CVDMM(N) 201

Applications of E-Office Management Tools

Minor / Minor Vocational

School of Vocational Studies

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UNIT- 1

MODERN OFFICE AND ITS FUNCTIONS

1.1 INTRODUCTION

Office is described as the nerve center of an organization. It has become an indispensable part of any business organization. Present-day office activities have expanded tremendously to keep pace with the rapid globalization. Modern offices organized on scientific principles with their techno-savvy office managers allow the sustenance of business amidst cut-throat competition.

In olden days, all jobs in the organization were mostly done by the proprietors. If work was more two or three more persons were appointed. They had to sit in small rooms and worked in a poorly lighted and congested place. There were no modern office amenities as of today; clerks were found copying letters tiresomely turning leather-bound registers. Typewriters had not come into general use, most of the office work had to be performed manually, and clerks would be found spending most of their time copying letters for dispatch to customers. All the internal and external communications were performed through human agency. The

telephones and intercom systems were not generally in use. The proprietor of business would be found sitting in the office room and supervising the office work. He personally was responsible for dealing with customers and visitors. In the past, production was generally from a limited number of locally available raw materials, whereas marketing was in most cases confined to local markets. Businessmen were interested in maximizing profits through two important profit centres, i.e. production and marketing. A few decades ago, the office was defined as a place for clerical work within the four walls of a building.

Office activities have undergone profound changes in the last few decades. The world has witnessed spectacular advancements in the field of science, technology, industrialization, transport, communication, etc. In modern terms, office is viewed as a function. When it is taken as a function, it (Office) may direct, control and coordinate the office work wherever it is done and whosoever does it. Here it may be noted that in modern times, offices are developed on scientific principles, and their management and administration is in the hands of qualified and trained managerial staff.

1.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Learn the meaning of an office and its work.
- Understand the activities and functions of an office.
- Understand the importance and purpose of an office.
- Know the changing scenario of an office with new technologies and paperless office.

1.3 THE OFFICE AND OFFICE WORK

Meaning of Office-

Office is a place for transacting business where clerical and administrative functions are carried out to coordinate and control activities of an organization. A typical office performs tasks such as framing business policies, processing and communication of information, record keeping, and handling e-mails, execution of orders, managing receipts, and payments. An office can be described as any place where information converges on paper, is documented, preserved and used for both current and future operation of businesses.

In the past few decades, office activities have undergone vast changes. The old dingy, cluttered, stuffy office rooms have vanished have been replaced by well-ventilated, well-lit, air-conditioned offices with up-to-date furnishings in alluring designs. Gone are the days when the head of the concern had to personally supervise the work of clerks. Today, modern offices are organized on scientific principles and their management and administration are in the hands of a specialized office manager. Managers do not share the same room with clerks

but sit in separate rooms. The clerks are supervised and controlled with the help of supervisors and through standard office systems, routines, office manuals, etc.

Advancements, in the recent past, have led to an expansion in the scale of production and business activities as the size of business enterprises grows; there is a corresponding increase in the volume of office work. The office activities of today are not performed by general clerks but by specialized clerks – Receptionist, Cashier, Typist, Telephone Operators, etc. There is also a higher division of labour. Departmentalization of office has been affected. The office managers of today welcome greater use of machines and minimal use of human beings in the office work. Machines-typewriter, telephones, computers, calculators, duplicating machines, Dictaphones, accounting machines, intercom, cellular phones, internet system, etc help save time and labour. Computers are the latest additions to the long list of office machines, capable of performing most clerical operations at high speed without errors. Thus, modern offices are embracive to more and more technical advancements.

Office is an important section of business. The term business implies office work. The office is defined as "a place for the transaction of business, the room or department, where the clerical work is done," or we can say "a place where business is carried on", or it is "a place where all sorts of activities of organization are dealt with". An office is the centre of an organization. Commercial office acts as a central directing and coordinating agency of the various activities of any business.

In the modern age, the "office" is used in a broader sense. Prof. Dicksee states, "An office is to a business what the mainspring is to a watch". An organization cannot be carried on without an office, as a watch without the mainspring is useless. In present times, the modern office organization has so much importance as the brain in a human body. Thus, a commercial office can be called "a clearing house of all essential business information". The office has to receive or collect all information of the business, process the collected information (analyses, arrange and classify) and put them into an understandable form on the one hand. On the other hand, the processed information has to be presented or communicated to the management of the business as and when required.

According to the Random House Dictionary "An office is a place where business is transacted or professional services are available" An office is the place where the control mechanisms for an enterprise are located, records are initiated for communication, control and efficient operation of the enterprise. According to Mills and Standing Ford, "The office is the administrative centre of a business". The purpose of an office has been defined as the providing of a service of communication and record.

It is generally seen, in commercial offices, there are some persons to receive information, process them and supply the processed information to the management. Doing so can be called a clerical job. Clerical job includes correspondence (to collect information or clarify

the information received) serving (filing), typing, book-keeping, handling of money, etc. Efficient management of the organization helps the managers or executives to formulate planning, organizing, controlling, and supervise activities. Prompt and accurate decision depends upon timely information.

An office is a place to record the information for control through collection (of information) handled and serviced. The control mechanism for a business is located-paper work is to attain an aimed result. One must give importance to the office function rather than to the place. An office is a place of paper processing and memory centre for all its departments. In the office, policies and ideas are formulated through collection and analysis of obtained information. An office maintains all records. And this readymade, scrutinized and processed information is made available to the management to attain the best result.

Office Work-

According to the old concept "Office work" is mostly concerned with clerical work where the records of an enterprise and making, preserving the records for further usage. Office work not only deals with records, it also includes communication, mechanical data processing, planning and scheduling.

Office work being mainly concerned with clerical work or paper work is narrow view and an old concept of office work. Nowadays, office work has a very wide scope. Office work is primarily concerned with making, preserving, and using records. The records are concerned about purchasing, producing, selling, accounting and correspondence, inventories, and written or printed memorandum of all kinds. These records are essential for an efficient and effective control of the organization.

An office serves as the memory centre and control organ of an organization. The office performs many services like communication, reproduction, mechanical data, processing, procuring of stationery, furniture and equipment, secretarial assistance, etc to other departments in an organization.

Office is a unit where relevant records for control, planning and efficient management of the organization are prepared, handled and preserved. Office provides facilities for internal and external communication as well as coordinates activities of different departments of the organization. The purposes of an office are:

- To preserve all the records of the business.
- To handle incoming correspondence.
- To plan the policies of the business and ensure their implementation.
- To direct and co-ordinate the activities of the various department.
- To maintain accounts, statutory and non-statutory books, etc of the business.

Office Activities-

Each office has a personality of its own. This personality is a reflection of the purpose of the existence of an office. The manufacturing office has a profile that differs from that of the sales office. Likewise, the accounting office has a different orientation from that of a research and development office. In organizing a new office, the office manager must first determine the prime reason for the existence of that office and then add the necessary ingredients to bring about an efficient operation entity that achieves predetermined results.

Although offices differ from one another in prime responsibility, many activities are commonly carried out by all the offices. Some of these activities are:

- Processing incoming mail.
- Processing outgoing mail.
- Maintenance of the records (Filing and Indexing).
- Establishing standard at office work.
- Designing and procuring at office forms, stationery, etc.
- Recruitment and training of office staff.
- Maintenance of furniture, machines, appliances, etc.
- Preparation of statements, reports, etc.
- Maintenance of accounts and other financial records.
- Handling Telephone calls and enquiries.
- Preparing updated information for the whole firm.
- Arranging the data in a quick and accessible form for using and safeguarding the assets.
- Keeping prompt and accurate handling of enquiries orders etc.
- Maintaining an efficient flow of work in the office.

1.4 IMPORTANCE OF AN OFFICE

Purpose of an office-

The place of office is incomparable as it fulfills the following purposes:

- It is a place where the manage-ment can prepare the plans intelligently.
- The management can make their plans effective from the office.
- From the office, records of the progress of plan in action can be obtained.
- Through different control techniques carried out in the office with available records,

the effectiveness of the plan in action can be ascertained.

- The results of such action are evaluated in the office without delay.
- Different activities are coordinated from the office.

Importance of an Office-

"No organization worth its name can exist without an office". Thus, the office is an essential segment of any organization, big or small, govt. or private and contributes to its efficient and economical functioning. The importance of an office to a business organization is high because of the variety and complications that a business enterprise faces due to competition, legal and statutory restrictions, role of trade unions and a host of other factors. A business enterprise today cannot stand without the assistance of a well-organized office.

Office is behind every business activity and the nerve centre of all deliberations. In the words of Dicksee, what office is to business is what the man spring is to watch. All operations are directed, coordinated and controlled through the office. A well-organized office makes it possible for management to plan its operations intelligently, appraise results and coordinate all the activities of the business.

The term office has been defined in a variety of ways. In general terms, office means a place where clerical work is performed and all kinds of paperwork is maintained & dealt. However, in modern sense of the term, office denotes an activity and not a place. Whenever clerical operations are performed, they are treated as office function. According to Edward Roche "It is a mistake to regard the office as a specific place; instead an office exists anywhere, wherever certain kinds of works are performed".

Office is regarded as an important part of an organization. The very existence of an organization necessitates the presence of an office whether a government institution, business house or an educational institution. Office plays a pivotal role in its functioning because a well-managed office helps management to plan its operation intelligently and to put them in action competently. Without an efficient office, business activities cannot be carried on systematically. The importance of an office can be defined in the following ways:

a) **Information Center:** Office is an information center or a data bank of all information on which the business is carried. All present and past figures of business that it does should be in the office. Based on this information, the office plans, and forecasts and controls its operation and its area of operation.

b) **Channel of Communication**: It is evident that without any communication, the office cannot all alone function and serve its purpose. Every communication, especially the written communication flows from the top to the bottom, and the reporting has to flow

from the bottom to the top. The office would fall if the flow of communications is not frequent and the reports are not made available or presented to the higher authorities within the stipulated time.

c) **Aids in Coordination**: The objectives of any office won't be met if there is no proper coordination among the employees. The employer-employee relation and the employee-employee relation have to be strong if effective coordination has to be built up. An effective coordination jacks up the spirit of work tightens the unity and strengthens the morale of every employee working in the organization. Moreover, the necessary information and feedback from the top level is needed for promoting coordination.

d) **Importance in Relation to Government and Public:** Today, for every business to exist, it has to follow certain guidelines, rules and regulations as formulated by the government. Every business unit today is considered to be revenue-generating as well as a social institute. Every office has a wing, and it is a link between society and the government. It is also a link between the people and the government. Hence, an office has to create a proper type of image in the mind of the people for building a proper brand image and a corporate image.

e) **Aid in Managerial Control:** Control is a combination of corrective and measuring techniques of the performance of subordinates in order to make sure that the objective of an enterprise is achieved and accomplished. Control requires establishing 'standards' and then measuring the standards within the stipulated time and resources.

f) **Importance in Relation to Customers:** The actual importance of any office is its relation with its customer. It is the customer who brings the business to the office and, hence, a customer is the king. Except for the government office, every other business organization depends on its customer for its business to generate the revenue. Hence, the importance of office about its customer is of great significance "customer", now, is the 'emperor'. The orders received by the customer, their enquiries and their complaints are taken care by the office through direct and personal contacts. Nowadays, the modern office has a very important person—the Guest Attending Officer who attends all the customers and informs them everything directly, personally, or on the phone, about the company, its activities, and about its business.

g) **Importance to Shareholder:** Every office serves an important link between the shareholder on the one hand and the company on the other. The issue of division of shares, transfer of the shares, issue of the notice of the meetings of the company, and answering about all the queries to the shareholder is of great importance and these cannot be achieved or obtained without establishing a proper office.

h) **Importance of the Worker:** For maintaining a good workforce, a good environment,

free from official politics, free from partiality and an effective relation, in the form of employee-employer and employer-employee a relationship is needed.

1.5 FUNCTIONS OF THE OFFICE

An office is primarily concerned with the collection and supply of information. Accurate and up-to-date information relating to the organization and other agencies affecting the organization is always required for taking decisions and formulating policies. Besides, office has assumed many other responsibilities, such as safeguarding assets, personnel management, and procurement of assets, etc. which are incidental to the primary function. Therefore, the functions of a modern office may be classified into two categories: [i] Basic functions [ii] Administrative functions.

Basic Functions

Basic functions are those functions of an office which need to be performed in all types of organizations. They are mainly related to receiving and giving of information. These basic functions are as follows:

- **Collecting Information:** The office receives or collects information about various activities of the organization. The information may be collected from internal or external sources. Internal sources may be employees and various departments of the organization. The external sources are customers, suppliers and government departments, etc. From internal sources, information may be received in the form of letters, circulars, reports, etc. and external sources provide information through letters, orders, invoices, inquiries, reports, questionnaires, etc. The executives of the organization may also collect information while visiting other organizations.
- **Recording Information:** The office keeps a record of information collected from various sources to make it readily available to the management. The information is kept in the form of correspondence, reports, statements, circulars, lists, charts, registers, books, etc. An office has to also maintain records as prescribed under law. The registered office of a company is required to maintain Register of Members under the Companies Act, 1956.
- **Arranging, Analyzing and Processing the Information:** The information collected in an office is generally not in the form to be used by the management. Therefore, facts and figures collected have to be arranged, processed, organized and analyzed to make them useful to the management. In this regard, financial statements, statistical statements, charts, lists, reports and summaries are prepared.
- **Preserving Information:** The information is properly sorted out and preserved in the most economic and scientific manner. Various types of equipment, filing cabinets, etc. are used for preserving records. Unnecessary and outdated records are destroyed to

make space for new and valuable records.

- **Supplying information:** All accumulated and processed information is useless unless it is communicated. The office serves as a two-way channel for communication. On the one hand, it supplies the collected, recorded and processed information to the management. On the other hand, the policy decisions, guidelines and instructions issued by the management to the departments are also routed through the office. The information may be supplied verbally or in writing.

Administrative Functions-

Administrative functions are in addition to the basic functions. Nevertheless, the office cannot hope to work smoothly without them. These relate to the tasks of protecting and safeguarding assets, maintaining and enhancing the operating efficiency, stationery control, choice and use of the office equipment's and selection, training, placement, and remuneration of the personnel. The following functions are normally considered as administrative functions of an office:

- **Management Functions:** Various functions of management are also applicable to the management of office functions. Office work has to be planned, organized and executed according to the plan. Control is exercised to ensure the efficiency of operations in the office. Staffing, directing, communicating, co-ordination and motivating is also important for the management of offices.
- **Instituting Office Systems and Routines:** An office has to develop systems and procedures for providing better services to other departments. Each phase of office work is carefully analyzed, and a proper procedure is developed for it. Proper sequencing of different tasks is necessary to ensure the continuous flow of work.
- **Procuring Stationery and Supplies**: Adequate supply of quality office stationery is necessary for the efficient performance of office work. The office purchases standard quality paper, pens, ink and other stationery items, maintain the stock and issue them only on demand.
- **Designing and Control of Office Forms:** Use of standardized forms simplifies office operations. It is the responsibility of the office to design, standardize, provide and control the forms to be used in the office and other departments of the enterprise.
- **Purchasing Office Equipment and Furniture:** Efficient and economical performance of office work requires proper furniture, equipment and machines. The office has to arrange for the selection and purchase of these items from reliable suppliers. It also has to ensure timely availability of furniture, etc. to departments and employees and facilitate proper utilization, as well as arrange for maintenance, servicing and replacement according to needs.

- **Safeguarding Assets:** Different types of assets are maintained in an organization. The assets must be protected against damages and losses on account of fire, theft, etc. An efficient control system is exercised by the office to safeguard the assets.
- **Personnel Management:** The efficiency of office work depends very much on the employees. Their appointment, training, promotion, appraisal and welfare are the functions of the office.
- **Maintaining Public Relations:** An organization depends on public reputation and goodwill for its existence and progress. Maintaining public relations is also the responsibility of the office. Most organizations have reception counters to greet and receive visitors to the organization.

1.6 THE CHANGING OFFICE

Office Yesterday

A few decades ago, a typical business Office presented a gloomy picture. Housed in one or two small rooms, poorly lighted and ill-ventilated, it was generally situated in the least conspicuous part of the building. There was a small volume of paperwork, which was handled by a few clerks manually and without the aid of mechanical and labour-saving devices. Since typewriters were somewhat rare, the clerks had to do all the written work with their own hands. Letters were copied before dispatch on loose sheets or in fat leather-bound registers. All the internal and external communication was performed or carried on through the human agency, for telephones and intercom systems were not generally in use. The proprietor of a business or the head clerk would be found sitting in the office room, supervising and guiding office work, and personally dealing with the visitors or customers. There was no departmentalization of office activities, and the techniques of scientific management were either not known or not practiced.

Historical Developments.

The following technological developments made during the last 150 years have led to the evolution of the modern office:

1870: First commercial typewriter introduced.

1880: Alexander Graham Bell invented telephone.

1920: Electric typewriter introduced.

1930: Important machines like duplicators, Dictaphones, intercoms developed.

1950: Calculators, computers, copying machines, addressographs, and franking, tabulating and accounting machines developed.

1961: Memory electronic typewriters launched.

1964: Word processing equipment, cash registers, etc.

1970: Introduction of digital networks local area networks (LAN).

1980: Computerized telephone networks, picture phone, etc.

1990: Personal computers, micro processing equipment, electronic mail, fax machines, modems, pagers, Cellular Phones, Internet Systems, etc.

2000: Internet Banking, Internet Trading, BPO servicing, Internet Telephony, Digitized office.

2008: Apple I-Phones, Voice Mails, Teleconferencing, Handwriting and speech Recognition Software, Broadband Spectrum, L.C.D. and Plasma T.V.s. 3D image Videoconferencing (telepresence), etc., Black Berry, Google Gphone, Robotics, etc.

2012: Voice/Face/Handwriting Recognition, 3D Printing, Apple iPhones 4S, ITB Hard Disk,

2014: Blue Ray Disc, Voice Navigation, Wi-fi, Wireless Printers, Cloud Computing (Google Drive, DropBox, Skydrive-Microsoft), iPad, Business Analytics (for Cash Management, Website Management, Employee Management, etc.) SaaS (Software as a Service), LED, Mobile Banking, Virtualization, Android, Ubuntu, Internet of Things (IOT), etc.

Office Today

Office activities have undergone vast changes in the last five-six decades. A modern office is well-planned, well-laid out and well-organized. The scope of office activities has widened tremendously following spectacular developments in science and technology, industrialization, transport and communication. These developments have led to an expansion in the scale of production and business activities, to greater governmental and legislative interference and control, and the consequent enlargement of the volume of office work. In today's office, activities are performed not by general-purpose clerks but by specialized clerks- by receptionists, accounts clerks, cashiers, stenographers and typists. There is, thus, a greater division of labour. Loose-leaf binders have replaced the old fat leather-bound ledgers. Filing and indexing techniques have been developed. Departmentalization of office has been affected. Greater and wider use of machines (typewriters, dictaphones, calculators, accounting machines, computers, etc.) is made to save time and labour. Work standardization, job evaluation, merit rating and other techniques of personnel management are being practiced. Telephones, intercoms, telex and other communication device, are used for rapid and global communication. Many large-sized offices use computers to handle the enormous volume of work. The use of carbonless copy paper has become very popular.

In short, Offices today are organized on scientific principles, and their management and

administration are in the hands of highly specialized managers. The term "Office Management" is rapidly being replaced by the term "Administrative Office Management" and "Information Management"

Office of the Future

Advancements in technology are having an enormous impact on the working of the office. The new office technologies are converting the information that was written or typed, transmitted and stored on paper to be processed by computer-based machines more accurately and at much higher speed. However, it may be stressed that the rate of introduction of the new technology is very 'variable' and it might take many years before all offices resemble 'office of the future'. In India, we usually find a mixture of traditional and new machines in the same office. Few organizations have the finance or are prepared to take the risk of replacing all their old office equipment with the new machines all at once. We are, in fact, in a period of transition which might extend to a few years or even more. In the more distant future, we might see an office that is virtually 'paperless'. However, in the near future, there will be an important reduction rather than a total abolition of paperwork.

The office of the future has to face a variety of challenges — social, political and economic. For instance, with the increased mechanization of office activities and the installation of sophisticated machines like computers, it seems we are on the threshold of office automation. With the increasing pace of industrialization and government control of the business, the need to employ more experts and specialists to perform office activities has become pressing, and has led to the utilization of consultancy services to a greater extent. These developments call for a greater "professionalization of management" and increased application of the principles of management to the office. The other challenges faced by the office of the future include:

- The challenge of legal provisions.
- The challenge of reducing paperwork.
- The challenge of reducing office cost.

Once these challenges are met, the productivity of an office would increase, and its importance would be enhanced in relation to the business organization of the future.

1.7 THE PAPERLESS OFFICE

The 21st-century offices will be an electronic wonderland where expensive paper-based routine work will be replaced by result-oriented and advanced information technology. Office automation, with its microcircuitry and visual display screens, is sure to take over the old and worn-out methodology, in office management. Probably, within the next 3-5 years, office information system would be installed and developed to such an extent that it would replace the desk, the typewriter, the filing cabinet and the plethora of paperwork.

With the evolution of a new work style, based on speed, accuracy and efficiency the offices which fail to wake up to the implications of modern information technology will find themselves lagging behind. They would become vulnerable to the technological onslaught of their better-equipped competitors. A US study16 on office automation has indicated that 100% of the banking industry has already installed Office automation systems of some kind. An average of 85-word processors per 1,000 employees was reported. Together with these, the banks are likely to add private videotext, electronic mail, online management information systems with graphics and voice information systems. Future developments also imply the adoption of multifunctional workstations with a wide variety of capabilities. The technological advances have also invaded offices in Europe, UK, Japan, etc. However, in India, the position has started to emerge, and in certain sectors, rapid computerization is taking place particularly in BPOs, Stock Market Operations, Banking, Retailing, Higher Education, etc. The concept of paperless office encompasses the following:

- The omnipresent desk will now be replaced by the multifunctional workstation with a personal computer linked to other personal computers via a high-speed Local Area Network (LAN) system. The workstation can be further linked to the main station so that the staff positioned at the workstations can contact and manipulate information from the Office records.
- Computers, equipped to process words as well as figures, will replace typewriters. The present-day, word processor will slowly give way to personal computers.
- The electronic-magnetic or optical-filing is the one to succeed the paper filled filing cabinets in our offices. Microfilming will also reduce paper records and facilitate the retrieval of records.
- For outward communication, facsimile (FAX) system will replace the dispatch section.
- For inward communication, shorthand notebooks and typewriters will give way to dictating machines and printer computers.
- Desktop Publishing System will look after the entire printing work of the office. It will write and format documents, create and incorporate graphics, prepare camera-ready copy for printing, keep databases of mailing and subscription lists, create official advertising files and brochures and keep all financial records, no matter how large or small it is.
- Various machines like accounting machines, billing machines, payroll machines, addressing and mailing machines, punched card machines, etc. shall be replaced by computer network (LAN) system.
- The automatic answering devices and automatic electronic branch exchanges will reduce the workload of the reception counter of the office.

- The new emphasis will be on LAN system- a low-cost method of connecting microcomputers, printers and data storage devices on a single site. Imaginative use of information technology helps to create new opportunities. It cuts down operating costs, provides faster and more accessible information and reduces time spent on clerical functions and unproductive tasks.

Are the days of paper limited?

The increasing use of office machines in transmission, storage and data processing has facilitated the offices to abandon the use of paper to a large extent. However, the realization of the goal of 'Paperless Office' is subjected to the following problems:

[1] Transmission: Facsimile transmission is already possible, but it requires both the receiver and sender have compatible electronic apparatus, which will restrict transmission for some time to come.

[2] Storing: Microfilm has long been used as a storage medium, but as yet it has made no serious in roads into the use of paper. Data storage of huge quantities of information is already carried out by computers. Nevertheless, the most used device of many computers is not video display units (VDU) but printer.

[3] Data Processing: Again, computers already perform many data processing tasks which previously were being carried out by clerks armed only with pencils and paper. However, aspects like, financial, organizational and resistance to change will inhibit the rapid elimination of paper.

As such, the transformation of the office is not an easy task. An integrated approach where information is treated as a primary resource is necessary to reap maximum benefits from office automation. Further, the software supporting an electronic office should be reliable, accessible to everybody and easy enough to be operated by everybody irrespective of their ability or status, "Office automation can be carried out in a phased manner starting with the clerical staff and later moving on to the professionals and managers". Managers can have desktop on workstations, which can be used for electronic mail, finding information from large central databases and typing text while producing reports. Through a properly linked network system, a manager can send electronic messages to his colleagues and arrange meetings and appointments. He can also type letters from his own laptops (screen-based/workstation). For maximum results, the technology used should be matched to the needs of the business and business objectives. The person coordinating the 'Information Technology' (IT) activity must be familiar with the business objectives of the organization.

Tips for a Paperless Office

Many people who use computers- whether it's for their home or business- are moving towards a "paperless office". Simply, they are tired and overwhelmed by scraps of paper,

heaps of old file folders, envelopes- and they want to reduce the clutter. Take a look at how many messages are stored in your e-mail's in-basket. Now imagine how much paper would have been generated if they hadn't come to you from cyberspace.

Many companies have made at least a partial move to a paperless office. They're doing so this way: by using scanners instead of copying machines, sending electronic faxes instead of paper faxes, storing information electronically instead of in filing cabinets, giving staff clients or vendor's information on CDs or through Internet attachments instead of inbound folders. In short, they're getting a greater return on their hardware, software and technology investments. Here are six things to keep in mind as you move towards a paperless home or business office.

a) **Without paper, make sure you're backing up files**. In the traditional backup system, you would make a photocopy of a document and put it in a properly-labeled folder that can later be retrieved from a filing cabinet. Many people and businesses develop electronic filing systems that mimic the old paper systems, using Microsoft Word or customized programs for storing documents by type of document, client, project or other prioritization. But those files can't just be created — they have to be backed up as well. Backup solutions can include backing up to second hard drives, to removable drives or to Internet and off-site locations to minimize the risk of loss of data from a computer failure. So, the message here is to have a system in place for regular and consistent backing up of your information.

b) **Realize that a paperless office doesn't happen overnight**. Your home office or business won't go from all-paper one day-to-paperless the next. It's a progression. You might start out by scanning all incoming bills into your system and then expand to include all general business correspondence. Initially, you might imagine you're creating more work instead of less —especially if you run a business. It's just another way of backing up information.

c) **You'll need to rearrange your office** — a good thing. There usually aren't tremendous savings of office space when you first start focusing on using less paper. After all, you still have all those paper documents housed in your big, clunky file cabinets. At some point, during your transition to a 'paperless office', however, the difference in your physical storage space will become apparent.

d) **"Paperless" often really means "less paper".** Yes. It's possible to scan all received documents into your computer and to store all in-house documents in your system as well. You can virtually eliminate paper faxes by generating faxes on your computer and having inbound faxes delivered to your computer system. You can even electronically sign or signature-stamp outgoing documents. But you're still likely to have some paper floating through your office. Not all of your clients or customers will

want to be billed electronically. Some vendors will still want to communicate by snail mail. And tax and regulatory requirements could force you to either do some current business on paper or to keep hard copies of your past home or business records.

e) **Everyone has to participate in change**. Merely saying as head of household, owner or manager of a business that you want those around you to embrace your paperless office doesn't make it so. Your partner or staff has to buy into the transition as a permanently-new way of doing business. Change can be difficult. People who have been making photocopies, sending paper faxes, putting documents into legal-sized folders or saving tons of mail and catalogues that they just can't part with are going to have to change their perceptions. They will have to learn new routines that they already feel skilled at.

f) **Realize that less paper is just the beginning of the pay-off**. The most visible impact of a move to a paperless office is the reduction in the cost of printing, mailing, shipping and storing paper. Over time, lots of other benefits should become apparent: Less time spent looking for paper lost in the shuffle. Fewer hours looking for bills, documents and, if you're in business, copies of client documents. The ability to access all sorts of information from computer files, in a matter of seconds without having to search your office. If you've got a home office that serves as a satellite office of a business, you can have access to all of your business files, using a product like Terminal Services or other software, even if you're not at your business location. In short, change can be hard but it can be profitable.

Working towards the Paperless Office

The paperless office — promised since the first desktop computers started appearing in the 1980s- has yet to become a reality for most companies. Despite, the increasing use of computers in all types of businesses, a good portion of most day-to-day work is still paper-based. Besides, basic human behavior works against a truly 'paperless office', employees will always want to print documents for more careful study or to bring to meetings. For now, the perfect paperless office system remains an elusive goal.

Despite these challenges, you can drastically reduce the amount of paper documents your business depends on by choosing a document management system. The term "document management" (DM) covers a range of systems for managing paper and electronic files. To work towards a 'paperless office', a more specific term is "document imaging systems" which include tools to help convert paper records into electronic files.

Benefits of a Paperless Office Solution

It provides additional cost savings by eliminating paper records. Converting records rooms into usable office space can let you make much better use of expensive real estate, and to

eliminate warehousing costs entirely. Other benefits include increased security, better disaster recovery protection, environmental benefits and remote access for your important documents.

The Automated Office

Till now, it was customary to transfer and store information on paper. With new electronic procedures and systems becoming more and more popular in use in modern automated office, the so-called "Paperless Office" is becoming a near reality. A 'Paperless Office' is one in which paper has been replaced by electronic, digital, micrographic and micro-processing systems and equipments. It is aptly said that. "The office is now in a period of transition" where more and more information processing functions are being automated through sophisticated electronic systems; the Paperless Office is attainable today."

"It may be noted that though paperwork can be reduced by up to 95 per cent in the traditional office, many people believe that a completely paperless office will not be attained in the near future."According to William Benedon in the 'Paperless Society; fact or fiction,' there are six major barriers to a totally paperless office; namely-

- Traditional Values.
- Legal Requirements.
- Accounting and Audit Values.
- Legislative Values.
- Societal Values and.
- Procedural Values.

In contrast, the System Analysts, Records Managers, and other management professionals often complain of the high cost of creating, storing, retrieving, reproducing and disseminating paper documents.

Modern offices are increasingly converting all incoming and original data to either electronic form or microfilm, which can then be edited, indexed, stored, retrieved or converted to paper. In some companies' 'Paperless Office' integrates voice inputs, word processing, optical character recognition, electronic mail, calendars, message sending, filing directions and text editing, computer indexing and processing, COM, Micrographics, automated storage and retrieval, telecommunications and colour graphics systems into a fully automated office facility.21 The integrated office has evolved into "Communicating Integrated Office". Office systems communicate with each other by the use of satellites. Several modern offices provide satellite communication, video teleconferences, and electronic mail and computer-to-computer hookups for intra-company use.

Subsystems of an Automated Office

The Modern Office System is said to have the following subsystems that are integrated into the Automated Office.

- Voice System.
- Word Processing.
- Optical Character Recognition (OCR).
- Data Processing.
- Reprographics.
- Micrographics
- Communication and Facsimile
- Graphic systems.
- Telecommunication (e.g. Teleconferencing, Videoconferencing, Computer conferencing, Telepresence [Latest innovation by CISCO Inc.])
- Electronic Mail.
- Photocomposition.
- Computer Networking
- Robotics

The business office is currently undergoing a dramatic change, an abrupt transition from antiquated procedures that have been evolved fundamentally for over a century to sophisticated, integrated systems involving electronic and advanced microcomputer technology.

The Virtual Office

A virtual office is an integrated suite of applications that is accessed via the internet and available 24/7. The 18 applications include calendar, addressbook, webmail, etc., and can also synchronize with PDA or Phone. One can receive agenda by SMS/Text Message every day and send SMS/Text message right out of virtual office. One may access the virtual office even from a pocket PC or mobile phone.

A virtual office may be created by an individual or maybe opened up to a group of employees, colleagues, vendors or anyone else within or outside the business. One can decide as to who joins, what to share and who can share what. Anyone who has access to the Internet has access to the virtual office, if allowed. The virtual office offers the following features:

- **Calendar:** Personal and group calendar. Share public events within your group, view another member's calendar and sync it with your PDA or wireless phone.

- **Address book:** Personal and group address book. Share public addresses within your group and view other member's addresses.
- **Web Mail:** Compose, send, receive, reply, forward e-mail with your new "@office.com" e-mail address. Includes POP3, folders, attachment, address books, templates, signature, anti-virus and anti-spam.
- **Documents**: Full document management centre with automatic backup. Share and jointly edit your personal or group's valuable information.
- **To Do's:** Be better organized. Manage your tasks, send tasks to other group members and control completion.
- **Forum:** Broadcast company news and ideas with your group effortlessly. Great for keeping everyone on the same page or brainstorming.
- **SMS:** Get your daily calendar by wireless phone via SMS (Short Message Service, commonly known as Text Messaging) or send reminders by SMS, send SMS directly from your address book.
- **Virtual Drive:** Using the virtual drive, you can access all your private and group documents directly from your PC or Mac computer.
- **Groups:** Create groups (or Virtual Offices) to share information with other members, such as addresses, documents, and bookmarks.
- **Meetings:** Schedule your meetings online in seconds and automatically invite others in your group to attend. See the responses as they roll in.
- **Calls:** Don't miss another important phone call. View a list of the calls "while you were absent," marking them off as you return to them.
- **Notes:** Create, save and stick notes to any object in your Organizer. Better than all those "Post-It" notes stuck to your monitor. Keeps the notes where you will see them, when you need them.
- **Reminders:** Meetings, birthdays, reminders on time of any events. Reminder displayed by screen pop up, e-mail, messages or SMS.
- **Bookmarks:** Save bookmarks which can be used from any browser, share them with other members.
- **Fax:** Using your messaging account, you can send faxes worldwide. You simply send a message in the same way that you send an e-mail.
- **Synchronize:** Synchronize your personal calendar, address book, tasks and notes with your PDA or PC. Whether it is Palm, Outlook, Lotus Organizer, iPAQ Pocket PC or

Treo, you can sync up and run.

- **WAP:** Access your virtual office through WAP in order to check and enter information, using your WAP enabled wireless phone.
- **Encryption:** Use secured transfer when required (documents, calendars, addresses, or e-mails) or faster, non-secured transfer for no secure transfer.

1.8 POINTS TO REMEMBER

- An office is generally understood to be a place where clerical work is performed and where all kinds of paperwork are done.
- Office activities include processing incoming mail, processing outgoing mail, Dictation, Transcription, Typing, Printing, Copying, Filing Records retrieval, Records disposal and Communication.
- The functions of a modern office may be classified into two categories: Basic Office Functions and Administrative Management Functions.
- Basic office functions include receiving information, recording information, arranging information and giving information.
- Administrative Office Functions include Management functions of planning, organizing, staffing, directing, communicating, controlling, coordinating and motivating, public relations function, instituting office systems and routines, retention of records, safeguarding assets, form designing and control, stationery and supplies control, selection and purchase of office appliances, personnel functions and controlling office costs.
- An office is an important and indispensable part of every organization, big or small. The importance of the office to a business enterprise arises from the fact that a modern business cannot be managed efficiently without clerical assistance in some form or other. The office serves modern business as an information centre, as an intermediary, as a coordinator, as a service centre, as an administrative nerve centre, as a control centre. It is rightly said that “the office is to a business what the main spring is to a watch”.
- A paperless office is a concept in which usage of paper is greatly reduced or eliminated totally in an office environment. This is achieved by converting a document into digital form. According to the proponents, a paperless office is not only environmentally friendly, but also helps in boosting the productivity and efficiency of an office while also saving money and making work processes easier and more convenient as digital documents can be easily shared between users.

1.9 GLOSSARY

- Office: It is the nerve centre of the entire organization.
- Administrative: Relating to or responsible for administration.
- Management: The art of getting things done.
- Front office: It welcomes visitors.
- Middle Office: It is usually a part of the operations division.
- Electronic office or e-office: Computer based office.
- Virtual office: Being actual or in almost every respect.
- Back office: Building layout of early organization where tasks dedicated to the operating company.
- Organization: It means a group of people who are cooperating under the direction of leadership for the accomplishment of communed.
- Automated: The technique of operating a process by electronic devices, reducing human intervention
- Paperless Office: Operating an office with minimum use of paper
- Filing: Keeping papers in order.
- Computing: To calculate or estimate.
- Execution: Performing or Accomplishing.
- Documented: Collection and keeping documents in order to be done
- Maintenance: Act of protection.
- Communication: Process of passing information.

1.10 CHECK YOUR PROGRESS

Objective type questions-

a) Which of the following is not a function of an office?

[i] Processing of mails [ii] Supply chain management

[iii] Maintenance of Records [iv] Recruitment of staff

b) Which of the following tasks are typical of the virtual office?

[i] Desktop publishing [ii] Internet research

[iii] Travel arrangements [iv] All of the above

c) Which of the following is not true about an office?

[i] Information Center [ii] Channel of Communication

[iii] Aids in Co-Ordination [iv] Financial Management

d) The basic functions of an office are known as .....

[i] Outline Functions [ii] Purchase Functions

[iii] Safeguarding Functions [iv] Human Resource Functions

e) Basic Functions are related to .....

[i] Arranging [ii] Recording [iii] Receiving [iv] All of the above

Descriptive type questions-

a) What is an office? State the importance of an office in the business and discuss the various service rendered by it to the business.

b) Explain the importance of office to an organization. State the challenges that the office fears in the near future in our country.

c) What is the modern concept of office? State its characteristics. Why the office is sometimes called the service department?

d) 'The office is the nerve Centre of a business'. Explain the statement.

e) What is an office? State the importance of an office in the business and discuss the various services rendered by it to the business.

Answer (Objective type questions)

[a] ii [b] iv [c] iv [d] i [e] iv

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UNIT- 2

OFFICE MANAGEMENT

2.1 INTRODUCTION

Management is a vital aspect of the economic life of man, which is an organized group activity. A central directing and controlling agency is indispensable for a business concern. Resources like material, labour, capital, etc. are entrusted to the organizing skill, administrative ability and enterprising initiative of the management. Thus, management provides leadership to a business enterprise without able managers and effective managerial leadership; the resources of production remain merely resources and never a final product. Under competitive economy and ever-changing environment, the quality and performance of managers determine both the survival as well as the success of any business enterprise. Management occupies such an important place in the modern world that the welfare of the people and the destiny of the country are very much influenced by it.

2.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the nature and principles of management.
- Define the functions of management and office management.
- Understand the role, qualities and functions of office manager.

2.3 NATURE OF MANAGEMENT

Definition-

In the words of Henry Fayol, "To manage is to forecast and to plan, to organise, to command, to co-ordinate and to control".

According to Peter F Drucker, "Management is a multi-purpose organ that manages a business and manages managers and manages worker and work".

In the words of J.N. Schulze, "Management is the force which leads, guides, and directs an organisation in the accomplishment of a pre-determined object".

In the words of Koontz and O'Donnel, "Management is defined as the creation and maintenance of an internal environment in an enterprise where individuals working together in groups can perform efficiently and effectively towards the attainment of group goals".

Management simple means to control or to administer. Office management is the method of controlling an office to achieve a given aim. In our modern society, all kinds of business are carried on by a group of people with adequate knowledge in their respective filed. However, a group of people working for a common object must be guided and controlled by a leader or an authority. This is the function of the management. Management is a technique of leadership or control of an office in order to attain the aimed result through the efforts of other people in grouped activities. This is possible only when the office is properly organized and managed. Office function is carried on by a group of people for a common result, by giving services to the organization. The management has to organize the office in such a way to attain the objectives. It is the function of the management to organize, guide, and control the activities of the office personnel. That is why in the present era, personnel management has become a specialized subject.

An analysis of the various definitions of management indicates that management has certain characteristics. The following are the salient characteristics of management:

- **Management aims at reaping rich results in economic terms**: Manager's primary task is to secure the productive performance through planning, direction, and control. The management is expected to bring in the desired results. Rational utilization of available resources to maximize the profit is the economic function of a manager. A

professional manager can prove his administrative talent by smartly using resources and enhancing profit. According to Kimball, "Management is the art of applying the economic principles that underlie the control of men and materials in the enterprise under consideration".

- **Management also implies skill and experience in getting things done through people:** Management is a people- involving job. Profitable returns cannot be expected without enlisting cooperation and securing positive response from "people". Hiring ones with specialized expertise is the significant aspect of the management. In the words of Koontz and O'Donnell, "Management is the art of getting things done through people in formally organized groups".
- **Management is a process:** Management is a process, function or activity. This process continues until the objectives set by administration are actually achieved. "Management is a social process involving coordination of human and material resources through the functions of planning, organizing, staffing, leading, and controlling in order to accomplish stated objectives".
- **Management is a universal activity**: Management does not apply to business undertakings only. It is applicable to political, social, religious and educational institutions as well. Management is necessary when group effort is required.
- **Management is a science as well as an art:** Management is an art because there are definite principles of management. It is also a science because by the application of these principles, predetermined objectives can be achieved.
- **Management is a profession**: Management is gradually becoming a profession because there are established principles of management being applied in practice, involves specialized training and is governed by ethical code arising out of its social obligations.
- **Management is an endeavor to achieve predetermined objectives**: Management is concerned with directing and controlling of the various activities of the organization to attain the predetermined objectives. Every managerial activity has certain objectives. Management deals particularly with the actual directing of human efforts.
- **Management is a group activity**: Management comes into existence only when there is a group activity towards a common objective. Management is always concerned with group efforts and not individual efforts. To achieve the goals of an organization, management- plans, organizes, coordinates, directs, and controls the group effort.
- **Management is a system of authority**: Authority means power to make others act in a predetermined manner. Management formalizes a standard set of rules and procedure to be followed by the subordinates and ensures their compliance with the rules and

regulations. Since management is a process of directing men to perform a task, the authority to extract the work from others is implied in the very concept of management.

- **Management involves decision-making**: Management implies making decisions regarding the organization and operation of business in different dimensions. The success or failure of an organization can be judged by the quality of decisions taken by the managers. Therefore, decisions are key to the performance of a manager.
- **Management implies good leadership**: A manager must have the ability to lead and get the desired course of action from the subordinates. According to R. C. Davis, "Management is the function of executive leadership everywhere". Management of the high order implies the capacity of managers to influence the behaviour of their subordinates.
- **Management is dynamic and not static**: The principles of management are dynamic and not static. It has to adapt itself according to social changes.
- **Management draws ideas and concepts from various disciplines**: Management is an interdisciplinary study. It draws ideas and concepts from various disciplines like economics, statistics, mathematics, psychology, sociology, anthropology, etc.
- **Management is goal-oriented**: Management is a purposeful activity. It is concerned with notes and the achievement of predetermined objectives of an organization.
- **Different levels of management**: Management is needed at different levels of an organization namely top level, middle level, and lower level.
- **Need of organization**: There is the need of an organizational setup for the success of management. Management uses the organization for achieving pre-determined objectives.
- **Management need not be owners**: Managers don't need to be the owners of the enterprise. In joint-stock companies, management and owners (capital) are different entities.
- **Management is intangible**: It cannot be seen with the eyes. It is evident only through the quality of the organization and their results, i.e., profits, increased productivity, etc.

Before trying to understand management, it is essential to understand the meaning and definition of administration which is as follows:

Administration concerns determination of corporate policy, coordination of finance, production and distribution, settlement of the organization's compass and the ultimate control of the executive.

According to schedule, "Administration is the force which lays down the object for which an

organization and its management are to strive and the broad polices under which they are to operate. Management is the force which leads guides and directs an organization in the accomplishment of a predetermined object. Organization is the combination of the necessary human beings, materials, tools, equipment, working space and appurtenances, brought together in systematic and effective correlation, to accomplish some desired object."

According to Milward, "Administration is primarily the process, an agency used to establish the object or purpose which an undertaking and its staff are to achieve. Secondarily, administration has to plan and stabilize the broad lines or principles which will govern the action. These broad lines are in their turn, usually called policies. Management is the process and the agency through which the execution of policy is planned and supervised. Organization is the process of dividing work into convenient tasks or duties, of grouping such duties in the form of posts of delegating authority to each post and of appointing qualified staff to be responsible that the work is carried out as planned."

It is known through economics that the factors of production are divided into four- land, labour, capital and entrepreneur. The last one is important under the present study. The entrepreneur is the man who brings together the other factors in a business. The other factors can be called as an organization. For example- consider a human body. The human body can be compared as an organization. It has various organs- ears to hear, eyes to see, hands to work, legs to walk, etc. Each organ has a specific work. Each of the organs works in coordination with the other organs. All the activities of the different organs combined can be considered as an organization. Finally, there is a top administrator i.e. the brain. Similarly, in business, production department, sales department, personnel department, etc have to do the proper function as directed by the management. The organization may refer to the function of organization or plans carried out through persons. Organization is concerned with and exists when an employee is selected, assigned jobs within his ability to work through a clear understanding. He must understand what he should do, how he should do and when he should do.

Office administration denotes the function of giving birth to major policies on which the enterprise is to be functioned. In a joint- stock company, the Board of Directors makes the major policies and in a partnership firm, partners lay down the policies. In all kinds of business, the function of administration is the same. Making policies is the function of administration.

2.4 PRINCIPLES OF MANAGEMENT

1) **Division of Work:** In practice, employees are specialized in different areas and they have different skills. Different levels of expertise can be distinguished within the knowledge areas (from generalist to specialist). Personal and professional developments support this. According to Henri Fayol, specialization promotes the

efficiency of the workforce and increases productivity. Moreover, specialization of the workforce increases their accuracy and speed. This management principle of the fourteen principles of management is applicable to both technical and managerial activities.

2) **Authority and Responsibility**: In order to get things done in an organization, management has the authority to give orders to the employees. Of course, with this authority comes responsibility. According to Henri Fayol, the accompanying power or authority gives the management the right to give orders to the subordinates. The responsibility can be traced back from performance, and it is therefore, necessary to make agreements about this. In other words, authority, and responsibility go together and they are two sides of the same coin.

3) **Discipline:** This third principle of the fourteen principles of management is about obedience. It is often a part of the core values of a mission and vision in the form of good conduct and respectful interactions. This management principle is essential and is seen as the oil to make the engine of an organization run smoothly.

4) **Unity of Command**: The management principle 'Unity of command' means that an individual employee should receive orders from the manager and that the employee is answerable to that manager. If tasks and related responsibilities are given to the employee by more than one manager, this may lead to confusion which may lead to possible conflicts for employees. By using this principle, the responsibility for mistakes can be established more easily.

5) **Unity of Direction**: This management principle of the fourteen principles of management is all about focus and unity. All employees deliver the same activities that can be linked to the same objectives. All activities must be carried out by one group that forms a team. These activities must be described in a plan of action. The manager is ultimately responsible for this plan, and he monitors the progress of the defined and planned activities. Focus areas are the efforts made by the employees and coordination.

6) **Subordination of Individual Interest**: There are always all kinds of interests in an organization. In order to have an organization function well, Henri Fayol indicated that personal interests are subordinate to the interests of the organization (ethics). The primary focus is on the organizational objectives and not on those of the individual. This applies to all levels of the entire organization, including the managers.

7) **Remuneration**: Motivation and productivity are close to one another as far as the smooth running of an organization is concerned. This management principle of the 14 principles of management argues that the remuneration should be sufficient to keep employees motivated and productive. There are two types of remuneration namely non-monetary (a compliment, more responsibilities, credits) and monetary (compensation,

bonus or other financial compensation). Ultimately, it is about rewarding the efforts that have been made.

8) **The Degree of Centralization**: Management and authority for decision-making process must be properly balanced in an organization. This depends on the volume and size of an organization including its hierarchy. Centralization implies the concentration of decision-making authority at the top management (executive board). Sharing of authorities for the decision-making process with lower levels (middle and lower management), is referred to as decentralization by Henri Fayol. Henri Fayol indicated that an organization should strive for a good balance in this.

9) **Scalar Chain**: Hierarchy presents itself in any given organization. This varies from senior management (executive board) to the lowest levels in the organization. Henri Fayol 's "hierarchy" management principle states that there should be a clear line in the area of authority (from top to bottom and all managers at all levels). This can be seen as a type of management structure. Each employee can contact a manager or a superior in an emergency situation without challenging the hierarchy. Especially when it concerns reports about calamities to the immediate managers/superiors.

10) **Order:** According to this principle of the 14 principles of management, employees in an organization must have the right resources at their disposal so that they can function properly in an organization. In addition to social order (responsibility of the managers) the work environment must be safe, clean and tidy.

11) **Equity**: The management principle of equity often occurs in the core values of an organization. According to Henri Fayol, employees must be treated kindly and equally. Employees must be in the right place in the organization to do things right. Managers should supervise and monitor this process and they should treat employees fairly and impartially.

12) Stability of Tenure of Personnel: This management principle of the fourteen principles of management represents deployment and managing of personnel and which should be in balance with the service that is provided from the organization. Management strives to minimize employee turnover and have the right staff at the right place. Focus areas such as frequent change of position and sufficient development must be managed well.

13) **Initiative:** Henri Fayol argued that with this management principle, employees should be allowed to express new ideas. This encourages interest and involvement and creates added value for the company. Employee initiatives are a source of strength for the organization according to Henri Fayol. This encourages the employees to be involved and interested.

14) **Esprit de Corps**: The management principle 'esprit de corps' of the fourteen principles of management stands for striving for the involvement and unity of the employees. Managers are responsible for the development of morale in the workplace; individually and in the area of communication. Esprit de corps contributes to the development of the culture and creates an atmosphere of mutual trust and understanding.

The fourteen principles of management can be used to manage organizations and are useful tools for forecasting, planning, process management, organization management, decision-making, coordination, and control. Although they are obvious, many of these matters are still used based on common sense in current management practices in organizations. It remains a practical list with focus areas that are based on Henri Fayol 's research which still applies today due to a number of logical principles.

2.5 ELEMENTS OF OFFICE MANAGEMENT

Elements of office management are termed as pillars of a building. If the pillars are strong, certainly, the building is also strong. Hence, efficient functioning of office management is based on the elements of office management. Following are the essential elements of office management.

a) **Personnel**: Office personnel are responsible for the official work within an organization. Generally, the selection and placement of office personnel is carried on by the office manager in small organizations. In large organization, staffing is carried out by the human resource management department. In both the case, the office work is to be performed by allocating the work to each individual according to their efficiency, guide the personnel to do the work with the help of means available in an office within a specified time and control the activities of office personnel. The office manager has to do all these activities.

b) **Means**: Means refers to tools used to perform office work. Means include pen, pencil, eraser, paper, ink, office forms, typewriter, computer, printer, calculator, etc. Adequate tools need to be supplied in an office and put them to the most efficient and economical use for achieving objectives.

c) **Environment**: The nature of business determines the environment of an office. The various office works have to be carried under a particular condition or environment. A work environment is created and maintained for the smooth performance of office work. It is the duty and responsibility of an office manager to bring suitable environment by adopting various procedures and practice.

d) **Purpose**: The office personnel must be aware of the purpose of work is and the impact of such work on other's performance. The office manager teaches the purpose to office personnel. If not done, the economical and justifiable use of resources and the

objectives of the organization cannot be realized.

2.6 FUNCTIONS OF MANAGEMENT

There is no universally acceptance to the classification of management functions. This is because different authors considering different organizations give a separate classification of management functions. Office management is similar to general or administrative management and performs the same functions as are performed by the management. The functions of office management in brief, are given below:

[1] Planning

Planning is a fundamental function of office management. All types of organizations prepare plans. Planning our studies, careers, new products, etc are examples of planning. Determination of a course of action determines the achievement of a desired result. Planning concentrates on setting and achieving objectives of an organization. It is an intellectual process. It is characterized as the process of thinking before doing. Planning function of management precedes all other managerial functions. "Planning is deciding in advance what is to be done. When a manager plans, he projects a course of action for the future, attempting to achieve a consistent, coordinated structure of operations aimed at the desired results." Planning involves projecting the future course of action for the business as a whole and also for different sections within it. Planning is thus the preparatory step for actions and helps in bridging the gap between the present and the future. Since planning is essentially choosing, it is dependent upon the availability of alternatives. It is through this process of choosing that office manager can obviously be seen as an important aspect of planning. Planning process comprises determination and lying down of objectives, policies, procedures, rules, programmes, budget and strategies, etc. The operations of the office will not run smoothly if they are not planned adequately. Planning makes it possible to occur which would not otherwise happen**.**

Benefits of Planning:

- The business objectives can easily be secured through plans.
- Planning gives direction to activities in the office.
- It focuses attention on objectives.
- It provides coordinated efforts and reduces risk and uncertainties.
- It facilitates the process of decision-making.
- It encourages innovation and creativity.
- It serves as a basis of control.
- It encourages a sense of involvement and team spirit.

- It eliminates unproductive office work and thus helps to minimize cost.
- It helps in economical operations.

[2] Organizing

It is an important managerial activity through which management brings together the human and material resources for the achievement of certain objectives. Organization is the foundation upon which the whole structure of management is built. It may be conceived as the structuring of functions and duties to be performed by a group of people for the purpose of attaining enterprise objectives. Organizing is determining, grouping and arranging of the various activities, assigning of people to those activities, providing of suitable physical factors of environment and the indicating of the relative authority delegated to each individual charged with the execution of each respective activity.

According to Louis A Allen, "Organization is the process of identifying and grouping the work to be performed, defining and delegating responsibility and authority, and establishing relationships for the purpose of enabling people to work most effectively together in accomplishing objectives."

According to Liver Sheldon, "Organization is the process of combining the work which individuals and groups have to perform with the faculties necessary for its execution that the duties so formed provide the best channels for efficient, systematic, positive and coordinated application of the available effort."

Steps of Organisation:

The important steps involved in the process of an organization are:

- **Identification of Activities** An organizational structure is developed to achieve objectives. Organization as a process of management is concerned with identifying and grouping of activities to be performed.
- **Grouping of Activities**: Closely related and similar activities are grouped together to form departments, divisions or sections. The grouping may be done on several bases depending on the requirements of the situation. Such grouping of activities is called departmentation.
- **Assignment of Duties**: Each group of related activities is assigned a position most suited for it. Every position is occupied by an individual. While assigning duties, the requirements of the job and the competence of the individual are matched together. The process of assigning duties goes on till the last level of the organization.
- **Delegation of Authority**: Authority without responsibility is a dangerous likewise;

responsibility without authority is an empty vessel. Hence, corresponding to the responsibility, authority is delegated to the sub-ordinates enabling them to show work performance.

- **Fitting Individuals**: Having determined the various parts and portions of the job to be done, the next step will be to fix suitable and well-qualified persons into these activities. Each person in the group will be given a specific part of the job to do and will be made responsible for it.

[3] Staffing

'Staffing' is concerned with the recruitment, selection, placement, training, growth and development of all those members of the organization whose function is to get things done through the efforts of other individuals. After determining the number and type of personnel to be appointed to fill different jobs, management starts recruiting, selecting the training the people to fulfil the requirements of the enterprise. According to Franklin Moore, "Staffing is a forward-looking activity because tomorrow keeps becoming today. Attrition constantly reduces executive ranks through retirement, death, resignations and occasional dismissal; so young men keep moving up. Besides this, most enterprises grow, providing new openings for managers." The function of staffing was considered to be a part of organizing but recently it has developed into a distinct function of management, and is, therefore treated separately in the chapter relating to Personnel Management.

[4] Directing

Once plans are drawn up to re-determine the objectives and the organization is ready to go into action, competent people/staff are appointed. Directing is the managerial function of guiding, inspiring, instructing and harnessing people towards the accomplishment of desired results. It is that part of the management process, which actuates the members of an organization to work effectively and efficiently for the achievement of the goals. Koentz and Q 'donnel defined direction as, "The interpersonal aspect of managing aimed at achieving the enterprise's objectives through understanding and effective contribution of the subordinates." According to Haimann, "Directing consists of the process and techniques utilized in issuing instructions and making certain that operations are carried on as originally planned. Directing is around which all performance revolves. It is the essence of operations, and coordination is a necessary by-product of good managerial directing." Directing consists of the following steps:

- Issuing orders and instructions to the sub-ordinates.
- Guiding and teaching the proper method of work to the sub-ordinates.
- Supervising the work of sub-ordinates to ensure that it conforms to the plan.

- Motivation of the sub-ordinates by providing incentives.

[5] Motivating

The term motivation has been derived from the word motive. Motive is anything that initiates or sustains activity. It is an inner state that energises, activates or moves and directs or channels behaviour towards goals. Motive is a psychological force within an individual that sets him in motion. Behind every human action, there is a motive. According to Brech, "Motivation is a general inspirational process which gets the members of the team to pull their weight effectively, to give their loyalty to the group, carry out the accepted task properly and play an effective part in the job that the group has undertaken." The important task of office management is to motivate employees to direct their efforts towards the accomplishment of organizational goals. Motivating may be achieved by: Providing inducements and incentives to employees, keeping morals high, satisfying the needs of the employees, etc.

[6] Co-coordinating

Along with specialization, there must be conscious efforts on the part of the management to see that all activities carried on by experts and different departments, contribute to the achievement of the objective of the business. Smooth working of an enterprise and the achievement of its objectives depend on sound co-ordination. According to Lundy, "Co-ordination involves the development of unity of purpose and the harmonious implementation of plans for the achievement of desired ends." According to Mooney and Reiley coordination is the, "Orderly arrangement of group efforts to provide the unit of action in pursuit of a common purpose." Thus coordination may be achieved by:

- Simplified organization.
- Harmonized programmes and policies.
- Well-designed method of communication.
- Voluntary cooperation.
- Coordination through supervision.
- Clear-cut objectives.
- Clear definition of authority and responsibility.
- Effective leadership.

[7] Controlling

"To control is to determine what is being accomplished; that is to evaluate performance and, if necessary, to apply corrective measures so that performance takes place according to the

plans. After the plans are put into action, there can be several hurdles in the achievement goals. Results may fall short of targets. Direction may be faulty. Therefore, management must find out what is going wrong, what changes in plans and directions are required and what must be done to set things right. This is the function of control. In words of Anthony "Management control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of an organisation's objectives." The basic elements of the control process:

- Establishment of standards or objectives.
- Measurements of actual performance.
- Comparing actual performance against the standard set.
- Determining the reason for deviation.
- Taking corrective action.
- Feedback.

Control is thus closely related to the planning job of the manager.Nevertheless, it should not be viewed merely as a post-mortem of past achievements and performance. In practice, a good control system should suggest corrective measures so that negative deviations may not recur in future.

[8] Communication

Communication is a means by which different persons are linked together in a group or organization to attain a common goal. No group activity is possible without communication. It enables the members to coordinate, exchange and make progress. A good communication must aim at making everyone concerned aware of the goal which the organization wants to achieve.

The two main objectives of communication are to inform and persuade. Communication is the means by which behavior is modified, change is affected, and goals are achieved. Communication is essential for effective control and motivation.

2.7 SUCCESS RULES FOR OFFICE MANAGERS

In any office environment, the office manager acts as the glue that holds a team together. While the duties of the position may vary depending on the specific line of work, a keen sense of leadership and the well-being of the team should guide the office manager's mission. This role is absolutely crucial to the overall success of an office, which is why we've outlined six useful tips for office managers, working in any field, on how to be more successful at their job.

[1] Establish Goals for Your Team-

Establishing clear office goals will create a sense of purpose that drives your team forward and keeps them productive and motivated. Inspire your team members to create ambitious yet achievable personal goals that reflect their work values and benefit the rest of the workforce. The sense of fulfilment that comes with accomplishing a goal will motivate employees to continue excelling, and you'll be able to better monitor their progress by knowing what exactly they are working toward.

[2] Communication is Key

It's the office manager's responsibility to unify a workplace, which means establishing straightforward and open communication between the members of your team. Ensure that they know their specific duties and give them constructive feedback when helpful or necessary. Teach your team members to clearly articulate their needs and actively listen to one another so that no one is in the dark about what is expected of them. There are many moving parts in any given office environment, and it's the office manager's responsibility to implement clear methods of communication to ensure those parts are working together productively.

[3] A Little Bit of Fun Goes a Long Way

No matter the kind of office environment you foster as a manager, you should always make room for occasional fun. Whether that means putting in extra effort to make the holiday party better than last year, setting aside weekly team bonding time, or a gesture as simple as implementing casual dress Fridays, keep in mind that happy employees are hardworking employees. Moreover, getting to know the members of your team outside of a work environment can strengthen personal relationships, in turn, benefit the workplace productivity.

[4] Know Your Boundaries

While it's crucial to show the members of your team a more candid side of your personality, it's equally important to maintain boundaries separating your work life and personal life. You want to cultivate a comfortable work environment without blurring the lines of acceptable workplace conduct. Remind the people in your office that you are their friend, but not their best friend.

[5] Be an Office Role Model

As the office manager, you should serve as a role model for the members of your team. At the end of the day, the only behaviour you can control is your own, which means it's up to you to lead by example and embody the workplace values that you wish to see reflected throughout the office. Show them how far a little bit of positivity can go in boosting team morale or getting through a particularly hard day. Uplift and embolden your team when struggles arise

and treat everyone with the respect they deserve. After enough time, your example will become the standard.

[6] Go the Extra Mile

Within the complex machine of an office, there are some things bound to fall through the cracks, and it should be the office manager who provides the extra hand. Show your team members that you are willing to make sacrifices that enrich the office environment and make their work lives more enjoyable. Stay late when there's extra work that needs to get done, and if you can manage it, offer to take work off someone's hands if you see they are drowning in deadlines. If you continue to go above and beyond, you should find that your team will gladly meet you halfway.

Qualities of a successful office manager-

- **Leadership:** A good office manager must possess the quality of leading the office staff rather than driving them. Although leadership ability is inherent, it can be developed by training and experience.
- **Sound Judgment:** Sound judgment is required under two circumstances (a) Whether the person whom the work is to be delegated and has the ability to do the work (b) In dealing with disciplinary matters with workers.
- **Impartially:** The office manager must treat his staff impartially in order to gain their confidence and respect.
- **Shrewdness:** This quality refers to the ability to deal with a situation and to take appropriate action.
- **Courage**: This implies backing the shrewdness by courage. He should not contradict his own judgment.
- **Methodical:** This quality implies the orderly performance of office work. He must organize the work of his staff systematically.
- **Good Character:** An office manager must stand firm to his decisions. However, firmness should not be taken to mean stubbornness.
- **Forward Looking:** An office manager must keep himself up to date in relation to office system, methods and techniques so as to improve the efficiency of the office.
- **Personal Qualities:** Personal qualities of an office manager are a combination of personal traits such as honesty, sincerely, initiative, self-discipline, punctuality, humorous, tact, persuasiveness and an attractive personality.
- **Professional interests:** In addition to the usual knowledge in the field of office management, an office manager must also have interest in professional fields such as

Management Science, Cost Accountancy, Financial Management, Secretarial Procedure, knowledge relating to law and so on. These professional interests make him become a wholesome office manager.

2.8 FUNCTIONS OF OFFICE MANAGERS

Each office has a personality of its own. This personality is a reflection of the purpose for which an office exists. The manufacturing office will have a profile that differs from that of the sales office. The accounting office will have a different orientation from that of a research and development office. In organizing a new office, the office manager must first determine the prime reason of the existence of that office and then add the necessary ingredients to bring about an efficient operation entity that achieves predetermined results: Although, offices differ from one another in prime responsibility, many activities are commonly carried out by all the offices. Some of these activities are:

- Processing incoming mail.
- Processing outgoing mail.
- Maintenance of records (Filing and Indexing).
- Establishing standard at office work.
- Designing and procuring at office forms, stationery, etc.
- Recruitment and training of office staff.
- Maintenance of furniture, machines, appliances, etc.
- Preparation of statements, reports, etc.
- Maintenance of accounts and other financial records.
- Handling Telephone calls and enquiries.
- Preparing updated information for the whole firm.
- Arranging the data in a quick and accessible form for use.
- Safeguarding the assets.
- Keeping prompt and accurate handling of enquiries orders.
- Maintaining an efficient flow of work in the office.

Some broad functions of the office managers-

a) **Leadership:** An office manager has to control his office. He/She is important for the smooth running of an organization. He is in-charge of the public relations. He helps other departments to achieve their goals. He has complete control over the work done in

the office.

b) **Coordination:** He has to select the persons- right persons for the right jobs.

[i] He will have to work and carefully see that the policies laid down by the management are implemented.

[ii] He is the connecting link between the top management and the workers. Workers approach him for their grievances and difficulties and the manager has to redress them. If he is not able to do the needful, he must place it before the management.

[iii] He has to work and safeguard the firm, where he is an office manager.

[iv] His primary duty is to the management and secondary duty to the workers. He must please both the parties. If either one of the parties is annoyed or neglected, he will be regarded as a bad manager.

c) **Recruitment of Staff:** He has to select the right person for the right job. For that he invites applications, conducts interviews and selects personnel.

d) **Training of Staff:** He provides training to the new employees as well as old employees to improve their skill in the latest techniques of management.

e) **Motivation:** He measures the employees work and output and offers rewards which increase their efficiency and ensure their better cooperation and lead to the promotion of the staff.

f) **Discipline:** Discipline in the office depends upon him. The sub ordinates should follow the rules and principles of management. He must have ability to speak. New methods cannot be accepted, unless full explanation is followed. He has to convince others about the fact findings.

g) **Accounting:** He has to keep a close touch with the accounting and costing section.

h) **Controls Stationary:** He has to safeguard the furniture, fittings, machines, equipments and various types of records.

i) **Secretarial Services:** He maintains statutory and accounts books, holds meetings, drafts report and minutes, etc. Thus, he does the secretary's functions.

j) **Organizer and Supervisor:** He organizes and supervises the office correspondence, messenger services, communication system, filling and indexing, protection of records, etc. There is no hard and fast rule as to the functions of an office manager. His functions depend upon the type and size of the organization.

2.9 POINTS TO REMEMBER

- Management is defined as the creation and maintenance of an internal environment in

an enterprise where individuals working together in groups can perform efficiently and effectively towards the attainment of group goals.

- Management also implies skill and experience in getting things done through people.
- Management is a science as well as an art.
- Management works on fourteen principles.
- Management functions are: Planning, Organizing, Staffing, Directing, Motivating, Coordinating, Controlling and Communication.
- The functions of an office manager are: Leadership, Coordination, Recruitment, Training and Motivation.

2.10 GLOSSARY

- **Management**: Process of controlling and making decisions about an organization, as well as overseeing others to ensure activities are performed efficiently and effectively.
- **Planning**: Process of setting goals and objectives and deciding how to accomplish them.
- **Organization**: Body of people that come together for a specific purpose.
- **Staffing**: Process of recruiting, hiring, training, evaluating, and compensating employees.
- **Controlling**: Continuous process of comparing actual outcomes with planned outcomes and taking corrective measures when goals are not met.
- **Authority**: Power to carry out a task and make decisions.
- **Motivation**: Force that inspires employees to want to perform their best and achieve results.
- **Unity of Command:** States that each employee reports to one manager.
- **Leadership**: Ability to influence others to reach a goal.
- **Communication:** Skill by which different persons are linked together in a group or organization to attain a common goal.

2.11 CHECK YOUR PROGRESS

Objective type questions-

a) Who said, "Management is a multi-purpose organ that manages a business and manages managers and manages worker and work"?

[i] Henry Fayol [ii] Peter F Drucker

[iii] J. N. Schulze [iv] Koontz and O'Donnel

b) Which of the following is true about management?

[i] Management is a system of authority [ii] Management implies good leadership

[iii] Management is dynamic and not static [iv] All of the above

c) In what order do managers typically perform the managerial functions?

[i] organizing, planning, controlling, leading

[ii] organizing, leading, planning, controlling

[iii] planning, organizing, leading, controlling

[iv] planning, organizing, controlling, leading

d) Which of the following is not a primary function of an office manager?

[i] Leadership [ii] Coordination

[iii] Dissemination [iv] Recruitment

e) Which management function involves measuring results, comparing results to expectations, and taking corrective action?

[i] Planning [ii] Organizing [iii] Leading [iv] Controlling

f) Which management function involves setting goals, objectives and creating specific plans for completing them?

[i] Planning [ii] Organizing [iii] Controlling [iv] Leading

g) Which management principle states that each individual should report to only one boss in order to avoid conflict and/ or confusion?

[i] Division of command [ii] Chain of command

[iii] Unity of direction [iv] Unity of command

Descriptive type questions-

a) State and explain the functions of office management?

b) What do you understand by "Office Management"? Discuss the functions of the modern office.

c) Discuss the role of an office manager and the important qualities you think he should have?

d) Planning bridges the gap between the present and the future". Explain?

e) Define office management and explain in detail its functions?

Answer (Objective type questions)

[a] ii [b] iv [c] iii [d] iii [e] iv [f] I [g] iv

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UNIT- 3

MAILING SERVICES

3.1 INTRODUCTION

The history of mail or messaging services extends messages from one place to another, starting with the invention of writing. The first documented use of the postal system occurred in Egypt around 2400 BCE when Faros used officials to send instructions throughout the empire. The same type of courier service may have been used in the Fertile Crescent (500-220 BCE), the Han Dynasty in China (306 BCE) - 221 CE), the Islamic State (622-1923) CE) in Arabia, the Inca empire in Peru (1250-1550 CE), and the Mughal empire in India (1650-1857 CE). Learners must be aware of the postal services, generally used to send letter/posts manually through government postal department. This may take long time or few days to deliver the post.

Nowadays, mailing services to send and receive the text, photo, etc have been changed into electronic mail. Electronic mail is a technique of exchanging messages between people using electronic gadgets. It was founded by Ray Tomlinson in 1972 named as email or e-mail. It

works on all computer networks which is called Internet. Sending this electronic post distance between the sender and receiver does not matter. Earlier email programs required the sender and recipient to both be online at the same time for instant messaging. Today's advanced email servers need not be online at the same time. These servers are quite able to send, receive and store the messages. Users or their computers need not be online at the same time; they need to connect briefly, usually to a mail server or web interface as long as it takes sending or receiving messages or downloading them. Even today's mobile device has made it very easy to send and receive the mail anytime, anywhere.

3.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Explain the term mail.
- Managing the incoming and outgoing mails.
- Explain different types of filing structure.
- Explain the meaning, purpose and types of indexing.
- State the objectives of office management.
- Explain the purpose and different functions of a file system.

3.3 INCOMING AND OUTGOING MAILS

What do you mean by mail?

'Mail' means a written communication via a messenger service or post office. All business concerns send and receive large amounts of letters, notices, circulars, calls, reminder reports, statements, pamphlets, queries, etc. The postal service ensures continuous communication between internal and external parties. It assists the firm in establishing and maintaining communication with customers, suppliers, and other stakeholders.

In order to ensure prompt postal management, the postal service must be organized and systematized. Because of its importance and the important role played in the organization, email should receive special attention. In companies, mail handling is done by a special department called Mailing department. The type of order of the mail delivery department depends on the size of the firm and the amount of mail to be handled. Generally, a mail is categorized as incoming mail, outgoing mail and the communication between different departments of the same company called inter-departmental mail. Email refers to the communication between the parties through electronic gadgets. This requires an electronic setup.

Managing incoming mails-

Good mail management requires the establishment of a thorough process that include step by step email management. Incoming mail should be received and communicated with speed and accuracy. The exact way to handle internal mail varies from office to office. Managing incoming mail usually consists of the following steps.

- **Acceptance of mail:** The post is sent once or twice a day by post or courier. When a mailbox or mail bag is rented, mail is collected by an employee from the post office once or twice a day. The clerk is assigned the task of receiving letters and issuing receipts or notifying them that he or she has received them from the peon / messenger's letter.
- **Mail opening:** Letters are opened by hand or by machine. Mail must be opened carefully to ensure mail security. It should also be noted that there are no papers left inside the envelope. The chief executive officer must handle this process.
- **Content Evaluation:** The contents of envelopes should be examined to determine the purpose of communication with the department concerned. If there are enclosed areas, they should be inspected to make sure they are in order. Any discrepancies should be brought to the notice of the postal manager, especially where the entry is by check, written, postal orders, etc.
- **Stamp closure:** After opening the mail, each letter must be in writing on the date and time of receipt. The stamp can be made by rubber stamp, by hand or with the help of dating, counting and time recording machines. If necessary, the envelope should be pinned as proof. The letter is marked to the department concerned and a circulation slip, if needed.
- **Recording:** Details of the letters received are recorded on the 'Internal Mail Record' or 'Books Received' or any register. It ensures that the letters are not lost or remain neglected but it is time consuming when the mail is large.
- **Categorization and supply:** Letters are sorted into trays or baskets or cabinets in the pigeon's den and sent to the appropriate departments. Finding a clerk is signing a list or registering as an adoption.

Managing outgoing mails-

Almost all offices send mail daily. Outgoing mail must be handled with care because the speed and accuracy of managing such mails play a vital role. The following reasons demand the careful management of the mails:

- Improper handling of external mail creates a negative impression on third parties.
- A delay in submitting responses may result in a loss of business opportunities.

- Delays may incur additional costs.

All outgoing mail goes through three stages: [i] Forming a mail [ii] Signing over mail [iii] Recording of mail

Forming includes writing or dictation as well as typing (or writing) of a draft or reported item. Standard letters may be signed by the new staff on behalf of the principal but the important letters are signed by the official or the head concerned. Only an authorized person must sign over the official letter/ post. After that, every letter should be written up with a code or file number for future reference. This process is known as a reference. Each organization follows its own code-and-expression method, e.g. the reference number UOU/ Exam/06/2020 indicates that letter No.06 pertaining to the exam department was filed in 2020.

Manage inter-departmental mails-

At large organizations, all mails of the department are handled almost exactly the same as the one described above. A separate register may be maintained for the central departmental mails but for smaller organizations, this can be handled simply by mentioning a letter of the book or letters of the messengers.

3.4 FUNDAMENTAL ACTIVITIES OF MAIL HANDLING DEPARTMENT

Managing external mail usually involves the following steps:

[1] Collection of outgoing mails: Usually, each department sends its letters to the email department for mailing. In some offices, a messenger from the post office travels at scheduled times to collect mail from various departments. The tray marked as 'outgoing mail' is kept in each department. All letters to be exported are placed in the tray and the messenger collects the email from that tray. Timely collection of outgoing mail improves the efficiency of the batch phase.

[2] Mail Entry: Maintain records of all the mail is the primary duty of the mail handling department Letters to be delivered locally by courier or by peon are recorded in the messenger book. Entries are placed in the Outgoing Mail Register or Dispatch Register.

[3] Creasing of the letter: The letter should be carefully folded and in the correct size. The texture should be precise and should not damage the solitude of the characters. They should be grouped into a minimum number of folders. When a windows envelope is used, the wrap should be done in such a way the address can be seen through a window. Standard envelopes should be used to accommodate letters. Before letters are placed in envelopes, you should take care:

- Write the number of letters in the envelope and in the letter, itself as listed in the

dispatch register.

- Also, look at the entries as mentioned at the bottom left of the book.
- Add the enclosures with pins, tags, clips, or strings.

Nowadays, machines are used to wrap letters and place them in envelopes automatically.

[4] Preparation of envelopes: After wrapping, the letters are placed in the appropriate envelopes. A complete and correct address must be provided. Pin codes should be provided as they guarantee faster delivery. The address is written on the letter and the envelope must accompany the message. A windows envelope is used to prevent the rewriting of an address in an envelope. The address must be fully identifiable by hand or in writing. Speech machines can be used whenever needed. The envelopes should be sealed with a gum, paste or cello tape. The work is tedious but must be done with care. The sticker should not spread internally, as it can damage the content. Various mail categories, such as 'Book Post', 'Registered Post' should be mentioned over the envelope.

[5] Sorting, measuring and stamping: The envelope for the different mail categories should be arranged in phases. External mail is usually in two categories-(i) Domestic (ii) Outstation

The second category can be classified as standard postal mail, registered, speed, postal mail, foreign mail, under shipping certificate, Indian Airlines, Air India, sea mail, etc. The mail must be typed in separate ports so that the stamp function is enabled. Stamps should be posted on postage. It is necessary to measure the different articles that will be mailed to the appropriate number of stamps. A timely copy of the 'Post Office Guide' should be kept with the Dispatch clerk responsible for the postage stamps. In large organizations, filtering machines are used for treading. Letters to be sent by courier are included in the messenger or peon book and forwarded to the courier for distribution.

[6] Delivery: Finally, shipping and delivery of books must be organized. Regular mail is posted at the nearest post box from time to time. Special types of mail such as subscriptions and insurance, etc are sent by post separately.

Handling E-Mail-

Electronic mail or E-mail is the fastest and easiest way to send messages, data, graphics etc. over the Internet. You know that the Internet is a worldwide network of computers connected by satellite. To receive and send emails online you need to have an email address. E-mail are usually received and sent by the concerned authority. In the case of senior officials, the job is assigned to their assistant or secretary.

While sending emails, one must be very careful as it is not possible to correct the original message once it is forwarded. Another important thing is that a hard copy of the message must be kept on file as proof.

3.5 FILING SYSTEM

As a primary source of information, all records in the office need to be kept for future reference. Completion serves the purpose of keeping records in all offices. Documents and papers are filed and available on demand. Completion is the process of arranging the records in the correct order for easy access. Captioning can be defined as the process of editing and maintaining original records or copies, so that they can be easily found where they are needed. It involves the installation of documents in standard containers in a predetermined format so that any document can be obtained quickly and correctly when needed.

The main purposes of the filling process are to ensure proper ordering, proper storage and easy access to records. The active filing system is expected to have the following objectives:

- Cataloging and unifying records.
- To protect documents from loss or damage.
- Providing easy access to information without wasting time.
- Availability of past records to future business policy managers and agencies.

Functions of the filing system

The functions of the filing system are as follows:

- Storage of file covers or folders in cupboard-mounted cabinets.
- Issuance of files filed in any department.
- Transfers of papers no longer used from existing files to separate folders or box files for future use.
- Completion of letters and other documents after the action taken on the cover of the cardboard file or folders.
- Classification of documents on a predetermined basis.
- Disposal of no longer applicable old papers and records.

3.6 CLASSIFICATION OF FILING

Documentation is required to ensure immediate access to records. Separation is a process of selecting subjects for which records and documents are organized due to general characteristics prior to completion. For example, characters can be separated on the basis of a communication issue. The main arrangements for file classification in the office are:

- Serial from 1-100
- Serial from A-Z
- Geographical
- According to the title

[1] Serial from 1-100

Under this technique, files are arranged numerically, each link or subject is assigned a number. The files are arranged in numerical order. For example, a customer, XYZ, may be assigned No.06 so that all related papers are available in folder no. 06.

[2] Serial from A-Z

With this technique, letters from different groups or related to different topics are organized and placed in different file covers on the basis of the alphabet on which the group's name or subject begins. The first alphabet of a name or surname or title is the first directory of the file rank. For example, all documents related to Tata Consultancies can be placed in a folder marked T'. For each file, the papers are sorted by date.

[3] Geographical subdivision

In the technique, books are subdivided according to geographical areas. All connections related to a specific location are stored in one file.

[4] According to the title

Under this technique, papers are organized according to the topic. Subjects are listed alphabetically, e.g. Exam, Result, Study material, etc. This method is more appropriate if the title is more important than the author's name or location.

Methods of filing-

After classification, files should be carefully stored using any of the appropriate filing methods. There are various ways to fill them based on the type of equipment they use. These methods can be classified as-(i) Traditional Methods (ii) Modern Methods

[1] Traditional Filing Methods

There are some traditional methods of filing such as pigeon-hole installation, folder filing, box placement, spike filing, book bind filing, and arch lever filing. Although, these filing systems have limited use nowadays, these do apply to smaller organizations. These methods can be defined as:

a) **Pigeon cave installation**- It is a special almirah or wardrobe divided by the number of smaller areas. It is open from one side and its parts are square marks called 'pigeon holes'. Each pigeon hole holds a letter of letters. When the letters are received, they are arranged alphabetically or sequentially.

b) **Folder filing**- There are cardboard covers or thick sheets covered with metal hooks to fasten the papers together. A separate folder is assigned to each customer. All characters associated with that customer are stored in the file's contents. The papers are

(a) Pigeon Cave Installation (b) Folder Filing

ordered and filed. The papers lie on top of one another.

c) **Filling with boxes**- The box file, as the name suggests, is made in the form of boxes. The documents are usually placed in folders and then placed in a box file. It helps to keep the papers better as they are safer and collect less dirt. For classification purposes, papers related to various topics may be collated. This method is applicable to traveling agencies where book correspondence is maintained temporarily.

d) **Spike filing**- Includes wire with sharp edges and wood, plastic or round metal at one

(c) Filing with Boxes (d) Spike Filing

end is used for filing. It is stored on a table or mounted on the wall after the filling is completed.

e) **Book binds filing**- Under this method, paper or discounts is attached to the book's length. This method is often used to record minutes and save receipts and notes. It avoids the possibility of losing or replacing it incorrectly.

f) **Arch lever fitting**- This system uses sturdy cardboard folders containing solid metal layers. These wires can work with a lever. When the paper is inserted, it is milled through two holes with a milling machine. The excavator is then transferred to the top that opens the edges of the metal or springs. After the paper is inserted into the holes, the lever is pressed down to close the spring. The paper in the file arranges one over the other.

(e) Book Binds Filing (f) Arch Lever Fitting

[2] Modern Filing Techniques

In addition to traditional filing methods, as mentioned above, you will find some of the most popular modern filing methods nowadays in large and small organizations. Modern filing methods are classified as- (i) Horizontal Filing (ii) Vertical Filing.

a) **Horizontal Filing**- In this system, the documents are stored in file covers or folders one over the other in standard position. The documents are stored chronologically inside the cardboard file cover. Sheets are lined with metallic or metal joints. Files are then stored in cupboards in one convenient place over another. When any paper is required, the correct file is extracted, and after processing it is returned to the same location.

b) **Vertical Filling**- This is a modern form of filling. In this way, the papers are put in files and stored in a straight-standing position. Folders are stored in specially designed cabinets. The front side of the folder is short. The extended back part is used to indicate the file code number. Metal drawer drawings are deep enough to hold vertical folders. In order to separate the wardrobe into simple guide sections are placed in the correct positions. Under this method, it is placed in a separate folder for each customer or subject. Folders can be organized alphabetically, numerically, geographically or intelligently. This system has become very popular in big offices and big business houses.

(a) Horizontal Filing (b) Vertical Filing

3.7 INDEXING

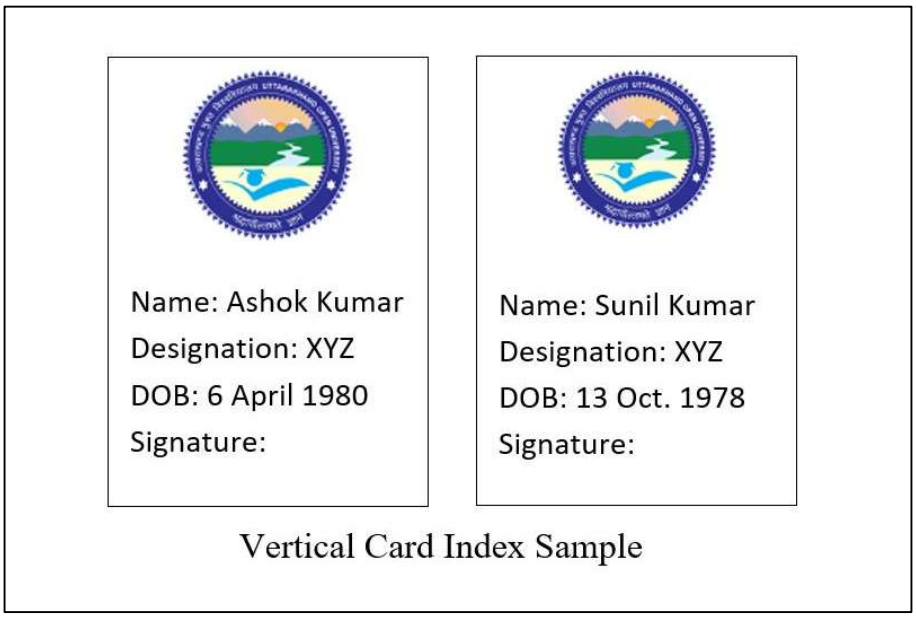
Index is a 'point' or 'indicator'. For example, a book index is an index that helps the reader to find pages where various topics have been discussed. Identification is an important issue in filing. It is the process of determining the name, title or other caption where the text is placed. The reference is to the directory. The main purpose of the index is to prepare the location of the required files and documents. Index helps to search the location of any file or text.The objectives of indexing are as follows:

- It helps in searching the location for files and documents.
- It provides quick identification of disconnect.
- It saves time and effort to access records.
- It gives efficiency in the maintenance of records.
- It reduces the cost of running records management.

Types of Indexing-

Indexing can be done in many ways as:

a) **Vertical Card Index**: Each title, document, or customer, is assigned a unique card where relevant information appears. Usually, they are categorized and arranged alphabetically. For example, in the library, two cards are prepared per book- one is arranged on the basis of the author and the other one based on the book.



Vertical Card Index Sample

b) **Strip Index**: It contains a framework in which hard paper sketches are organized in such a way that they can be easily extracted and replaced. Each strap is dedicated to a single item. The frame can be hung on the wall or laid on a table in book form or even arranged in a flexible post that can be turned toward any part of the index.

c) **Fixed Index**: Instead of keeping a separate index, the index may be bound with the relevant document. Such an index usually appears at the end of the standard textbook in which the subject matter is arranged alphabetically and the page numbers are assigned according to each topic or sub-heading.

d) **Loose-Leaf Index**: It is another variation of the index of books. Single sheets are placed in metal pots or screws. Index prepared in these sheets. Whenever a new leaf is added, a book may be opened and a suitable sheet inserted. A bundle containing loose index sheets may be locked so that no pages can be accessed without proper authority.

e) **Wheel or Rotary Index**: Cards are arranged around a tire wheel. One wheel can hold


(d) Loose Leaf Index (e) Wheel Index

up to 5000 cards. The card can be inserted or removed without interrupting the other cards. Entries can also be made to cards without removing the saddle.

f) **Bound Book Index**: Index prepared in a book that is bound or labeled into paragraphs where the words or texts are inserted.

3.8 OFFICE MACHINES AND EQUIPMENT

Machines and equipment are a significant part to the successful running of any office. We require different types of machines in an office that are essential to perform office tasks quickly and accurately. With rapid technological advancements, there is an increase in the efficiency of office work due to the transfer of high equipped machinery. The use of the office has the following purposes:

- **Increase in accuracy:** One of the purposes of using machines is the accuracy of work especially in every department like attendance monitoring, accounting, sale, purchase, etc.
- **Time-saving:** Machines do more work than they do by hand. They work faster, so there's more time savings.
- **Employee Savings:** few workers can handle large amount of labor and therefore there is a saving of labor.
- **Improving the quality of work:** Work done by machines is usually clean and neat.
- **Ensure better management:** The functioning of the office empowers managers to manage tasks effectively. For example, a biometric thumb impression machine can help manage the attendance of employees.
- **Improving goodwill:** Use of equipment results in better service to customers and the public. This enhances the reputation of the organization.
- **Mitigation of fraud opportunities:** Equipment such as cash register, etc imposes a

check on fraud and misuse.

Types of office equipment

Learners must have seen various modern offices. Have you noticed that the offices have turned to automation? Computers can read, store, analyse and interpret information quickly. In the mail room, letters can be opened, sealed, sealed, picked up, weighted and automatically checked with the help of shipping machines. Messages can be sent from one location to another in no time via tele-printer, fax, telephone or internet. Some of the important equipment can be defined as:

- **Computer:** These days, computer is the most commonly used equipment in office. A computer is a machine that can perform various tasks such as calculation, data comparisons, information storage, data analysis and preparation of diagrams and charts.
- **Photocopier Machine:** Photocopier is a machine that makes copies of the paper and other images. It is quick and cheap. Nowadays, photocopiers can print very fast. They even have memory chip which can store the data.
- **Biometric Thumb Impression machine:** In large organizations, arrival and departure of employees is electronically recorded. Thumb impression or swipe card can be used for the same purposes. Employees are given a card with a magnetic strip on it; by swiping them using time recording equipment, arrival and departure times are recorded.
- **Phone/ Intercom:** Nowadays, it's impossible to imagine an office without a phone. It's an easy way to communicate orally widely used in internal and external communications. Cell phones are also very popular nowadays. Compared to fixed phones, mobiles are easier to communicate with at any time. It's also easy to send SMS over the phone. For inter-department communication, an automated communication system i.e., Intercom can be used.
- **Currency counting machine:** This machine is very helpful for departments managing cash. Manual counting of cash may result in mismatch with the cash of balance sheet. It increases accuracy and efficiency.
- **Calculator:** We need concentration during the calculations like addition, subtraction, multiplication, division, percentages, etc. So, calculator can help us for the same and errors can be reduced.
- **Fax:** FAX service enables instant transmission of the facsimile of an entire document. It can send handwritten and printed with pictures, charts and diagrams to different locations within or outside the country. As a result, both the time and labor both is reduced.
- **Projector:** It is a good medium of communication. Through projection, one can

communicate the planning and policies between the audiences.

- **Printer and Scanner:** Printer and scanner are essential for office management. We have a variety of printer and scanner like dot matrix printer, inkjet printer, 3D printer, etc. Even now one machine can be used for multiple purposes like 3-in-1 printer i.e. printer, scanner and photocopier.
- **Paper Shredder:** In offices, there are two types of documents. One, those are related to office policies and second, those of no use after some time i.e. the document with validity. After some time, there is no use to keep such records. So, we can remove such documents. But, if we remove documents as it is, it may disclose the confidentiality of office. So, we should crush the documents first by using the paper shredder machine. This machine cuts the paper in small-small pieces. No one can read the text written over the document.

3.9 POINTS TO REMEMBER

- In current age, mailing services have been changed to electronic mail that can be used to send and receive the text, photos, etc electronically.
- 'Mail' means a written communication via a messenger service or post office. All business concerns send and receive large amounts of letters, notices, circulars, calls, reminder reports, statements, pamphlets, queries, etc.
- The main purpose of the filling process is to ensure proper ordering, proper storage and easy access to records.
- Classification of filing is a process of separating records and documents, organized due to general characteristics prior to completion.
- There are several methods of filing classification, e.g. Serial from 1-100, Serial from A-Z, Geographical, According to the title.
- Indexing is a process of determining the name, title or other caption where the text is placed.

3.10 GLOSSARY

- Bound Book Index: Index prepared in a book that is bound or labelled into paragraphs where the words or texts are inserted.
- Import– The method for bringing data into your program.
- Data Entry– Usually, the process of transferring written or printed data to processable form by keying it character by character.
- Delete– Remove a particular record from a mailing list.

- Edit– Updating a record in a file.
- File– A collection of records on a single storage device.
- Strip Index- It contains a framework in which hard paper sketches are organized in such a way that they can be easily extracted and replaced.

3.11 CHECK YOUR PROGRESS

Objective type questions-

a) Earlier email programs required the sender and recipient to both be online at the same time for instant messaging. (True/False)

b) Email is the fastest and easiest way to send and receive messages, data, graphics and etc. over the Internet. (True/False)

c) The main purpose of the filling process is to impress the officer. (True/False)

d) Printer and scanners are essential for office management. (True/False)

e) Proper indexing of files helps to ..... the location of any file or text.

f) Computers can read, store, analyze and interpret ..... quickly.

Descriptive type questions-

1) What are the different types of outgoing mail?

2) What do you mean by stamp closure?

3) What is the purpose of the dispatch register?

4) What is the significance of creasing of letters?

5) Explain the importance of mailing system in this digital era.

6) What do you mean by filing the documents?

7) What is the spike filing system?

8) How many types of filing?

9) "Poor Filing system can affect the efficiency of any office". Do you agree with the statement? Yes or No? Justify your answer.

10) What is the objective of indexing?

11) What are the advantages and disadvantages of vertical card indexing?

12) List the equipment used in the office.

13) What is the use of a paper shredder machine?

Answers (Objective type question)

[a] True [b] True [c] False [d] True [e] Search [f] Information

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UNIT- 4

FUNDAMENTALS OF INTERNET- I

4.1 INTRODUCTION

Internet is also known as 'THE NET'. The internet is a global wide area network that connects computer system across the world. It includes high-bandwidth data lines that comprise the internet's "backbone". The net comes up with different duties:

- Web- Collection of web pages.
- Email- Method of sending and receiving messages online.
- Social Media- That allows people to connect through texts, photos, etc.
- Online Gaming-Simply the gaming things that one can play online. Earlier people used dial up modems to play games on the internet. Nowadays, one can play games easily with friends on devices like mobile phone, etc.

4.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Know Internet applications.

- Understand the types of networks and Internet connecting devices.
- Understand URL

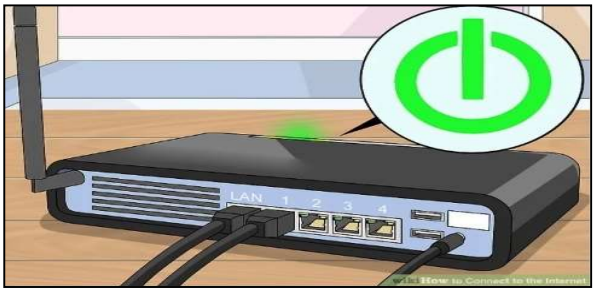
4.3 APPLICATIONS OF INTERNET

- Communication- Internet allows us to communicate with people through videos, photos, documents, etc. With the help of internet people send or receive items. They're able to communicate better no matter how far they're with each other. Internet telephony is another common communication service that is made possible through internet.
- Job Search- Companies post advertisement on newspaper but it's not necessary that each and every one who wants job will receive it. Internet provides us that facility in the job like the companies who need employees can register themselves. Likewise, job seekers can get to know about them more quickly.
- Online Shopping- Online shopping is a trend nowadays as it allows people to shop online by just sitting at your home or anywhere. They also provide product information. For example- Amazon, Flipkart, Ebay, etc.
- Research- Research papers are present online, which helps in the researchers do literature review.
- Video Conferencing- It enables user's direct face-to-face communication across networks via web cameras, microphones, and other communication tools.
- Stock Market Updates- One can sale out or purchase the items while sitting at home through internet.
- Reservation-One can also book tickets for movie or flights or anything via internet.

4.4 CONNECTING TO THE INTERNET

[1] On the Source of Internet-

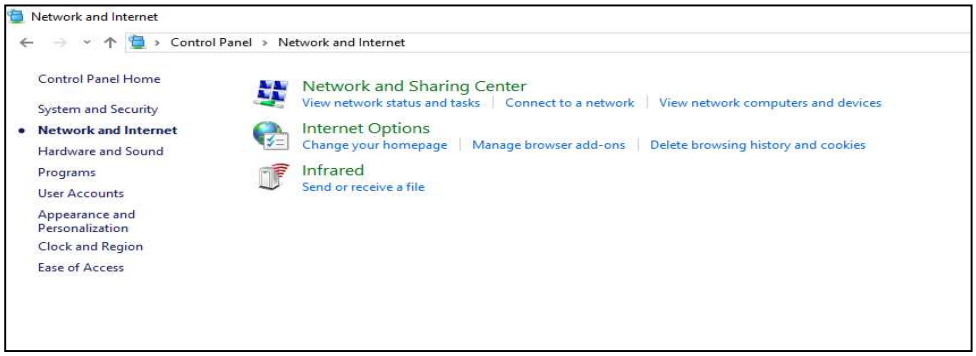
While connecting to the internet the very first step is to make sure that the source of internet



must be on. This is one of the most common mistake people make while connecting.

[2] See Your Network Setting-

The very next step is to go to your network setting and adjust it accordingly. This process is somewhat varying in different devices, but the most thing you have to keep in your mind is to access the network setting. Some common devices or operating systems, and their paths to

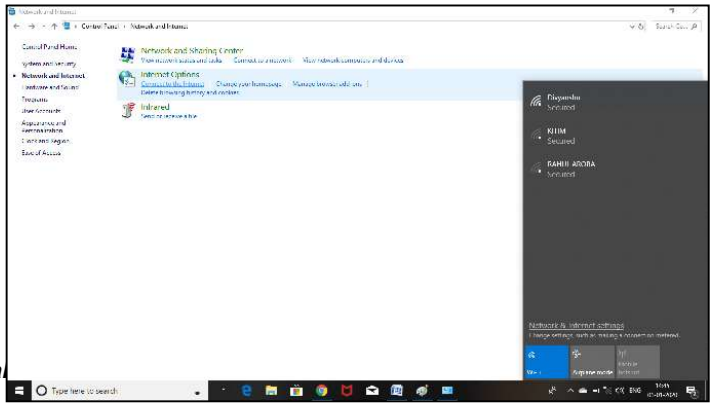


the settings, are listed below.

- Windows XP: Start –> Control Panel –> Network and Internet Connections
- Windows Vista: Start –> Network –> Network and Sharing Centre
- Windows 7: Start –> Control Panel –> Network and Internet
- Windows 8: Start –> Search "View network connections" –> View Network Connections
- Windows 10: Search "View network connections" –> View Network Connections
- Mac OS X Jaguar and later: System Preferences –> Network
- Ubuntu and Fedora: Network Manager
- iOS (iPhone, iPad, etc.): Settings –> Wi-Fi
- Android: Settings –> Wi-Fi (or Wireless & Networks)
- Windows phone: Settings –> Wi-Fi

[3] Connecting Using Wireless Broadband-

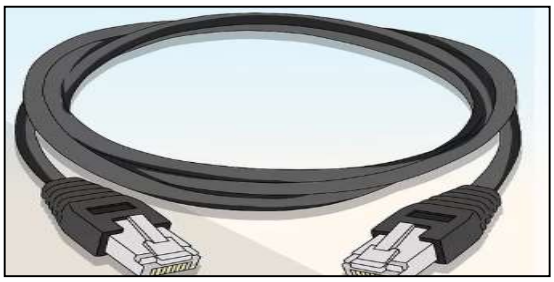
Go to the internet option>connect to the network, then select wifi . The wifi networks ask for



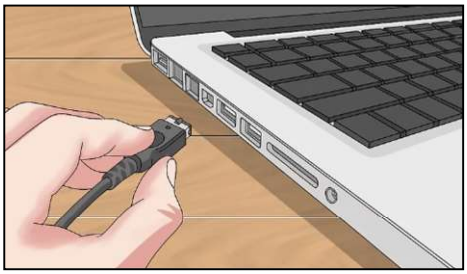
password, type and connect.

[4] Connecting Using an Ethernet Cable-

Many recent devices can connect directly to the router. However, laptops for example cannot.



Because they do not have any component we can connect via adapter. Ethernet cables are all different; for example, a Cat-5 or Cat-5e cable runs at slower speeds than a Cat-6. Connect one end of the cable to the computer and one end to the broadband. Go to network setting and adjust in accordingly.



4.5 BASICS OF COMPUTER NETWORK

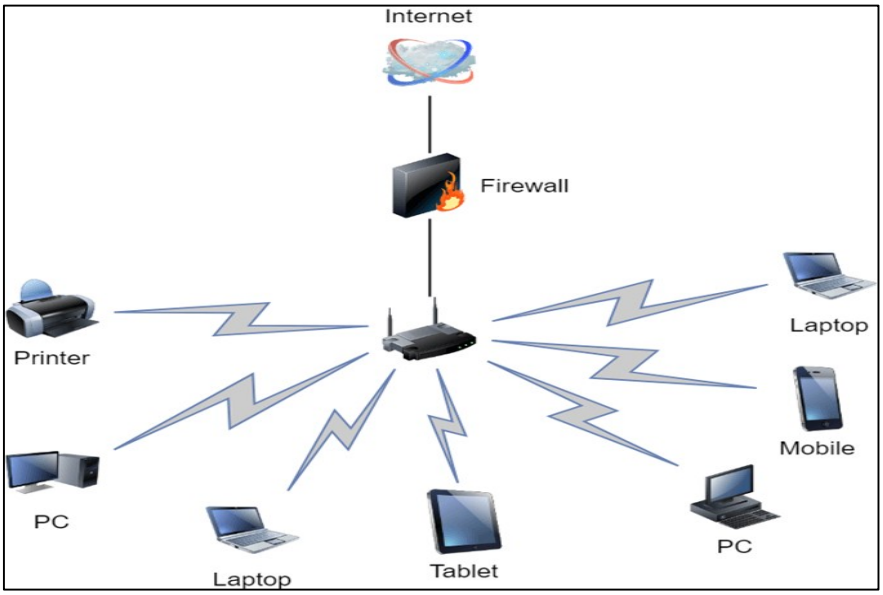
Computer network is a set of computers that are connected together for sharing information. The most common resource shared today is connection to the Internet. A computer network is a set of connected computers. Computers on a network are called nodes. Several computer can be connected together via cable usually (Ethernet cable) or wirelessly (through radio waves).

Computer Network Components-

Here are essential computer network components:

- **Switches**: Switches work as a controller which connects computers, printers, and other hardware devices to a network in a campus or a building. It allows devices on your network to communicate with each other as well as with other networks. It helps you to share resources and reduce the costing of any organization.

- **Routers**: Routers help you connect with multiple networks. It enables you to share a single internet connection with multiple devices and saves money. This networking component acts as a dispatcher allowing you to analyze data sent across a network. It



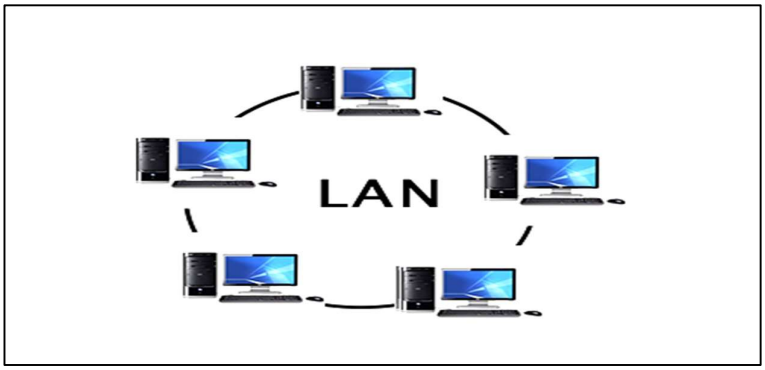
automatically selects the best route for data to travel and send it on its way.

- **Servers**: Servers are computers that hold shared programs, files, and a network operating system. Servers allow access to network resources to all the users of the network.
- **Clients**: Clients are computer devices that use the network as well as shared network resources. They are also users of the network, as they can send and receive requests from the server.
- **Transmission Media**: Transmission media is a carrier used to interconnect computers in a network, such as coaxial cable, twisted-pair wire, and optical fiber cable. It is also known as links, channels, or lines.
- **Access points**: Access points allow devices to connect to the wireless network without cables. A wireless network allows you to bring new devices and provides flexible support to mobile users.
- **Shared Data**: Shared data are data which is shared between the clients such as data files, printer access programs, and email.
- **Network Interface Card**: Network Interface card sends, receives data, and controls data flow between the computer and the network.
- **Local Operating System**: A local OS helps personal computers to access files, print to a local printer and uses one or more disk and CD drives are located on the computer.

Types of Network-

Local Area Network (LAN)-

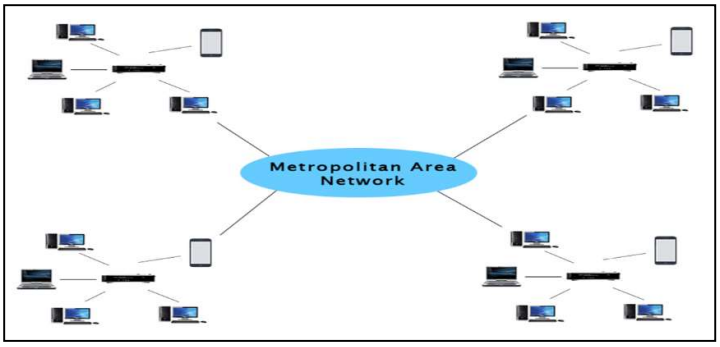
- The full form of LAN is Local Area Network.
- IT is basically a group of networks that are connected together in a small area.
- Its setup is cheaper.



- It provides high security.
- Data is transferred at high speed.
- Example-building, school etc.

Metropolitan Area Network (MAN)-

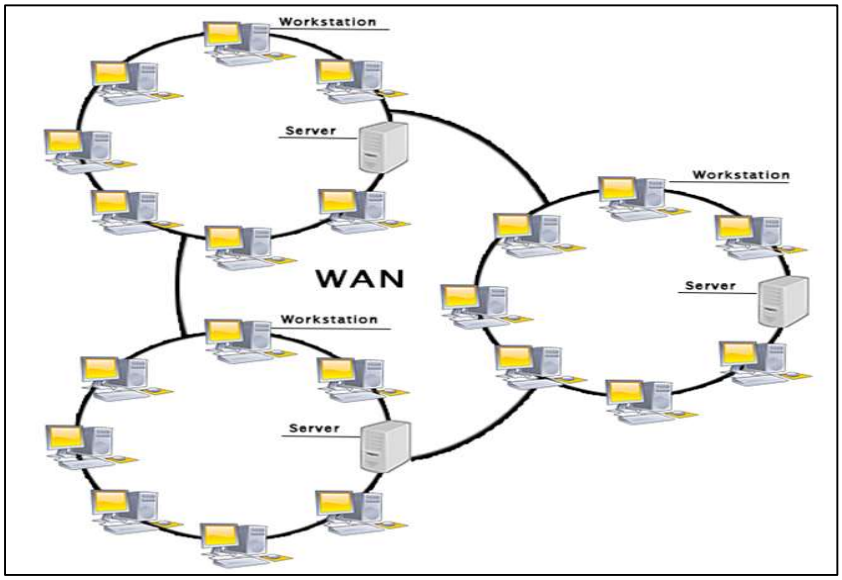
- The full form of MAN is Metropolitan Area Network.



- It covers a region larger than covered by LAN.
- It is used to mean the interconnection of several local area networks by bridging them with backbone lines
- Example-large universities, cities, etc.

Wide Area Network (WAN)-

- The full form of WAN is Wide Area Network.



- It is bigger than the LAN.
- It extends over large areas like cities.
- Internet is one of the biggest WAN in the world.
- Examples-mobile broadband, private network.

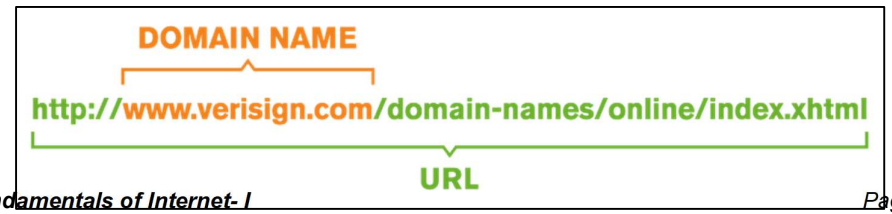
4.6 MISCELLANEOUS ABOUT INTERNET BASICS

Understanding URL

The full form of URL is Uniform Resource Locator. It is basically the address of a resource on the internet and indicates the location of a resource as well as the protocol. A URL contains the following information:

- The protocol used to access the resource
- The location of the server (whether by IP address or domain name)
- The port number on the server (optional)
- The location of the resource in the directory structure of the server
- A fragment identifier (optional)
- An example of URL is https://www.amazon.com, which is the URL for the amazon website.

A domain name is a part of URL:



Overview of URL:

Below is the additional information about each of the sections of the http URL:

- http:// or https://: The "http" stands for Hypertext Transfer Protocol. It lets the browser to know which protocol it is going to use to access the information specified in the domain.
- www: "www" stands for World Wide Web and is used to distinguish the content.
- Computerhope.com: "computerhope.com" is the domain name for the website. It is used to identify the type or location of the website.
- jargon/u/: The "jargon" and "u" portions of the above URL are the directories where the web page is located on the server.
- url.htm: url.htm is the actual web page on the domain you're viewing.

Search Engine-

A web search engine or Internet search engine is a software system, designed to carry out web search, i.e., to search the World Wide Web in a systematic way for particular information specified in a textual web search query.

OR

Search engine is a website for the user to search the content of internet. User just has to put the searching item into the search bar as shown below

How does the search engine work?

CRAWL: Scour the Internet for content, looking over the code/content for each URL they find.

INDEX: Store and organize the content found during the crawling process. Once a page is in the index, it's in the running to be displayed as a result to relevant queries.

BLANK: Provide the pieces of content that will best answer a searcher's query, which means that results are ordered by most relevant to least relevant.

Internet as an educational tool

Internet is not only beneficial for communication and entertainment but also incredibly useful for educational purposes.

Accessibility-

- Some universities have opened free courses on a variety of subjects. Such as- Harvard, Stanford, MIT, etc.
- These online lectures consist of not only notes but also videos.

Communication-

- If there is a student who has a missed class. Internet allows instantaneous communication between teachers and one's classmates.
- People working together on a project or something are able to connect more easily via internet.

Study and Research-

The internet contains information on wide variety of topics one can even think of. You can search and research about anything of your choice. Internet is the largest encyclopaedia consisting large amount of information about each and every topic.

4.7 POINTS TO REMEMBER

- The Internet is generally defined as a global network connecting millions of computers. More than 100 countries are linked into exchanges of data, news and opinions.
- The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet.
- The World Wide Web, or simply Web, is a way of accessing information over Internet. It is an information-sharing model that is built on the top of Internet.
- No one actually owns the Internet or any person or organization controls the Internet in its entirety. Internet is more of a concept than an actual tangible entity, and it relies on a physical infrastructure that connects networks to other networks.

4.8 GLOSSARY

- LAN: The computers are geographically close together (i.e., in the same building).
- MAN: The computers are farther apart and are connected (i.e., in the same city).
- WAN: The computers are farther apart and are connected (i.e., not in the same city).
- Topology: The geometric arrangement of a computer system. Common topologies include a bus, star, and ring. Hybrids of these are star bus & star ring.
- Protocol: The protocol defines a common set of rules and signals that computers on the network use to communicate.

- Switches: Switches work as a controller which connects computers, printers, and other hardware devices to a network in a campus or a building.
- Routers: Routers help you to connect with multiple networks. It enables you to share a single internet connection with multiple devices and saves money.
- Clients: Clients are computer devices which access and uses the network as well as shares network resources.
- Servers: Servers are computers that hold shared programs, files, and the network operating system. Servers allow access to network resources to all the users of the network.
- Transmission Media: Transmission media is a carrier used to interconnect computers in a network, such as coaxial cable, twisted-pair wire, and optical fiber cable. It is also known as links, channels, or lines.
- Network Interface Card: Network Interface card sends, receives data, and controls data flow between the computer and the network.

4.9 CHECK YOUR PROGRESS

Objective type questions-

a) The full form of URL is .....

b) The full form of www is .....

c) Collection of web pages is called .....

d) The group of networks that the connected in small are is .....

e) The three bases on which search engine works are .....

f) Each LAN covers larges area than MAN (True/False).

g) Does a router allow the user to share only one network at a time (True/False).

h) Switches words as a controller which connects computers printers to a network in a building (True/False).

i) The full form of LAN is Light Area Network (True/False).

j) The URL is the address of a resource on the internet (True/False).

Descriptive type questions-

a) What is the Internet?

b) How to find information on the Internet?

c) What is the difference between the Internet and World Wide Web?

d) What is a modem?

e) How do computers connect over the Internet?

f) What is Wi-Fi?

Answers (Objective type questions)-

[a] Uniform Resource Locater [b] World Wide Web [c] Web [d] LAN [e] Crawling, Indexing, Ranking [f] False [g] False [h] True [i] False [j] True

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4.11 SUGGESTED READINGS

- V. Murarka, internet and web page design, BPB Publications
- Satish jain, 'O' level made simple internet technology and web design, BPB Publications
- S. imtiyazhassan and raisahmed, O level internet technology & web design
- Jeeva Jose, internet of things, Khanna Publishing

UNIT- 5

FUNDAMENTALS OF INTERNET- II
(Frequently Used e-office Applications)

5.1 INTRODUCTION

E-Office Suite is the need of modern office automation which makes our task efficiently in terms of time, effort, cost and quality of service. It also helps to reduce the movement of hard copy papers within an organization and integrate various, seemingly unrelated, activities within an organization. The aspirants/user can access the office applications/services using Internet. Several benefits of e-office are envisioned due to the easy access of Internet, such as- Searching files, quick information flow, tracking files, enhance transparency, increase accountability, etc.

5.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the role of Google applications in e-Office.
- Know about advanced tools on Google like Docs, Sheets, and Slides etc.
- Best practices of using Google Drive tools and applications.

5.3 GOOGLE SHEETS- AN OVERVIEW

Google Sheets is a web-based spreadsheet application that allows you to store and organize different types of information, much like Microsoft (MS) Excel. Howerever Google Sheets does not offer all the advanced features of MS Excel. It is easy to create and edit spreadsheets online with a variety of tasks ranging from the simple to the complex. Basically, spreadsheets are used by to process complicated numbers and data, they can actually be used for a variety of everyday tasks, such as- data storage in tabular form, budget planning, creating an invoice or just about anything else you can think of. Spreadsheets are a great way to organize and process information.

Google Sheets is a web-based spreadsheet that you can use anywhere with Internet connection. It works from any device, with mobile apps for iOS and Android along with its web-based core app. Google Sheets is free, and it's bundled with Google Drive, Docs, and Slides to share files, documents, and presentations online anywhere. It includes almost all of the same spreadsheet functions. If you know how to use MS Excel, you will feel at home in Google Sheets. For advanced features you can download add-ons, create your own, and write custom code.

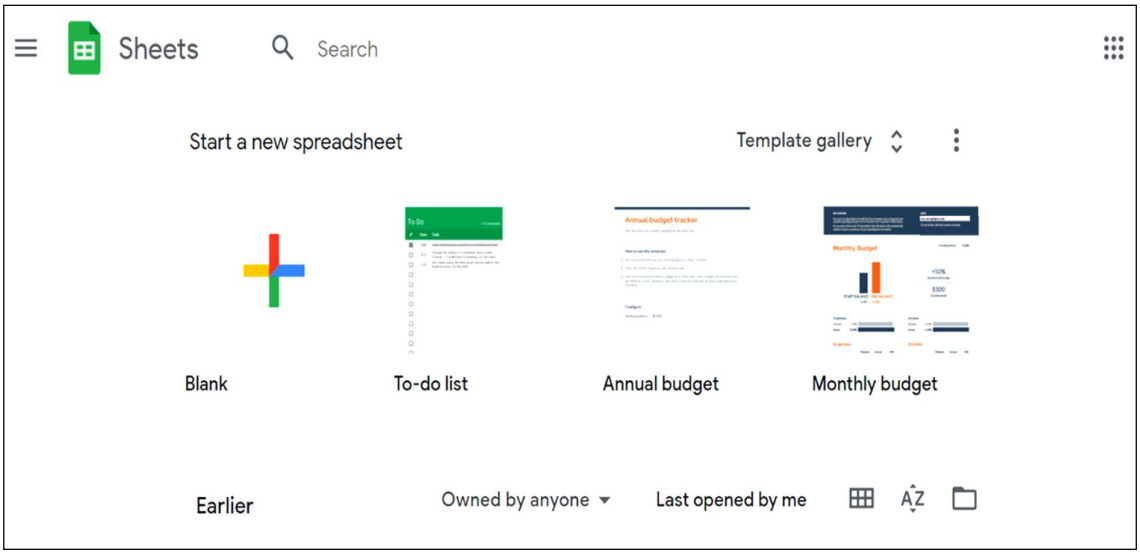

Figure 5.1 Google Sheet home

5.4 STEPS TO USE GOOGLE SHEETS

Create or import files to Google Sheets-

Choose any option from the below to create a new file, as- (i) type "http://spreadsheet.google.com" into browser's address bar; (ii) either click on the spread sheet icon (refer to the figure 5.2)

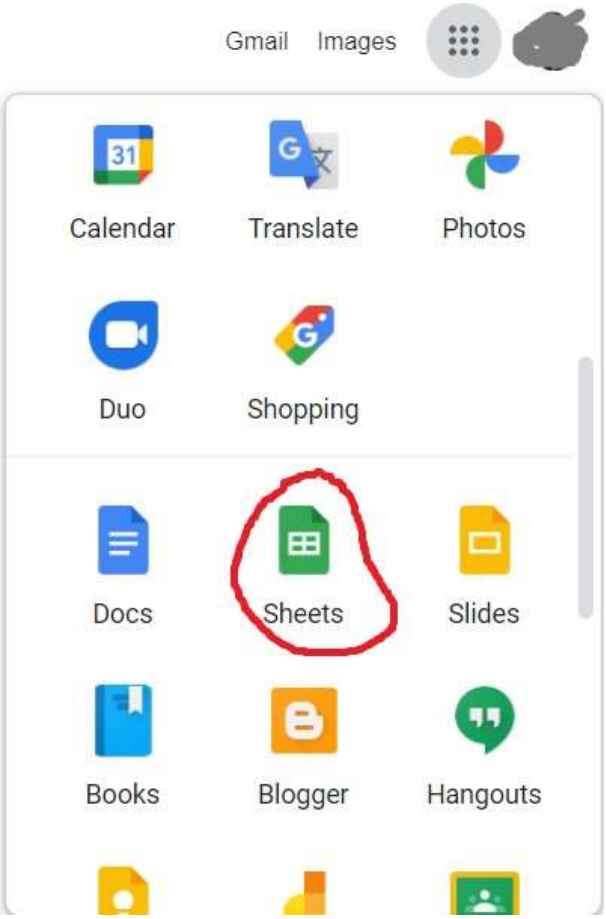

Figure 5.2 Open Google Spread Sheet Using Icon

Create new file-

After opening Google sheet, you can create a new file; and also can select several templates, as- to-do-list, annual budget, and monthly budget (refer to figure 5.3).

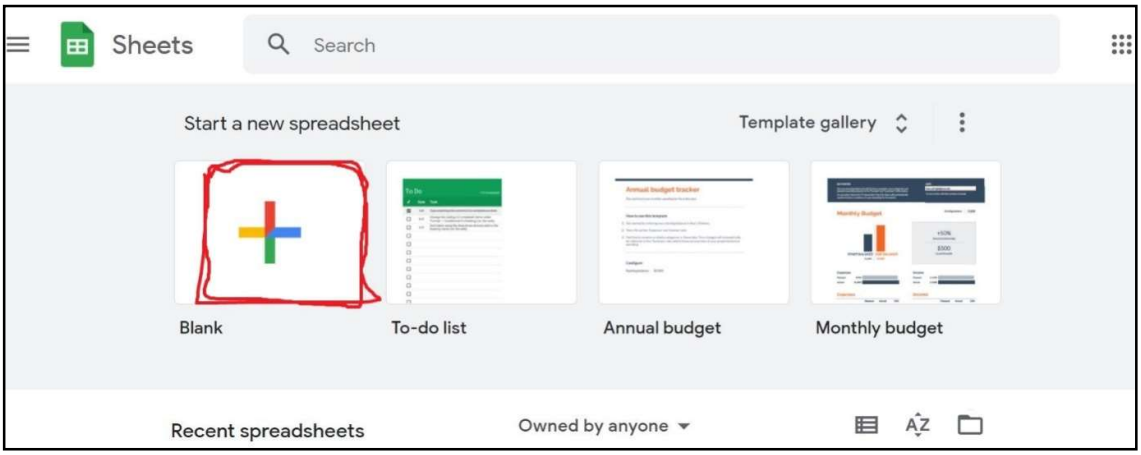

Figure 5.3 Create new file

Import and convert existing files in to google sheet

If you have existing files, you can import and convert them to google sheets. Following are the steps to import a file. as-

Step 1- Go to Google Drive.

Step 2- Click on new and then File Upload.

Step 3- Choose the file you want to import from your computer to add it to Google Drive.

Step 4- In the Upload complete window, click the show file location.

Step 5- Right-click the file and select Open with Google Docs (Sheets).

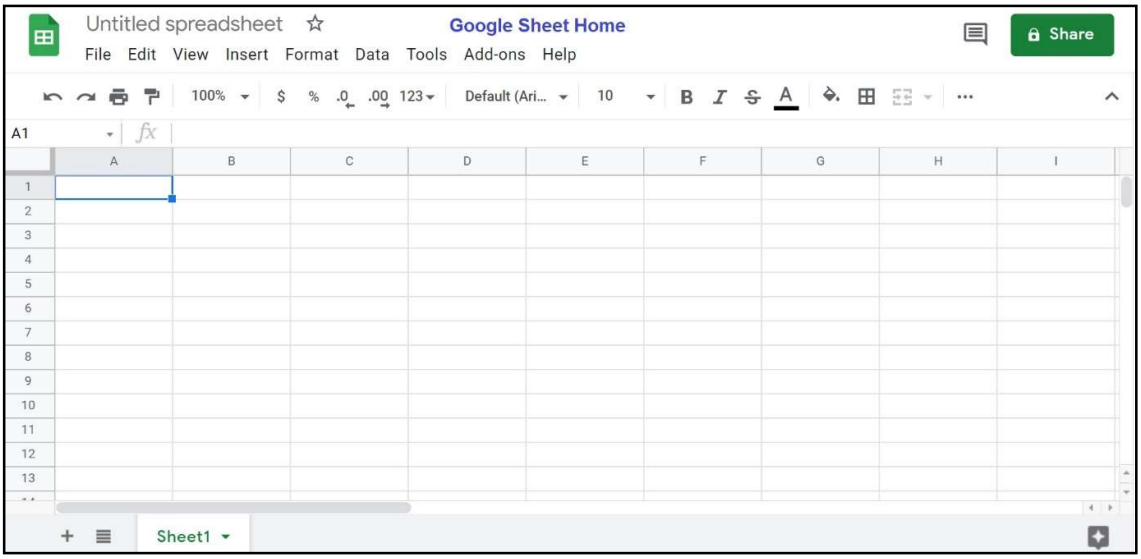

Figure 5.4 Google Sheet Interface (home)

You can do the following tasks on the google sheets (only few are listed here)-

- Access stored Google Drive files offline.

- Get instant insights into your data
- Insert and edit and summarize your data with charts.
- Filter your data in a spreadsheet.
- Protect content in a spreadsheet
- Share links of your file to others.
- Transfer ownership of a file.

5.5 GOOGLE DOCS- AN OVERVIEW

Google Docs is a free Web-based application which offers word processing, spreadsheets, presentations, forms, and drawings. Google Docs facilitates to create, edit and store docements (files) online. Docements can be accessed from any computer with an Internet connection and a full-featured Web browser.

Users of Google Docs can import, create, edit and update documents and spreadsheets in various fonts and file formats, combining text with formulas, lists, tables and images. Google Docs is compatible with most presentation software and word processor applications. Work can be published as a Web page or as a print-ready manuscript. Users can control who sees their work.

Google Docs provides an easy-to-use, integrated way for teachers and students to work together on projects, reports, and more, and to collect and share information in a secure online environment. Some of the advantages of using Google Docs include: (i) Anytime, anywhere access (ii) Collaboration support (iii) Autosave and revision history; and many more.

5.6 STEPS TO USE GOOGLE DOCS

Step 1: Setting Google Account

For using Google Docs you have to setup a Google account (if you does not have one). It is free to signup a Google Account, and with it you can access GMAIL, Maps, Youtube, as well as GDrive.

To create a Google Account you can use (http://docs.google.com) this link. You will get the screen as shown in Figure 5.5

Enter your information and follow the suggestion. After creating the Google Account login and get access to google Drive screen.

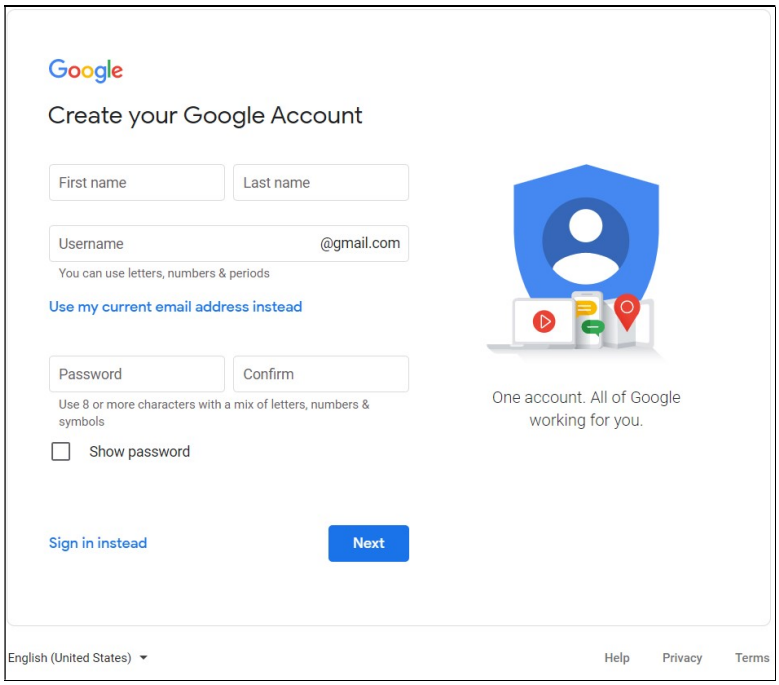

Figure 5.5 Google Account Interface (home)

Step 2: Starting Google Docs

There are a different ways to get to Google Docs, contingent upon your gadget. You can download the application from the App Store or Google Play, or click on the Google Apps symbol in the upper-right corner of the Google landing page. You should then tap the Docs button — you might need to look down inside the menu that pops-up or click More From Google in that equivalent pop- up menu to see it.

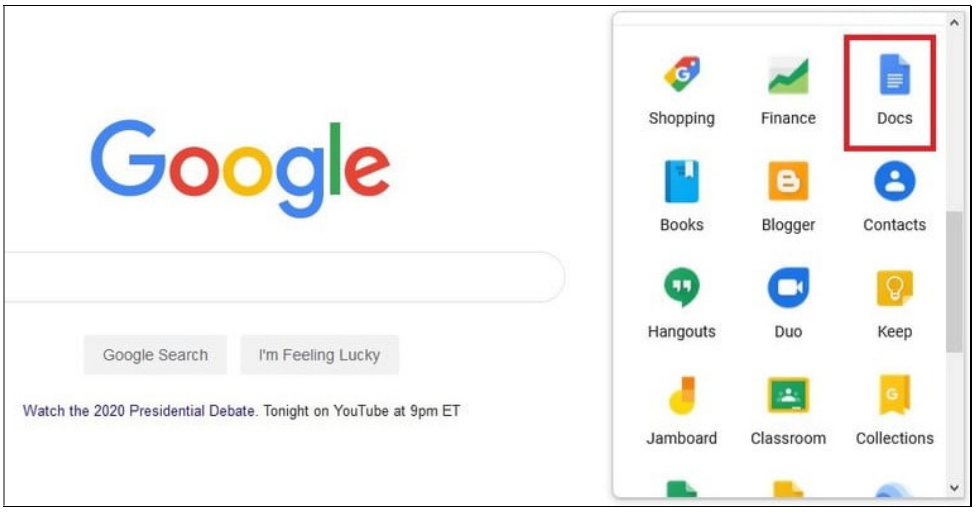

Figure 5.6 Google Docs Launching Dashboard

Step 3: Creating a New Document

To make a new document,

- Click the blank page with the multicolored Addition sign inside it, which is located on the upper-left side of the main Google Docs page.
- After that a blank page icon with the multicolored addition sign will pop up again at the top of your screen. Click on that to open a new document.

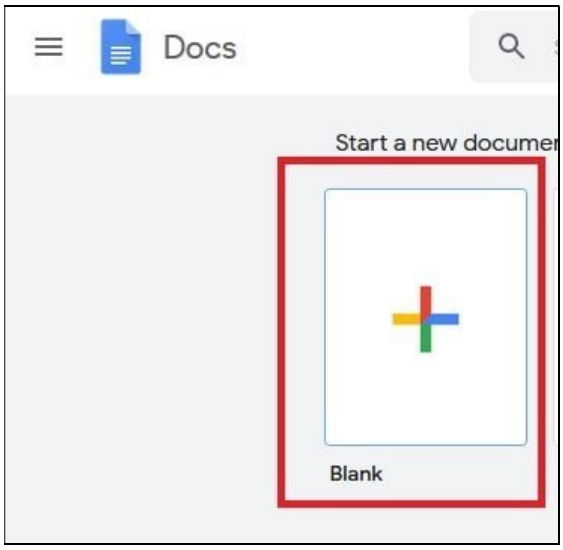

Figure 5.7 Creating a new document

Step 4: Working on a new document

Once you've created a document, you can work on it.

- Click Untitled Document in the upper-left corner to add a title to your document.
- You can also adjust the font type, text size, and much more via the Toolbar at the top of the page. If those options are hidden, click the downward-facing Arrow in the upper-right corner to display them.
- Any changes made to your file will be saved automatically to the Google cloud platform. And you can access that file from any of your devices that has an internet connection.
- If you look to the right of your document's title at the top of the screen, you should either see Saving… or Saved to Drive. Wait for the second message to appear before exiting out to ensure all your work has been saved.
- You can also use shortcut keys to format your document
    - Bold — Ctrl+B
    - Italic — Ctrl+I

- Underline — Ctrl+U
- Strikethrough — Alt+Shift+5
- Subscript — Ctrl+,
- Superscript — Ctrl+.

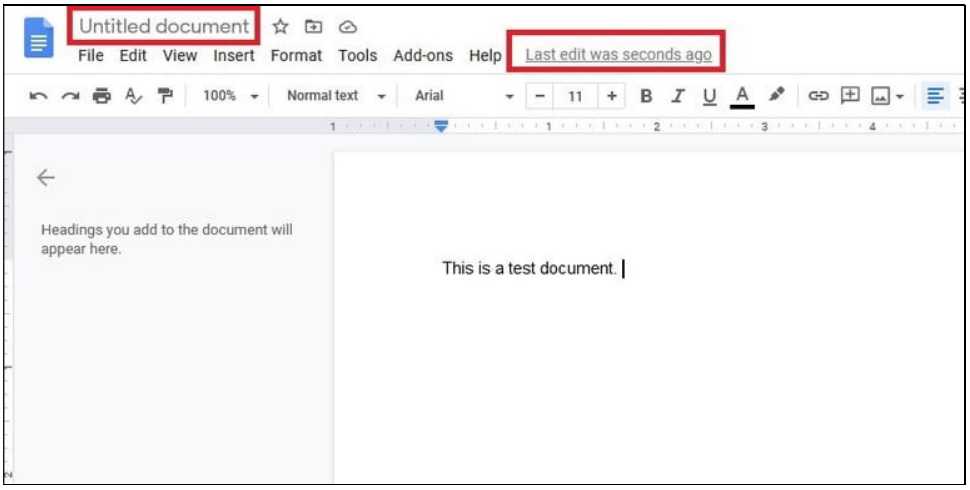

Figure 5.8 New document in Google Docs

5.7 GOOGLE SLIDES- AN OVERVIEW

Google Slides is a free program that is important for Google's set-up of electronic applications, including Google Docs (word preparing), Sheets (bookkeeping pages), Slides (introductions) and Forms (gathering and putting together data). What's especially amazing about Google Slides is that you can make, alter, work together and present consistently across working frameworks and without potential document similarity or debasement issues, overseeing streak drives or sorting out connector links. Utilizing an online program likewise takes out the danger of moving an infection.

It is likewise genuinely simple to move a show from PowerPoint to Google Slides and back once more, however you might lose some designing simultaneously. In the event that you do move a show, page through to ensure the slides actually look the manner in which you need them to. In case you are utilized to PowerPoint and end up expecting to utilize Google Slides (or the other way around), dread not! The orders and techniques are quite comparative among them, and in the event that you stall out, there are heaps of acceptable online assets to address your inquiries.

To feature a couple of key components and advantages:

- Widespread access, from your telephone, tablet or PC
- Backing for both Android and iPhone/iPad (Google Slides applications)

- Offer your show with choices for to limit/empower seeing, remarking and altering
- Auto-save

5.8 STEPS TO USE GOOGLE SLIDES

Step 1 – Create a new presentation in Google Slides

- Login into your Google Account, head to Google Drive.
- There, make a Google show by clicking **New > Google Slides > Blank Presentation**.
- You'll be diverted to another page with a blank page(presentation)

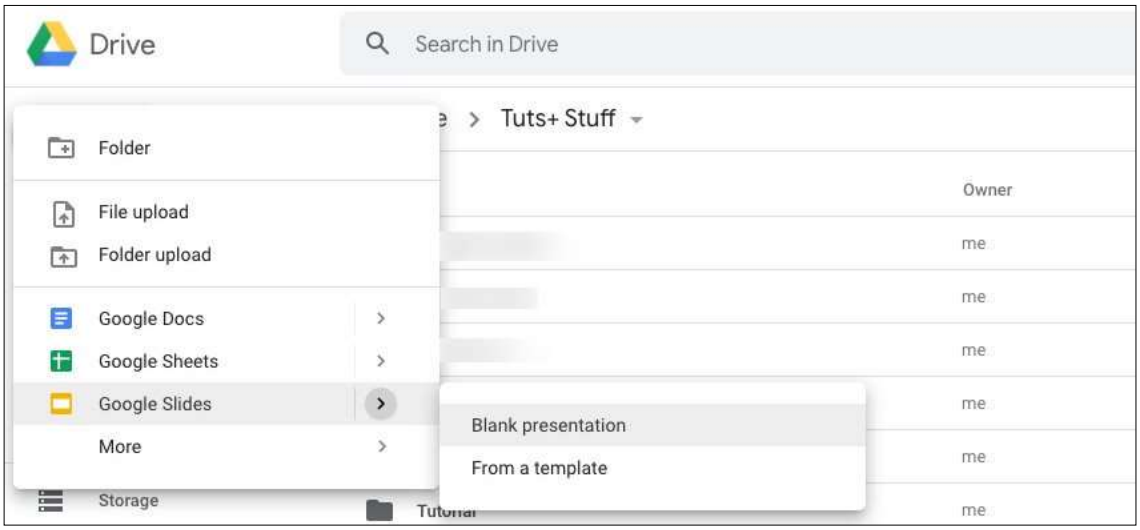

Figure 5.9 Creating new presentation in Google Slides

Step 2 – Creating new Slide

- If you are on the slides page, select an option from the top of the page to create a new slide.
- You can press the white square with a plus sign for a blank slide, or click one of the templates.
- Click on the Template Gallery option, where more templates will show up.

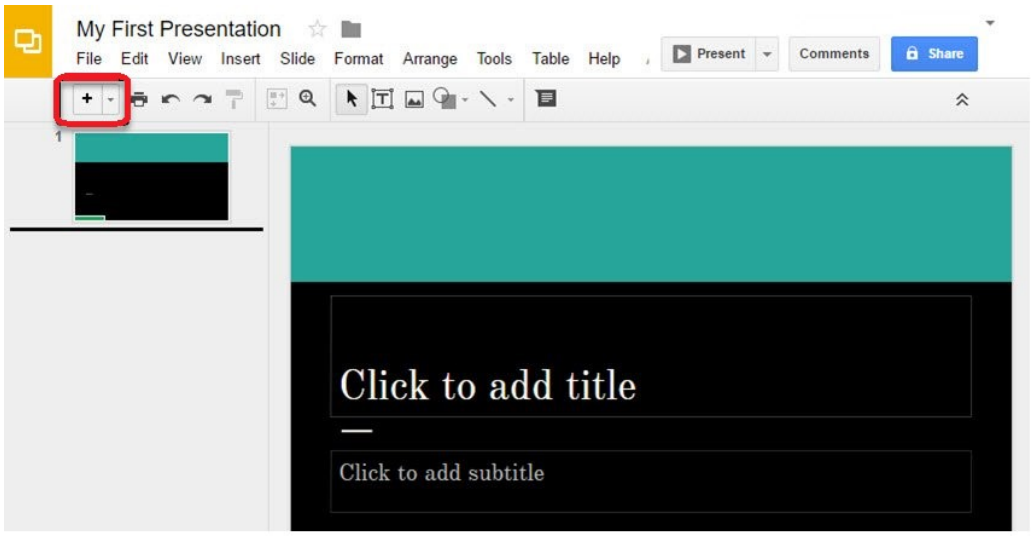

Figure 5.10 Adding new Slides

- Delete slides by selecting the slide and clicking ***Edit > Delete***.
- Or right-click on the slide thumbnail in the sidebar and clicking Delete slide.
- Or simply press the Delete key while the slide is selected.

Step 3 – Formatting a Google Slides Presentation

The initial phase in making presentation is arranging what it looks like. In this way, we should investigate the Themes sidebar that shows up after opening a new slide.

Google Slides comes preloaded with various themes for slides.

The Themes sidebar shows up on the right half of your new slide. Utilize that bar to travel through the different themes accessible.

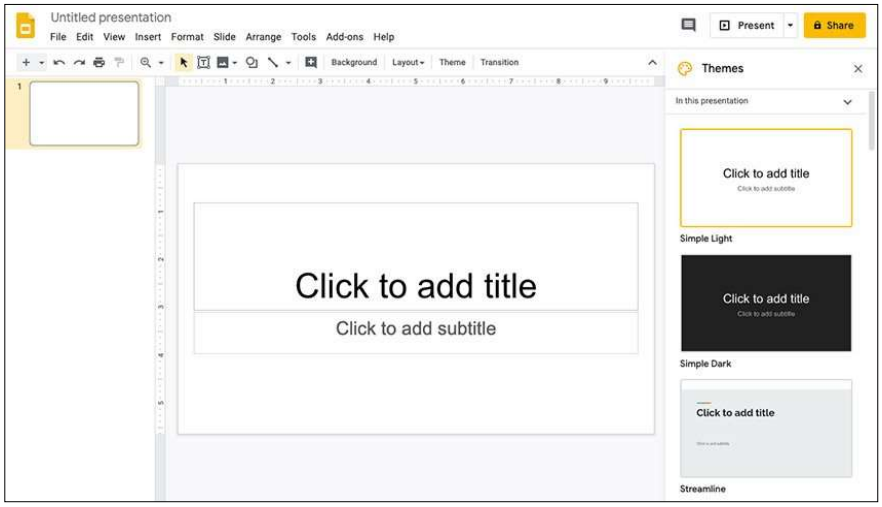

Figure 5.11 Formatting in Google Slides

What are the things that we can do using Google Slides?

- **Create and Present a Professional Presentation:** Google Slides is the most ideal decision for writing and putting across a presentation expertly. Alternatives accessible with the moderator incorporate speaker notes and the choice by which one can set up Q&A adjusts during the show.
- **Share a Presentation Online:** Google Slides can likewise be utilized to make a slideshow show that can run consequently on the web at whatever point somebody attempts to utilize it. Utilizing Google Slides, one can make a shareable connection to the show so it very well may be utilized in online media. One can likewise make codes that would permit one to insert their show into their own sites.
- **Create a Timeline:** One can make a timeline with Google Slides with the use of drawing tools. However, if one selects the correct Google Slides Template, making one's timeline presentation would be an easy task.
- **Work as a Team:** Google Slides very much like some other office usefulness apparatus that G Suite offers has distinctive sharing choices like can alter, can see, can remark access. This permits clients to adjust the substance of the presentation continuously cooperation differently or prevent them from doing as such if the show maker doesn't need others to affect the archive with a particular goal in mind.

5.9 GOOGLE DRIVE- AN OVERVIEW

Google Drive is a cloud-based capacity arrangement that permits you to save records on the web and access them anyplace from any cell phone, tablet, or PC. You can utilize Drive on your PC or cell phone to safely transfer records and alter them on the web. Drive likewise makes it simple for others to alter and team up on records.

Google Drive also gives you access to free web-based applications for creating documents, spreadsheets, presentations, and more.

Why use Google Drive?

Google Drive is perhaps the most well known cloud storage administrations accessible today. On the off chance that you've never utilized a cloud-based capacity administration like Google Drive previously, pause for a minute to consider the upsides of keeping your documents on the web. Since records can be gotten to from any PC with an Internet association, Drive takes out the need to email or save a document to a USB drive. Furthermore, in light of the fact that Drive permits you to share records, working with others turns out to be a lot simpler.

5.10 STEPS TO USE GOOGLE DRIVE

For using Google Drive you have to login to your Google Account. (Google Account setup has been discussed earlier in this UNIT).

Once you login to your google account you can use Google Drive option.

Google Drive doesn't simply store your records; it additionally permits you to make, share, and oversee reports with its own efficiency applications. In the event that you've at any point utilized a suite like Microsoft Office, a few things about Google Drive's applications may appear to be natural. For example, the sorts of documents you can work with are like records that can be made with different Microsoft Office programs.

Below are the types of files you can create and share on Google Drive:

- Documents: For composing letters, flyers, essays, and other text-based files (similar to Microsoft Word documents)
- Spreadsheets: For storing and organizing information (similar to Microsoft Excel workbooks)
- Presentations: For creating slideshows (similar to Microsoft PowerPoint presentations)
- Forms: For collecting and organizing data
- Drawings: For creating simple vector graphics or diagrams

Accessing Google Drive

1. Whenever you've set up your Google account, you can get to Google Drive by going to **http://drive.google.com** in your internet browser.
2. You can also navigate to Google Drive from any Google page (such as Gmail or Google search) by selecting the grid icon near the top-right corner, then clicking Drive.

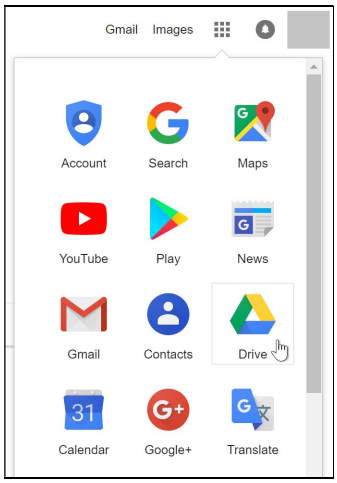

Figure 5.12 GDRIVE Link in Google Account

Interface of Google Drive

Your Google Drive might be vacant at the present time, yet as you transfer and make records you'll have to realize how to see, oversee, and sort out them in the interface.

You can use different facilities under GDrive by using ***(+New)*** option under Drive logo in left side.

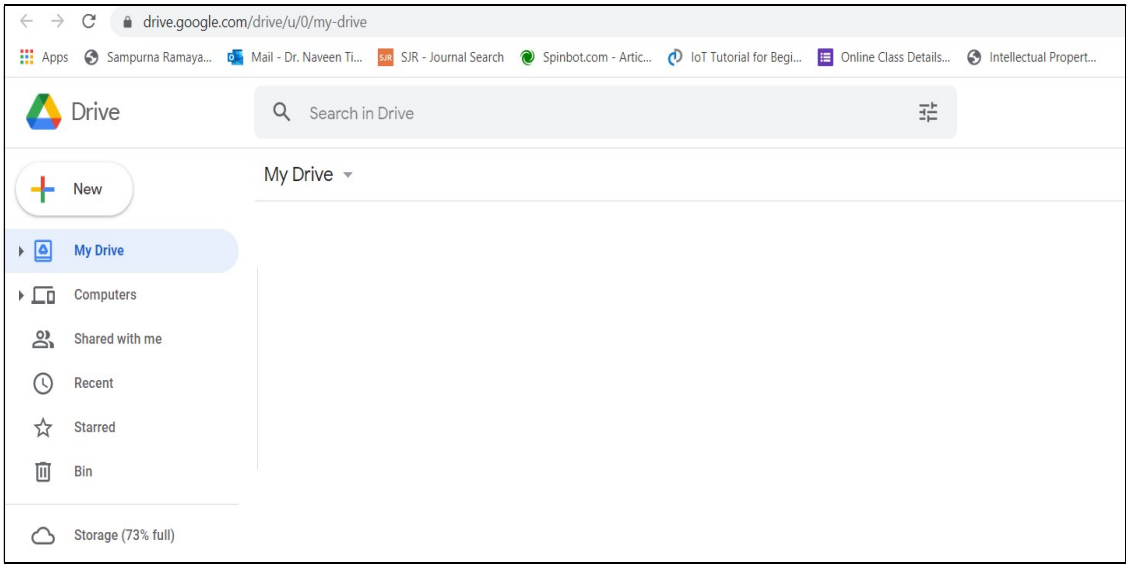

Figure 5.13 GDRIVE Interface

5.11 *BRIEF INTRODUCTION TO DISCUSSION FORUM, BLOGS AND NEWSGROUPS*

Discussion Forum

A discussion forum is a website where people can gather to have discussions about a specific topic. Electronic message boards for asynchronous communication, also commonly referred to as Web forums, message boards, discussion boards, discussion groups and bulletin boards. A program which permits individuals to have conversations on the web. The conversation is begun by one part by posting a subject and different individuals answer. This permits individuals from similar gathering to share data and thoughts.

It's common for websites to add a discussion forum to their website for people to discuss the product, service, or organization and even help each other. It reduces customer support requests, is great for search engine optimization, and creates a sense of community.

Discussion Forums are maybe the most punctual type of web-based media stage. Early adopters of Internet innovation might review news gatherings or particular vested parties (SIGs) that were facilitated on the early sites and frameworks associated with the Internet. These people group were established in specialized points however in the long run extended

to cover pretty much any classification that could draw in a group of people. These stages developed and are currently facilitated on purchaser situated informal communication destinations.

Some of them are –

- Reddit
- Stack Overflow
- Quora
- Yahoo Groups
- Google Answers

Blogs

A blog is a sort of site that is refreshed routinely with new substance. Most sites contain short, casual articles called blog entries. These posts ordinarily contain a blend of text, photographs, recordings, and different media. At its center, a blog is only a space on the Web that you can make to record and state your viewpoints, encounters, and interests. A larger part of websites are composed by one individual. Thus, the normal blog is genuinely close to home, mirroring the interests and character of the individual who composes it. This is the sort of blog we'll zero in on in this instructional exercise.

Individuals who compose blogs are called bloggers. From what you hear on the news, you may think bloggers are each of the a particular kind of individuals—youthful, politically slanted, and educated. Or on the other hand possibly you've caught wind of bloggers who've expounded on stunning encounters or yearning projects, then, at that point transformed their web journals into smash hit books. While a few bloggers do fit these portrayals, a greater part of bloggers don't. Indeed, there's no "normal" blogger—web journals are composed by individuals, all things considered, and foundations and from varying backgrounds.

There are many reasons why people blog, like:

- To share your experiences and expertise
- To speak up about an issue you care about
- To become more involved with hobbies and passions
- To be part of a community
- To advance your career or start a career in writing
- To keep family and friends updated about your life

Another explanation a few group blog is to bring in money. Individuals bring in cash from their web journals by facilitating promotions, selling items, or distributing their blog entries as a book or printed articles.

Some of the common features that a typical blog will include:

- Header with the menu or navigation bar.
- Main content area with highlighted or latest blog posts.
- Sidebar with social profiles, favorite content, or call-to-action.
- Footer with relevant links like a disclaimer, privacy policy, contact page, etc.

NewsGroups

A newsgroup is a storehouse of electronic messages posted by clients and oversaw by the Usenet framework. This is an overall Internet conversation framework that is isolated from the World Wide Web. Usenet was set up in 1980, somewhat more than 10 years before the making of the World Wide Web. Newsgroups on Usenet were one of the main chances for general PC clients to share and post data on the arising Internet.

Members in a newsgroup read and post messages to at least one classes. Usenet was made in when the transfer speed of the Internet was exceptionally restricted, and newsgroups were intended to be text as it were. All the more as of late, clients had the option to join pictures and different records to postings, yet as a rule, newsgroups stay intensely text-based.

The protocol utilized by newsgroups is called Network News Transfer Protocol, or NNTP. This is one of the numerous correspondence conventions utilized on the Internet, which additionally incorporates the more notable HTTP convention utilized by the World Wide Web. The name of a newsgroup is dictated by the individuals who make it. A name normally comprises of a few words that portray the subject, isolated by a dot.

Some of the examples are-

- news.admin.net-abuse.email
- rec.arts.sf.tv.babylon5.moderated
- talk.origins

Newsgroups are dissimilar from other communication methods that use the World Wide Web in a number of ways:

- No registration with a particular newsgroup is required
- Stored information is distributed on a collection of computers instead of a central server
- Archives are always available
- Newsreader software is commonly used to read and post messages

5.12 POINTS TO REMEMBER

- E-Office Suite is the need of modern office automation which makes our task efficiently in terms of time, effort, cost and quality of service.

- Google Docs facilitates to create, edit and store docements (files) online. Docements can be accessed from any computer with an Internet connection and a full-featured Web browser.
- Google Drive is a cloud-based capacity arrangement that permits you to save records on the web and access them anyplace from any cell phone, tablet, or PC
- Google Sheets is a web-based spreadsheet application that allows you to store and organize different types of information, much like Microsoft (MS) Excel.
- A newsgroup is a storehouse of electronic messages posted by clients and oversaw by the Usenet framework.
- A blog is a sort of site that is refreshed routinely with new substance. Most sites contain short, casual articles called blog entries.
- A discussion forum is a website where people can gather to have discussions about a specific topic.

5.13 GLOSSARY

- Add Fonts - When you create a new document, Google Docs starts you off with nearly two dozen native fonts you can choose from using the dropdown list on your top editing toolbar.
- Templates - A template is a pre-created document that already has some formatting
- Create or Remove Header - Headers and footers are particularly useful when creating a Google Doc that has many pages. You can create a header that includes the document title, each page number, or both on every page all at once.
- Classroom - Classroom is where your child can find their assignments, grades and feedback, and communicate directly with their teacher
- Forms - Forms are often used by teachers for creating quizzes, parent feedback surveys, or even field trip forms.
- Drive - Drive is your child's virtual backpack, where they can hold all of their assignments, projects, and notes online

5.14 CHECK YOUR PROGRESS

Descriptive Type Questions-

1) How to get Google Account?
2) What are the different software tools available in Google Drive? Explain.
3) What is Google Docs?
4) What is a blogger? Explain.
5) Write the steps to use Google Slides?

Objective Type Questions-

a) If you already have a Google account, you can use the same account to access Google Docs. (True/False)

b) You can insert automatic page numbers for your document in the header or footer. (True/False)

c) Google Docs do not allow you to insert or upload images. (True/False)

d) A Google doc is most similar to.....

e) Inserting a header at the top of a page will make it appear on.....

Answer (Objective Type Question)-

[a] True [b] True

[c] False [d] Microsoft Word [e] Every page

5.15 BIBLIOGRAPHY/ REFERENCES

- https://support.google.com/a/users/answer/9282959?visit_id=637546643380456196-2961995063&hl=en&rd=1.
- https://zapier.com/learn/google-sheets/google-sheets-tutorial.
- https://docs.google.com/document/edit?id=1MZ7Vqub8LrD5kvRaU1fsf_i4DvVG2ea7VHebIGdQong
- https://edu.gcfglobal.org/en/googlespreadsheets/getting-started-with-google-sheets/1.

5.16 SUGGESTED READINGS

- https://support.google.com/a/users/answer/9300311?ref_topic=9296423.
- https://zapier.com/learn/google-sheets/google-sheets-tutorial.
- https://edu.gcfglobal.org/en/googlespreadsheets/getting-started-with-google-sheets/1.

UNIT- 6

INTRODUCTION TO E-COMMERCE

6.1 INTRODUCTION

In our day to day life, we perform various tasks with the help of Internet like purchasing or selling goods. Electronic commerce or e-commerce is basically the exchange of information/currency for goods or services online.

The term e-commerce got popularized from the 1980s, where it denotes the buying and selling of goods through the transmission of data, made possible by the introduction of the electronic data interchange (EDI). In the current digital society, e-commerce can be viewed as online business, becoming one of the most popular method of making money online and an attractive opportunity for the investors.

Sharing business information, maintaining business relationships and conducting business transactions using computers connected to a telecommunication network is called E-Commerce. A more general definition of e-commerce is given by Wigand (1997) as, “The seamless application of information and communication technology (ICT) from its point of origin to its endpoint along the entire value chain of business processes conducted electronically and designed to enable the accomplishment of a business goal. These

procedures may be partial or complete or may encompass business to business as well as business to consumer and consumer to business transactions."

Originally, e-commerce mean the facilitation of commercial transactions electronically, using technology such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT). These were both introduced in the late 1970s, allowing businesses to send commercial documents like purchase orders or invoices electronically. The growth and acceptance of credit cards, automated teller machines (ATM) and telephone banking in the 1980s were also forms of e-commerce strongly and changed the old conceptions of e-commerce. Now, the new age e-commerce has spread to areas like airline reservation system, railway reservation system, online shopping, online business and many more. The e-commerce means the use of Internet and the web for business transactions/commercial transactions, which typically involves the exchange of values/information/ideas across organizational or individual boundaries.

It is a process of purchasing, selling, shifting or exchanging products, services, and or information via electronic networks and computers. E-commerce is like a parasol that covers everything there is to do with purchasing or selling online. It can sometimes be written as "E Commerce", "e-commerce", or eCommerce". The term commerce is defined as trading of good & services; 'e' for 'electronic' is added to this, e- commerce in simpler terms can be defined as trading of goods, services, information or anything else of value between two entities over the internet. Following are some definitions of e-commerce-

- It is the ability to conduct business electronically over the internet.
- It means managing transactions using networking and electronic means.
- It is a platform for selling products & services via internet.

6.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Explore the overview of e-commerce.
- Understand the importance of E-Commerce.
- Explore the models of e-commerce.

8.3 WHY E-COMMERCE?

Application of digital technologies to business processes within the firm is called e-business. These technologies have deep impact on commerce more than e-commerce. E-commerce technology is powerful than any other technology which has left economic effect on the world. The evolving internet and other technologies are bound to shape the 21st century. The traditional process of marketing and sales was a lengthy process of selling and advertising.

Branding required long term product observation of the customers. Selling was done through well-insulated channels in a traditional manner limited by social and geographical boundaries. Information about the product was not available everywhere, creating profitable information asymmetries. It was difficult to change the national or regional prices in traditional retailing. One national price was a norm and different regions had different prices for the same product. E-commerce has challenged this traditional thinking.

Some key Features of e-commerce are-

- Ubiquity- It is available everywhere at any time. The result is called a market space, a marketplace extended beyond traditional boundaries and removed from a temporal and geographic location. It saves transaction cost and time. In traditional commerce, you have to visit physically to a market place, in contrast, you do not have to visit anywhere for e-commerce market.
- Global reach- Due to e-commerce technology, commercial transactions has crossed all the cultural and national boundaries whereas traditional commerce are unable to cross-national boundaries.
- Universal Standards- E-commerce has become universal. It is shared by all the nations. While traditional technologies differ from one nation to the next. For the merchant's market entry cost is same all over the world and it is lowered due to internet. For the customers price and product search is lowered. Prices are constant throughout the world and can be searched from any part of the world.
- Richness- Information about any product is easily available. Traditional markets, national sales forces and retail stores are able to provide the prompt audio and visual information, which makes it a powerful selling and commercial environment. Exchange of information and goods is not distance dependent. The richness of a message is spread evenly i.e. complexity and the content of the message is same throughout the world.
- Interactivity- It allows two-way communications between merchant and customer, no other commercial technology of the 20th century except telephone has this feature. E-commerce can be used using different websites for both giving and receiving the information from the net.
- Information Density- Information available on the web is more accurate and reaches the person fast in a timely manner. The information is complete and is available to all consumers, merchants and participants.
- Customization- E-commerce technologies allow personalization by targeting their marketing message to a specific person by adjusting a message to person's name, interests, and past purchases. Technology also permits customization by changing the

product according to the user's requirement. A lot of information about the customer's requirement, its past purchases can be stored due to information density.

Importance of e-commerce-

SETUP: The set-up of E-commerce is much easier than a physical setup including cost and everything.

MORE INFORMATION: Customers can get more information regarding the product they're looking for like all the details regarding the product is given in the description column of a product.

REVIEWS: People while buying things online can also get reviews regarding the products so they can get the clear idea of the products whether it's of use or not .

LESSER COST: If the inventory management of goods and services is an automated process then not only there will be a reduction in costs, but also in risk. Also, having e-commerce business is much more cost effective than a physical store as it saves your extra expenses like rent, electricity, etc.

Applications of e-commerce-

Marketing: E-commerce helps in marketing activities such as fixation of price, negotiation, product feature enhancement and relationship with the customer.

Finance: Nowadays, most companies use e-commerce to a greater extent. Customers can perform a lot of tasks through online banking or E-commerce such as- check balances or savings, pay bills and so on.

Manufacturing: E-commerce can be used in the chain operations of a company. Some company form an electronic exchange by providing both buying and selling of goods, trade market information and run-back office information such as inventory control.

Online Publishing: It includes the digital publication of e-books, digital magazines, and the development of digital libraries.

Auctions: It also includes auctions that involve bidding. Bidding is a special type of auction that allows prospective buyers to bid for an item.

6.4 TYPES OF E-COMMERCE MODELS

Before we check the different e-commerce business models, let us briefly discuss the types of e-commerce business classifications. With the rise in popularity of e-commerce, people are increasingly finding themselves thinking about opening online businesses. E-commerce models can be categorized into following categories.

- Business to business(B2B)

- Business to consumer(B2C)
- Consumer to consumer(C2C)
- Consumer to business(C2B)
- Business to government(B2G)
- Consumer to government(C2G)

a) BUSINESS TO BUSINESS (B2B)- B2B, or Business to Business, is the largest e-commerce model. In this model, both the sellers and buyers are business entities. This model describes the transactions between a retailer or a wholesaler, or a wholesaler and manufacturer. Also, the transaction of the B2B business model is much higher than that of the B2C model. In this model, the products are being sold to an intermediate buyer who then sells the product to the final customer. As younger generations enter the age of making business decisions, B2B selling in the online space is becoming more important. Some of the examples of B2B models are Alibaba (world's largest online business to the business trading platform), Amazon business, IBM, Boeing, ExxonMobil Corporation, and more.

b) BUSINESS TO CONSUMER (B2C) - In this model, the product is being sold to the end user. It is one of the most common use business models. Business to consumer, known as B2C, is the most common and the thickest e-commerce market. In this model, the decision-making process is shorter than B2B model. The B2C business is the most common type. This is the thickest e-commerce market. In this online model, the business sells to individual customers. This business model offers direct interaction with customers. Some examples of B2C models are WalMart, Staples, Target, and REI.

c) CONSUMER TO CONSUMER (C2C) - This model helps consumers to sell their things (assets) like -property, cars, etc., or rent a room by publishing their information on the website Companies like Craigslist and eBay who pioneered this model in the early days of the internet. The C2C or consumer to consumer business model involves a transaction between two consumers. It is also known as a citizen to citizen. A common example of this model would be an online auction, where a customer or visitor posts an item for sale and other customer bids to purchase it. However, the third party generally charges a commission. The few examples for this model include Craigslist, eBay and OLX.

d) CONSUMER TO BUSINESS (C2B)- In this model, consumer process towards a website showing multiple business organizations for a particular service. Customer to business, known as C2B, involves customers selling their services or products to business. It is roughly the same as a sole proprietorship serving a larger business. One thing that differentiates C2B from other business models is that the consumers create

the value for the products. The consumer places an estimate of amount he/she wants to spend for a particular service or it allows a customer to sell their products to companies. In this e-commerce model, a site might allow customers to post the work they want to be completed and have businesses bid for the opportunity. Affiliate marketing services would also be considered C2B.C2B examples include Google Adsense, Commission Junction, and Amazon. Fotolia is also emerging as a good C2B example.

e) BUSINESS TO GOVERNMENT (B2G) - It is alternative of B2B model. Such websites are used by governments to trade and exchange information with various business organizations. Business to government is also referred to as the business to administration commerce. In this model, government and businesses use central websites to do business with each other more efficiently than they can off the web. This e-commerce model is also referred as public sector marketing, i.e., marketing services and products to multiple government levels. With this platform, businesses can bid on government opportunities, including tenders' auctions, and application submission.

f) CONSUMER TO GOVERNMENT (C2G) - Consumer to administration or consumer to government e-commerce model enables the consumers to post feedback or request information regarding public sectors directly to the government administration or authorities. For example, when you pay electricity bill through government websites, payment of health insurance, make payment of taxes, etc.

6.5 ADVANTAGES OF E-COMMERCE

- Messages and important information can reach the world in no time which makes the process effective and cheap for suppliers and customers.
- An online store works 24 hours a day, 7 days a week, 365 days a year or via an EDI system.
- The costs required to set up offices is very high in comparison with the cost of setting an e-commerce website which in turn can be integrated with less efforts.
- New market segments can be explored with the use of Internet.
- Business processes are automated and with increased efficiencies there is no need to re-key in orders into order entry system.
- Easy search of required quality product with wider choice range and no wastage of time.
- Easy Buying/selling of items with the use of Internet using a computer.
- Use of financial and legal services, medical advice etc. from proper portals.

- No need of personal visit and searching. Large variety of goods accessible easily without spending time and money.

6.6 POINTS TO REMEMBER

- Commerce is defined as trading of good & services or if e 'for electronic' is added to this, the definition of e-commerce becomes the trading of goods, services, information or anything else of value between two entities over the internet.
- E-Commerce or Electronics Commerce is a methodology of modern business, which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery.
- EDI is an electronic data interchange. It is the direct communication of trading messages between computer systems, using national and international telecommunications networks.

6.7 GLOSSARY

- B2B: The process of selling services or products to another business, which typically then sells to the consumer.
- B2C: The process of selling services or products directly from the business to the consumer
- Domain: The main page or main URL for a website. This is often the 'homepage' or the root portion of the web address.
- Mobile Commerce: The process of buying products or services on a mobile or wireless handheld device.
- Transaction: Purchasing an order online from a business or other seller.

6.8 CHECK YOUR PROGRESS

Objective type questions-

a) The model that allows consumers to sell their assets is .....

b) E-commerce is the process of ..... and ..... good or services via electronic naturals.

c) E- commerce helps in marketing activities such as ....., ...

d) Good use G2B model in order to exchange information between ..... & .....

e) E-commerce is available just about everywhere and any time. This is brown as .....

f) E-commerce allows people to purchase things online

g) Setting-up of E-commerce is captives than a physical Shop.

h) The model B2G is alternative to B2B model.

i) Anyone with access to a computer, Internet connection, and a means to pay for purchased good or services can participate in E-commerce.

j) The model that involve companies doing business with each other, and the final customer is not involved is called G2B model.

Answers (objective type questions)

[a] C2C model [b] Selling, shifting [c] Fixation of price, R/P with customers [d] Business, good [e] Ubiquity[f] True [g] False [h] True [i] True [j] False

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UNIT- 7

E-OFFICE MANAGEMENT TOOLS- I

7.1 INTRODUCTION

E-office or electronic office is a term that refers to any office environment that makes significant use of computer technology to operate. The term was first coined during the middle of the 20th century and began to come into common use during the decade of the 1980s as more office environments dispensed with manual methods and began to rely more heavily on a combination of desktop computers, mainframes, and servers to manage a number of job-related tasks. Today, electronic office is more commonly equated with a virtual office, which involves the use of wireless technology allowing people to work from virtually anywhere with the right type of laptop or notebook and a reliable wireless connection.

7.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Explore the need and benefits of e-office.
- Explore the pre-requisites of e-office.

- Define the components of e-office.
- Define the role of an e-file management system.

7.3 WHY E-OFFICE?

For decades, paper documents and filing cabinets have been the way to organize information in an office, or at home. But that doesn't mean they're the best option. Many offices and homes globally are transitioning from physical documents to electronic document management. Why do they want to go paperless? Well, there are many reasons to get started for going paperless in today's modern business climate.

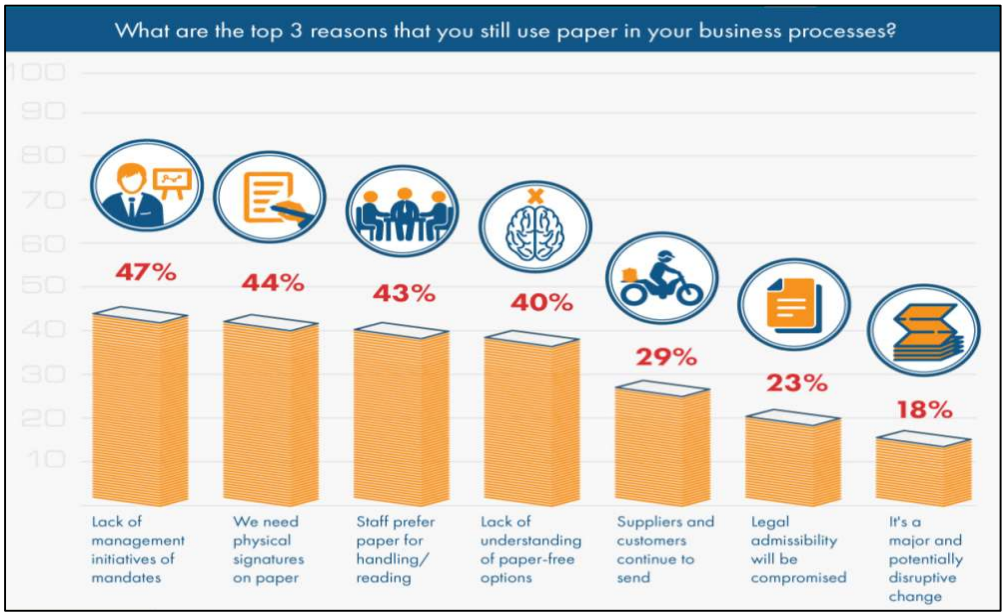
More and more business people are starting to realize that paper is an expensive and inefficient way to manage their information. So, they turn to a service, like electronic document management which has the tools they need. But going paperless isn't something that happens overnight; it is a process that takes time and effort, and many business owners and at home workers are intimidated by the prospect of making the switch.

As intimidating as the concept may be, going paperless with information management systems is a necessity if you're going to compete in the modern business world and still have a life outside the office.

Lead the Way-

What do you think is the number one reason why companies aren't going paperless? The answer may surprise you.47% of employees surveyed said that one of the top three reasons for not going paperless was a lack of management initiatives or mandates. Essentially, they're ready and willing to go paperless, but nobody is leading the way or providing the tools. Executing steps for going paperless means your home business and major company needs you to take the initiative, step up, and lead the way for a more efficient office. Your employees will be grateful for improving their life at work.

Here are some tips for going paperless. Set goals for each department and for the company as a whole that encourage everyone to transition to an electronic document management system. You may even want to set up some kind of reward initiative for when the goal is met to encourage employees to participate in the efforts to go paperless.



The important thing about going paperless is that you lead by example. If you have your own filing cabinet of documents, take responsibility for transitioning those to an electronic system. Set goals for yourself, and take ownership for meeting those goals. If your employees see you leading the way, they are more likely to follow, and you'll drive home how important going paperless really is.

Get Everyone on Board with Going Paperless-

No matter how strong the paperless example you set, your company won't make the transition unless you have your employees on board. Make sure the employees know about mobile apps. It gives them easy access wherever they have phone service. They can view, read, and share documents and files without taking up any personal phone storage. A recent survey asked businesses which departments were most resistant to a paperless work environment. It was found that legal and finance departments tend to be the most hesitant about going paperless. So how can you get them and the rest of your teams started and on board with the paperless plan? Here are three tips that might help.

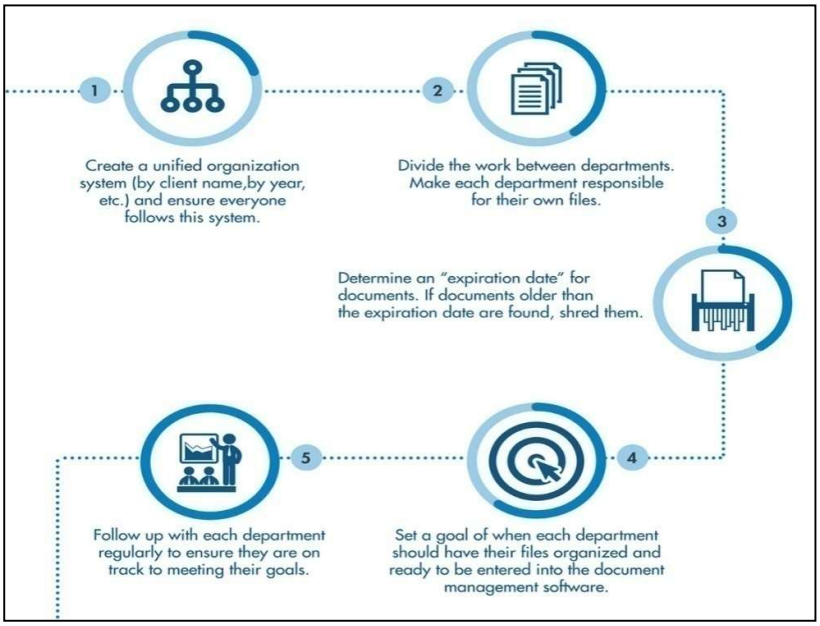
- Show them the ways going paperless benefits them: Demonstrate to people how going paperless will make their jobs easier. If they see the time and effort they can save, they're more likely to be on board with going paperless.
- Address compliance concerns about going paperless: There's a reason legal and finance department are the most resistant to go paperless: they're worried about compliance issues. However, the truth is going paperless can actually help you to become more compliant. Paper processes expose your company to potential liability due to lack of security or lost paperwork. On the other hand, electronic document management software possesses security measures and other features that ensure vital information is

protected. Demonstrate these digital features to your team members to show them how going paperless not only doesn't create compliance issues but can actually eliminate potential issues in existing paperless processes.

- Show how going paperless benefits customer services: The majority of consumers today prefer electronic correspondence to paper correspondence because they are easier to handle and are more secure. Providing these kinds of digital services for your customers can get a lot of your team members on board with the switch because customer service is arguably the most important part of any business.

Organize your Paper Documents and Files-

Now that you've set up some initiatives and gotten your team on board for going paperless, it's time to start the dirty work. Before you begin scanning your physical documents into their



new home in the digital cloud, an electronic system, read these ways to organize what you have—and odds are, you have a lot. To tackle these mounds of paper documents, you should divide the work and utilize your team appropriately.

Here's how you can quickly and easily get your stacks of paper documents organized and ready to be entered into a digital system on a desktop computer or in the cloud. Once the paper documents are all organized, you can prepare to take your business, whether at home or in a corporate office, into the paperless era.

Get Software and Get Training-

While your employees are preparing their documents and files for entry, you need to find the right digital document management system to aid you going paperless. There are many digital document management systems out there for you to choose from, so you need to do your

research and compare your options before making a decision. To help you during your search, you should sit down and make a list of the tools you need in a DMS service, as well as the things you want that aren't absolute necessities. These typically involve data backup, amount of storage, number of user accounts, audit logs, employee permissions, and automation.

Once you've read the tips and created a list of necessary tools, you need to figure out your budget for the new office software. You may need to consult with the finance team about this. Then, with your list in hand and budget in mind, you can start comparing cloud document management software. You should aim to find something that meets all of your needs and at least a few of your wants while still staying in your budget.

Get as many demonstrations and trials as you can so you can see how the software functions. You may want to let other employees test the software, to ensure that it is usable and easy to learn by others in the office.

After selecting your software, you need to select the office employees who need to be trained on the best way to use it. Depending on your situation and your business, you may want only certain departments to learn how to use the software or only the leaders of certain departments. The important thing is that all employees who handle, file, and need access to information in the cloud will be able to do so digitally and confidently.

Get Started Right the Way and File Electronically-

One of the most important tips for going paperless is relying on the right scanner to make the transition. With the necessary employees trained in the software, you can start scanning in your documents and filing them electronically with a document management vendor's scanner selection. This is also a good time for you to assess how to handle incoming documents and digital files while catching up on your backlog of existing documents. From the time you scan your first document, all incoming paperwork should be filed electronically. After all, you don't want to be constantly playing "catch-up" when it comes to being paperless; you want to move forward with paperless processes already in place.

Tell Clients, Tips, and Share Electronically-

Once you have your current documents switched to electronic copies, you can't stop there. Tell your clients about the switch you've made. Make sure to send out an email addressing any security concerns, and tell them about all of the benefits they'll experience from the switch. You'll also want to introduce them to electronic sharing as well. If your clients at home sharing digital documents with you and sign documents electronically with a phone or computer, your company will save even more time and money.

Make sure your clients are familiar with whatever version of electronic sharing you choose to use- email, online sharing, etc. Be willing to answer their questions and provide tips to make

the transition easier for them. Any tips or help will let your clients know you care about their success.

One of the most important steps for going paperless is also to introduce them to the electronic signature services as well. Get your clients started with as many paper-free processes as you can. You will also help your company to keep your paperless systems consistent, efficient, and organized on your computer.

Enjoy the Benefits-

Once you finish the steps for going paperless, much less effort is needed to ensure you stay paperless, so you'll be able to rest on your laurels for a bit. Mostly you should minimize printing from a computer, and maintain the consistency in naming and filing.

As you continue to use a computer to make your processes digital, you'll see a number of benefits in your office and life outside of work. With savings in time and cost, as well as increased document security, data backup, your employees, customers, and your business as a whole will benefit from making the switch to a paperless office. When people at home or work ask how you had such a great business year, feel free to share these tips. After all, our main goal as a company is to improve your life by reducing stress at work.

7.4 BASIC INFRASTRUCTURE & PRE-REQUISITES FOR E-OFFICE

Basic infrastructure-

Digital workplaces not only enhance employee experience but enable business excellence and cost arbitrage. Research has shown that 87% of CIOs believe that digitally empowering employees can drive at least 5% additional revenue growth over three years (2). Here's a deeper look into some of these digital workplace infrastructure use cases that have already found a way into offices and are making an impact:

[1] User Preference-based Lighting and Temperature Control

Two of the most basic office necessities are lighting and air-conditioning/temperature control. An 'ideal temperature' is a myth. Employees have varied temperature requirements, which often lead to office temperature debates. This never-ending temperature tussle could be solved with the help of technology. Some companies have employed applications that allow employees to provide feedback on the current temperature – 'I'm cold,' 'It's too hot!', or 'It's perfect.' Based on such inputs, the building facility management team can adjust the temperature. Such tools place the control in the employee's hand, which further boosts productivity and employee satisfaction. A step further is a technology that helps employees set preferred temperatures for their own bays/work desks.

Similarly, for lighting, companies are exploring ways to install connected lighting systems that allow for remote light controlling, offering energy savings in the process. For instance, Cisco partnered with Philips to jointly implement smart lighting and HVAC systems. Philips' connected lighting system collected data from 600 PoE (Power over Ethernet) enabled luminaires equipped with sensors to capture temperature, light level, and activity for optimizing user comfort. Philips' lighting management software, running in the building's IT environment, allowed system managers to monitor and manage each light point via a dashboard application. The system also stored data over time, allowing managers to assess occupancy patterns and optimize lighting operations based on historical trends and findings. Cisco thus reduced energy consumption in its office spaces and had better control of the lighting system.

[2] Digital Building Management System

A digital building management system will help enable facilities managers to run their buildings with high service levels and deliver cost savings and environmental benefits through reduced power consumption. For instance, a bank implemented technologies that help converge isolated building systems such as sensors, lighting, HVAC, security, and audio-video into a single system. It brought together different building systems on a single IP in order to be monitored and managed more effectively.

[3] Intelligent Workspace Allocation

Several companies today have implemented intelligent workspace allocation systems, which allow employees to choose and block their workstation based on their requirement for the day. Employees can also block workstations for longer durations, per their needs. This gives employees the freedom to select the seats they prefer, based on convenience, amenities required, and the type of work they are engaged in. It also allows employers to track workspace utilization and use the gathered data to plan for future expansion if needed.

Companies are also installing desks with a height adjustment option that enables employees to work either standing or sitting, according to their comfort. Another variant of this is the treadmill desk, where a low torque treadmill is placed below a standing desk, where the employees can walk while working. This improves the overall health of the employees and helps attract the millennial workforce who prefer an ergonomic workplace.

[4] 3D Holographic Telepresence

As companies continue to globalize and expand across diverse geographical locations, connecting digitally for meetings and townhalls will be key to saving valuable time and traveling cost for leaders as well as organizations. High-definition 3D holograms are one of the most promising technology use cases that can enable these digital meetings. Accenture's tech team has already created a 3D holographic telecast technology to enable the digital

presence of leadership teams in key meetings without actually needing them to be physically present. Accenture has built seven studios with the capacity to capture holograms across the globe and plans to expand its use. 3D holograms will not just help increase an organization's efficiency but will also help build a digital-ready culture in the organization.

[5] Smart Writing Boards

In several MNCs, traditional whiteboards are being replaced by smart boards. These smart boards can replicate the content onto a laptop or tablet in real-time, enabling better collaboration and saving the time spent on replicating the content. Smart writing boards can be used to edit existing files (e.g. Excel/PPTs) and can be saved for further use as well. Multiple files can be accessed simultaneously at the tap of a finger. Smartboards also have in-built webcams that relay the content being written on the board to a remote location of choice, in real-time. It helps extend the scope of discussions with ease of swapping data through files and making discussions more effective. It also ensures that the points discussed during meetings are captured without any loss of data due to human interventions.

[6] Intelligent Amenities

Companies are conscientiously taking initiatives and investing heavily in providing intelligent amenities to the employees through facilities like smart elevators, IoT-enabled parking availability tracking, biometric access and security, interactive platforms, etc. A case in point is RMZ Corp., a commercial real estate company that has adopted technology to transform its tenants' experience by providing them with a highly interactive platform enabled by AI and IoT. The platform acts as a comprehensive productivity and efficiency enabler that allows employees within the campus to enjoy certain features. Employees can make workplace decisions such as the right time and mode to get to and from work, in-campus services, security, concierge services, community socializing, etc.

Pre-requisites for e-office-

Some of the basic requirements for the E-office establishment are given below, e.g. Hardware, Software, Training, actualization.

[1] Actualization

- Pre-transition Preparedness
- Creation of Database (EMD)
- Creation of NIC email ID
- Procurement of Digital Signatures
- Establish a ten member PMU that can be reduced to five after six months and three after one year
- R and I section to be equipped and trained
- User PC Peripheral Equipment modifications

- Scanning
- Self
- Outsourced
- Migration
- All new files as e-files
- Physical files to be migrated to Electronic Files
- Cutoff Date
- Hardware
- Creation of a separate instance
- NIC Network
- Sufficient Bandwidth
- Backend Management Support
- Monitors are not too small
- Adequate RAM in CPU

Strategy

- Setting Up
- Application procurement
- Hardware changes (Screen size & RAM) rollout
- Training
- Scanning Arrangement –Vendor & Officers PA
- Pre-transition preparedness Cut off
- R&I going electronic
- New files electronic

Software

- E-office a NIC developed Software
- E-office Premium and E-office Lite
- Advantages
- File management
- Tracking
- Expeditious Movement
- Location agnostic saves paper
- Saves Space increases transparency
- Leave Management
- Inter Organizational Communication
- Needs to be purchased-Cost varies based on number of users and Locations

Training

- Overview

- Introductory training
- Enablement training
- Learn while you do

7.5 COMPONENTS OF E-OFFICE

Addition, maintenance of certain basic records, scheduling, processing summarized business information for structured decision making, and what-if analyses are some of the other automated office operations. Some of the common components of E-office are: Word Processor, Electronic Spreadsheet, Business Presentations, Scheduler, and Data Base Management System.

Each of these components is designed to perform a special type of desktop activity. The word processors help in designing documents for internal and external communication. The Electronic spreadsheets are used for analyzing numeric data and performing 'what-if' analysis.

The business presentation component of office suite helps in designing screens for business presentations before customers, investors, shareholders, policymakers, etc. These packages combine graphic facilities and databases to make the presentations accurate, interactive and flexible. Schedulers are packages that help managers in time management.

They record a manager's engagements and maintain dynamic scheduling and recordings. As a result, time management is made more systematic. Information regarding the lean periods and busy periods can be obtained easily.

7.6 E-FILE MANAGEMENT SYSTEM

E-file management or electronic document management is the practice of importing, storing, and managing documents in digital format, e.g. images, documents, etc. To resolve the issues with manual file system someone needs to upgrade into e-filing system that eliminates or minimizes the time spent managing and maintaining paper documents, amount of physical storage space required for paper files, risks of document loss due to fire, water damage, or any other physical damage, etc.

Benefits of an e-filing management system-

E-file management system provides the following advantages-

- Save space and resources otherwise needed for organizing, filing, and storing papers.
- Minimize errors that are likely with manual data entry and filing.
- Permanently preserve documents and information that could otherwise be misplaced or lost.
- Reduce or eliminate expenses for office supplies such as printers, copiers, paper, ink,

etc.

- Optimize productivity by eliminating time and effort necessary to search through files for information.
- Improve customer service by speeding up response times.
- Access of official documents to the authorized person irrespective of space and time.

7.7 POINTS TO REMEMBER

- E-office software has been designed with an objective to help reduce the movement of hard copy papers within an organization and integrate various, seemingly unrelated activities within an organization.
- The software is based on open technologies and web-based, which is user-friendly. This facilitates easier deployment over the Local Area Network, Wide Area Network as well as over internet whenever required.
- The user can access the system using standard Internet browser such as Internet Explorer or Netscape after necessary authentication.
- The complete system works with a centralized backend database to store the necessary structured information, keyed in by the user.

7.8 GLOSSARY

- Word Processor: Word processor is software or a device that allows users to create, edit, and print documents. It enables you to write text, store it electronically, display it on a screen, modify it by entering commands and characters from the keyboard, and print it.
- Electronic Spreadsheet: Electronic spreadsheets computerise the traditional layout of any tabulation or complex calculation done with pencil, paper and calculator.
- Data-Base Management System: A database management system (DBMS) is a software package designed to define, manipulate, retrieve and manage data in a database.

7.9 CHECK YOUR PROGRESS

Objective type questions-

a) The electronic office is a term that refers to any office environment that makes significant use of ……. to operate.

b) 47% of employees surveyed said that one of the top three reasons for not going paperless was a lack of

c) some of the basic requirements for the E-office are …… & ……

d) PDF stands for ……

e) Some of the common components of E-Office are ……., ……., ……., ……., …….

f) for formatting the E-documents we mostly preferred animations formatting software. (True / False)

g) If you want to strip all of the formatting, Select the text and press [Ctrl]+[Spacebar]. (True / False)

h) Two of the most basic office necessities are lighting and air-conditioning/temperature control. (True / False)

i) One of the most common applications of PCs is inter-office and intra-office communications. (True / False)

j) MS-Word, Notepad, WordPad are some of the examples of text editing and formatting tools. (True / False)

Descriptive type questions-

a) What is E-office management?

b) What is a word processor?

c) Explain the components of E-office.

d) Describe the E-file Management System.

Answers (Objective type questions)

[a] Computer technology [b] Management initiatives or mandates [c] Hardware, software, training, actualization [d] Portable document format [e] Word processor, electronic spreadsheet, business presentations, scheduler, data base management system [f] False [g] True [h] True [i] True [j] True

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UNIT- 8

E-OFFICE MANAGEMENT TOOLS

8.1 INTRODUCTION

The electronic office, or e-office, was a term coined to cover the increasing use of computer-based information technology for office work, especially in the 1980s. It was a popular marketing buzzword during that era, but is no longer so widely used since all modern offices are electronic offices. The term appeared much earlier in the name of the LEO computer (Lyons Electronic Office), that first ran a business application in 1951 in England.

The general objective of e-office adoption was the elimination of paper and converting most or all office communications to electronic form. The definition of electronic office is not precise, and it might be either:

The introduction of individual computers running office software applications, such as word processors, or the interconnection of office computers using a local area network (LAN), or

the centralization of office functions via collaborative software (i.e., groupware), which was later superseded in many contexts by web applications.

The introduction of e-office improved accuracy and efficiency of organizations and thereby improved their level of service, while theoretically lowering costs and drastically reducing the consumption of paper. Many documents are still being printed out and circulated on paper, however, especially those that require signatures or other legal formalities.

8.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Describe the concept of e-office.
- Define e-office management tools.
- Describe the basic concept of GOOGLE DOCS, PHOTOS.
- Identify the effectiveness of DIGILOCKER.

8.3 E-OFFICE MANAGEMENT TOOLS

The e-office product aims to support governance by ushering in more effective and transparent inter and intra-government processes. The vision of e-office is to achieve a simplified, responsive, effective and transparent working of all government offices. The Open Architecture on which e-office has been built, makes it a reusable framework and a standard reusable product amenable to replication across the governments, at the central, state and district levels. The product brings together the independent functions and systems under a single framework.

- Enhance transparency- files can be tracked and their status is known to all at all times
- Increase accountability- the responsibility of quality and speed of decision making is easier to monitor.
- Assure data security and data integrity.
- Provide a platform for re-inventing and re-engineering the government.
- Promote innovation by releasing staff energy and time from unproductive procedures.
- Transform the government work culture and ethics.
- Promote greater collaboration in the work place and effective knowledge management.

8.4 INTRODUCTION TO GOOGLE DOCS, AND PHOTOS

Google Docs is a word processor included as part of the free, web-based Google Docs Editors suite offered by Google Corporation. The service also includes Google Sheets, Google Slides, Google Drawings, Google Forms, Google Sites, and Google Keep. Google Docs is available as a web application, mobile app for Android, iOS, Windows, BlackBerry, and as a desktop application on Google's Chrome OS. The app is compatible with Microsoft Word file formats.

The app allows users to create and edit files online while collaborating with other users in real-time. Edits are tracked by user with a revision history presenting changes. An editor's position is highlighted with an editor-specific color and cursor and a permissions system regulates what users can do. Updates have introduced features using machine learning, including "Explore", offering search results based on the contents of a document, and "Action items", allowing users to assign tasks to other users.

Google Docs is available as a web application supported on Google Chrome, Mozilla Firefox, Internet Explorer, Microsoft Edge, and Apple Safari web browsers. Users can access all Docs, as well as other files, collectively through the Google Drive. In June 2014, Google rolled out a dedicated website homepage for Docs that contains only files created with the service. In 2014, Google launched a dedicated mobile app for Docs on the Android and iOS mobile operating systems. The mobile website for Docs was updated in 2015 with a "simpler and more uniform" interface, and while users can read files through the mobile websites, users trying to edit will be redirected towards the dedicated mobile app, thus preventing editing on the mobile web.

Fetures-

Google Docs and the other apps in the Google Drive suite serve as a collaborative tool for cooperative editing of documents in real-time (online). Documents can be shared, opened, and edited by multiple users simultaneously and users are able to see character-by-character changes as other collaborators make edits. Changes are automatically saved to Google's servers, and a revision history is automatically kept so past edits may be viewed and reverted to. An editor's current position is represented with an editor-specific color/cursor, so if another editor happens to be viewing that part of the document they can see edits as they occur.

A sidebar chat functionality allows collaborators to discuss edits. The revision history allows users to see the additions made to a document, with each author distinguished by color. Only adjacent revisions can be compared, and users cannot control how frequently revisions are saved. Files can be exported to a user's local computer in a variety of formats (ODF, HTML, PDF, RTF, Text, Office Open XML). Files also can be tagged and archived for organizational purposes.

In March 2014 Google introduced add-ons, new tools from third-party developers that add more features for Google Docs. In order to view and edit documents offline on a computer, users need to be using the Google Chrome web browser. A Chrome extension Google Docs Offline', allows users to enable offline support for Docs files on the Google Drive website. The Android and iOS apps natively support offline editing.

In June 2014, Google introduced "Suggested edits" in Google Docs; as part of the "commenting access" permission, participants can come up with suggestions for edits that the author can accept or reject, in contrast to full editing ability. In October 2016, Google announced "Action items" for Docs. If a user writes phrases such as "Ryan to follow up on the keynote script", the service will intelligently assign that action to "Ryan". Google states this will make it easier for other collaborators to see which person is responsible for what task. When a user visits Google Drive, Docs, Sheets or Slides, any files with tasks assigned to them will be highlighted with a badge.

A basic research tool was introduced in 2012. This was expanded into "Explore" in September 2016, which has additional functionality through machine learning. In Google Docs, Explore shows relevant Google search results based on information in the document, simplifying information gathering. Users can also mark specific document text, press Explore and see search results based on the marked text only.

In December 2016, Google introduced a quick citations feature to Google Docs. The quick citation tool allows users to "insert citations as footnotes with the click of a button" on the web through the Explore feature introduced in September. The citation feature also marked the launch of the Explore functionalities in G Suite for Education accounts.

Supported file formats-

Files in the following formats can be viewed and converted to their Docs format, such as- .doc (if newer than Microsoft Office 95), .docx, .docm .dot, .dotx, .dotm, .html, plain text (.txt), .rtf, .odt File limits. Limits to insertable file sizes, overall document length and size are listed below:

Up to 1.02 million characters, regardless of the number of pages or font size. Document files converted to. gdoc Docs format cannot be larger than 50 MB. Images inserted cannot be larger than 50 MB, and must be in either .jpg, .png, or .gif formats.

Google Workspace- Google Docs and the Google Docs Editors suite are free of charge for use by individuals, but are also available as part of Google's business-centered Google Workspace, enabling additional business-focused functionality on payment of a monthly subscription.

More functionalities on Google Docs-

A simple find and replace tool is available. Google offers an extension for the Google Chrome web browser called Office editing for Docs, Sheets and Slides that enables users to view and edit Microsoft Word documents on Google Chrome via the Docs app. The extension can be used for opening Office files stored on the computer using Chrome, as well as for opening Office files encountered on the web (in the form of email attachments, web search results, etc.) without having to download them. The extension is installed on Chrome

OS by default. Google Cloud Connect was a plug-in for Microsoft Office 2003, 2007 and 2010 that could automatically store and synchronize any Word document to Google Docs (before the introduction of Drive) in Google Docs or Microsoft Office formats. The online copy was automatically updated each time the Microsoft Word document was saved. Microsoft Word documents could be edited offline and synchronized later when online. Google Cloud Connect maintained previous Microsoft Word document versions and allowed multiple users to collaborate by working on the same document at the same time. Google Cloud Connect was discontinued in April 2013 as, according to Google, Google Drive achieves all of the above tasks, "with better results"

Google Photos-

Google Photos is a photo sharing and storage service developed by Google. It was announced in May 2015 and separated from Google+, the company's former social network. In its free tier, Google Photos stores unlimited photos and videos up to 16 megapixels and 1080p resolution respectively (anything larger gets down-scaled to these sizes). This free tier will end on June 1, 2021. Photos and videos uploaded after that date get counted towards the 15 GB free quota shared across the user's Google services. There are subscriptions offered for users wanting to store their photos and videos at their "original" quality and requiring more storage than the 15 GB offered free.

The service automatically analyzes photos, identifying various visual features and subjects. Users can search for anything in photos, with the service returning results from three major categories: People, Places, and Things. The computer vision of Google Photos recognizes faces (not only those of humans, but pets as well), grouping similar ones together (this feature is only available in certain countries due to privacy laws); geographic landmarks (such as the Eiffel Tower); and subject matter, including birthdays, buildings, animals, food, and more.

Different forms of machine learning in the Photos service allow recognition of photo contents, automatically generate albums, animate similar photos into quick videos, surface past memories at significant times, and improve the quality of photos and videos. In May 2017, Google announced several updates to Google Photos, including reminders for and suggested sharing of photos, shared photo libraries between two users, and physical albums. Photos automatically suggested collections based on face, location, trip, or other distinction.

Google Photos acts as a backup when photos are sent or in Google terms 'Shared'. This is just a common backup tool when photos are shared between social media or other platforms or apps.

8.5 APPLICATION OF DIGILOCKER

DigiLocker is an Indian digitization online service provided by Ministry of Electronics and Information Technology (MeitY), Government of India under its Digital India initiative.

DigiLocker provides an account in cloud to every Aadhaar holder to access authentic documents/certificates such as driving license, vehicle registration, academic mark sheet in digital format from the original issuers of these certificates. It also provides 1GB storage space to each account to upload scanned copies of legacy documents. Users need to possess an Aadhaar number to use DigiLocker. For sign-up, the Aadhaar number and the one-time password sent to the Aadhaar-registered mobile number, need to be entered.

The beta version of the service was rolled out in February 2015, and launched by Prime Minister Narendra Modi on 1 July 2015. The storage space provided was 100 MB initially, and was later increased to 1 GB. The individual file size for upload cannot exceed 10 MB. In July 2016, DigiLocker recorded 20.13 lakh users with a repository of 24.13 lakh documents. The number of users saw a large jump of 7.53 lakh in April when the government had urged all municipal bodies to use DigiLocker to make their administration paperless.

From 2017, the facility was extended to allow students of ICSE board to store their class X and XII certificates in DigiLocker and share them with agencies as required. In February 2017, Kotak Mahindra Bank started providing access to documents in DigiLocker from within its net-banking application, allowing users to e-sign them and forward as needed. In May 2017, over 108 hospitals, including the Tata Memorial Hospital were planning to launch the use of DigiLocker for storing cancer patients' medical documents and test reports. According to a UIDAI architect, patients would be provided a number key, which they can share with another hospital to allow them to access their test reports.

As of December 2019, DigiLocker provides access to over 372+ crore authentic documents from 149 issuers. Over 3.3 crore users are registered on DigiLocker. 43 requester organisations are accepting documents from DigiLocker. There is also an associated facility for e-signing documents. The service is intended to minimise the use of physical documents, reduce administrative expenses, provide authenticity of the e-documents, and provide secure access to government-issued documents and to make it easy for the residents to receive services. Each user's digital locker has the following sections.

- My Certificates: This section has two subsections:
- Digital Documents: This contains the URI's of the documents issued to the user by government departments or other agencies.
- Uploaded Documents: This subsection lists all the documents which are uploaded by the user. Each file to be uploaded should not be more than 10MB in size. Only pdf, jpg, jpeg, png, bmp and gif file types can be uploaded.
- My Profile: This section displays the complete profile of the user as available in the UIDAI database.

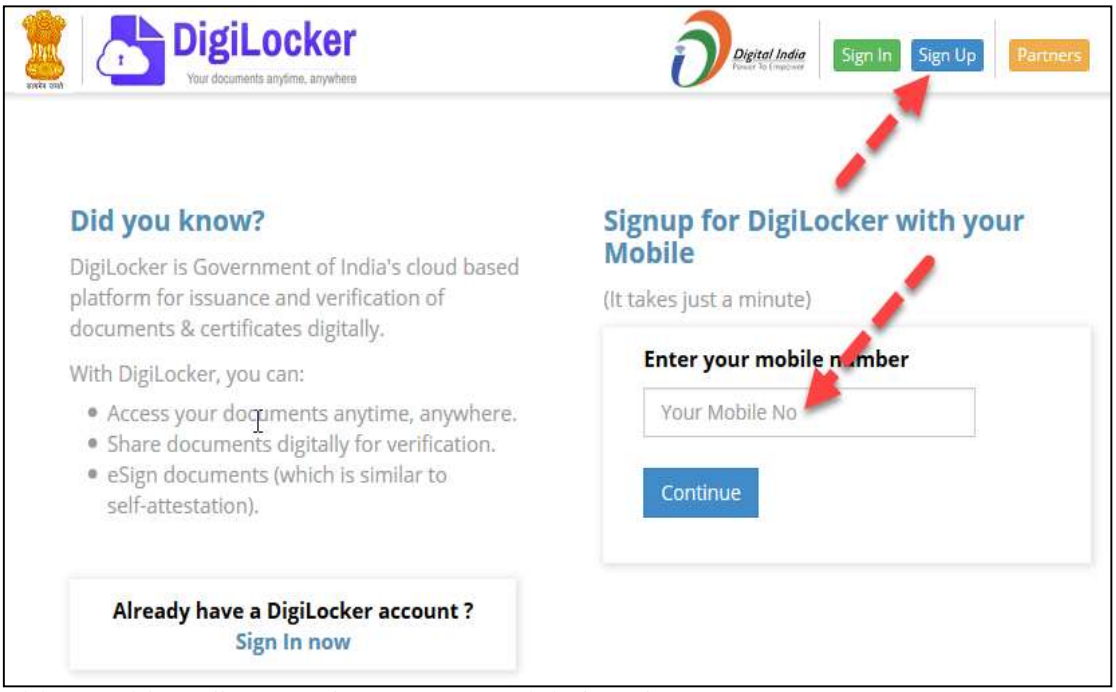
- My Issuer: This section displays the issuers' names and the number of documents issued to the user by the issuer.
- My Requester: This section displays the requesters' names and the number of documents requested from the user by the requesters.
- Directories: This section displays the complete list of registered issuers and requesters along with their URLs.

8.6 HOW TO USE DIGILOCKER?

Digital Locker, one of the key initiatives under the Digital India initiative, is aimed at eliminating the usage of physical documents and enable sharing of e-documents across government agencies via a mechanism to verify "authenticity" of the documents online. Residents can also upload their own electronic documents and digitally sign them using the e-sign facility. These digitally signed documents can be shared with Government organizations or other entities.

[1] USER ID CREATION

Step 1: Access digital locker at https://digitallocker.gov.in/



Citizens with Aadhaar number can create Digital Locker accounts.

Kindly ensure that your current mobile number is registered with Aadhaar number.

You can update your mobile number in Aadhaar by visiting any UIDAI centre.

Step 2: Click on 'Sign Up'

Step 3: Enter your Aadhaar Number.

Enter your unique 12-digit Aadhaar number.

Two options are there to proceed further- Use OTP or Use Fingerprint.

Step 4: User ID Creation

The application will prompt the user to create 'Username' and 'Password'. Enter your desired User name and Password for 'Digital Locker' account.

Click on SignUp button. After successful account creation, the application will show the 'Dashboard' page.

8.7 SHARING DOCUMENTS OVER INTERNET

Today's computers are capable of storing all types of files, including documents, songs, videos, and full applications. When you move one or more files from your local computer to another device or remote location, you are partaking in the activity of file sharing. In some scenarios, the recipient will have to accept the file, but typically the transfer will complete automatically.

The Pros and Cons of sharing files over the Internet.

There are a number of factors to keep in mind before you start actively file sharing. Let's walk through some of the key positives and negatives about the process.

Pros-

Allows you to transfer large files over a network connection.

Makes it easier to collaborate with other people across the globe.

Reduces the need to maintain a central file server that is always online.

Cons-

Amount of bandwidth required can be costly.

Hard to trace what happens to a file after it is shared publicly.

Higher risk of acquiring a virus or other type of malware from a remote file.

Types of File Sharing-

Before you can start distributing files over the internet, you need to determine what method and protocol you want to use. Your decision should be based on what types of files you are moving and who will be receiving them. We'll dive into the main options and explain what scenarios they can help with the most.

File Transfer Protocol (FTP)

FTP was one of the first methods invented for moving data across networks and it remains very popular today thanks to its reliability and efficiency. FTP actions can be run through a command prompt window or a tool with a user interface. All it requires is for you to specify the source file you want to move and the destination where it should be placed. Tools used for FTP, Example- FileZilla, Telnet, WinSCP, etc.

Peer to Peer (P2P)

The purpose of a P2P file transfer is to remove the need for a central server that hosts the data. Instead, individual clients connect to a distributed network of peers and complete the

file transfers over their own network connections. P2P might eventually be used to create an unstoppable TOR. Whether or not The Onion Router (TOR) is a truly P2P environment depends on many factors, but its popularity in creating a more secure online connection is unquestioned. Example- Limewire, Gnutella, BearShare.

Cloud Services

With a cloud file sharing service, one user uploads their data to a central repository and then other users can download the files to their own devices. All data is hosted by a third party provider, although users can specify what types of permission levels to put on the files. Tools used for cloud services, as- Dropbox, Box, OneDrive, iCloud.

Email Providers

Some people don't realize that email can actually function as a file transfer system. Every time you attach a document to an outgoing message, you are initiating a transfer of that data over the open internet. Example- Gmail, Outlook, Yahoo! Mail.

Removable Storage (offline)

When no network-based option will fulfill your needs, you can always rely on a physical drive to serve as your file transfer operation. This means you are literally copying data to a USB flash drive or external hard drive and plugging that device into the destination computer. Example- USB thumb drives or external hard drives.

8.8 POINTS TO REMEMBER

- The electronic office, or e-office, was a term coined to cover the increasing use of computer-based information technology for office work, especially in the 1980s.
- Google Docs is a word processor included as part of the free, web-based Google Docs Editors suite offered by Google.
- Google Photos is a photo sharing and storage service developed by Google. It was announced in May 2015 and separated from Google+, the company's former social network.
- DigiLocker is an Indian digitization online service provided by Ministry of Electronics and Information Technology (MeitY), Government of India under its Digital India initiative.

8.9 GLOSSARY

- LEO- Lyons Electronic Office
- LAN- Local Area Network
- UIDAI- The Unique Identification Authority of India

8.10 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) What is e-office management?

b) Define various e-office management tools.

c) What are the applications of Google Docs and Photos?

d) Define the term DigiLocker.

Objective Type Questions-

a) The electronic office, or e-office, was a term coined to cover the increasing use of computer-based information technology for office work. (True/False)

b) Google Sheet is a word processor included as part of the free, web-based Google Docs Editors suite offered by Google.(True/False)

c) DigiLocker is an Indian digitization online service provided by Ministry of Electronics and Information Technology (MeitY). (True/False)

d) Google Calendar is the time management and scheduling tool created by Google. (True/False)

Answer (Descriptive Type Questions)-

[a] True [b] False [c] True [d] True

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UNIT- 9

FUNDAMENTALS OF BANKING

9.1 INTRODUCTION

Banking is an essential part of modern economy. The idea behind banking is effective use of money. In general, banking deals with the concept of lending. While making the historical study of our society, we came to know that presence of money lenders is always there, which has now been replaced with the concept of banking. While studying the thoughts of Quran, and Arthashastra of Kautilya, we found one common reference is present in them i.e. the rate of interest. Thus, the same concept has been used by today's modern banking. During the medieval age, the concept of banking was carried out at the individual level, but in modern times it has also included the partnership formulation, i.e. banking of stock market companies.

While making the fundamental study of banking, it has been identified that it is a concept that deals with the facilities like:

- Cash storage
- Credit/Loan facility
- Investment
- Deposit/Withdrawal
- Currency Exchange
- Forex Trading and
- Various other financial transactions.

Banking is the key area which is responsible for the efficient driving of an economy of a country. Somehow one can also say that bank is a link between depositors and borrower, i.e. it accepts deposit from a customer (in certain rate of interest) and credit them to the borrower in certain high rate of interest. This transfer of money between depositor and borrower is done under the regulations of the central bank of a country.

9.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand Indian banking structure
- Understand banking functionality and types of account holders.
- Know the types of remittance.

9.3 BASICS OF BANKING

Banks are known as 'bancus' or 'banque' in Latin whereas in English it is termed as bench. A bank is an institution which deals with financial transactions like deposit and withdraw of cash/money. It is also a financial intermediary that involves activities like loaning. Banks are generally regulated with certain rules and regulations due to the heavy influence of banking within a financial system and economy of a country. All banks need to comply to the regulations set by Basel i.e. set of international standards for banking. Most of the authors globally have given some definitions regarding banking; some of them are discussed below.

- F.E. Perry: "The bank is an establishment which deals in money, receiving it on deposit from customers, honouring customer's drawings against such deposits on demand, collecting cheques for customers and lending or investing surplus deposits until they are required for repayment."
- Walter Leaf: "A banker is an institution or individual who is always ready to receive money on deposits to be returned against the cheques of their depositors."
- Dr. Herbert L. Hart: "A banker is one who in the ordinary course of his business,

honourscheques drawn upon him by persons from and for whom he receives money on current accounts."

- The Indian Banking Companies Act, 1949: "Banking means the acceptance for the purpose of lending or investment, of deposits of money from the public repayable on demand or otherwise, and withdrawal by cheque, draft, order or otherwise".

Characteristics of Banking-

- Trade in Money: All banks deal with money exchanges like deposit of money in bank or lend or borrow the money from banks.
- Company/Firm/Individual: Bank is an institution which can be operated through a company/firm or an individual by the implementation of certain regulations.
- Providing Advances/ Overdraft: A bank provides money in the form of overdraft/ loans to persons/companies who need it for various assignments.
- Easy methods to operate: A bank is also responsible for providing easy facilities for his customers for depositing /withdrawing money through cheques/drafts, etc.
- Various utility services: A bank is also responsible for implementing or provides various banking facilities to its customers through various technologies.

Banking in Asia

Several governments in Asia after independence soon realized the changes to the market economy and the requirement of supportive development to their banking and financial systems, including considerable capacity building in an area that needed to be re-established almost from scratch. The resulting reform programs designed and aimed at restructuring and modernizing of the components of financial system creating conditions for sustainable economic growths were implemented in the 1990s. The entire era has been divided in two stages.

First stage-

During the first phase in Asia, sovereign currencies began with restrictive monetary politics to curb inflation. As a result, high-interest rate policies and formal and informal restrictions on convertibility were implemented and enforced. High-interest rates, low level of reserves, lack of liquidity, economic and political instability and devaluation continued throughout 1995–96, along with continued dollarization of the financial system and outflow of funds.

Second stage-

Improvements in monetary policies, combining structural and institutional reforms, and reforming fiscal discipline eventually brought economic stability to various regions of Central Asia by the mid of the 1990s. Inflation fell from hyperinflationary levels in 1993 to

about 15–20 percent in 1997–98 and reduced the devaluation of local currencies, which remained relatively viable until the 1998 Russian financial crisis. In addition, it was at the end of 1997 that gross domestic product (GDP) began to grow in the gross area.

Banking in India

Modern banking was developed in England and introduced in India by the British government during their rule in India. Naturally, Indian banking system today is almost similar to the concept of banking system of the British government. However, this does not mean that banking system was unknown to India. The essence of banking in India had been present since ancient time. In fact, India was a major contributor in international trade and a major producer of steel, textiles, spices and fine articles during the ancient and medieval age. To refer Manusmriti, the concept of rate of interest and security of loans is present in our nation during ancient age. Arthashastra of Kautilya also mentions the regulation of interest rates, deposits and even exemption in bills. They were called 'Hundies'. The big traders, merchants and moneylenders were called his superior as ‘nagarseeth’, who held important positions in the Mughal and Maratha reign. They had efficient courier systems and had extensive branches all over India and had also given loans to kings.

However, with its double entry accounting system, the emphasis was on modern banking and deposit by the British. The British rule expanded the stages of development in banking in India. Modern banking promoted indigenous banking.

Stages in the Evolution of Banking in India:

The history of the Indian banking system is divided in three stages:

- Before Independence
- Between 1947-1991
- After 1991 to till date

Before Independence

Banking system in India started with the establishment of Bank of Hindustan in the year 1770 but it has been ceased to operate in 1832. During this period, there is an alliance of three major banks i.e. Bank of Bengal, Bank of Bombay and Bank of Madras. However, during the British rule, these banks were amalgamated formed as a new bank called Imperial Bank established in 1921 with its network of branches in all over the country (taken over by SBI in 1955). Following banks were established during this period:

- Allahabad Bank (Established in year 1865)
- Punjab National Bank (Established in year 1894)
- Bank of India (Established in year 1906)

- Bank of Baroda (Established in year 1908)
- Central Bank of India (Established in year 1911)

Banking Between 1947-1991

Hilton Young Commission emphasized the need for a separate central bank. As per the commission recommendation, Reserve Bank of India has been established in 1935 and after the Independence it has been nationalised on 1 January 1949. Along with the nationalization of reserve bank, regional rural banks were also introduced in our country on 2 October 1975.

Nationalization of banks has improved the efficiency of the banking system of our country. This has boosted the confidence of the public in our banking system. This nationalization has helped increase funds which may lead the economic growth of our country. After independence, another significant step was taken in 1969 which was to nationalize 14 Indian banks. After this in 1980, six more India banks were also nationalised. This nationalisation of banks brought about great changes in the policies, attitudes, procedures, functions and coverage of Indian banks throughout the world. Indian banks are now being ready to become leading international players.

Banking After 1991

After 1991, Indian banking system has shown tremendous growth rate. Liberalization policies introduced by the government have also boosted up the growth of Indian banking system. This tenure is also known as the phase of expansion, consolidation and increment of Indian banking system. This tenure has also been responsible for the entry of private sector in Indian Banking System. As a result RBI has given license to ten private entities (ICICI, HDFC and Axis Bank) for the establishment of banks in India.

At present, the banking system of India is known or termed as Modern Banking Era in India. As per the reports published by Reserve Bank of India (RBI), India's banking sector is sufficiently capitalised and well-regulated. The financial and economic conditions of Indian banking system is far superior and better to any other banking system in another country in the world. After making the study of credit, market and liquidity risk, it has been observed that Indian banks are generally durable and have withstood the global downturn well.

The banking industry of India has recently witnessed the implementation of innovative banking solutions like payments and establishment of small finance banks. The new measures of RBI's may go a long way in helping the restructuring of the domestic banking industry. Establishment of digital payments system in India has evolved the most among 25 countries with India's IMPS(Immediate Payment Service) being the only system at level 5 in the Faster Payments Innovation Index (FPII). Currently, Indian banking system features the following:

- 27 public sector banks.

- 21 private sector banks.
- 49 foreign banks.
- 56 regional rural banks.
- 1562 cooperative banks.
- 94,384 rural cooperative banks and cooperative credit institutions.

Key Developments of Indian Banks-

As per the banking reports of September 2018, government of India has initiated the India Post Payments Bank (IPPB) and opened its branches across all the districts of our country for achieving the objective of financial inclusion. As of May 2018, the equity funding of microfinance companies has grown up at the rate of 39.88 to Rs 96.31 billion (Rs 4.49 billion) in 2017-18 from Rs 68.85 billion (US$ 1.03 billion).

9.4 STRUCTURE OF INDIAN BANKING SYSTEM

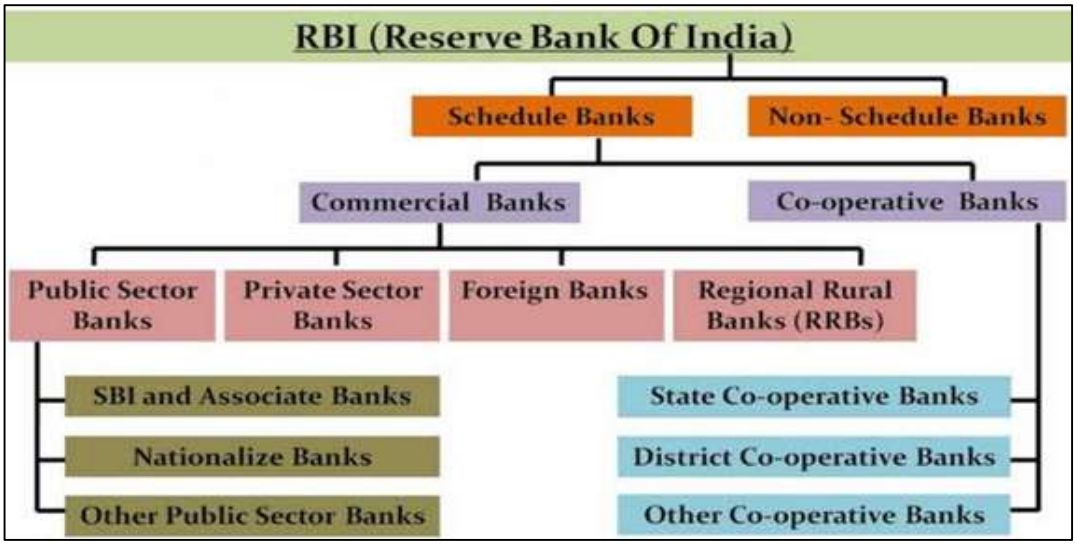
Indian banking system has divided in two major schedules: (i) Scheduled Banks (ii) Non-Scheduled Banks.

Scheduled Banks-

The banks which have been scheduled in second scheduled of Reserve Bank of India (RBI) Act, 1934 are known as scheduled banks. As per the schedule, these banks must comply of the following:

- Paid-Up capital and collected funds should not be less than Rs Five Lakhs.
- Any activity of the bank should not affect the interest of the customers.

The banks belong to this category are comprised: (i) Commercial Banks (ii) Cooperative



Banks.

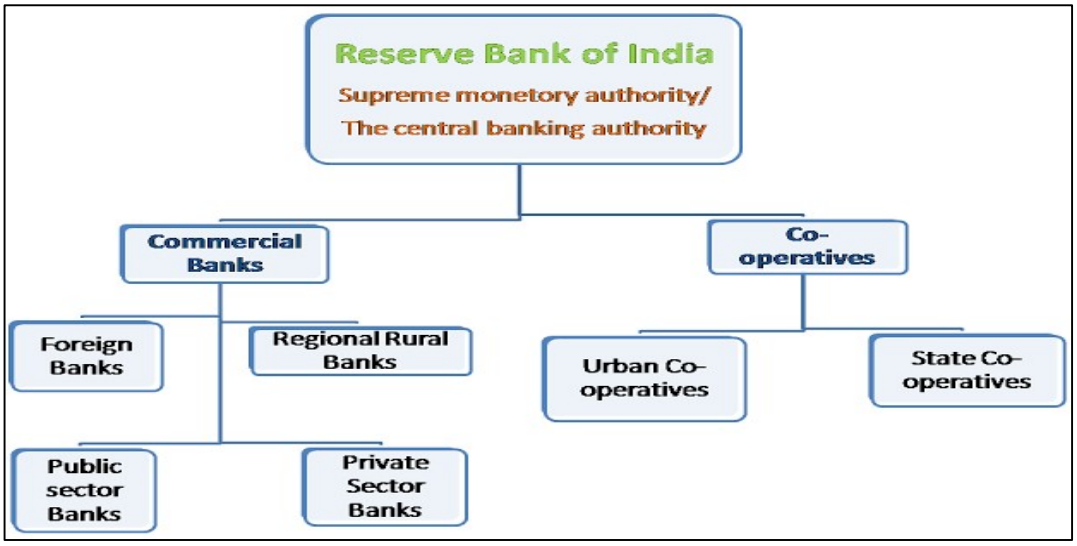
Figure 9.1 Bank Classification

Figure 9.2 Indian Banking System

Further the commercial banks can be divided under the following:

a) **Public Sector Banks**- Banks which are owned by government (i.e. more than 51% of stake) are known as public sector bank. Currently, there are 21 public sector banks in India from which 19 are nationalized. For e.g. SBI, PNB and BOB are top most leading public sector banks in India.

b) **Private Sector Banks**- Are those banks owned by private individuals or institutions. These types of banks are also listed under Indian companies Act 1956 as a limited company. For e.g. ICICI and HDFC are the top leading private sector banks of our country.



c) **Foreign Banks**- Are those banks which are not listed as an Indian company or organization. These banks are incorporated outside the country and they just have some branches in our country. Finally, we can say they are not operated from our country. Some examples of foreign banks are HSBC, etc.

d) **Regional Rural Banks**- Since the middle of 1970's, Regional Rural Banks came into existence in India. These banks were set up with the specific objective of providing credit and facilities of deposits especially to small and marginal farmers, agricultural labor and artisans and small enterprises. Rural development in respect of agriculture, trade, commerce and industry is the prime responsibility of Regional Rural Banks (RRBs) of India. Banks which are operated at state level but they are governed under the regulations of Reserve Bank of India. Some examples of RRB are Uttarakhand

Gramin Bank etc.

Non-Scheduled Banks

The banks which are listed under clause (c) of section 5 of the Banking Regulation Act, 1949 (10 of 1949) are known as Non-Scheduled Banks.

9.5 BANKING FUNCTIONALITY

Banking is the life blood of modern commerce. It has played a very important role in the economic development of all the countries of the world. We cannot think of modern commerce without banking.

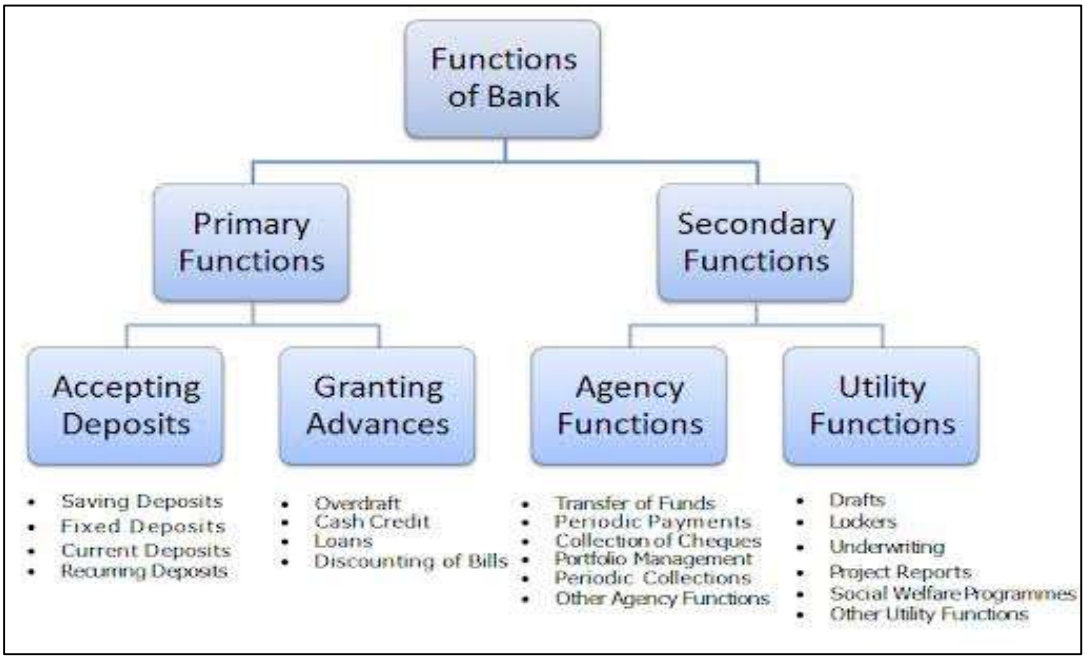


Figure 9.3 Basic Banking Functions

Banking is a business. Like any other business, banks are also profit-making organizations. Borrowing and lending constitute the banking business as these are the two basic functions of a bank. It should be noted that banking became out of the need of people for safe place of deposits. Later, banks realized that their business could be made profitable if the money they received was re-lent. Gradually, banks started providing many other services to the people. These are other tasks a modern banker performs. All these functions and services can be classified under primary functions and secondary functions.

Basic functions- The entire banking functionality is divided under the following: (i) Primary Functions (ii) Secondary Functions.

Primary Functions-

Primary functions include accepting deposits, granting loans, advances, cash, credit, overdraft and discounting of bills. Some of the primary functions of banks are discussed below

[1] Accepting Deposits- The most important activity of a commercial bank is to raise deposits from the public. Those who have surplus income and savings, find it convenient to deposit the amount with the banks.

Depending on the nature of the deposit, the money deposited with the bank also earns interest. Thus, deposits with the bank increase with accrued interest. If the rate of interest is high, the public is motivated to deposit more money with the bank. The bank also has the security of deposited funds. Banks are also called custodians of public money. Originally, money is accepted as a deposit to keep it safe, but since banks use this money to learn interest from people who need money, they share a portion of this interest with depositors. The amount of interest depends on the tenure - the time for which the depositor wants to keep the money with the bank - and the ease of withdrawal. The rule of thumb is: the longer the tenure, the higher the rate of interest, and the lower the ban on withdrawals, the lower the interest. Banks can accept the deposits from various sources like:

- Saving deposits
- Fixed deposits
- Current deposits &
- Recurring deposits

[2] Granting Advances/Loans

Another important feature of bank is the granting of loans and advances to their customers. Some types of Advances/Loans are:

- Overdraft
- Cash Credits
- Loans
- Bill Exchanges

Secondary Functions-

Secondary functions include issuing letter of credit, undertaking safe custody of valuables, providing consumer finance, educational loans, etc. Some basic secondary functions of banks are:

- Transfer of Funds from one location to another.
- Collection of Cheques from customers.

- Periodic maintenance of customer data.
- Periodic collections from other sources.

In addition to all above tasks bank has also performs some utility tasks like:

- Issue of Demand Draft and Letter of credits
- Locker facility for customer
- Accounting services for their customers
- Dealing with foreign exchange
- Various social welfare programmes.

9.6 TYPES OF ACCOUNT HOLDERS IN BANKS

Bank accounts are of different types which are used to serve different needs. Also, the usage of accounts depends on our goals, it's always good to put the money into the best account and attain good benefits from it. Doing this allows us to make growth in our money or return from our bank. Basically, the prime objective of banks is to collect money from the public. Therefore, for this purpose accounts are to be opened in the bank. In India, anyone who is legally capable can open an account with a banker. While going through the types there are different types account holders.

Individual Account Holder (Single or Joint)-

An individual can open his/her account in the following two categories:

Single account- It means account could be operated singly mode or an individual can only operate the account.

Joint Account- This kind of account is opened when more than one individual want to operate from the same account. It could be opened in the names of two or more persons. When an individual wants to open joint account with a bank, then a precise set of instructions has to be accepted by all the account holders in writing like which members are entitled to draw cheques from the account, in the event of the death who will be the nominee of the account etc. This document (in written) has to be signed by all the account holders in whose names the joint account has been opened.

Company Account-

A company can also open the account in its name, but the account has been taken care of by company owners.

9.7 METHODS OF REMMITTANCES

Remittance is a process of money transfer. In this process, an individual or group of individuals can use various banking techniques to transfer the money from their accounts to any other account globally. In India, banks offer various kinds of methods to perform remittances some of them are discussed below:

a) **Demand Drafts-** Demand draft is an order made from one bank to another branch of the same bank, for paying the specified amount (mentioned in draft) to an individual in his/her account or in his/her name. As the name suggests a draft is always payable on demand. Banks are authorized to issue a draft at their branch for sending the money from one account to another account or account of another individual. As per the Section 85-A of the Negotiable Instruments Act (Made by the government of India) "Demand draft is an order to pay money, drawn by an office of the bank at another office of the same bank for the amount of money payable to order on demand". An individual can buy a demand draft by paying the amount in advance to the respective bank. After this, bank issues the draft to an individual. The bank also makes the additional charges for providing this service.

b) **Banker's Cheque-** Another service offered by the bank for transferring the money. In this process, a cheque which is payable by a bank itself is payable for a simple cheque which is payable from the funds of a particular customer's account. This is a cheque which is usually received by the bank customer (by paying additional value), the point being that the person receiving the cheque has the security to know that it is payable by the bank and thus not bounced. A banker's cheque or bankers draft is a cheque (or cheque), where the amount is withdrawn directly from a bank's funds from a person's account. This is a negotiable instrument to order and draw all the provisions applicable to the investigation of an order and is valid for six months from the date of issue and may be invalid in actual cases.

c) **Truncated Cheque**- The present system of cheque clearance is paper based; it makes the involvement of exchanging the cheques physically. This exchange of cheques requires a clearing cycle of 3 to 7 days. Generally, most of the cheques are cleared in a cycle of three days, these cycles are long and banks delay the receipt of value by customers.

d) **Electronic Fund Transfer (EFT)** - Electronic funds transfer or EFT refers to the usage of IT enabled services for performing various transactions related with money transfer. This deals with the usage of computer-enabled systems for performing various financial transactions electronically. The EFT is a term which can be further used for a number of different concepts some of them are mentioned below: (i) Transactions initiated by cards i.e. debit/credit. (ii) Electronic cheques i.e. CTS enabled cheques. Electronic fund transfer provides a mechanism for electronic payments of amounts and collections of

money. In today's scenario, EFT is one of the safest, secure, efficient and less expensive techniques rather than using of paper cheque payments and collection.

e) **RTGS (Real Time Gross Settlement)** - RTGS is the process of settling the payment of an individual as per his/her order. This is also known as the special fund transfer technique where transfer of money can be done from one bank to another bank as per the permissions of account holder. In this system, transfer of money can be done in real time or gross basis. This system was carried by top three leading banks of India in 1985 but in 2005 this has been raised to 90 banks. This system can be operated by central bank of a country so as per the Indian context RBI (Reserve Bank of India) is responsible for all the financial transactions done under RTGS. Implementation of RTGS is an historical event in the history of Indian economy/banking. This system has been proved as an important mile stone for Indian banking system. One of the major benefits of RTGS system is that it minimizes the settlement risks or making the payment in real time basis. This system is designed to transfer the funds on real time basis i.e. no waiting is required for transferring of money.

f) **NEFT (National Electronic Fund Transfer) -** The NEFT is a nation-wide payment system which allows one-to-one funds transfer between accounts. In this system, an individual account holder can electronically transfer funds from any of the bank's branch to any other individual which had an account with any other bank branch in the country participating in this scheme. This scheme has been initiated in the year 2005 by the Reserve Bank of India. The central bank of India i.e. RBI acts as the custodian for this scheme. It is responsible for resolving all the concern issued raised from this system. Recently, the government of India has raised the working hours for this scheme i.e. on 27*7*365 days (on any time basis).

g) **IMPS (Immediate Payment Service)** - As the name suggests, this system allows the instant payment of money from anywhere and anytime basis. Initially this was the only system which allows the payment between accounts on any time basis but now government has allowed NEFT transaction also to be round the clock or any time basis. One major difference between IMPS and other service like NEFT, in IMPS there is a limitation of certain amount for transfer but it get transfer on real time basis whereas this could not be possible for NEFT i.e. it new some time to get transfer the amount to another's account.

h) **SWIFT (Society for Worldwide Interbank Financial Telecommunication) -** This is a payment body which is acceptable world-wide. The SWIFT system allows the financial systems globally to send and receive information at global level. This is also known as a messaging network which is used by financial institutions to securely transfer the information and instructions through a standard system of codes at global

level. In this system, each participating body get an eight- or eleven-digit code for transferring/exchanging the money between them. The important key feature about this system is its global acceptance world-wide. Originally, this system was introduced in 1970's and used at global level or transfer of funds between two or more countries.

9.8 TECHNOLOGY IN BANKING

Technology in Indian banking is already transforming the new concepts and facts in financial services, allowing rapid change in the traditional banking landscape in few years. Involvement of safety features through technology, such as advanced cryptography and biometrics, ensure the protection to banks against scams, and remote applications and also make sure that maximum of your tasks are completed without having to visiting the branch.

Technology in banking has brought up a complete paradigm shift in the present functioning of banks and delivery of banking services to its customers. Days are gone when every banking transaction required a personal visit to the branch. In today's scenario, most of the financial transactions could be done from one's home and customers need not visit the bank branch for doing the same. Growth of technology in the financial sector has expanded due to Internet and mobiles. The IT (Information technology) enabled solutions available today is being leveraged in customer satisfaction, driving automation and many more. Most of the IT initiatives of banks in India started in the late 1990s, or early 2000, with an emphasis on the implementation of core banking solutions (CBS), atomisation of bank branches and centralisation of all the financial operations in the CBS.

Over the last decade of Indian banking sector, it has been observed that most of the banks are capable of offering technology enabled services. While moving from a manual and scale-constrained environment, it is difficult to predict the adverse scenario where the banking sector was in the era before the reforms, when a simple money deposit or withdrawal of money would require a whole day. Use of ATMs, mobile banking and various online bill payments facilities allowed the customers to complete their tasks by without visiting the branch. Use of the technology in banking services is provided by the term called E-banking as discussed below.

E-Banking-

It is also known as web banking or in common terms "Internet Banking". In 1997, ICICI bank was the only bank in India offering internet banking services. But today, most of the new-generation banks offer the same to their customers. It allows the easy and safe accessing of our banking records on 24*7*365 basis i.e. any time banking. Technically it is the use of networking where all banking systems are connected with each other. Through this a customer can access his saving account as well as other financial details through his computer or mobile phone. E-banking services are provided under the following phases:-

Phase I- Under this all the banking services are offered by bank website itself. The customer needs to register himself to attain these services.

Phase II- Customer can access his bank account details through various devices like smart phone, laptops, desk top etc. Under this scheme, customer can access the various services like checking their account balance, etc by e-banking.

Phase III- Bank allows its customer to use e-banking facilities to operate accounts for funds transfer, bill payments etc by making collaboration with third party.

Benefits of E-banking- E-banking is beneficial for both bank and customers. Some are discussed as follows:

For Banks-

- Less expensive due to reduced transaction costs.
- Less Error.
- Reduced paper work.
- More and effective services to customers.

For Customers-

- It is very convenient to customer to access account details.
- Fast and time saver for customers.
- Any time access for account details.

E-Banking Services-

E-banking services are provided to customers through the following:

- **ATM**- ATM is the automation of the Teller. The first ATM appeared in London in 1967 whereas in India the first ATM was setup in 1987 by HSBC bank in Mumbai. An ATM is an electronic cash dispensing and accepting machine. Banks installed these machines to dispense cash to the bank customers for 24*7*365 basis. For availing ATM services, customer needs to apply for ATM service to the bank and giving a prescribed fee a customer can avail this service. In general, banks make certain restriction in using this service like limitation on cash withdrawal and limit on certain transactions.
- **Debit/ Credit Card-** Debit Card or Credit Card are the two-service provided by the bank to his customers. Both of them are payment card that has been issued to the customers for making the payments. The major difference between Debit and Credit Card is in case of debit card the customer can avail the services of cash withdrawal or payments of bills by using his saving bank account i.e. debit card is linked with

customers saving bank account. Whereas credit card also allows the customers to pay for various goods and services or get cash from ATM machine but after some time the amount has to be repaid to the bank by the customer i.e. one can say it is a type of unsecured loan provided by the bank to his customers as per his credit history/ good will.

- **Mobile Banking-** This is a system when bank would provide its services to his customers through mobile phone/smart phone. Under this service, the user can access his account details through mobile devices and it can also use this to make bill payments or transfer money from one location to other location.
- **E-Wallet(s)** - E-wallet is an e-card concept i.e. a user can use this service by using through online mode. E-wallet is a concept where user can link its saving bank account. In response to this a customer can get a user name and password for sending the payment to respective site. Some popular Wallets are: BHIM (Bharat Interface Money), IRCTC, PAYTM, MOBIWIK, AMAZON PAY, PhonePe, etc.

9.9 POINTS TO REMEMBER

- Banking is a service for deposit or withdrawal of money from the bank for the customer.
- E-banking- When customers are availing all the banking services through online mode it is said to be e-banking.
- NEFT (National Electronic Fund Transfer)- Online service provided by the banks for transferring the money through online mode.
- IMPS (Immediate Payment Service) - Online service provided by the bank for the immediate transfer of money from one customer to another customer.
- E-wallet- Used by the customers for paying money during online shopping, etc.

9.10 GLOSSARY

- SB- Saving Bank Account
- BHIM- Bharat Interface Money
- E-Wallet- Electronic Wallet
- SWIFT- Society for Worldwide Interbank Financial Telecommunication
- ATM- Automation of the Teller
- EFT- Electronic Fund Transfer
- FPPI- Faster Payments Innovation Index.

9.11 CHECK YOUR PROGRESS

Descriptive type questions-

a) What do you mean by bank?

b) Explain the stages in evolution of Banking in Europe and India.

c) Define the functions of banks.

d) What do you mean by e-banking? List the benefits of e-banking.

Objective type questions-

a) Which of the Following cannot be used for online payment (s):

[A] NEFT [B] IMPS [C] Demand Draft [D] Debit Card

b) Following are the payment wallets:

[A] Mobiwik [B] BHIM [C] Amazon Pay [D] All

c) Which of the following can be used for making Instant payment?

[A] IMPS [B] Banker Cheque [C] NEFT [D] All

d) Banking service that can be used to make international payment (s):

[A] SWIFT [B] Cheque [C] Cash [D] All

e) Credit card is a kind of loan provided by bank. (True / False)

f) Demand drafts are same as of banker cheque. (True / False)

g) ICICI and HDFC are government sector banks. (True / False)

h) Nationalize bank means government bank(s). (True / False)

Answers (Objective type questions)-

[a] C [b] D [c] A [d] A [e] True

[f] False [g] False [h] False

9.12 BIBLIOGRAPHY/ REFERENCES

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9.13 SUGGESTED READINGS

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UNIT- 10

OFFICE MEETINGS

10.1 INTRODUCTION

Office meetings are an intrinsic part of running a business. They allow for the business to have a common objective. They also allow every employee and department in the business to know what they should be doing. Essentially, they allow everyone to work towards a common goal. A meeting is important because it helps a group to reach a common decision when urgent and crucial matters need to be discussed and brainstormed through personal interaction. E-mail or conference call may not effectively iron out any issues arising in the office. The objective of a meeting is to provide updates, deliver announcements, solicit feedback, share information and participate in a team environment. Meetings should have a detailed agenda, a time limit and a designated moderator to be effective.

10.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Know meetings types
- Know the importance of meetings and essential elements of meeting.

10.3 OFFICE MEETINGS

Meetings can be of various types based on formality, purpose, use, legality, participation and more. Types of meetings are; formal meetings, annual general meetings (AGM), statutory meetings, board meetings, and informal meetings. Meeting or plural form "Meetings" can be defined as; "A gathering of people; as for a business, social, or religious purpose."

We know how important part meetings play in our professional lives. But they also have a significant role in other parts of our life. Meetings can be of various types based on formality, purpose, use, legality, participation and more. However, the main principle of the meeting is remaining common: a gathering of people.

Types of Meetings-

[1] Informative- the purpose is to give information to the participants about a new scheme, product, etc.

[2]Consultative- the members are consulted to solve a problem.

[3]Executive- decisions are taken by those empowered to do so.

In practice, most of the meetings serve more purposes than one. Some additional classifications of meetings are – meeting for negotiation purpose, meeting for giving instructions, etc.

Purposes of Meetings-

The purposes of holding meetings are listed here in a skeleton form:

- To reach a common decision/agreement.
- To solve a problem.
- To understand a situation, exchange ideas and experiences.
- To inform, explain, present ideas.
- To give and get feedback on new ideas.
- To give training.
- To plan and prepare for action.
- To resolve differences and misunderstandings.

- To generate enthusiasm and seek cooperation.
- To review past performance and evaluate it.
- To create a feeling of continuity and solidarity in a body's working.

Advantages of Meetings:

- **Save time:** Since one can meet a number of people at a time, a meeting can save time.
- **Addressing groups:** One can divide the audiences according to their background and need, and address them group by group.
- **Cope with information explosion**: New technology and new regulations are coming thick and fast. Meetings enable us to cope with this situation.
- **Social and emotional support:** Members get personal support from each other when they meet and exchange ideas.
- **Feeling of being consulted:** Members get the feeling that they have been consulted and this is useful in getting their intelligent and willing cooperation.
- **Democratic functioning:** Democracy aims at achieving all people's welfare by all people's involvement. This is possible through meetings.
- **Idea development:** Ideas are systematically cross-fertilized, analyzed and improved by a group.
- **Defusing troublemakers**: By collective constructive forces, troublemakers can be isolated in a meeting and positive action gets going. The opponents of a plan get a forum to voice their opposition, which can be overcome before a group of supportive people.
- **Bolder decisions**: Collectively we can take more adventurous decisions because of united strength.
- **Various interest groups represented**: In a meeting many interest groups can be represented and minorities can also be given due attention.
- **Preventing mistakes:** A meeting helps avoid mistakes by a collective and many-angled focus on issues.

Disadvantages of Meeting:

- **Time-consuming:** Meetings require a number of people to come together at the same time and place. This costs time because other work has to be set aside for the sake of the meeting.
- **Inability to arrive at a decision**: Just as "two heads are better than one," it is also true

that "too many cooks spoil the soup." Multiplicity of views and personal stubbornness of members may prevent a meeting from taking a decision which a chief executive may take alone.

- **Lack of seriousness:** Many meetings suffer from the drawback that members come unprepared and feel that the others will do the thinking and talking. They feel they can take a free ride. "Everybody's job is nobody's job."
- **Inexpert chairing**: Just as an airplane is steered by a pilot, a meeting is piloted by the chairperson. His lack of skill and personal failings/biases may fail a meeting.
- **Expensive:** Meetings are expensive to arrange – they require a place, paperwork, prior communication, and travelling by the attendees.
- **Open to disruption**: A meeting is prone to being disrupted by an element that is opposed to its objective. There are times when one passenger's refusal to adjust himself delays the entire flight. The same for meetings. The spirit of give-and-take may be missing in some participants. In this mechanical age, union is strength, and united work is done by means of meetings. It is estimated that worldwide, millions of meetings are conducted every day, and their number and usefulness is on the rise. That is why although many negative remarks are made about the use of meetings; on the whole we find that meeting is a useful device of collective decision-taking and action.

Meetings can also be classified as follows:-

1. Management Committee Meetings

Management Committee meetings are vital to the effective functioning of the committee and its ability to carry out its role. They are the means by which the Committee exercises its collective responsibility for leading the organisation.

2. Management Sub-Committee Meetings

Under management sub-committee meetings, some powers may be delegated to members, office bearers or to sub-committees. A sub-committee is a small group of people assigned to focus on a particular task or area, such as finance or personnel. A sub-committee generally makes recommendations to the Management Committee for decision.

3. General Meetings

A general meeting is a meeting of a company's shareholders (unlike a board meeting, which is a meeting of the directors). Companies Act 2013 2006 provides the statutory framework for the calling and conduct of general meetings.

4. Annual General Meetings

AGM's are held once a year to assess the trading of the organization over the year. All shareholders are invited to intend the GM but they must be given 21 days notice.

5. Board Meeting

Board meetings are held as often as individual organizations require. They are attended by all directors and chaired by the Chairman of the board.

6. Statuary meeting

Statutory meetings are called so that the directors and shareholders can communicate and consider special reports companies are required by law to hold these statutory meetings.

7. Formal meetings

The rules of conduct of formal meetings are laid dozen in a company's Articles of Association and/or Constitution or Standing Orders. With such meetings, a quorum must be present, i.e. the minimum number of people who should be present to validate the meeting. A formal record of these meetings must be kept, usually by the company secretary.

8. Informal meetings

Informal meetings are not restricted by the same rules and regulations as formal meetings. Such meetings may take the form of brainstorming or discussion sessions where strict agendas may not be necessary and minutes may not be kept. However, it is usually considered good business practice for an agenda to be issued to all members before the meetings so that they can be prepared adequately to make valuable contribution. These meetings are attended by a group of managers who may need to discuss a specific matter, report of progress reports. For example, the marketing manager, sales manager, production manager, and research and development manager may meet to discuss the launch of a new product being launched soon.

9. Celebrations

A celebration is a special enjoyable event that people organize because something pleasant has happened or because it is someone's birthday or anniversary

10. Rituals/Services

A ritual is a sequence of activities involving gestures, words, actions, or objects, performed in a sequestered place and according to set sequence.

10.4 NOTICE

A notice of meeting is a document informing the members or directors of a company about an upcoming meeting. This document specifies the date, time and place of the meeting and the general nature of the business to be transacted at the meeting. When a meeting is to be

convened, a notice is required to be sent to all who are to attend it. It should satisfy the following conditions:

a) It should be under proper authority.

b) It should state the name of the organization.

c) It should state the day, date, time, and place. Also, sometimes, how to reach the place.

d) It should be well in advance. Some require seven days notice, some 48 hours.

e) It should state the purpose and, if possible, the agenda.

f) It should carry the date of circulation and convener's/secretary's signature.

g) It should go to all persons required at the meet.

h) It should mention the TA/DA etc. payable and the arrangements for this.

In practice, it is necessary to ensure that the notice has reached in time. This may be done telephonically. Dispatch section and post are prone to delays. We often find that between the date of a letter from a major public organisation and the post mark on the letter, there is a gap of 10-12 days. A notice that should reach seven days before a meet should not reach seven days after the meet.

Example of format of Notice-

Address of the Company

Notice

Notice is hereby given that a meeting of the Board of Directors of the Company will be held at 3.30 P.M. on Thursday, the 30th day of October, 2008 at Corporate Office at 19, Gandhi Road, New Delhi110001, India, to interalia consider the following business as under:

i. To consider and approve the unaudited financial results for the quarter ended 30.09.2008 and submit to auditor of the company for limited review as per Clause 41 of the Listing Agreement.

ii. Any other business with the permission of the chair which is incidental and ancillary to the business

Authority **Name and Signature of the**

10.5 AGENDA

An agenda is a list of meeting activities in the order in which they are to be taken up, beginning with the call to order and ending with adjournment. It usually includes one or more specific items of business to be acted upon. It may, but is not required to, include specific times for one or more activities. An agenda may also be called a docket, schedule, or calendar. It may also contain a listing of an order of business. Agendas most often include: Informational items - sharing out updates regarding a topic for the group. For example, a manager may provide an update on the year-end planning process. Action items - items that you expect the group will want to review during the meeting.

Types of Agenda

There are a variety of agenda formats; the purpose and type of meeting will determine which agenda format to use. Types of agendas typically include- Informal, formal, prioritized and timed. Familiarizing yourself with each agenda format will allow you to effectively choose the proper type for your needs.

Three Key Elements of Meeting Agendas

- Basic information like the location, names of expected participants, date, start time and end time of the meeting.
- The topic and the person responsible for it.
- An objective for each item, or for the meeting in general.

Contents of a Meeting Agenda

- Be short, simple, and clear.
- Be informative and practical.
- Have the date, time and location of the meeting.
- State which issues will be discussed and in what order.
- Be the outline for the meeting minutes.
- Help you predict the results of the meeting.

10.6 RESOLUTIONS

A resolution is the final form of a decision taken at a meeting by voting on a motion, with or without amendment. A Resolution must not be confused with a motion. A motion is con-sidered at a meeting, a resolution is the outcome of the discussion. A resolution is binding on the organisation. It becomes effective when it is passed but minutes make the evidence of such resolution. Sometimes there is a legal formality, as we find in the Companies Act, to file a copy of a resolution with some appropriate authority (e.g., the Registrar of Companies) to make it effective.

Rules Regarding Resolution-

Every association has to function guided by the resolutions adopted at the meetings at different levels- resolutions passed at general meetings, at executive meetings and at committee meetings, if any. In an Assembly or in Parliament proposed Bills are passed in the forms of resolutions which become the Acts subsequently. Therefore, the importance of reso-lutions is immense. Certain rules have to be strictly observed for passing resolutions.

(1) The drafting of a resolution has to be carried out with great care so that the purpose or meaning of the resolution is easily and clearly understandable and there is no ambiguity (double meaning). The secretary, who is supposed to be an expert in the line, helps in the drafting process. The motion itself shall be drafted in such a manner that it can be adopted as a perfect resolution. This is particularly true for a formal resolution.

(2) There are different styles and forms of drafting a resolution. Any one style can be followed. It is desirable that a formal resolution is drafted in a specialized style.

(3) A resolution must be entered in the Minute Book in verbatim, i.e., word for word.

(4) Once a resolution is passed it cannot be revoked or cancelled either at the same meeting or at any subsequent meeting by passing another resolution.

Types of Resolutions-

Broadly speaking, resolutions are of two types:

(1) Ordinary Resolution:

This type of resolution has the following characteristics:

(a) This can be passed by a simple majority of votes and even by a margin of one vote. It can be passed (or lost) by the casting vote of the chairman.

(b) This type of resolution is necessary to take decisions on ordinary matters of the association

(c) This is the most common type of resolution.

(d) Formalities for passing such a resolution (unlike a special resolu-tion) are not so strict.

(2) Special Resolution:

This type of resolu-tion has the following characteristics:

(a) It needs a specific margin of votes to be passed. For example- two-third majority or three-fourth majority. Every association in its bye-laws mentions what shall be the margin. There may be statutory rules too. For example, the Companies Act states that there shall be three-fourths majority out of the members present (in person or by proxy) and voting. According to

our Constitution, any Article of the Constitution can be altered by two-thirds majority of all the members of Parliament.

(b) Such resolutions are necessary when any decision has to be taken affecting the very constitution of the organisation, e.g., altering the objects of the organisation

(c) This type of resolution is not commonly necessary.

(d) There may be strict formalities to be followed for the purpose (as found in the Companies Act).

Concept of types of resolutions comes mostly from the Companies Act. There are various types of resolutions mentioned in the Com-panies Act, mainly applicable to members' meetings.

Resolutions as found in the Companies Act:

(1) Ordinary Resolution:

According to Sec. 189(1), an ordinary resolution is that which can be passed at a general meeting by simple majority (including a casting vote of the chairman, if any), votes being cast by the members present either in person or by proxy and either by show of hands or by poll.

(2) Special Resolution:

According to Sec. 189(2), a special resolution is that which can be passed at a general meeting, votes being cast by the members present either in person or by proxy and either by show of hands or by poll, provided that (a) in the agenda it is mentioned that the resolution shall be passed as a special resolution, (b) a notice has been duly issued and (c) three-fourth of the votes cast are in favour of the resolution.

It has to be noted that at a Board meeting there is no question of any special resolution. But, sometimes to pass a particular type of resolution the consent of all the directors present is necessary. (In the past, special resolution was known as extraordinary resolution).

(3) Resolution with Special Notice:

According to the Companies Act, certain resolutions require a special notice for their validity. The resolution itself may be passed as an ordinary resolution. The notice for a members meeting is prepared and issued by the Board of Directors (the secretary does it in practice) and the agenda is included in the notice.

If any member who wants to move any motion at the meeting must be given the opportunity to do it and generally for that this Section has been provided. According to Sec. 190, certain resolutions, as wanted by the Act or as mentioned in the articles, require special notice.

It means that a member, intending to move a resolution, shall give a notice to the company at least fourteen days before the meeting and the company shall circulate the notice of the resolution to all the members at least seven days before the meeting.

Suppose, a director is to retire by rotation and his name has been mentioned in the notice as offering for re-election A member wants to propose the name of another person. He must send the name of that person at least fourteen days before the meeting and the company shall circulate the name at least seven days before the meeting (Sec. 257).

(4) Resolution by Circulation:

The Board of Directors of a Company (or the members of a committee appointed out of the directors of a company) may pass a resolution without holding a meeting. This can be done by circulating a draft of the resolution together with necessary papers, if any, to all the directors (or the members of the committee) at their usual address in India, and who are in India.

10.7 MINUTES

Minutes, also known as minutes of meeting (abbreviation MoM), protocols or, informally, notes, are the instant written record of a meeting or hearing. They typically describe the events of the meeting and may include a list of attendees, a statement of the issues considered by the participants, and related responses or decisions for the issues.

The name "minutes" possibly derives from the Latin phrase minuta scriptura (literally "small writing") meaning "rough notes". Minutes may be created during the meeting by a typist or court reporter, which may use shorthand notation and then prepare the minutes and issue them to the participants afterwards. Alternatively, the meeting can be audio recorded, video recorded, or a group's appointed or informally assigned secretary may take notes, with minutes prepared later. Many government agencies use minutes recording software to record and prepare all minutes in real-time.

10.8 ABBREVIATIONS AND TERMS USED IN BUSINESS CORRESPONDENCE

acct. (account)	fwd. (forward)	n.d. (no date)
Assn. (Association)	FY (fiscal year)	oz. (ounces)
bal. (balance)	G.M. (general manager)	pd. (paid)
bldg. (building)	gr. (gross)	qty. (quantity)
CEO (chief executive officer)	hdlg. (handling)	recd. (received)
cont. (continued)	ins. (insurance)	sec. (secretary)
dis. (discount)	Ltd. (Limited)	treas. (treasury, treasurer)
dtd. (dated)	max. (maximum)	V.P. (vice-president)

ea. (each)	min. (minimum)	whsle. (wholesale)

10.9 POINTS TO REMEMBER

Requisites of a Meeting-

If the business transacted at a meeting is to be valid and legally binding, the meeting itself must be validly held. A meeting will be considered to be validly held, if:

- It is properly convened by proper authority.
- Proper notice must be served.
- Proper quorum must be present in the meeting.
- Proper chairman must preside the meeting.
- Business must be validly transacted at the meeting.
- Proper minutes of the meeting must be prepared.

10.10 GLOSSARY

- **Agenda-** The plan for a meeting, lists the items to be discussed in the order in which they will be discussed.
- **Amendment**- Proposed modification to a motion which is not in conflict with the general thrust of that motion. If the amendment is adopted it becomes part of the original motion (now called 'motion as amended' or 'substantive motion').
- **Apologies**- Formal notifications of inability to attend a meeting.
- **Brainstorming**- A technique used to gather ideas from a group; it involves the members of the group thinking of as many ideas as they can in a short period of time.
- **Business Arising**- Discussion on any matter recorded in the minutes of the previous meeting.
- **Chair**- The person who controls the conduct of the meeting, a sort of umpire.
- **Consensus**- A type of group decision making. It involves coming to a decision acceptable to all members of the group without a vote being taken.
- **Constitution**- A document setting out the fundamental principles governing the running of an organization. It normally includes such things as the goals of the organization, membership requirements, rights and fees, meeting times, voting rights and standing orders for meetings.
- **General Business**- The body of the meeting where the main objectives of the meeting

are discussed.

- **Minutes**- The formal written record of a meeting. Copies are circulated to attendees and those who apologized (and sometimes to other interested parties), and formally confirmed at the next meeting as being a true record.
- **Motion**- A formal statement, usually involving some proposed action, put to a meeting for discussion and subsequent decision by vote.
- **Mover**- The proposer of a motion.
- **Motion of Dissent**- A formal statement involving some proposed action, put to a meeting for discussion and subsequent decision by vote.
- **Other Business**- An item on the agenda (usually the last) that provides an opportunity for those present to suggest additional matters for discussion.
- **Point of Order**- A formal complaint (to the chair person) at a meeting that a speaker is being irrelevant, unduly repetitive, exceeding prescribed time, speaking out of turn or in some way violating standing orders.
- **Procedural motion**- A motion aimed at changing the sequence or timing of events at a meeting, rather than one which addresses an agenda item.
- **Quorum**- Minimum number (or percentage of those invited) required being at a meeting for it to proceed legitimately.

10.11 CHECK YOUR PROGRESS

Descriptive type questions

a) What are the essentials elements of a notice?

b) What do you understand by minutes?

c) Define Resolution by Circulation.

d) Discuss the types of meeting in detail.

e) What do you understand by Agenda?

Objective type questions

a) CEO means

[i] Chief Electricity Officer [ii] Central Electronics Organization

[iii] Chief Executive Officer [iv] Chief Examination officer

b) What is not essential for a valid meeting?

[i] Notice [ii] Chairman [iii] Agenda [iv] Uniform

Answer (Objective type questions)

[a] iii [b] iv

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UNIT- 11

MANAGEMENT INFORMATION SYSTEMS

11.1 INTRODUCTION

A management information system (MIS) is a broadly used and applied term for a three-resource system required for effective organization management. The resources are people, information and technology, from inside and outside an organization, with top priority given to people. The system is a collection of information management methods involving computer automation (software and hardware) or otherwise supporting and improving the quality and efficiency of business operations and human decision making. As an area of study, MIS is sometimes referred to as information technology management (IT management) or information services (IS). Neither should be confused with computer science.

11.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Define management information system (MIS).
- Understand the need, importance and purpose of MIS.
- Understand the role of information management in decision making.
- Describe various decision-making models.

11.3 WHY MIS?

Managers make decisions and decision-making generally takes a four-fold path-

- Understanding the need for decision or the opportunity.
- Preparing the alternative course of actions.
- Evaluating all the alternative course of actions.
- Deciding the right path for implementation.

MIS is an information system that provides information in the form of standardized reports and displays for the managers. MIS is a broad class of information systems designed to provide information needed for effective decision making. Data and information created from an accounting information system and the reports generated thereon are used to provide accurate, timely and relevant information needed for effective decision making by managers. Management information systems provide information to support management decision making, with the following goals-

- Pre-specified and pre-planned reporting to managers.
- Interactive and ad-hoc support for decision making.
- Critical information for top management.
- MIS is of vital importance to any organization, because −

  It emphasizes on the management decision making, not only processing of data generated by business operations.

  It emphasizes on the systems framework that should be used for organizing information systems applications.

The purpose of using MIS-

- "A formal method of collecting timely information in a presentable form in order to facilitate effective decision making and implementation, in order to carryout organizational operations for the purpose of achieving the organizational goals". Walter I. Kennevan defines MIS as "An MIS is a system designed to provide selected decision-oriented information needed by management to plan, control and evaluate the activities

of the corporation. It is designed within a framework that emphasizes profit planning, performance planning and control at all levels."

- MIS is very useful for efficient and effective planning and control functions of the management. Management is the art of getting things done through others. MIS will be instrumental in getting the things done by providing quick and timely information to the management.
- Reports give an idea about the performance of men, materials, machinery, money and management. Reports throw light on the utilization of resources employed in the organization.
- MIS is helpful in controlling costs by giving information about idle time, labor turnover, wastages and losses and surplus capacity.
- By making comparison of actual performance with the standard and budgeted performance, variances are brought to the notice of the management by MIS which can be corrected by taking remedial steps.
- MIS brings to the notice of the management strength (i.e., strong points) of the organization, to take advantage of the opportunities available.
- MIS reports on production statistics regarding rejection, defective and spoilage and their effect on costs and quality of the products.

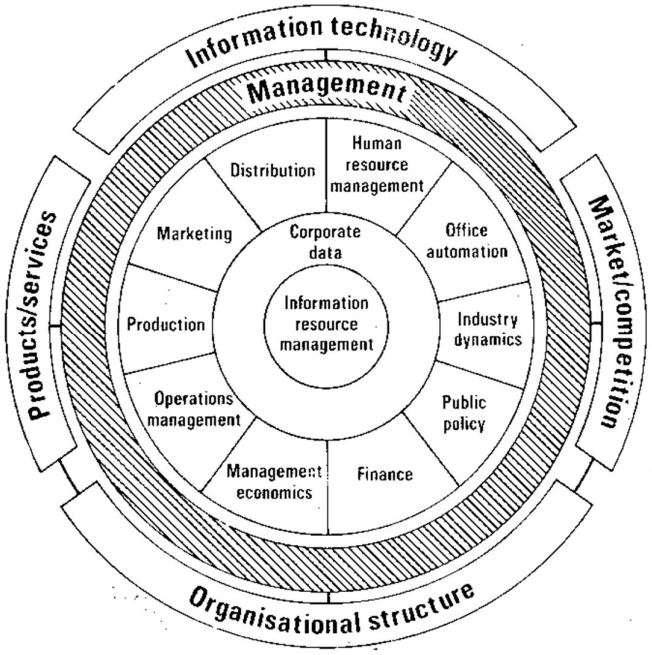
11.4 INFORMATION AS A STRATEGIC RESOURCE

It is impossible to neglect the impact of information and information technologies on the strategy of companies nowadays because of its important role in competition. Since competitiveness is getting stronger and stronger in most of the industries, new competitors are emerging, the environment is also changing and the expectations of clients are continuously altering, managers are those who should not allow themselves to stay indifferent in such situations.

Today, information can no longer be treated as a source of competitive advantage, but a competitive necessity. It penetrates in all aspects of an organization, crosses data processing and information systems department. The information potential can be realized by the means of appropriate management and knowledge of the organizational and cultural aspects. No automatic profits come from investments in information technologies since management has the responsibility for exploitation of the information technology potential. During the last two decades, companies have learned how to manage financial, human and material resources. The changes of the management of these resources depend on the access, processing and means of information. A receipt of information resource management is impossible to be

given, neither is desirable because the approach should be structured and flexible and managers are those who should possess it.

The managers of an organization should be well-informed of the profits of the appropriate information and information technology. The most important questions for them are: What information is needed so that the company can fulfil the set strategic aims? Which skills or products will be an advantage over competitors? What is the current strategy in order to beat competitors? And what information is needed to form it? Successful organizations are those



who are learning and adapting and have a flat simple structure and information is inseparable part of their activity. That is why managers should be trained how to use it effectively. Information Resource Management (IRM) defines the way in which the organization will accomplish its business when using different information resources in order to make its short-term strategies. This management is unique even for companies with identical products and/ or services. Information Resource Management includes the management of all kinds of data, numbers, texts, images and sounds available in making the proper strategy at a certain moment. This is why managers are responsible for the provisions of the appropriate information concerning the business and decision making.

Information impacts on all aspects of the organization: marketing, distribution, production, operations management, management economics, finance, public policy, industry dynamics, office automation, human resource management as shown on the figure above. The wheel is spinning round and in its centre is Information Resource Management. Information and communication technologies provide continuous information flow, which the organization should use in forming its corporate strategy and accomplishing its management activities in decision making. Of great importance for organizations is their flexible management style.

That is why a great quantity of information and its optimal use is needed especially by decision-makers in the processes of decision making. The more information is used the better for the company. The better the instrument of using this information, the better the decision will be. The better the decision will be the less the risks for the company are. For this reason, information is an important resource which should be managed appropriately and thus it increases the company's chances of success. The effective management is day to day even every minute because the environment is changing very fast and it should respond to its quick changes. Consequently, short run strategies are needed because of this and long run plans are no longer made. In this sense, the planning of information resources is of great value and should satisfy the needs of the organization.

Most of the strategies aim to increase production, to increase sales or to increase profit and these can be achieved by current use of information. For example, a number of the applications of information technologies lead to a great decrease in costs since mediators are eliminated. So distribution costs no longer exist, personnel costs are diminished exclusively and also the deadlines of delivery are lessened to a great extent. Consequently, the prices of the products/ services are decreased substantially which means that people are encouraged to buy more. This eventually increases sales and profit of the company and of course the quantity of production needed should be greater. When production is higher the costs per product or service is less and the profit is higher. The assimilation of information is a challenge for every manager because the participation of information in company management leads to a higher effectiveness and better results in forming the competitive strategy. Managers should pay attention to six basic problems concerning information and its use in organization:

- Information impacts different companies in different ways. This is the reason why management approaches and instruments and their use should be chosen appropriately.
- Coordination and control of information should be established.
- Education of the organization in using information in forming short run strategies.
- Decisions about building or buying of appropriate information technologies should be precisely made and information about them should be collected.

11.5 USE OF INFORMATION FOR COMPETITIVE ADVANTAGE

A company gains competitive advantage by providing a product or service in a way that customers gain more value than with a competitor. However, it is not information technology that gives a company a competitive advantage; it’s the way they use information technology that makes the difference. Businesses need to use information technology innovatively.

Innovation is the process of devising ways to do things in new and creative ways. Using information technology to tackle a business problem the same way the other companies have been doing is probably not going to give a firm the competitive advantage. The company has to invent or develop creative ways to create something new their competitors don't have yet. Below listed points represents the use of Information Technology (IT) in Competitive Advantage as-

[1]The CEO's Attitude toward Information Technology-

The CEO's vision can influence how managers think about things within their company, including information technology. If the CEO understands that IT can be a powerful competitive weapon, a message is relayed to the entire organization; that coming up with creative IT ideas can lead to a company's growth and improved customer satisfaction. Company leadership is very important in determining its competitive advantage using information technology.

[2] To bridge the gap between business people and technical people-

Business people must understand the use of Information technology to gain competitive advantage. In this case, they work hand in hand with a technical team to achieve this goal. Designing an information system that gives the competitive advantage needs at least two things. First, it requires an understanding of the business problem you are trying to solve. Second, it requires knowledge of available technologies to use in designing a creative solution for the business problem. It's beneficial for business people to study management information systems (MIS). Doing so will help them better analyse technical issues if the need arises.

[3] To view business problems from another Perspective-

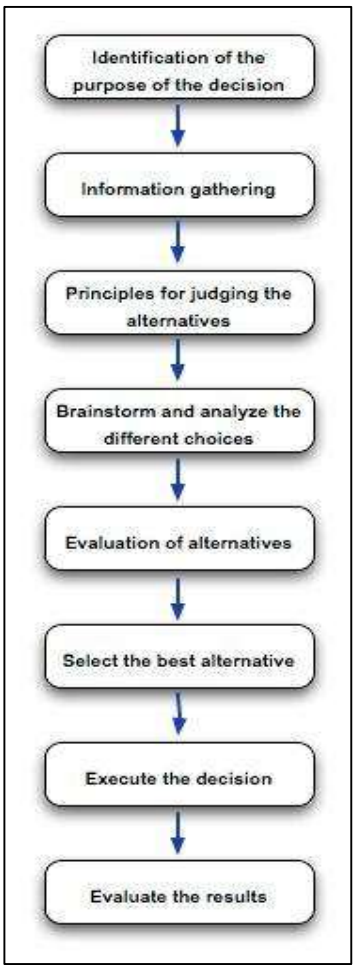
It is imperative to view a business problem from the perspective of your customers. These are the owners of your business, not you, because, without them, the business will not survive. IT can provide businesses with valuable information to better understand the needs and requirements of their customers and stakeholders. Being informed of limitations and inconveniences experienced by the customer should result in the more effective use of resources to resolve these issues.

[4] Use in Creative Designing-

Creative design of an IT system is one that solves the business problem in a new and highly effective way. One of the biggest mistakes most business people make when designing new information systems is to come up with a design that is typical, something very similar to what other companies are doing.

11.6 INFORMATION MANAGEMENT

Information management (IM) is the process of collecting, storing, managing and maintaining information in all its forms. Information management is a broad term that incorporates policies and procedures for centrally managing and sharing information among different individuals, organizations and/or information systems throughout the information life cycle. Information management may also be called information asset management.



Information management is generally an enterprise information system concept, where an organization produces, owns and manages a suite of information. The information can be in the form of physical data (such as papers, documents and books), or digital data assets. Information management deals with the level and control of an organization's governance over its information assets. Information management is typically achieved through purpose-built information management systems and by supporting business processes and guidelines. Moreover, IM also focuses on how that information is shared and delivered to various recipients, including individuals and different computing devices such as an organization's website, computers, servers, applications and/or mobile devices.

As per the definition given by Davis in 1997, Information management (IM) is the process by which relevant information is provided to decision-makers in a timely manner. Information management has largely been defined from an information systems perspective and equated with the management of information technology. IM is a generic term that encompasses all the systems and processes within organisations for the creation and use of corporate information.

11.7 DECISION-MAKING

Decision-making is a cognitive process that results in the selection of a course of action among several alternative scenarios. Decision-making is a daily activity for any human being. There is no exception about that. When it comes to business organizations, decision-making is a habit and a process as well. Effective and successful decisions result in profits, while unsuccessful ones cause losses. Therefore, corporate decision-making is the most critical process in any organization.

In a decision-making process, we choose one course of action from a few possible alternatives. In the process of decision-making, we may use many tools, techniques, and perceptions. In addition, we may make our own private decisions or may prefer a collective

decision. Usually, decision-making is hard. Majority of corporate decisions involve some level of dissatisfaction or conflict with another party. Let's have a look at the decision-making process in detail. Following are the important steps of the decision-making process. Each step may be supported by different tools and techniques.

Step 1 − Identification of the Purpose of the Decision

In this step, the problem is thoroughly analysed. There are a couple of questions one should ask when it comes to identifying the purpose of the decision.

What exactly is the problem?

Why the problem should be solved?

Who are the affected parties of the problem?

Does the problem have a deadline or a specific time-line?

Step 2 − Information Gathering

A problem of an organization will have many stakeholders. In addition, there can be dozens of factors involved and affected by the problem.

In the process of solving the problem, you will have to gather as much as information related to the factors and stakeholders involved in the problem. For the process of information gathering, tools such as 'Check Sheets' can be effectively used.

Step 3 − Principles for Judging the Alternatives

In this step, the baseline criteria for judging the alternatives should be set up. When it comes to defining the criteria, organizational goals as well as the corporate culture should be taken into consideration.

As an example, profit is one of the main concerns in every decision-making process. Companies usually do not make decisions that reduce profits, unless it is an exceptional case. Likewise, baseline principles should be identified related to the problem in hand.

Step 4 − Brainstorm and Analyse the Choices

For this step, brainstorming to list down all the ideas is the best option. Before the idea generation step, it is vital to understand the causes of the problem and prioritization of causes.

For this, you can make use of Cause-and-Effect diagrams and Pareto Chart tool. Cause-and-Effect diagram helps you to identify all possible causes of the problem and Pareto chart helps you to prioritize and identify the causes with the highest effect.

Then, you can move on generating all possible solutions (alternatives) for the problem in hand.

Step 5 − Evaluation of Alternatives

Use your judgment principles and decision-making criteria to evaluate each alternative. In this step, experience and effectiveness of the judgment principles come into play. You need to compare each alternative for their positives and negatives.

Step 6 − Select the Best Alternative

Once you go through from Step 1 to Step 5, this step is easy. In addition, the selection of the best alternative is an informed decision since you have already followed a methodology to derive and select the best alternative.

Step 7 − Execute the decision

Convert your decision into a plan or a sequence of activities. Execute your plan by yourself or with the help of subordinates.

Step 8 − Evaluate the Results

Evaluate the outcome of your decision. See whether there is anything you should learn and then correct in future decision making. This is one of the best practices that will improve your decision-making skills.

11.8 MODELS OF DECISION MAKING

The decision-making process though a logical one is a difficult task. All decisions can be categorized into the following three basic models.

- The Rational/Classical Model.
- The Administrative or Bounded Rationality Model.
- Herbert Simon's Model.

All models are beneficial for understanding the nature of decision-making processes in enterprises or organisations. All models are based on certain assumptions on which the decisions are taken.

[1] The Rational/Classical Model

The rational model is the first attempt to know the decision-making-process. It is considered by some as the classical approach to understand the decision-making process. The classical model gave various steps in decision-making process which have been discussed earlier. Features of Classical Model-

- Problems are clear.
- Objectives are clear.
- People agree on criteria and weights.
- All alternatives are known.

- All consequences can be anticipated.
- Decision makes are rational.

[2] The Administrative or Bounded Rationality Model

Decision-making involve the achievement of a goal. Rationality demands that the decision-maker should properly understand the alternative courses of action for reaching the goals. He should also have full information and the ability to analyse properly various alternative courses of action in the light of goals sought. There should also be a desire to select the best solutions by selecting the alternative which will satisfy the goal achievement.

Herbert A. Simon defines rationality in terms of objective and intelligent action. It is characterised by behavioural nexus between ends and means. If appropriate means are chosen to reach desired ends the decision is rational.

Bounded Rationality model is based on the concept developed by Herbert Simon. This model does not assume individual rationality in the decision process. Instead, it assumes that people, while they may seek the best solution, normally settle for much less, because the decisions they confront typically demand greater information, time, processing capabilities than they possess. They settle for "bounded rationality or limited rationality in decisions. This model is based on certain basic concepts.

Sequential Attention to alternative solution: Normally it is the tendency for people to examine possible solution one at a time instead of identifying all possible solutions and stop searching once an acceptable (though not necessarily the best) solution is found.

Heuristic: These are the assumptions that guide the search for alternatives into areas that have a high probability for yielding success.

Satisficing: Herbert Simon called this "satisficing" that is picking a course of action that is satisfactory or "good enough" under the circumstances. It is the tendency for decision makers to accept the first alternative that meets their minimally acceptable requirements rather than pushing them further for an alternative that produces the best results. Satisficing is preferred for decisions of small significance when time is the major constraint or where most of the alternatives are essentially similar. Thus, while the rational or classic model indicates how decisions should be made (i.e. it works as a prescriptive model), it falls somewhat short concerning how decisions are actually made (i.e. as a descriptive model).

[3] Herbert Simon's Model

This model is linked with the decision-making process which explains the core of the decision making and used as the base for explaining the decision-making process. According, the Herbert Simon Model, the process of the decision making consists of the following phases –

[i] The Intelligence Phase- In this phase, the various activities for finding out the problems related to the searching of the operating environment is involved. By this, the identification of the various conditions can be done which ultimately helps in taking the decisions at the different levels. Extensive and the comprehensive database is must for the intelligence phase, making this phase very suitable for searching or scanning of the environment.

In this phase, the type of the environment forms a very major factor and hence the types of the environment can be categorized as the follows-

[a] The Societal Environment: Mainly includes the economic, the legal and the social environment and it is this type of the environment in which the organization operates.

[b] The Competitive Environment: Includes the understanding and the analysing of the characteristics, the trends and the behaviour of or at the market place and also the various players of the market in which the organization operates.

[c] The Organizational Environment: Includes the various capabilities, the strengths, the weaknesses, the constraints and the various other factors that affect the ability of the organization to discharge or operate its various types of the activities.

[ii] The Design Phase- The inventing, developing and analysing of the various alternatives or the solutions to the particular problem forms a major part of this phase. Various steps to be followed in this phase can be summarized as the follows-

[a] Support in getting the in-depth knowledge of the problem.

[b] A correct model of the situation can be made and the assumptions of the model need to be tested.

[c] Support for the generation of the solutions can be obtained by- manipulation of the model for the development of the insights and creation of the database retrieval system.

[iii] The Choice Phase- The selection of a specific alternative or the course of the action from the ones which have been generated and considered during the design phase, takes place during this phase. The choice procedure and the implementation of the chosen alternative form a very major part of the choice phase. The flow of the activities takes place from the intelligence phase to the design phase and then finally to the choice phase. But, one very important point that must be remembered here is that at any phase there may be a return to a previous phase.

11.9 POINTS TO REMEMBER

- MIS is an information system that provides information in the form of standardized reports and displays for the managers.
- MIS is very useful for efficient and effective planning and control functions of the

management.

- MIS is sometimes referred to as information technology management (IT management) or information services (IS).
- Data and information created from an accounting information system and the reports generated thereon are used to provide accurate, timely and relevant information needed for effective decision making by managers.
- Business people must understand the use of Information technology to gain competitive advantage.
- Information management is generally an enterprise information system concept, where an organization produces, owns and manages a suite of information.
- Information management is a generic term that encompasses all the systems and processes within organizations for the creation and use of corporate information.
- Information management has largely been defined from an information systems perspective and equated with the management of information technology.
- Decision-making is a cognitive process that results in the selection of a course of action among several alternative scenarios.
- In a decision-making process, we choose one course of action from a few possible alternatives.

11.10 GLOSSARY

- Management Information System- MIS is an information system that provides information in the form of standardized reports and displays for the managers. MIS is a broad class of information systems designed to provide information needed for effective decision making.
- Purpose of MIS - MIS is very useful for efficient and effective planning and control functions of the management. Management is the art of getting things done through others. MIS will be instrumental in getting the things done by providing quick and timely information to the management.
- Use of Information - A company gains competitive advantage by providing a product or service in a way that customers gain more value than with a competitor. However, it is not information technology that gives a company a competitive advantage; it's the way they use information technology that makes the difference. Businesses need to use information technology innovatively.
- Information Management - Information management is typically achieved through

purpose-built information management systems and by supporting business processes and guidelines.

- Decision-Making - Decision-making is a daily activity for any human being. There is no exception about that. When it comes to business organizations, decision-making is a habit and a process as well. Effective and successful decisions result in profits, while unsuccessful ones cause losses. Therefore, corporate decision-making is the most critical process in any organization.
- Decision-Making Models - The decision-making process though a logical one is a difficult task. All decisions can be categorized into the following three basic models. Rational/Classical model, administrative or bounded rationality model and Herbert Simon's Models.

11.11 CHECK YOUR PROGRESS

Objective type questions-

a) MIS is stands for .....

b) MIS is very useful for efficient and effective ..... and ..... functions of the management.

c) MIS is sometimes referred to as ..... management.

d) Decision-making is a ..... process that results in the selection of a course of action among several alternative scenarios.

e) Business people must understand the use of Information technology to gain competitive advantage. (True / False)

f) Information management is not a generic term that encompasses all the systems and processes within organizations for the creation and use of corporate information. (True / False)

Descriptive type questions-

a) Explain the need and importance of management information system.

b) How information plays an important role in the resource management?

c) With the help of suitable example, explain the role of information in competitive advantage.

d) Describe the term information management with respect to MIS.

e) What is the importance of decision making in an organization?

f) Compare any two decision making models.

Answer (Objective type questions)-

[a] Management information system [b] Planning and Control

[c] Information technology [d] Cognitive [e] True [f] False

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UNIT- 12
E-FILE MANAGEMENT

12.1 INTRODUCTION

E-File management or electronic file management is the term which describes the process of importing, storing and managing the documents and images in form of computer files. It also includes scanning and capturing of the documents which leads to the process of digitization and removal of hard copies. This system involves the usage of computers for the management of personal/official registers. It also maintains the details about the file(s)/letter(s) send or received to and from the office. Here we need the respective software(s) which are developed to perform office specific tasks.

This is a workflow based process which incorporates all the existing features (as in manual file handling) efficiently in an electronic system. The E-File management system comprises of all the stages like creation of file, archiving of previous data etc. This electronic system of

file management allows the high level of transparency in an office management. It makes efficient decision making, which is quite easy to do from the records managed electronically. By using the system of electronic file management an organization can achieve high level of efficiency, transparency and accountability. This system makes the revolutionary change in the existing manual system of an organization. It implements for gaining some more objectives like paperless system etc. The government of India has also defined some standard guidelines and procedures for the designing of paperless office through its Department of Administrative Reforms & Public Grievances (DARPG).

12.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the role of electronic file
- Know about the needs of electronic file
- Know about the types and merits of electronic file
- Know about reports and its role

12.3 NEED OF ELECTRONIC FILE

As we are already aware that ICT (Information Communication and Technology) has changed the working culture or style of the peoples over the time. Also, technology plays a vital role in our society which leads to the development of E-File system for the management of the day to day activities at office level. While, following manual system (as earlier we are doing) for keeping paper based records we needs a lots of time, efforts and high cost of maintenance which inturn effects the productivity and efficiency of an organization on day to day basis. Therefore, due to various hindrances the organizations are planning for a solution that allows them to capture and keep the documents in digital formats which makes there accessing fast and easy. Including to this, the digital data also allows us to manage related documents in a single folder, as well as easy noting on the files can be done easily. While sending records from one location to another location the digital format of data is very easily transferrable in comparison to manual format of the data.

Due to the inefficient behaviour of manual file system a need of computerized and centralized file system has been raised by various departments. While talking about manual system of office management one of the toughest jobs is to track files and letters and as a result the computerized system of office management may ensure the tracking of files and letters with in no more time. While taking about Indian context, NIC i.e. National Informatics Center has developed electronic office management software known as File Tracking System. This software was used most of the government organization in India for management of official tasks.

While talking about the contents, electronic files are same as of physical files. As per the reports received from various agencies, nowadays about 93 percent documents are created in electronic form. Also, about 70 percent files are never migrated/ converted to paper. Therefore here we are discussing some issues that lead to the challenges while discovering an effective electronic file management system.

The enormity of electronic files is more than paper enabled documents-

In today's world due to enormity of electronic documents the disks size grows constantly. Also most of the , the organizations are using tablets, laptops and desktops for making their company related tasks like accounting, personal information etc in digital mode.

Due to the gigantic growth in the data density of electronic files is much greater than paper enabled files or documents. A survey have been conducted to know about the enormity behaviour of electronic files, as per this a middle size organizations have about 2 two million files. In general, a hard drive can contain about 1-2 million of files. Thus, it shows the high magnitude of data in electronic form.

Assortment of electronic archives is bigger than paper reports-

Paper archives can be records, staff documents, notes, updates, letters, articles, papers, pictures, and so forth this range of files exists likewise in electronic structure. Yet, at that point bookkeeping pages are far more mind boggling than record, for instance. They contain equations, may contain graphs, they can fill in as information bases, and so on Notwithstanding the extra data, for example diagrams, the electronic accounting page underpins experimentation with imagine a scenario in which form the pioneer might need to examine. To show the range conceivable in electronic records it is adequate to consider the most universal of them. An electronic file may consist of the following:

- A Spreadsheet- Especially used to perform calculative tasks such as all mathematical functions etc.
- Charts- They are used to represent the data graphically.
- Pictures- Use to represent images in our electronic file.
- Audio/Video components- These components are used to design audio/video enabled electronic files.
- Links to Web address- The electronic files are also used to associate our content with some web-enabled data; therefore to do this link facility is used.

Electronic files consist of attributes which are lacking in physical form of files-

An electronic file consists of data about our records, also termed as "metadata, for example, an electronic file may contain name of the originator, date of creation, date of last access etc. But at the same time it is very tough to mention all the constraints with a physical form of a

file. Also, the electronic files allowed us to choose various font names, sizes, and shades etc for our electronic files. This is quite very difficult while using physical form of files.

- Efficiency of electronic file is more than files in physical forms. File Efficiency can be measured through various factors like:
- Reduced Space- Files in electronic form needs less space in comparison to physical form of files.
- Easier to change- One can modify, update or merge the electronic files conveniently in comparison to physical files.
- Less Cost- Management of electronic files is quite convenient and less expensive due to easy maintenance.
- Fast Searching- Searching is one of the key measures which promotes the usage of electronic file system. Finding of data in required time duration is one of the key benefits of electronic file system.

12.4 BENEFITS OF EFILE MANAGEMENT SYSTEM

Some key points which show the benefits of E-File management system have been discussed below:

- **Reduced Time-** While using e-file management system one can access the files in very less time in comparison to a manual file system. By using this system one can indexed his/her content which makes its accessing and retrieval very fast.
- **Reduced Cost-** Using of paper based system needs a lot of papers, printing machines, cartridges, folders, pins etc for the implementation of manual system. This needs a huge amount of recurring expenses while usage of this system. Therefore, digitization of the system makes this cost reduced up to an extent level. Once a file or paper gets digitized it can be used multiple times, this makes our system very cost efficient.
- **Easy Accessing of File(s)-** Once the system/data get digitized, it makes our data easy to search and retrieve. According to the study by Price water house Cooper reveals that the average organization loses 1 out of 20 documents. It takes $120 in labour searching for each lost document and wastes 25 hours in labour recreating each lost document.
- **Achieving High Level of Security-** While using electronic file management once can achieve high level of security. There are various steps through which we can attain the security; some of them are discussed below:
  - ✓ By using password protection- We can assign the password to our files through which only authorized person can access the file(s).
  - ✓ By using Read only/Write only mechanism- We can use the file on read/write mode by using electronic office management system.

- ✓ By using this system we can assign file(s) to specific department or person.
- ✓ Auditing of data can be done reliably due to enhanced security features.

- **Consumption of Less Space/Area-** While using traditional file system we need a huge physical area for storing file(s)/data and it need to be increase on day to day basis.
- **Disaster Recovery-** While using a manual system, what happens if the locations (where we are storing our files) get destroyed, so we need to be very much careful while making the selection of location for storing the files/ folders while using a manual system. This selection of location is sometime very critical due to various geographical or catastrophic challenges like flood, fire etc. As a solution electronic file management system can resolve this issue up to a great extent. Here, we can save multiple copies of our data in digital format, which is very much helpful in making the recovery of our data while our original files get destroyed. We can also use a local backup facility at regular intervals which is one more solution in making a disaster recovery of our files.
- **Regulatory Solutions-** While using electronic file management system implementation of various regulatory standards can be done easily as in compare of manual office management system.
- **Easy Sharing-** While using electronic file management system it is easy to share the files between various departments located at distant locations, which saves time and money.

12.5 TYPES OF EFILE MANAGEMENT SYSTEM

An electronic file management system provides a technique for storing a large volume of digital data centrally. Most of these file management systems includes the features for retrieval of documents efficiently. Some of those file management systems are discussed below:

- **CMS (Content Management System)**

  CMS (Content Management Systems) are use to organize and deliver a wider range of data and media content in web enabled infrastructure to its users. Some common CMS are Joomla, Word Press etc. CMS is use to manage or share the file(s) or data through web pages. One can deliver the information kept in form of file(s) through this system.

- **Record Management System**

  In this system maintenance, creation and destruction of the records is done through a efficient and systematic process. This kind of system is mostly used by organizations i.e. government or at company level. There are some common activities performed under this system are as follows- (i) Identification of suitable content and capture it as a

record. (ii) Implementation of policies and regulations (of an organization) while record creation. (iii) Coordination of record accessing by making confidentiality and privacy of the content.

- **Document Imaging System**

  This is one of the important components of electronic file management system. This component is used to capture the files/information in the form of images i.e. by using the scanning facility. This system is incorporated with some devices like OCR (optical character recognition), scanner, image compression tools/devices, mass storage devices (i.e. external disks) etc. This component is also useful to convert our files or records in image form or vice versa.

- **Enterprise Content Management System**

  This is a solution which is designed for the management of a respective organization's documents or records. It can manage the unstructured content which can be made available right in form of MS-Word, MS-Excel, PDFs documents and scanned content that can be made available to the authentic users at the right time and correct location.

- **Work Flow Management System**

  A workflow management system (WFMS) is a system which provides an infrastructure to set-up the performance and monitoring system for a predefined sequence of tasks or processes.

12.6 SOME COMMONLY USED EFILE MANAGEMENT SYSTEM

Here, we will review some commonly used electronic file system and their features. These are the systems having their global acceptance with various characteristics.

- **pCloud**
  This is an electronic file system having the functionalities for the file management, sharing of the data, securing the data, file versioning, file backup, and digital asset management services. This system also maintains the log of activities performed in the system.

- **Hub Spot**
  This is an electronic file system which is especially designed for tracking the sales and other utilities related to sales and accounts. This system can also be merged with Gmail and Outlook services offered by the companies. Some common features supported by the system are email tracking, email scheduling and sales automation.

- **Knowledge Tree**
  This is an open source system used by organizations. This system supports common

interface file system (CIFS) which allows its usage with UNIX operating system also. Some common features like web content management, record & image management etc. Sometimes this system also provides the back-end support for managing the files.

- **Seed DMS**
  This is an open source electronic office management system. This system is particularly based on PHP/ MySQL and SQL lite. This system is especially designed for accessing/retrieving or storing of files. One important feature about this system is it availability for HTML files.

- **Worldox**
  Worldox is an electronic file management system which is use for managing documents and emails. It is a commercial and comprehensive system which is use to integrate the applications with various operating systems like Windows, Android, Mac, IOS, and Cloud.

- **CaseBox**
  This is a system especially designed for HRM (**H**uman **R**esource **M**anagement) of an organization. It allows the conditional logic for making the record management. It also provides an effective level of encryption based on SSL technique.

- **Dokmee**
  It is a cloud based electronic file management tool which provides an efficiency and security of our files or documents. This system provides a user-friendly environment for its users. In addition, it provides document-imaging and various tracking tools for the users to track their operations.

- **Feng Office**
  It is an open-source file management system incorporated with various web-based tools. It has some additional features like Gantt chart and various task management tools which are quite helpful in day to day operations of e-file management. Through this system tracking of emails of multiple users can be done in an effective way.

- **Logical Doc**
  It is a Java enabled open-source system which is accessible through a web-browser. This helps in improving productivity and collaboration of various files. It also allows itself to integrate with various third party applications through an API.

- **Nuxeo**
  It is an open source system which reduces the time consumption required for searching and retrieving the contents. But due to its complex implementation and typical customization process it is not user-friendly for beginners. Audit logging is another feature with this system.

12.7 MIGRATING TO EFILE SYSTEM

In the time of electronic era, it's stunning that 75 percent of users actually depend upon the collection of information manually. While it might also be very tough to physically regulate quality and wellbeing contents on the paper, also it isn't productive and leaves a lot of space for blunder. At the time when information collection isn't done appropriately, records can be change or lost, which also makes it hard to recover the data. Therefore, migrating from an existing system to electronic system is done under certain steps. So, while making the migration the following steps need to be followed by the users.

- **Standard Naming Conventions to be followed**
  Naming conventions are need to be followed strictly while migrating the manual system to digital system. We need to follow various testing protocols, specifications and naming concerns which need to be strictly followed in manual system so that while migration, the system can accomplish the task easily.

  This helps us in easy recovery and searching of records while using digital systems. While going through the naming concerns we have found some ideas that need to be followed by the users.

  - Keep name of file short and meaningfull.
  - Strictly avoid repetition of names in files and path.
  - Never use –(dash) or any special characters in files names.
- **Selection of Deployment Model**
  Selection of data collection software is another crutial step while migrating the manual system to digital system. Preferably, if we are digitizing the system spreaded in multiple location, cloud can be a favourable technology whereas incase of single location some on-premises solution could be finded out. In addition to above, the cost and maintenance are some other factors that also needed to be focused while selection of deployment model.
- **Digitization of Record**
  Changing over the current paper structures to electronic, organizations can be seen as an overwhelming assignments, yet working intimately with the product supplier's architects can significantly diminish the exertion. Depending on their experience to productively actualize a best-practice, arrangement will give your most obvious opportunity to extreme achievements.
- **Instill Change Management**
  While migrating the system, agile concept of software development can be used. This allows to complete our task in timely manner.

12.8 E- REPORTS

Electronic reports are use to configure the electronic files (e-file) as per the norms of various countries and regions. These are use to design the standards as per the norms. Various regulatory issues can be resolve by using this format. Reports in electronic form can be implemented with some common formats like text, word etc. This feature of reporting can be use to develop our own archive of reports that can be saved for future usage.

12.9 POINTS TO REMEMBER

- E-File management or electronic file management is the term which describes the documents and images in form of computer files.
- The E-File management system comprises of all the stages like creation of file, archiving of previous data etc.
- NIC i.e. National Informatics Center has developed electronic office management software known as File Tracking System.
- About 70 percent files are never migrated/ converted to paper.
- In the time of electronic era, it's stunning that 75 percent of users actually depend upon the collection of information manually.
- Common Interface File System (CIFS) allows its usage with UNIX operating system.
- CMS (Content Management Systems) are use to organize and deliver a wider range of data and media content in web enabled infrastructure to its users.

12.10 GLOSSARY

- NIC- National Informatics Center is an government department, which provides IT and various other online supports.
- CMS- Content Management System: Use to design various web applications in easiest mode for e.g. word press, Joomla etc.
- EFile- Electronic File: File(s)/content in digital format.
- CIFS-Common Interface File System: an Unix based file system.
- WFMS- Workflow Management System
- DARPG-Department of Administrative Reforms & Public Grievances
- OCR-Optical Character recognition

12.11 CHECK YOUR PROGRESS

Descriptive type questions-

a) What is Electronic File?Define Electronic File management System?

b) Discuss the need of Electronic File System? Explain in detail

c) Define the merits and dmerits of Electronic File System.

d) Explain any Five Electronis management system?

e) Define Migration.Explain the process of migration from manual to electronic system?

f) Define Reports and its types.

Objective type questions-

a) Electronic File System increases the time to search the file/data. [T/F]

b) OCR is a Software. [T/F]

c) We cannot migrate from manual system to online system. [T/F]

d) CaseBox is a hardware for E-File management. [T/F]

e) CISF is an … … … based system.

f) Joomal is an … … … based software.

Answer (Objective Type Question)-

[a] False	[b] False	[c] False
[d] False	[e] Unix	[f] CMS

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UNIT- 13

E-GOVERNANCE

13.1 INTRODUCTION

E-governance because of its scope and aims is highly relevant in today's era. In simple terms, it is the use of information communication technologies (ICTs) to carry out public services, that is to say, the use of the internet to ensure that services are delivered in a much more convenient, customer-oriented, and cost-effective manner. In other words, the e-governance is the application of Information Technology to the processes of government functioning in order to achieve a Simple, Moral, Accountable, Responsive, and Transparent (SMART) Governance.

In the overall perspective, the e-governance is simply the use of ICTs in the operations of government businesses, put in another way, it is the shift from the traditional method of carrying out government activities which is mainly hierarchical, linear, and one-way to the use of internet which enables the public to seek information at their own convenience and not really having to visit the office in person or when government office is open.

The major objectives of e-governance are to improve government processes (e-administration), connect citizens (e-citizens and e-services), and build external interactions (e-society). Despite these objectives, making and implementing decisions, proper leadership, putting in place organizational arrangements, ensuring resources and funding, establishing accountability and measuring success, telecommunications network, internal agency systems, cross-government systems, service delivery network access points, internet access, and skilled staff, better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient government management are the factors that must be taken into consideration for the success of e-governance implementation.

13.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the role of e-governance for smart administration.
- Define the importance of e-governance.
- Explore e-governance projects in India.
- Define the types and applications of e-governance.
- Know the challenges of e-governance in India.

13.3 E-GOVERNANCE: AN OVERVIEW

The ‘e’ in e-Governance stands for ‘electronic’. Thus, e-Governance is basically associated with carrying out the functions and achieving the results of governance through the utilization of Information and Communications Technology (ICT). Why countries around the world are increasingly opting for ‘e-Governance’? In the last few decades, the expectations of citizens from the government have increased manifold. ICT facilitates efficient storing and retrieval of information, instantaneous transmission of information, processing information & data faster than the earlier manual systems, speeding up governmental processes, taking decisions expeditiously & judiciously, increasing transparency, and enforcing accountability.

The primary purpose of governance is the welfare of citizens. While one aspect of governance relates to safeguarding the legal rights of all citizens, an equally important aspect is concerned with ensuring equitable access to public services and the benefits of economic growth to all. It is expected that e-governance would enable the government to discharge its functions more effectively and can be able to work with more transparency.

In India, during the initial stage of introduction of ICT in governance there was some resistance. There were also serious doubts about whether government employees at all levels

would be able to handle computers. As time passes, all goes beyond and fortunately all these misgivings have proved wrong.

Today, new technology makes the machine-human interface very user-friendly. The Information Technology (IT) and Information Technology Enabled Services (ITES) sectors have created millions of jobs besides improving vastly on the services provided by government undertakings like Banks, Airlines, Railways, etc.

As a country like India, with 1.3 billion population, more than 600,000 villages, growing economy coupled with increasing aspirations of the citizens for a better quality of life – use of Information Technology in improving government processes is not just become vital but essential and without which it would be extremely difficult, if not impossible, to serve its citizens efficiently and transparently and ensure participation of a larger number of people in decision making at all levels of government– Centre, State and local.

The National e-Governance Division (NeGD) is providing strategic direction in terms of framing policies and implementation strategy for the Digital India Programme in different domains of e-Governance. And also provides, proactive support to Central and State Governments for Mission Mode Projects (MMPs) and other e-Governance projects acting as a facilitator and catalyst for the implementation of the Digital India Program by various Ministries and State Governments.

The NeGD also ensures effective citizen engagement and communication with all stakeholders using offline and Social Media channels. The role of NeGD in training and development initiatives, including- development of competency frameworks, training guidelines, case studies, etc. and developing online and web-based training and setting up of Learning Management System, knowledge management and sharing through workshops, development of case studies, sharing best practises, creation of knowledge repositories, etc.

The e-governance is, in essence, the application of Information and Communications Technology to government functioning to create 'Simple, Moral, Accountable, Responsive, and Transparent (SMART) governance. The e-governance involves the use of ICTs by government agencies for any or all of the following reasons, as-

- Exchange of information with citizens, businesses, or other government departments.
- Speedier and more efficient delivery of public services.
- Improving internal efficiency.
- Reducing costs/increasing revenue.
- Re-structuring of administrative processes and improving the quality of services.

The e-governance aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and inexpensive. The goals of e-Governance are-

- Better service delivery to citizens.
- Ushering in transparency and accountability.
- Empowering people through information.
- Improved efficiency within Governments.
- Improve interface with business and industry.

13.4 IMPORTANCE AND BENEFITS OF E-GOVERNANCE

E-governance is about reforms in governance, facilitated by the creative use of Information and Communications Technology (ICT). The importance and benefits of e-governance are not limited in respect to good governance, and citizen empowerment, few of them are as follows-

- E-Governance brings governments closer to the citizens.
- Provide simplicity, efficiency, and accountability in the government- Applications of ICT to governance combined with detailed business process re-engineering would lead to simplification of complicated processes, weeding out of redundant processes, simplification in structures & changes in statutes, and regulations. The end result would be the simplification of the functioning of government, enhanced decision-making abilities, and increased efficiency across government– all contributing to an overall environment of more accountable government machinery. This, in turn, would result in enhanced productivity and efficiency in all sectors of government functioning.
- E-governance empowers people to gather information regarding any department of government and get involved in the process of government decision making.
- E-Governance strengthens democracy by ensuring greater citizen participation at all levels of governance.
- E-Governance leads to automation of services, ensuring that information regarding every work of public welfare is easily available to all citizens.
- E-Governance revolutionizes the way governments function, ensuring much more transparency in the functioning, thereby eliminating corruption.
- If the information regarding every activity of government is easily available, it would make every government department responsible as they know that every action of theirs is closely monitored.

- Expanded reach of governance- Rapid growth of communications technology and its adoption in governance would help in bringing government machinery to the doorsteps of the citizens. Expansion of telephone network, rapid strides in mobile telephony, the spread of internet, and strengthening of other communications infrastructure would facilitate the delivery of a large number of services provided by the government.
- Proper implementation of e-Governance practices makes it possible for people to get their work done online thereby sparing themselves of unnecessary hassles of travelling to the respective offices.
- Successful implementation of e-Governance practices offers better delivery of services to citizens, improved interactions with businesses, and industries.
- E-governance helps citizen empowerment through access to information, better management, greater convenience, revenue growth, cost reductions, etc.
- Enabling Environment for Promoting Economic development- Technology enables governments to create positive business climates by simplifying relationships with businesses and reducing the administrative steps needed to comply with regulatory obligations. There is a direct impact on the economy, as e-procurement creates wider competition and more participants in the public sector marketplace.

13.5 TYPES OF INTERACTIONS IN E-GOVERNANCE

The e-governance facilitates interaction between different stakeholders in governance using ICT, such types of interactions are grouped into the following, as-

Government to Government Model (G2G)-

The G2G refers to the online communications between government organizations, departments, and agencies based on a super-government database. Moreover, it refers to the relationship between governments. G2G model of e-governance aims to enhance and improve inter-government organizational processes by streamlining cooperation and coordination among various government departments/organizations. The efficiency and efficacy of processes are enhanced by the use of online communication and cooperation which allows for the sharing of databases and resources and the fusion of skills and capabilities.

Government-to-Business (G2B)-

Government to business is another type of e-governance model which enables significant efficiencies to both governments and businesses. G2B includes various services exchanged between government and the business sector services. The business services offered include obtaining current business information, new regulations, downloading application forms, lodging taxes, renewing licenses, registering businesses, obtaining permits, and many more.

Nowadays, the government-to-business (G2B) model has been receiving a significant amount of attention.

Government-to-Citizens (G2C)-

Government-to-Citizens (G2C) model of governance has been designed to facilitate citizen interaction with the government. It allows citizens to access government information and services instantly, conveniently, from everywhere. The government-to-citizen model of governance focuses on customer-centric and integrated electronic services where public services can be provided based on a 'one-stop solution' concept. This implies that every citizen can get single window access to government services. G2C model of governance facilitates several services to the citizens, e.g. certifications, paying governmental fees, and applying for benefits schemes of government, etc.

Government-to-Employees (G2E)-

Government is by far the biggest employer and like any organization, it has to interact with its employees on a regular basis. This interaction is a two-way process between the organization and the employee. Use of ICT tools helps in making these interactions fast and efficient on the one hand and increase satisfaction levels of employees on the other so that the G2E model of governance is a valuable model of smart administration.

13.6 E-GOVERNANCE PROJECTS IN INDIA

The Government of India (GoI) established the Department of Electronics in 1970. The subsequent establishment of the National Informatics Centre (NIC) in the year 1977 was the first major step towards e-Governance in India. In the early 1980s, the use of computers was confined to very few organizations. The advent of personal computers brought the storage, retrieval, and processing capacities of computers to Government offices. By the late 1980s gradually, with the introduction of common use software such as word processing and other kinds of software, the computers were put to other uses like managing databases and processing information, etc.

Advances in communications technology further improved the versatility and reach of computers, and many government departments started using ICT for a number of applications like tracking movement of papers and files, monitoring of development programmes, processing of employees payrolls, generation of reports, etc.

The main thrust for e-governance was provided by the launching of the National Informatics Centre Network (NICNET) in 1987, the national satellite-based computer network. This was followed by the launch of the District Information System of the National Informatics Centre (DISNIC) programme to computerize all district offices in the country for which free hardware and software was offered to the State Governments.

A National Task Force on Information Technology and Software Development was constituted in May 1998, while recognizing Information Technology as a frontier area of knowledge per se, it focused on utilizing it as an enabling tool for assimilating and processing all other spheres of knowledge. It recommended the launching of an 'Operation Knowledge' aimed at universalizing computer literacy and spreading the use of computers and IT in education.

In the year 1999, the Union Ministry of Information Technology was created. By the year 2000, a 12-point minimum agenda for e-Governance was identified by the Government of India for implementation in all the Union Government Ministries/Departments. Some glimpse of the agenda-

- Each Ministry/Department must provide Personal Computers (PCs) with necessary software up to the Section Officer level. Besides, Local Area Network (LAN) must also be set up.
- It should be ensured that all staff with access and need to use computer for their office work are provided with adequate training. To facilitate this, inter alia, Ministries/Departments should set up their own or share other's Learning Centres for decentralized training in computers as per the guidelines issued by the ministry.
- Each Ministry/Department should start using the Office Procedure Automation software developed by NIC to keep a record of receipt of 'dak', issue of letters, as well as the movement of files in the department.
- Payroll accounting and other house-keeping software should be put to use in day-to-day operations.

Emergence of the National e-Governance Plan (NeGP)-

About the future of e-governance, the lighting words by the great visionary Dr. APJ Abdul Kalam, former President of India, in his inaugural address at IIT Delhi (India) during 2003 at International Conference on 'e-governance' can be summarized as- "E-governance has to be citizen-friendly. Delivery of services to citizens is considered a primary function of the government. In a democratic nation of over one billion people like India, e-governance should enable seamless access to information and seamless flow of information across the state and central government in the federal set up. No country has so far implemented an e-governance system for one billion people. It is a big challenge before us."

About National e-Governance Division (NeGD)-

In the year 2009, National e-Governance Division was established by the Ministry of Electronics & Information Technology (MeitY) as an Independent Business Division under the Digital India Corporation. NeGD has played a pivotal role in executing e-governance

Projects and initiatives undertaken by Ministries/ Departments, both at Central and State levels. The roles and responsibilities of NeGD are-

a) Providing strategic direction in terms of framing policies and implementation strategy for the Digital India Programme in different domains of e-Governance.

b) Proactive support to Central and State Governments for Mission Mode Projects (MMPs) and other e-governance projects.

c) Acting as a facilitator and catalyst for the implementation of the Digital India Program by various Ministries and State Governments.

d) Providing technical assistance to Central Ministries/ State Line Departments in their e-governance projects either directly or in collaboration with professional consultants.

e) Undertaking technical appraisal of e-governance projects for examining issues like overall technology, architecture, framework standards, security policy, service delivery mechanism, sharing of common infrastructure, etc.

f) Developing generic / model Expression of Interest (EoI), Request for Proposal (RFP), Standard Contracts, PPP Models, and other related documents for various stages and requirements of projects for the use of States.

g) Ensuring effective citizen engagement and communication with all stakeholders using offline and Social Media channels

h) Impact assessment and e-Readiness measurement of e-Governance projects of all States / UTs.

i) Recruitment, deployment and HR management of specialised resources in the State e-Governance Mission Teams (SeMTs) in all States and UTs

j) Training and development initiatives, including- (i) Development of competency frameworks, training guidelines, case studies, etc. (ii) Developing Online and Web-based Training and set up Learning Management System (iii) Knowledge management and sharing through workshops, development of case studies, sharing best practises and creation of knowledge repositories, etc

Implementation Strategy for E-governance-

The approach and methodology adopted for NeGP contains the following elements-

- Common Support Infrastructure.
- Governance- Suitable arrangements for monitoring and coordinating the implementation of NeGP under the direction of the competent authorities have been set up.

- Centralized Initiative, Decentralized Implementation.
- Public-Private Partnerships (PPP) model is to be adopted wherever feasible to enlarge the resource pool without compromising on the security aspects.
- Programme Approach at the National and State levels.
- Ownership of Ministries- Under the NeGP, various Mission Mode Projects (MMPs) are owned and spearheaded by the concerned line ministries.

Some Mission Mode Projects implemented by NeGD-

[1] Unified Mobile Application for New-age Governance (UMANG)-

UMANG is envisaged to make e-governance. It provides a single platform for all Indian citizens to access pan India e-Gov services ranging from central to local government bodies and other citizen-centric services. UMANG intends to provide major services offered by central and state government departments, local bodies, and other utility services from private organizations. It provides a unified approach where citizens can install one application to avail multiple government services. UMANG service has been made available on multiple channels like mobile application, web, IVR, and SMS which can be accessed through smartphones, feature phones, tablets, and desktops.

Note- Download UMANG App by giving us missed call on 97183-97183 or Visit- https://web.umang.gov.in/web/#/

[2] DigiLocker-

DigiLocker system is a flagship initiative of the Ministry of Electronics & IT under the Digital India Programme. Targeted at the idea of paperless governance, DigiLocker aims to provide a digital wallet to every citizen of the country so that all lifelong documents/certificates can be electronically held under a single secure digital wallet. DigiLocker is a platform for issuance and verification of documents & certificates digitally, eliminating the use of physical documents. Indian citizens who sign up for a DigiLocker account get a dedicated cloud storage space that is linked to their Aadhaar(UIDAI) number.

Note- To access Digilocker visit at- https://digilocker.gov.in

[3] National Centre of Geo-informatics (NCoG)-

NCoG is a single source Geographic Information System (GIS) platform for sharing, collaboration, location-based analytics, and decision support system, catering to central and state ministries/departments/agencies across the country. Under this project, location-based datasets such as data related to central government land banks, mining, forests, industrial parks, water resources, etc. are collated with attribute related data to bring out insights that are useful to support decision making. User departments can now pinpoint their operations,

assets on a map, and plan better. NCoG has provided mobile applications for geo-tagging and creating evidence of completed operations under the Government schemes.

Note- To access NCoG visit at- https://ncog.gov.in/

[4]- Rapid Assessment System (RAS)

RAS is an online instant feedback for e-services (online as well as offline through counters) delivered by the Government of India and State Governments. The main objective of RAS is to continuously assess the quality of e-Services, through feedback, under each e-governance project and realign processes to achieve targeted benefits. RAS interface prompts the citizens to provide feedback about the quality of service immediately after the citizen avails an e-service of the Government. The analytic features of RAS help integrated departments in system improvement and better delivery of services.

Note- To access RAS visit at- https://ras.gov.in/

[5]- Program Management Information System (PMIS)-

PMIS build using open source technologies is used to track and monitor project initiation, planning, execution, and management. It can be utilized for Central/State/Integrated MMPs, Departmental and Adhoc projects under the Digital India programme.

Note- To access PMIS visit at- https://pmis.negd.gov.in/

[6]- OpenForge platform-

The objective of the OpenForge platform is to promote sharing and reuse of e-governance application source code. In 2015, the Ministry of Electronics & IT, Government of India rolled out the 'Policy on Collaborative Application Development by Opening the Source Code of Government Applications', which provides a framework for archiving government custom-developed source code in repositories and opening these repositories for promoting reuse, sharing and remixing. By opening the source code, the Government wants to encourage collaborative development between Government departments/agencies and private organizations, citizens, and developers to spur the creation of innovative e-governance applications and services.

The scope of the project includes the development of a Collaboration Platform under the 'Source Open Policy'. Further, it includes the creation of a project team, development and maintenance of the platform, on-boarding of departments, promotion of the platform, and community management. The community to be created and managed through the platform will be a key driver in bringing agility and quality to the application development process. It will also lead to further reuse and value addition to the e-governance software landscape.

Note- To access OpenForge visit at- https://openforge.gov.in/

[7]- Learning Management System (LMS)-

LMS is a software application that automates the administration, tracking, and reporting of training events. LMS is a pioneer project under e-Kranti (an e-governance plan initiated by the Government of India). It is widely recognised that there is a tremendous need to enhance the skill sets and to develop an adequate number of appropriately trained resources for handling a variety of tasks including those who are expected to design and deliver Government services to the citizens.

Note- To access LMS visit at- https://lms.gov.in/

[8]- Miscellaneous e-governance Projects in India-

- Passport Seva Project.
- Immigration, Visa and Foreigners Registration & Tracking (IVFRT).
- Insurance (Department of Banking)
- Income Tax (Ministry of Finance/Central Board of Direct Taxes)
- National Citizen Database/UID (Ministry of Home Affairs/Registrar General of India (RGI)/ Planning Commission, Now NITI Aayog).
- Central Excise (Department of Revenue/Central Board of Excise & Customs)
- Pensions (Department of Pensions & Pensioners Welfare and Department of Expenditure)
- Banking (Department of Banking)
- Land Records (Ministry of Rural Development)
- Road Transport (Ministry of Road Transport & Highways)
- Treasuries (Ministry of Finance)
- E-District (Department of Information Technology)
- Common Services Centres (Department of Information Technology)
- e-Courts (Department of Justice, Ministry of Home Affairs)
- e-Procurement (Ministry of Commerce & Industry/ DGS&D)
- And many more.

13.7 CHALLENGES OF E-GOVERNANCE IN INDIA

- Lack of motivation and awareness towards the role and importance of e-governance.
- Lack of citizen-centric nature of applications and poor cooperation among bureaucrats and people at the local level of governance.
- Lack of trust, poor technical designs which leads to lack of interoperability among distinct e-governance applications, and underutilization of ICT infrastructure resources.

- One of the challenges to attain the ability of high level of data abstraction is to maintain the privacy of data in designing e-governance applications.
- Authentication is very important to know the right user of the services or it may be misused by private competitors. Meanwhile, the digital signature plays a major role in providing authenticity. In fact, it is expensive and causes for frequent maintenance.
- Maintenance should be given due importance because IT ministry has been continuously developing new software to fill the current needs of citizens.
- Digital divide- Even in the era of science and technology, a huge gap exists between users and non-users of e-governance services. In India, majority of the masses, living below poverty line are deprived of government services. This gap needs to be made narrow, and then only the benefits of e-governance would be utilized equally.
- Infrastructure is essentially required for the implementation of e-governance as much as possible in India. Electricity, Internet, and poor adaptability of technology will retard the progress of e-governance. In the context of developing countries, there should be enough basic facilities to give an impetus to e-governance.

13.8 POINTS TO REMEMBER

- E-governance is simply the use of information communication technologies (ICTs) to carry out public services, that is to say, the use of the internet to ensure that services are delivered in a much more convenient, customer-oriented, and cost-effective manner.
- E-governance is the application of Information Technology to the process of government functioning to achieve a Simple, Moral, Accountable, Responsive, and Transparent (SMART) Governance.
- The major objectives of e-governance are to improve government processes (e-administration), connect citizens (e-citizens and e-services), and build external interactions (e-society).
- It is expected that e-governance would enable government to discharge its functions more effectively and can be able to work with more transparency.
- The National e-Governance Division (NeGD) is providing strategic direction in terms of framing policies and implementation strategy for the Digital India Programme in different domains of e-Governance.
- E-governance strengthens the democracy by ensuring greater citizen participation at all levels of governance.
- E-governance revolutionizes the way governments function, ensuring much more transparency in the functioning thereby eliminating corruption.

- The rapid growth of communications technology and its adoption in governance would help in bringing government machinery to the doorsteps of the citizens.
- E-governance helps citizen empowerment through access to information, better management, greater convenience, revenue growth, cost reductions, etc.

13.9 GLOSSARY

- CSC- Common Service Center.
- ERP- Enterprise Resource Planning.
- G2B- Government to Business.
- G2C- Government to Citizen.
- G2E- Government to Employee.
- G2G- Government to Government.
- GPS- Global Positioning System.
- ITeS- Information Technology enabled Services.
- MCA- Ministry of Corporate Affairs.
- NeGD- National e-Governance Division.
- NeGP- National e-Governance Plan.
- NISG- National Institute for Smart Government.
- PPP- Public Private Partnership.
- SMART- Simple, Moral, Accountable, Responsive, Transparent.
- SWAN- State Wide Area Network.

13.10 CHECK YOUR PROGRESS

Descriptive type questions-

g) What are the benefits of e-governance?

h) Explain the summarized view of e-governance in India.

i) List five major challenges of implementing e-governance in India.

j) Define in short, the various e-governance models.

k) Define briefly the role and responsibilities of the National e-Governance Division (NeGD).

l) List the name of ten miscellaneous e-governance projects in India.

Objective type questions-

g) Infrastructure is essentially required for the implementation of successful e-governance projects. (True/False)

h) One of the major challenges in implementing successful e-governance projects is a lack of motivation and awareness. (True/False)

i) The National e-Governance Division (NeGD) is providing strategic direction in terms of framing policies and implementation strategy for the Digital India Programme in different domains of e-Governance. (True/False)

j) PMIS stands for Prime Minister Information System. (True/False)

k) DigiLocker aims to provide a digital wallet to every citizen of the country where we can deposit the money. (True/False)

l) National e-Governance Division was established by the Ministry of .....

m) Government-to-Citizens (G2C) model of governance has been designed to facilitate citizen interaction with .....

Answer (objective type question)-

[a] True [b] True [c] True [d] False [e] False

[f] Electronics & Information Technology [g] Government

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13.12 SUGGESTED READINGS

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UNIT- 14
DATABASE CONCEPTS

14.1 INTRODUCTION

A database is a collection of information that is organized so that it can be easily accessed, managed and updated. Computer databases typically contain aggregations of data records or files, containing information about sales transactions or interactions with specific customers. The DBMS is the software which is used to manage database is called Database Management System (DBMS). For Example, MySQL, Oracle etc. are popular commercial DBMS used in different applications. DBMS allows users to perform the following tasks:

- Data Definition: It allows us the creation, modification and removal of definitions or structures that defines the organization of data in the database.
- Data Updation: It allows us the insertion, modification and deletion of the information/data in the database.

- Data Retrieval: It allows us in retrieving/accessing of data from the database which can be used by applications to achieve various objectives.
- User Administration: It allows us in registering and monitoring database users, it promotes the enforcement of security of database, monitoring performance is another achievement, maintainance of data integrity, dealing with concurrency control and recovering of data corrupted due to various unexpected failures.

Database Design is a collection of various processes which facilitate the designing, development, implementation and maintenance of database management systems i.e. DBMS. Databse designed by using certain rules are quite easy to maintain, it also improves a consistency of the data and are also cost effective in terms of a storage cost. As the user of the database a database designer will suggests us that how the data elements are correlated and what kind of the data is to be be stored in the database. The main concerns behind the database designing is to produce the logical and physical design models of the proposed database system.

A logical model of the database focuses on the data requirements and a stored data is always independent of its physical considerations. This model of database makes us not to concern about where and how to store the database physically. Whereas, A physical data design model involves translation of a logical design of the database onto a physical media by using various hardware resources and software systems like as database management systems (DBMS).

14.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the role of Database.
- Know about the needs of Database and DBMS system.
- Know about the types and merits of Database and DBMS.
- Know about the process of Normalization.
- Know about ER diagram and its need.
- Know about SQL and its classification.

14.3 ROLE OF DATABASE

Database concepts can also be used in marketing of various formats. It promotes the collection of customer's data like name of customer, addresses details, emails addresses, contact numbers, various transaction histories, customer support tickets, and so on. The information collected is then analyzed and used for creating a personalized experience for each customer, or to attract potential customers.

Who needs Database for Digital Marketing?

In today's world multiple businesses are using various database techniques for refining their direct marketing strategies, it also includes finance companies, various retailers, companies having technology expertise, internet service companies, insurance companies, and different Bussiness to Bussiness companies.

Usage of Database in marketing is particularly useful for outsized companies, which already have huge customer base, it also generates huge amounts of transactional data. The larger the initially collected data set, the more opportunities are generated for finding groups of customers and/or prospects which can be achieved by making customized communication.

Many of those well-built companies are attending the conferences or exibitions organized by Direct Marketing Association's annual National Center for Database Marketing, where various companies are making the discussion on how to improve database marketing. In 2011 various Exhibitors like American Express, Experian Marketing, Pitney Bowes, and the SAS Institutes have organized the conferences on database marketting. Some more companies like Microsoft, Farmers Insurance, General Motors, IBM, and the Whirlpool Corporation are recognized for their excellent performance with database marketing.

Benefits of Database in Marketing

In today's world consumers are expecting a personalized experience with the brand. To deliver this, a marketing company needs a specified view of each customer across every touchpoint. By making the analysis of the collected data the marketing companies can only understand the customer's journey and keep them in a meaningful way. Using of Database for various marketing strategies makes that easier.

Database designed for Customer can allow us the following:

- Finding the customer groups – from your most dedicated, highly-valued customers to first-time customers and occasional buyers.
- Making of detailed view of customer segments which was based on demographics, behaviors, or even personal interests of the customers.
- Creating of highly personalized messages for both current and forthcoming customers
- Determine the best channel and time for engaging customers.
- Improving our marketing efficiency by not wasting much time and money in making campaigns to those who are unlikely to respond as per our requirements.
- Creating and Building effective loyalty programs which provides the suitable incentives schemes for repeated sales.
- Improving of customer support service by providing support staff with a 24x7 view of the customer's satisfaction with our brand.

14.4 DATA MODEL(S)

Data models defines how the logical structure of a database is created or developed. Data Models are the basic-blocks which introduce the abstraction in a DBMS. Data model defines how the data is connected to each other and how they are processed and stored inside the system. While creating the database, intially the data model could be flat data-models, where all the data are to be kept in the same area. Previously, data models were not so logical, hence they are prone to introduce lots of redundancy and various anomalies.

Type(s) of Data Model

While talking about data model there are three different kind of data models: i.e. conceptual data models, logical data models, and physical data models, and each one of them have a specific concern. The data models are used to represent the data and how it is stored in the database for setting the relationship between data items.

- **Conceptual Data Model:** This data Model is use to define what the system contains. This model is mostly created and used by Business stakeholders and Data Architects. The function of this model is to organize, scale and define business concepts and rules.
- **Logical Data Model:** This defines how the system should be implemented which is independent of the DBMS(Database Management System). This approach of database is typically created and developed by data architects and business analysts. The objective of this technique is to developed the technical mapping of regulations and data structures associated with database design.
- **Physical Data Model:** This part of data model decribes the database, it specifies that how the system would be implemented by using a specific DBMS (Database Management System). This approach is typically developed by database administrator (DBA) and developers. The main objective of this approach is to devlop an actual implementation of the database.

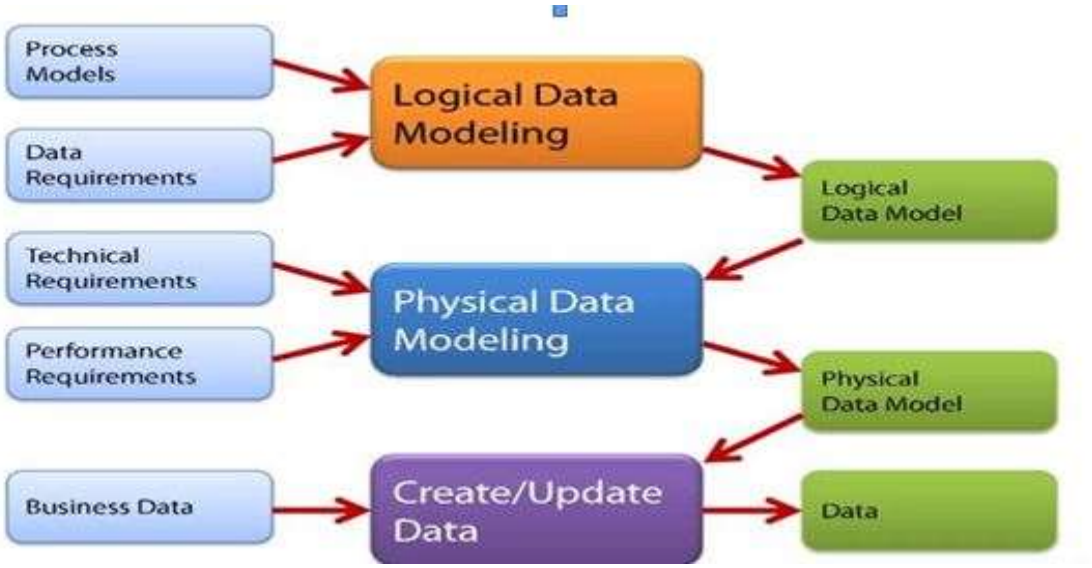

Figure 1- Data Model

14.5 DATABASE DESING AND RULES

Normalization is the process of database design which reduces the data repetition and eliminates the unwanted characteristics like Insertion, Update and Deletion Anomalies. The rule of normalization makes the division of larger tables into smaller tables and associate them by using relationships. Normalization is used mostly for the following two purposes:

- Eliminating repeated(useless) data.
- Ensuring the role of data dependencies i.e data is logically stored.

While we are not using the noramlization/design rules anomalies are the main concerns that needs to be resolved with the assistance of different rule(s). Some of the major anomalies we face are discussed below:

Roll_Num	Name	Branch	Head	Contact
1	Anil Kumar	CSE	Dr Ajay Tyagi	676767676
2	Ravi Kumar	CSE	Dr Ajay Tyagi	676767676
3	Neha Sharma	CSE	Dr Ajay Tyagi	676767676
4	Rakesh Saxena	ME	Dr Amrita	767676767
5	Abhinav Kumar	ME	Dr Amrita	767676767

While going through the above table we have identified the following anomalies:

Insert Anomaly

Suppose, If we want to insert the record for a new admission, until and unless a student opts for a branch, the student data cannot be inserted in a table, or else we need to enter NULL as

the branch information.

Update Anomaly

This anomalies deals "if Mr. Ravi Kumar (as per the table) leaves the college? or is no longer associated as the HOD of department of computer science ? In this situation all the student records named with Mr Ravi Kumar needs to be updated, and if incase if we miss any record of Mr Ravi Kumar, it will lead to a term called data inconsistency". This is known as Updation anomaly.

Delete Anomaly

As per the above **Student** table, we have stored two different kind of informations i.e. Information realted to Student and Branch information of the student. Therefore, while ending of the academic year, if records of student are deleted, we will also lose the information related with there branch. This is known as delete anomaly.

Therefore for managing the above mentioned anomalies we need to follow the various rules associated with the database design, which is also known as Normalization.

Normalization is the process which divided into the following heads or Normal Form(s):

First Normal Form (1NF)- If we need a table to be in 1NF then we need to follow the below mentioned guideline(s).

- A field must be Atomic i.e. It should only have single value.
- Columns are from same domain.
- All columns must be of unique names.
- Order and sorting of data does not matter.

Second Normal Form (2NF)- If we need a table to be in 2NF then one need to follow the below guideline(s).

- Table should be in the 1NF i.e. First Normal form.
- It also need to be in Partial Dependency.

Third Normal Form (3NF)- A table is said to be in 3NF Third Normal Form then we need to follow the guideline(s).

- It must be in 2NF i.e. Second Normal form.
- Removal of Transitive Dependency.

BCNF (Boyce Codd Normal Form)- Boyce and Codd Normal Form is also known as strict form of 3NF. This form deals with the certain type of anomalies which cannot be handled by 3NF. A table is in BCNF, if it does not allow the overlapping of candidate keys then it is said to be in BCNF. For a table to be in BCNF, following rule(s) must be there

- Table or relation must be in 3rd Normal Form

- For each (FD)functional dependency (X → Y), X should be a super Key.

Fourth Normal Form- For a table to be in 4NF i.e. Fourth Normal Form then,

- It is in the BCNF(Boyce-Codd Normal Form).
- It doesn't have Multi-Valued Dependency (MVD).

Fifth Normal Form- Fifth Normal Form (5NF), also known as Project-Join Normal Form (PJNF),it is a level of normalizing the database designed which is use to reduce repetition in relational databases (RDBMS) by isolating semantically related multiple relationships.

14.6 ENTITY RELATIONSHIP DIAGRAM (ER-DIAGRAM)

Entity-Relationship (ERD) Diagram is based on the notation of real-world entities and relationships between them. While describing the real-world scenario into the database model, the ER Diagram creates entity set, relationship set, general attributes and constraints. ER Model is mostly recommended to be used for the conceptual design of the database. ER Model is based on-

- Entities and their attributes.
- Relationships among various Entities.

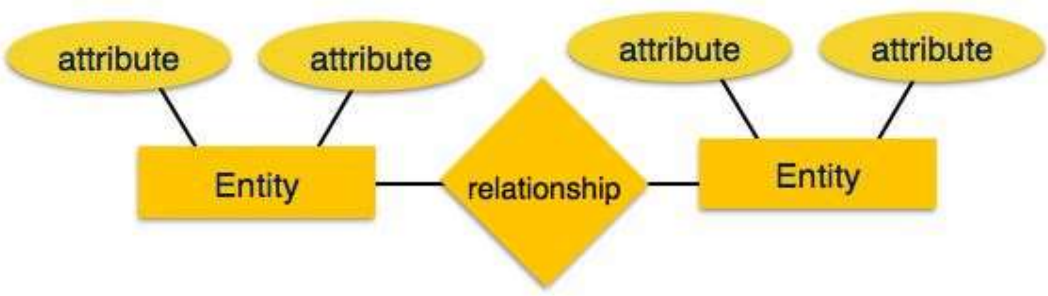

Figure 2- ER Model

Entity- An entity is an real-world object having properties known as an attributes. Every attribute is defined by a set of values known as domain. For example, in a college database, a student is considered as an entity. Whereas the student has various attributes like name, age, class, etc.

Relationship- The logical association between entities is known as relationship. Relationships are mapped with entities through various techniques. Mapping of cardinalities is defined as the number of association between two entities.

Relationship is divided into the following type(s)-

- **One to One-** When we are having relationship between two entities only then it is also known as one to one relationship.
- **One to Many-** When a single entity is connected with many entities then it is also known as One to Many relationship.
- **Many to One-** When an more than one entity is associated with a single entity then it is known as many to one.
- **Many to Many-** When more than one entities are associated with many entities then it is know as many to many.

14.7 INTRODUCTION TO SQL

SQL stands for Structured Query Language. It is designed for the management of data in a relational database management system (RDBMS). It is pronounced as S-Q-L or sometime known as See-Qwell. SQL is a language of database, which is used for creating the database, deleting the database, fetching the records, and modifying the records etc.

The chapter will give you a quick start to SQL (Structured Query Language). It covers most of the contents required for a understanding the basics Structured Query Language and to get a experience of how it works. SQL is used with all the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language. Some of the commonly used RDBMS/DBMs are mentioned below-

- MS SQL Server using T-SQL,
- Oracle using PL/SQL
- MS Access version of SQL is called JET SQL (native format) etc.

14.8 TYPES OF SQL

The basic SQL commands which is use to interact with relational databases are CREATE, SELECT, INSERT, UPDATE, DELETE and DROP. These commands are classified into the following groups-

[1] Data Definition Language (DDL)

DDL or Data Definition Language consists of the commands that can be used to describe the schema of the database. It simply deals with descriptions of the database schema and is specifically used to create and modify the structure of database objects in the database.

CREATE- Command is use to create the structure of the table/database.

Syntax [For creating the database]

```
Create database college;
```

Syntax [For creating the table]

```
CREATE TABLE table_name(
```

column1 datatype,
column2 datatype,
column3 datatype,
.....
columnN datatype,
PRIMARY KEY(one or more columns));

Example:

create table student(roll int,name char(20),address char(20))

ALTER- The ALTER TABLE command is used to add, remove, or modify the columns in an existing table.It can also be used to add and drop various constraints (rules) on an existing table.

Syntax:

Use to add column in a table
ALTER TABLE table_name
ADD column_name datatype;

Example:

Alter table student add state char(20);
Use to drop the Column
ALTER TABLE table_name
DROP COLUMN column_name;

Example:

Alter table student drop column state
Use to modify the column
ALTER TABLE table_name
ALTER COLUMN column_name datatype;

Example:

Alter table student
Alter column address char(10)

DROP- The DROP TABLE command is used to drop an existing table including data in a database.

Syntax:

Drop table table_name

Example:

Drop table student

[2] Data ManipulationLanguage (DML)

The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements.

SELECT- The SELECT command is used to select data from the table.

Syntax:

```
SELECT column1, column2, ...
FROM table_name;
```

Example:

```
Select * From Student;
        OR
Select Roll,Name From Student;
```

INSERT- The INSERT command is used to insert the new records in a table.

Syntax:

```
INSERT INTO table_name (column1, column2, column3, ...)
VALUES (value1, value2, value3, ...);
```

Example:

```
INSERT INTO student(roll,name,address) values(1,'ak','hld');
```

UPDATE- The UPDATE command is used to modify the existing records/data in a table.

Syntax:

```
UPDATE table_name
SET column1 = value1, column2 = value2, ...
WHERE condition;
```

Example:

```
UPDATE student
SET name="jk"
WHERE name="ak";
```

DELETE- The DELETE command is used to delete the existing data/record from the table.

Syntax:

```
DELETE FROM table_name
WHERE condition;
```

Example:

```
DELETE FROM student
WHERE name="ak";
```

[3] Data Control Language (DCL)

DCL includes commands such as GRANT and REVOKE which mainly deals with the rights, permissions and other controls of the database system. Examples of DCL commands: GRANT-gives user's access privileges to database.

GRANT- SQL Grant command is specifically used to provide privileges to database objects for an user. This command also allows users to grant permissions for other users too.

Syntax:

GRANT privilege_name
ON object_name
TO {user_name |PUBLIC |role_name}
[WITH GRANT OPTION];

Example:

Grant create table to SCOTT;

REVOKE- The REVOKE command removes the user access rights or privileges to the database objects.

Syntax:

REVOKE privilege_name
ON object_name
FROM {user_name |PUBLIC |role_name}.

Example:

REVOKE CREATE table from scott;

14.9 POINTS TO REMEMBER

- Database is use to store the contents.
- DBMS is a software which is use to manage the data in a database.
- SQL is a command use to work with a database.
- SQL is further classified as DDL, DML, and DCL.
- Create,alter and drop commands belong to DDL category.
- Select, Insert, Update and Delete commands belong to DML category.
- Grant and Revoke command Belongs to DCL category.
- ORACLE, MSQL and MS-Acess are some common RDBMS.
- ERD- (Entity Relationship Diagram)
- ER Diagram is use to represent our database logically.
- Normalization is a process use to reduce the redundancy.
- Data Models are use to show the physical representation of our database.

14.10 GLOSSARY

- DBMS: Database Management System
- RDBMS: Relational Database Management System
- ER: Entity Relationship Diagram
- DDL: Data Definition Language
- DML: Data Manipulation Language
- DCL: Data Control Language
- SQL: Strucutred Query Language
- PL: Procedural Language

- NF: Normal Form
- BCNF: Boyce Codd Normal Form.

14.11 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) Define Database.
b) Illustrate all the available RDBMS.
c) Compare traditional system with DBMS.
d) Discuss SQL and its classification.
e) Design a table college with following attributes: College_Id, College_Name, College_Address.
f) Define Normalization and its types.

Objective Type Questions-

a) RDBMS allows relationship between tables [T/F]
b) Normalization is a progressive process [T/F]
c) BCNF is also knownas 3.5 Normal Form [T/F]
d) One cannot remove repetition through Normalization [T/F]
e) -------- NF is use to remove transitive dependency.
f) --------- is an open source RDBMS.

Answer (Objective Type Question)-

[a] True	[b] True	[c] True
[d] False	[e] 3NF	[f] MySQL

14.12 BIBLIOGRAPHY/ REFERENCES

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- https://beginner-sql-tutorial.com/sql-grant-revoke-privileges-roles.htm
- https://www.guru99.com
- https://www.javatpoint.com/dbms-tutorial

14.13 SUGGESTED READINGS

- https://examupdates.in/database-management-system/#Database-Management-System-Pdf-Notes
- https://www.tutorialspoint.com/
- https://docs.oracle.com/cd/E11882_01/server.112/e40540/intro.htm

UNIT- 15

ONLINE OFFICE DOCUMENTS

15.1 INTRODUCTION

In the current era of Internet, the demand of online office documents increased rapidly. Persons always prefers to save their data on an online storage or database, so that whenever they have Internet, there documents are always with them. In the present market, there are a lot of online, web-based office tools available. Some most famous examples of online office documents are Google Docs, Microsoft Office 365 and Zoho Office etc.

Online office tools provide a lot of facilities to its users. The first advantage is its availability across multiple devices and accessibility across the Internet. Until and unless you have internet, your documents are in your pocket always. With online office tools, it becomes very easy to collaborate with other team members. Online office tools also provide enhanced security to protect user's data and privacy. All the documents can be kept at one place when

we are using online documents. They can be accessed without downloading any other software. For accessing online documents, people just need a web browser to access online documents. They are portable and can be accessed on any device, any platform and anytime.

15.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Understand the advantages of Online Office Tools.
- Familiar with Google Forms.
- Explore various features that Google Forms provides.
- Able to Create quiz on Google Forms.
- Share your Google Forms to your Intended users.
- View and analyse received responses.

15.3 GOOGLE FORMS: AN OVERVIEW

Google Forms is a free utility tool provided by Google, heavily used for survey. It is a web-based form creator and editor, included with other Google Docs products like Google Sheets, Google Docs, and Google Slides etc. Google Forms allows users to create web-based surveys, in collaboration with other users.

Google Forms lets its users to collect information from other persons via a large number of personalized tools, like quizzes and surveys.The quizzes and surveys that Google Forms provides, have a large number of response validation tools, various type of questions like Single Choice, Multiple Choice, Subjective, File Upload & Range Based questions. Google Forms can be used to collect RSVP's and also be used to take Online Examinations. It provides the facility to share the forms via email, social media or direct links.

Because of its web-based interface and online availability, it can be collaborated with multiple people on the same time. The main features of Google Forms are following:

- Online availability 24*7.
- Can be used for Surveys and custom forms.
- Drag and Drop facility available.
- Easy questions reordering.
- Addition of images, videos and custom logics in forms.
- Automatic response summaries.
- Real time response availability.
- Quick input validation & custom input validation

15.4 CREATE YOUR FIRST GOOGLE FORM OR QUIZ

Before creating your first Google Form, it is required to have a google account and you must be signed on google. If you don't have a google account, you can create your own google account by visiting https://accounts.google.com. On the page, click on Create Account first then on For myself.

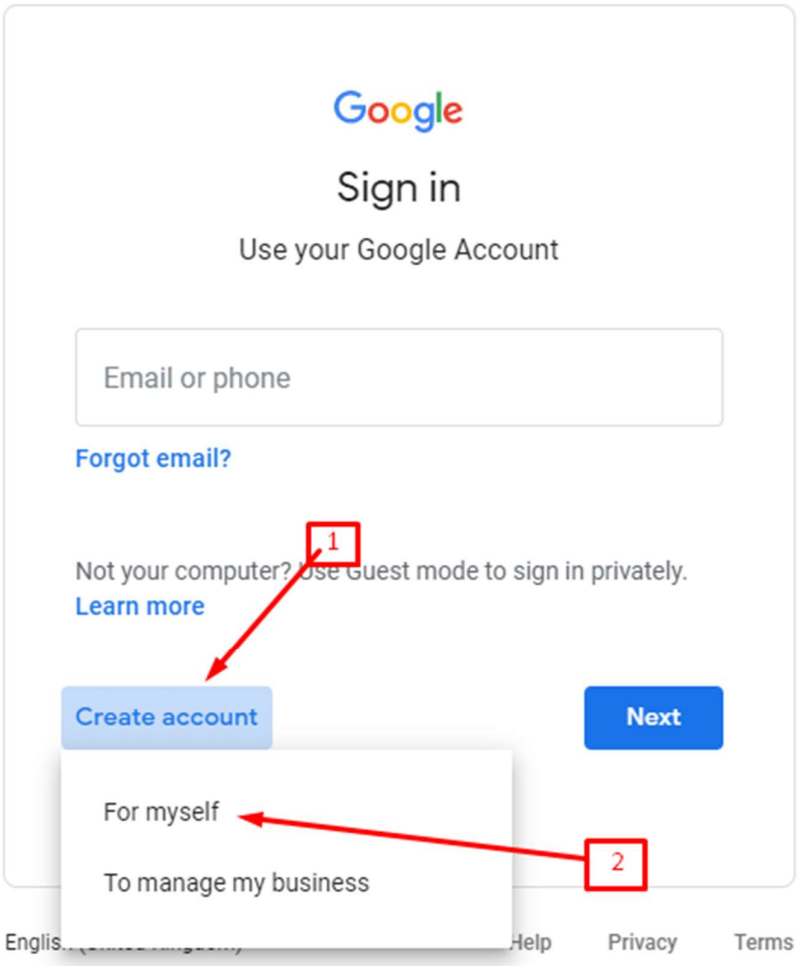

Figure 15.1 Google Account Page

On the next page, you need to provide some basic info about yourself like- first name, last name, username and password etc.

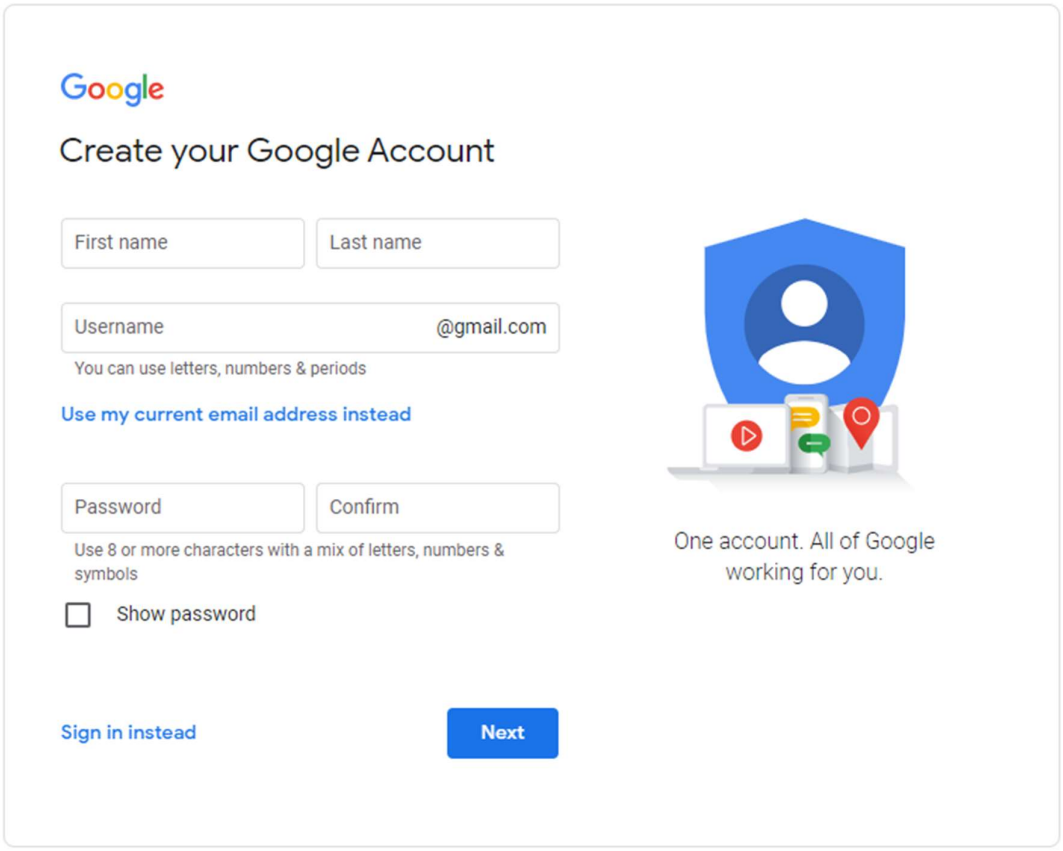

Figure 15.2 Google Account Signup Page

After successfully creating your account, you will need to visit https://docs.google.com/forms for creating your Google Form.

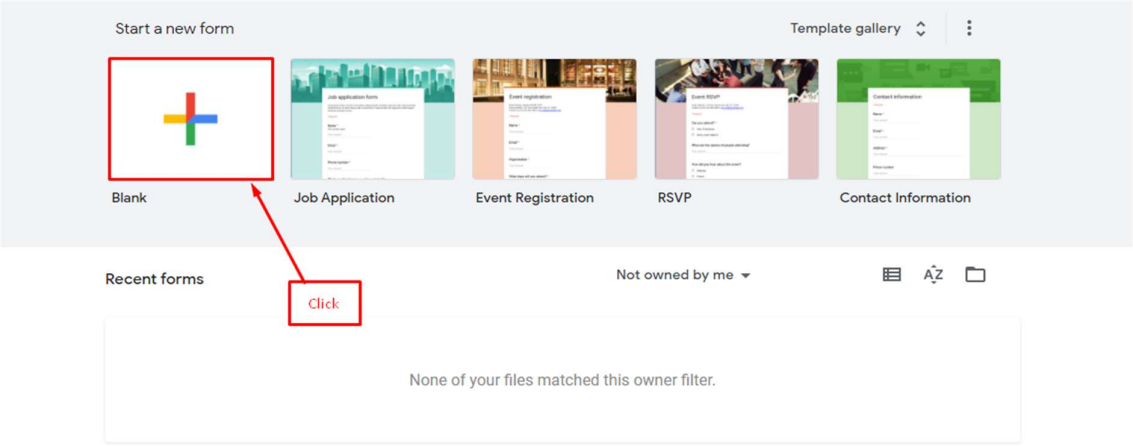

Figure 15.3 Create new Google Form

On visiting the above link, a web page will be opened like above. On that page, you will need to click on + icon to create a blank Google Form. After clicking on +, a blank form will be opened like below, which can be customized as per the requirement.

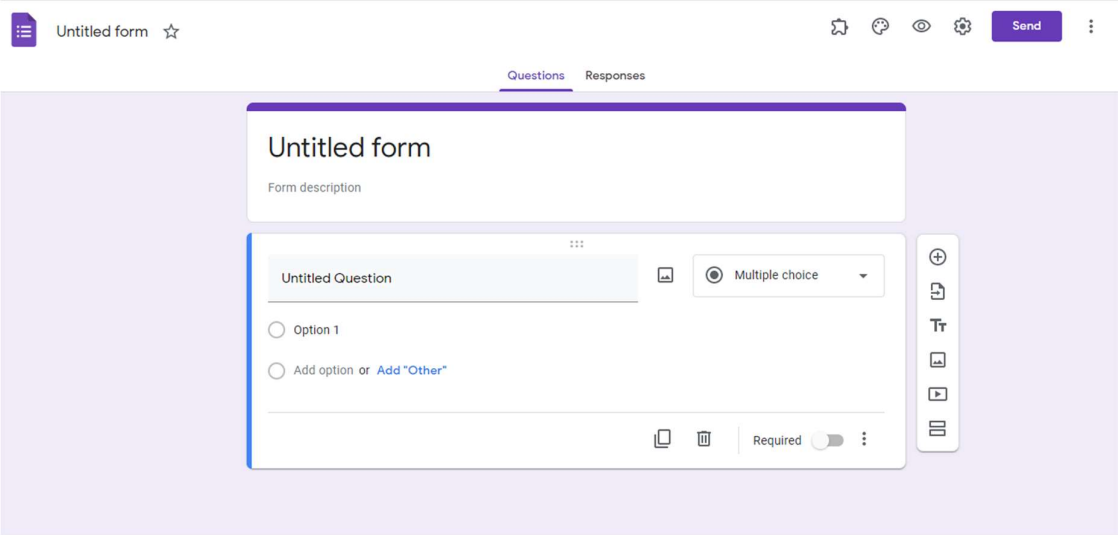

Figure 15.4 Blank Google Form

15.5 CHOOSE FORM SETTINGS AND PREVIEW

For changing the Google Form settings, we can click on Settings icon available at the top right corner of the screen.

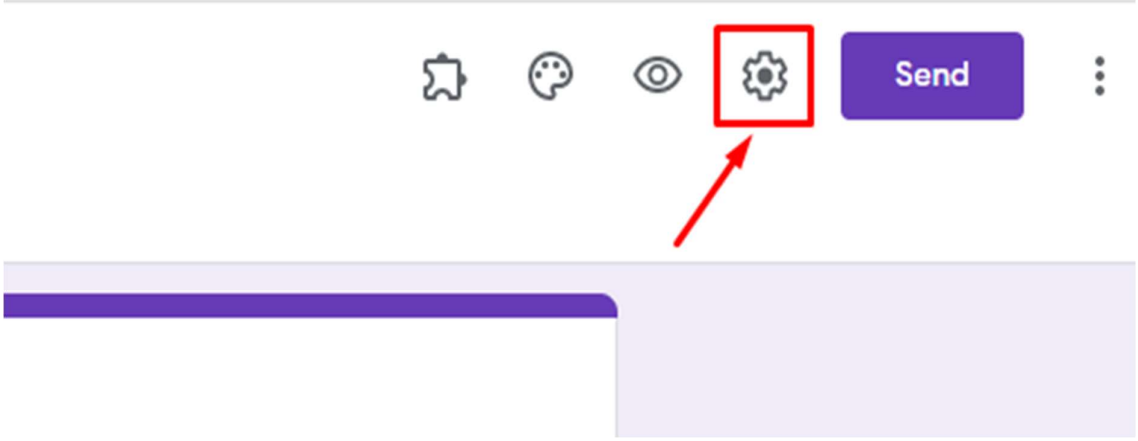

Figure 15.5 Google Account Settings

After clicking on the settings icon, a popup window will be available in front of you which will be used to change the settings of Google Form opened currently.

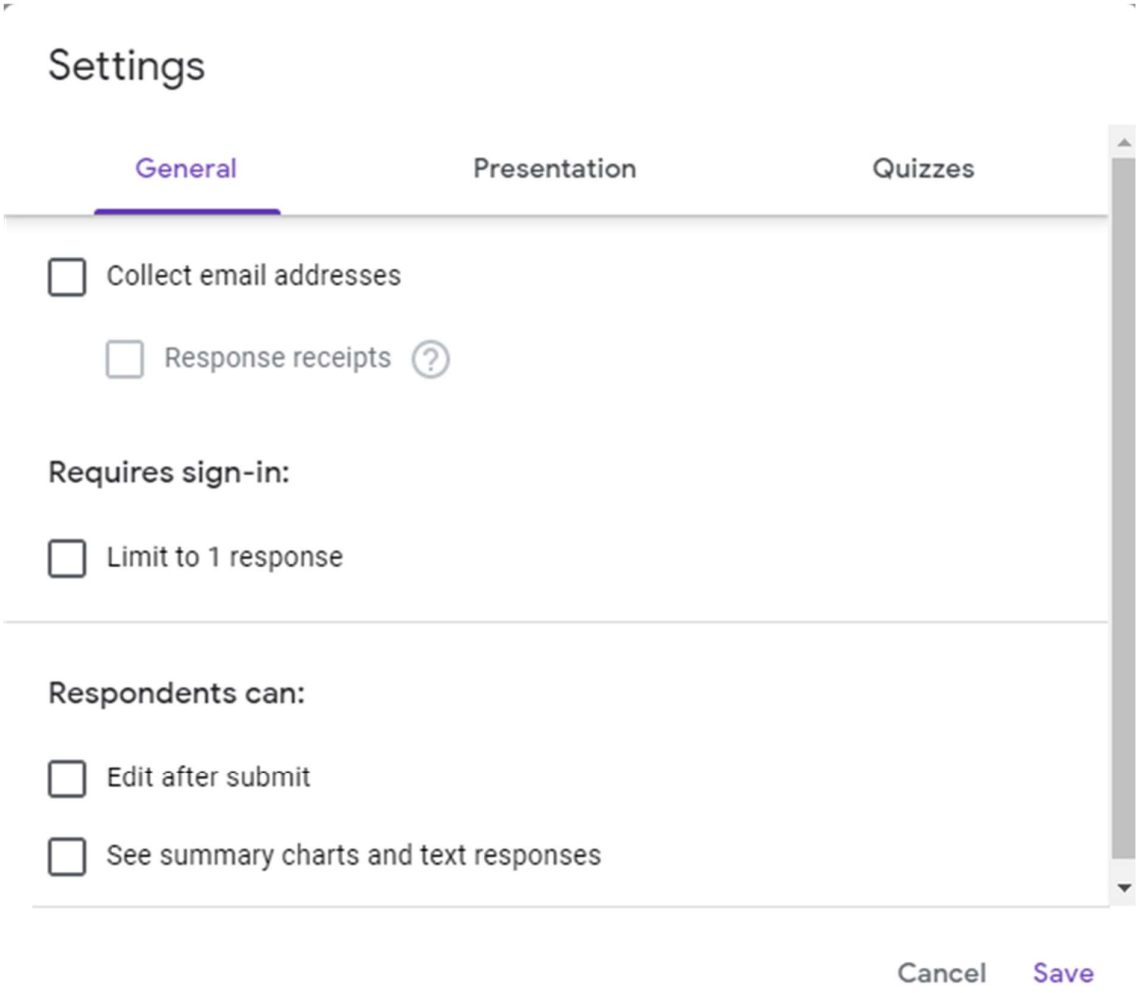

Figure 15.6 Google Forms General Settings

There are a lot of customization settings available like Email collection, limiting per user responses and editing form after submitting etc. Within these settings, on the third tab **Quizzes,** is available which will be used to convert a form as Quiz like below:

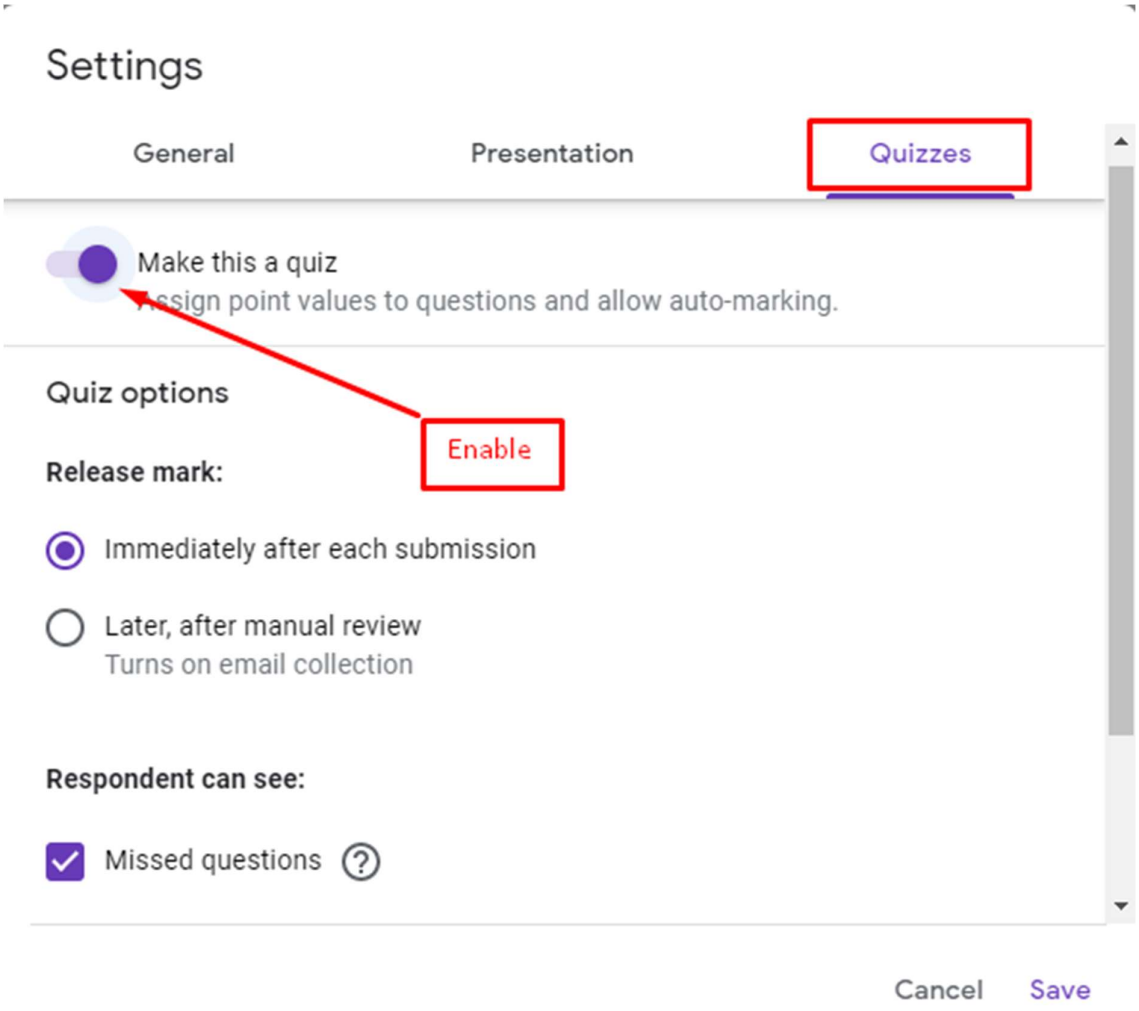

Figure 15.7 Google Account Quiz Settings

By enabling the Quiz option, Google Form will be converted to a Quiz, in which you can assign points or grades for each question. Also you can shuffle questions order with these settings.

To Preview the form as a responder, you need to click on the preview button available at the top right corner of the form like below:

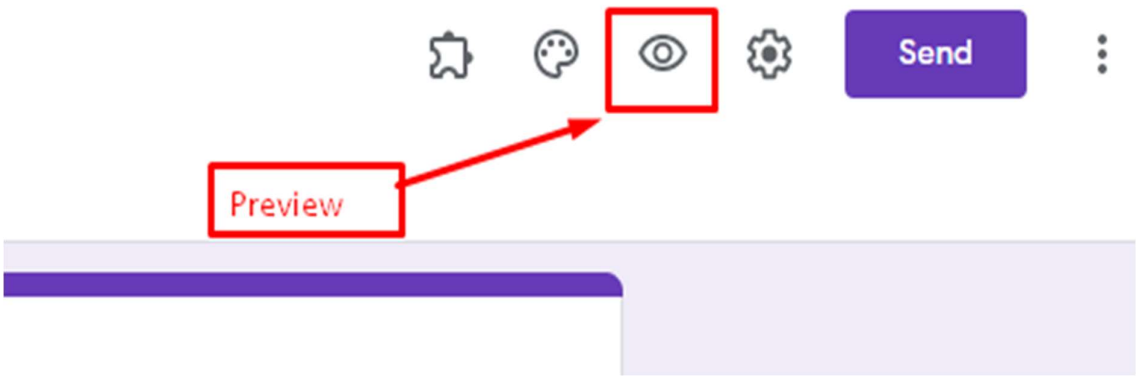

Figure 15.8 Google Forms Preview

After clicking on the preview button, the Google Form will be opened in a new tab or window of browser. Here the form will be shown same as will be visible to a respondent.

15.6 CUSTOMIZE YOUR GOOGLE FORM

Google form also provides the facility to customize the forms as per your choice. There are a lot of customization options available with google forms shown in the image below:

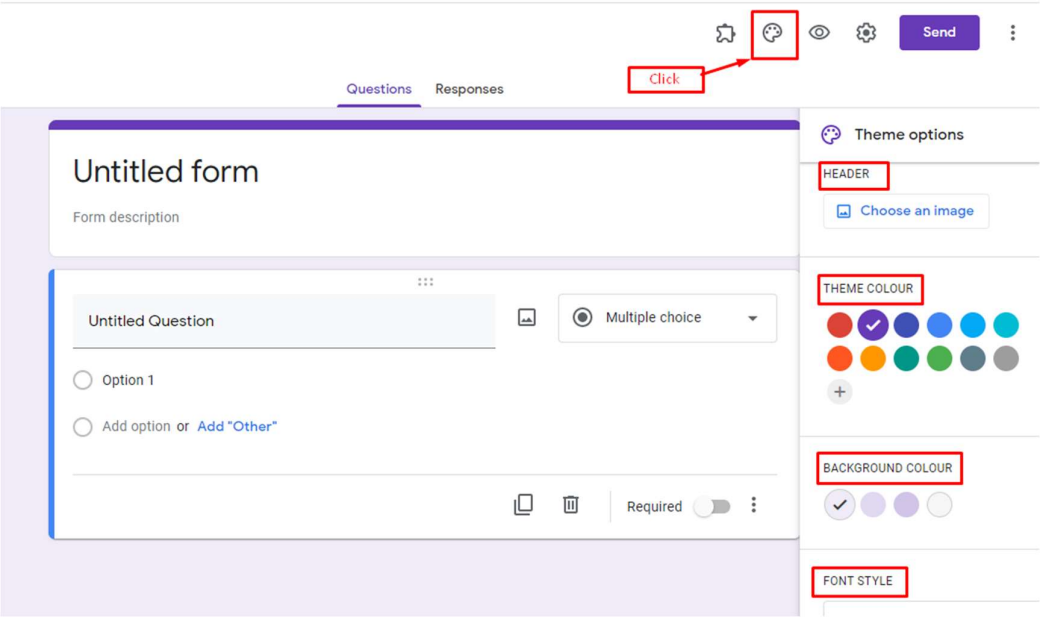

Figure 15.9 Google Forms Customization

With customization options, you can add header images to your google form, can choose colour theme, change font and also the background colour of the form which will be visible to your users.

15.7 ADDING MORE QUESTIONS TO GOOGLE FORM

If you are going to create a google form, you will need to add multiple questions in your google form. For adding new question, click on (+) sign as in the image below:

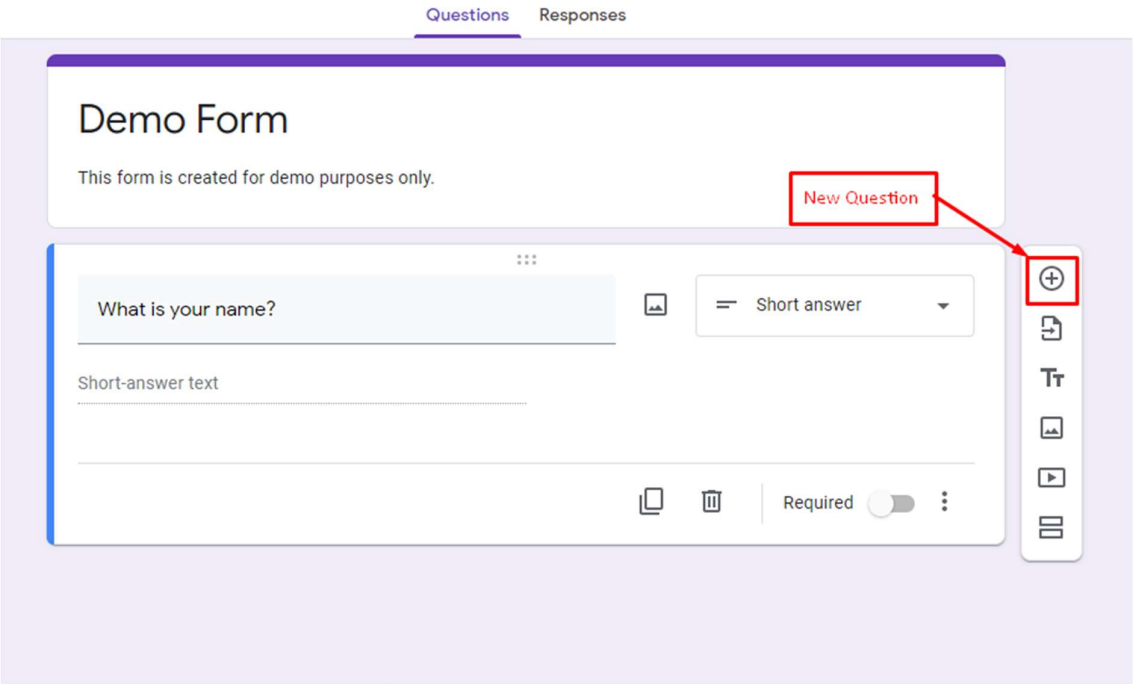

Figure 15.10 Google Forms, Create New Question

After clicking on (+), a new question will be available there, which can be edited easily.

Google Form also provides facility to add new section to the form, for adding new section, we have to click on the icon having two rectangles.

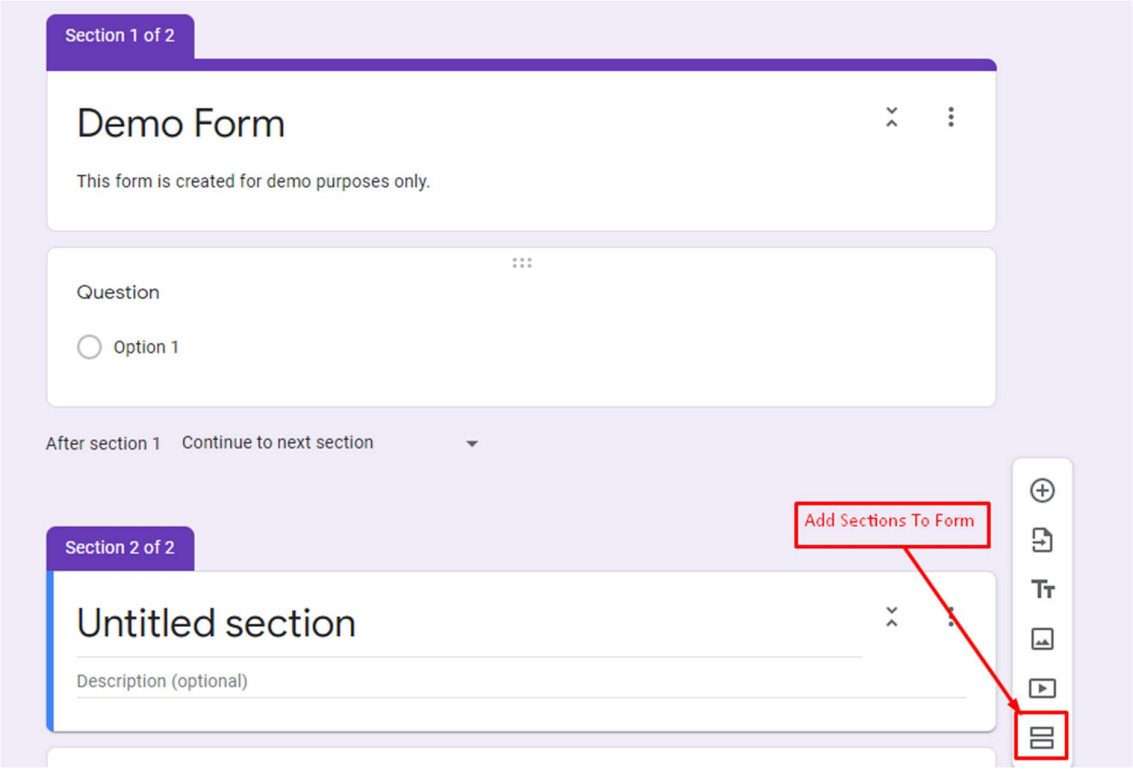

Figure 15.11 Google Forms, Add New Section

After clicking on section Icon, a new section of questions will be generated, which can be used to divide the form into multiple sections. Sections are mostly used whenever you have to group similar questions into one.

15.8 CHANGING QUESTION TYPES IN GOOGLE FORM

While creating a question, you can choose the question type from various options available there on Google form as shown in the image below:

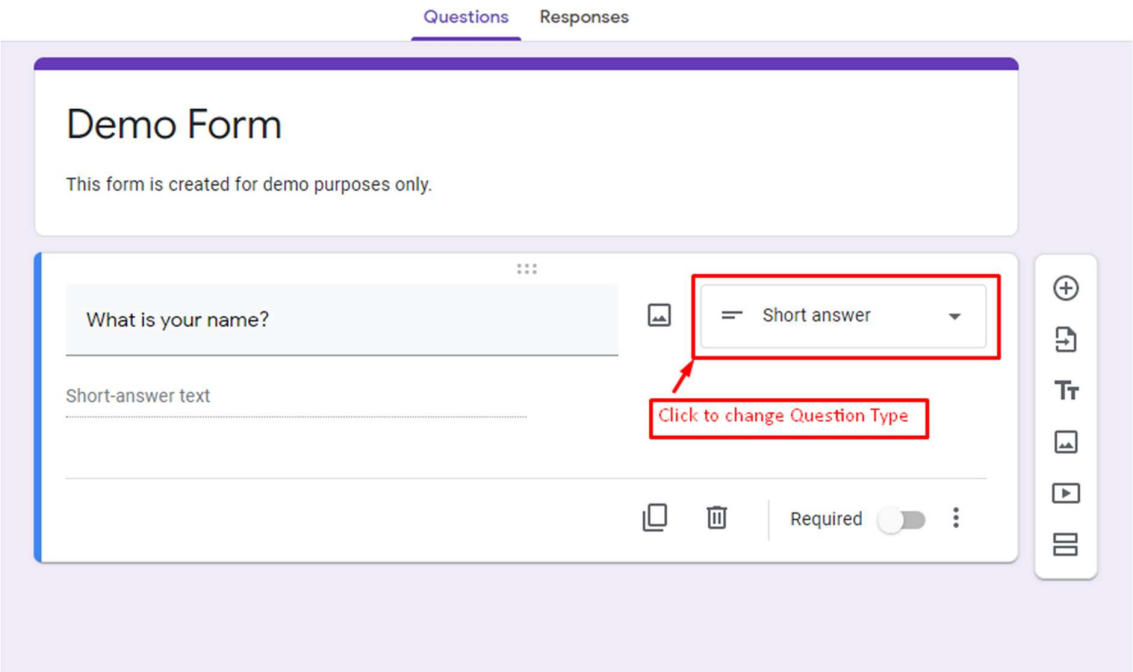

Figure 15.12 Change Question Type in Google Forms

After clicking on the dropdown above, a list of available question type will be opened. You are free to choose a question type from there.

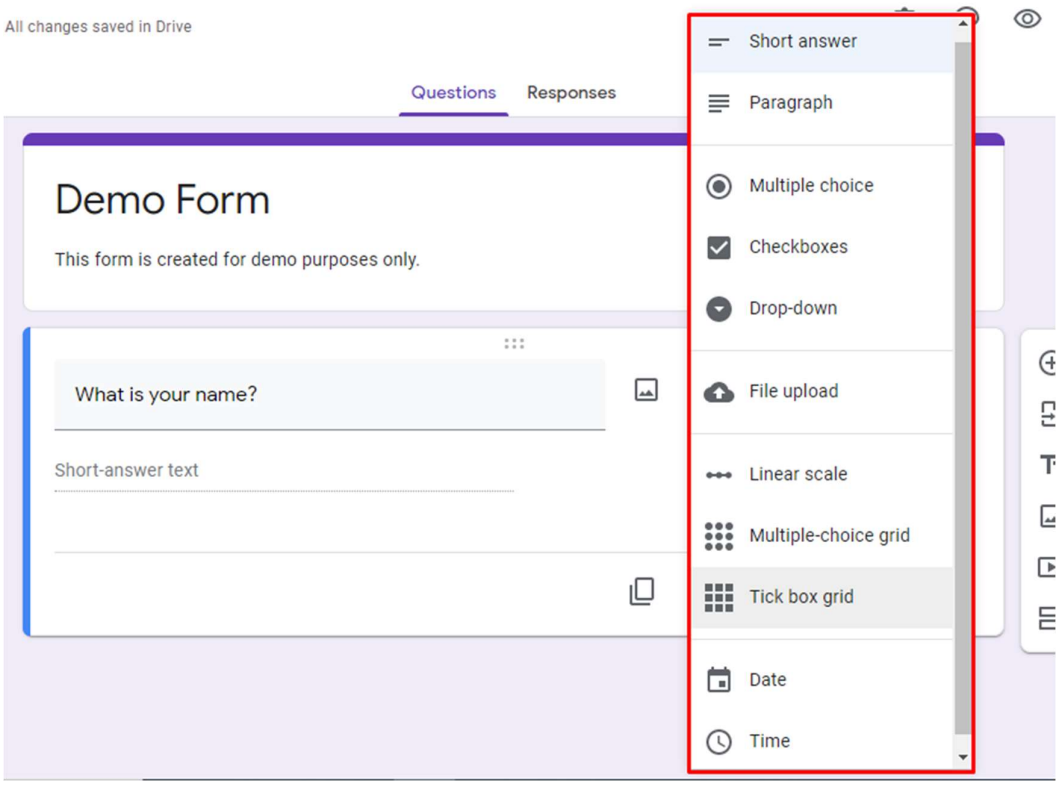

Figure 15.13 Question Types Available in Google Form

By selecting any of the above question type, the question will be automatically converted to that type. The choices for the question types are following:

Short Answer: Questions require only a few words. Good choice for email addresses or mobile numbers.

Paragraph: These types of responses require long-form answers of one or more paragraphs. Data input validation is available for this type of responses.

Multiple Choice: Respondents can choose between a set of options available there, but only one for a question. You can also include "Other" and an option so people can input a short answer.

Checkboxes: Responders can choose multiple options for a single, including the "Other" option for a short answer.

Drop-down: People can choose their answer from a set of options in a drop-down menu available, but only a single option for a question.

File Upload: It allows the user to upload a file in response to a question. Uploaded files are saved in Google Drive of the owner. You can specify the size and type of files people can upload like 5 MB, 10 MB etc.

Linear Scale: Responders can rate your question on a scale that starts at 0 or 1, and ends on a whole number from 2 to 10.

Time: Responder can choose the time of day or a duration of time.

Date: Responder can choose the date as an answer to the question. The default is day, month, and year. You can also include the time in answers.

Multiple Choice Grid: This option creates a grid from which you can select one answer per row. You can limit answers to one choice per column and can also shuffle the row order.

Checkbox Grid: This option creates a grid in which people can select one or more answer per row.

15.9 SHARE GOOGLE FORM OR QUIZ

Google Form allows its users to collaborate with others. You can share your google form with others, so that they can edit the form or can respond to that form. This feature makes the task easier while working on a group. There is no limit on number of persons with the forms is to be shared.To share your google form with your collaborators, you can tap on the Three Dots, available at the top right corner of the screen.

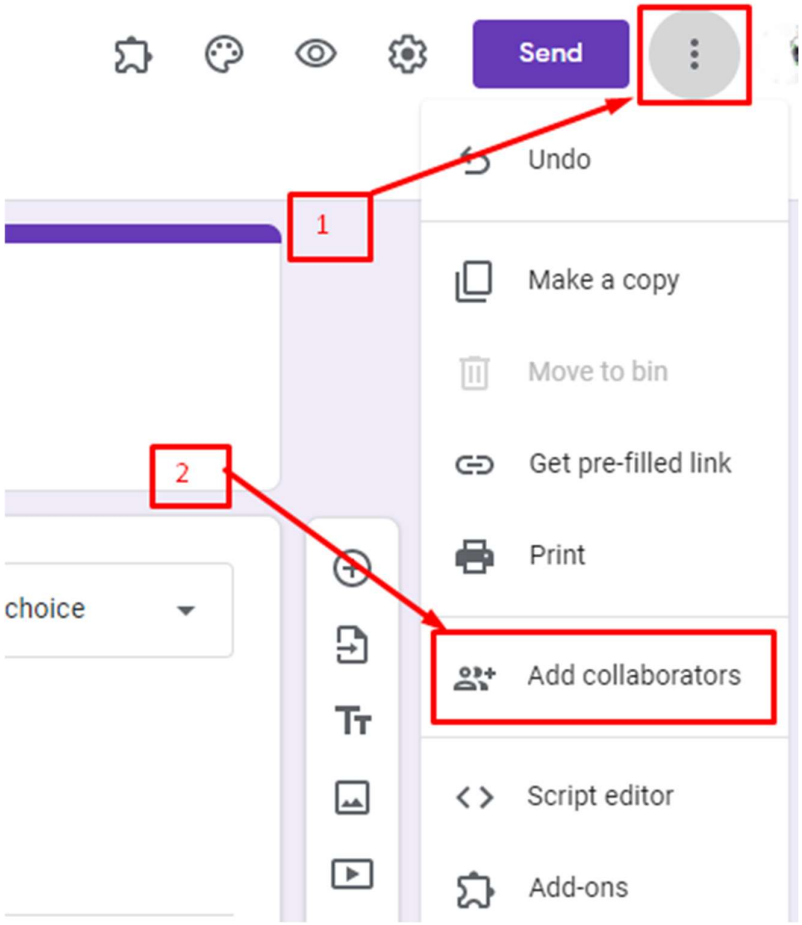

Figure 15.14 Google Forms, add collaborators

After clicking on Add Collaborators, a popup window will be opened like below:

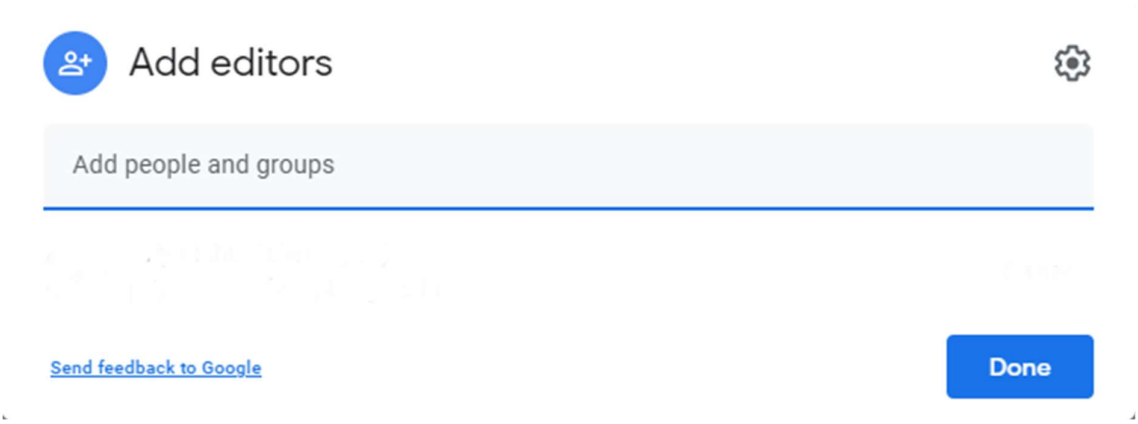

Figure 15.15 Google Forms, add collaborators using email

By the above window, you can easily add your collaborators on the same Google Form. To share google form with your respondents, you can use the **Send** button available at the top right corner. With this Send button, you can share the link of your form. You can also generate a short link for your google form here.

15.10 ANALYZE OR GRADE RESPONSES

With Google Forms, you can easily analyse responses in real time. To view responses of your Google Form, you need to click on **Response** tab, Response Tab also shows the count of the responses that have been received till now.

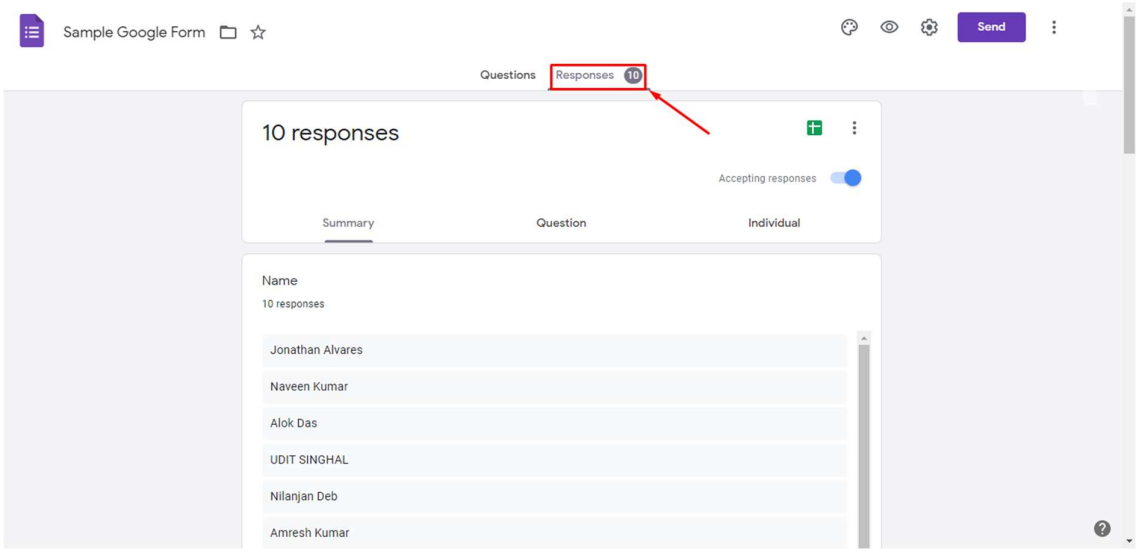

Figure 15.16 Google Forms, view responses

It also shows your data in the form of Pie Charts for Single Choice Type Questions as below:

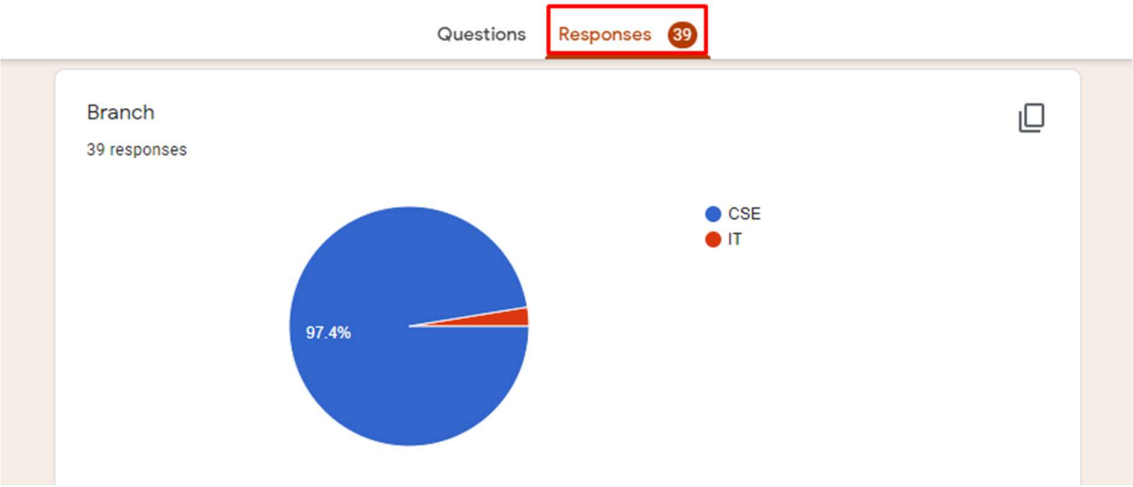

Figure 15.17 Google Forms, responses using graphs

Google Forms stores the responses in form automatically. We can also transfer form responses easily to a spreadsheet. To send your response to spreadsheet, select the "Responses" tab, and then click the green Sheets icon.

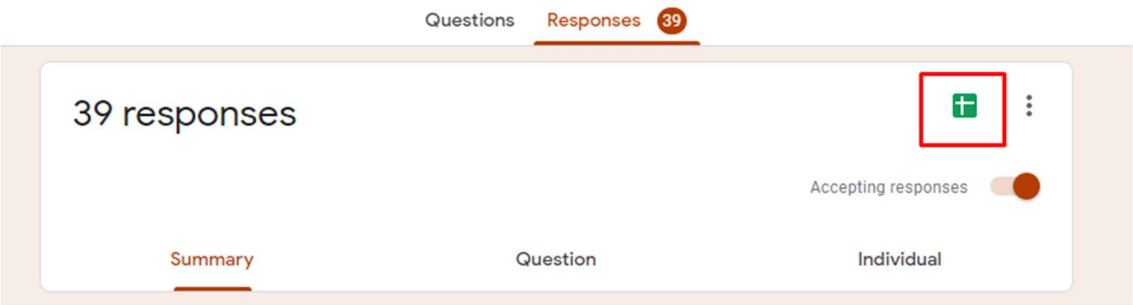

Figure 15.18 Google Forms, add spreadsheet

After clicking on Spreadsheet icon, you need to select the response destination. For storing responses, you can send responses to a new Spreadsheet or you can also select an existing

spreadsheet.

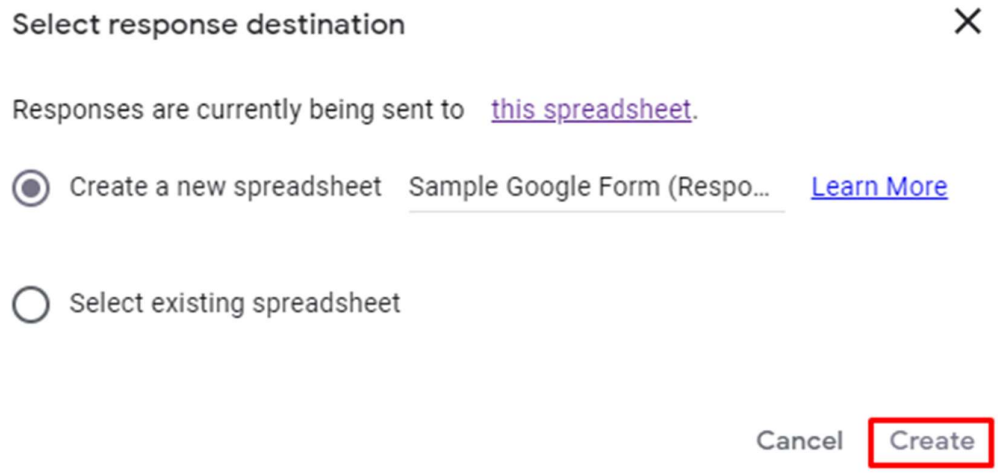

Figure 15.19 Google Forms, link spreadsheet

15.11 PRINT A FORM OR QUIZ

You can also print an individual response using Google Forms. To print a response, you need to view the responses individually.

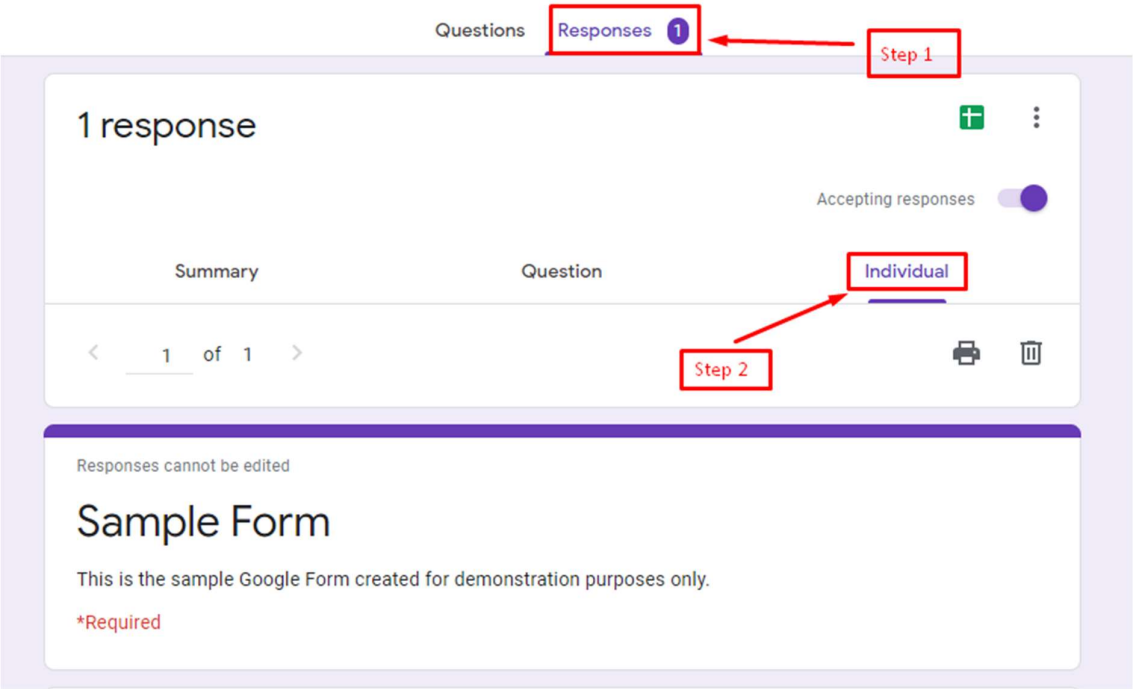

Figure 15.20 Google Forms, print a response

On the individual tab, an option to print the response will be available with **Printer** icon. By Clicking on the print button, the response will be printed and will be available in the PDF form to you.

15.12 SHARE PRE-FILLED LINK

With Google Forms, you can also share pre-filled link with your responders, in which some of the fields that you have specified are already filled. To create a pre-filled, google form, you need to click on three dots at top right corner:

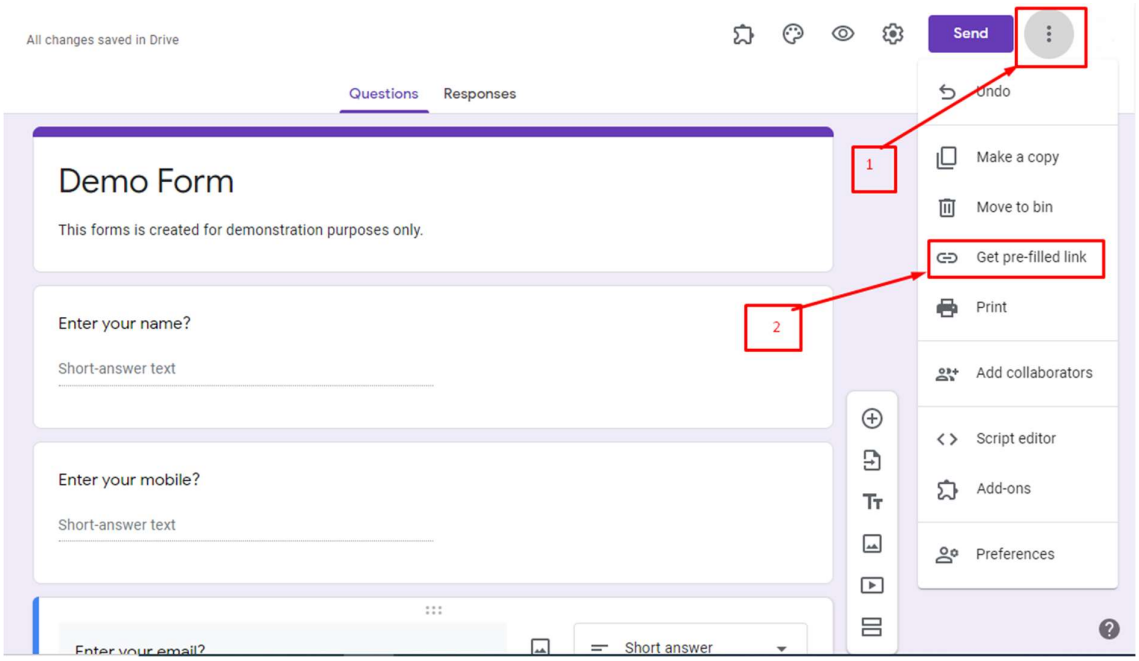

Figure 15.21 Google Forms, get pre-filled link

After clicking on **Get pre-filled link,** a page will be opened on next tab. You can fill the fields, which you want to pre-fill.

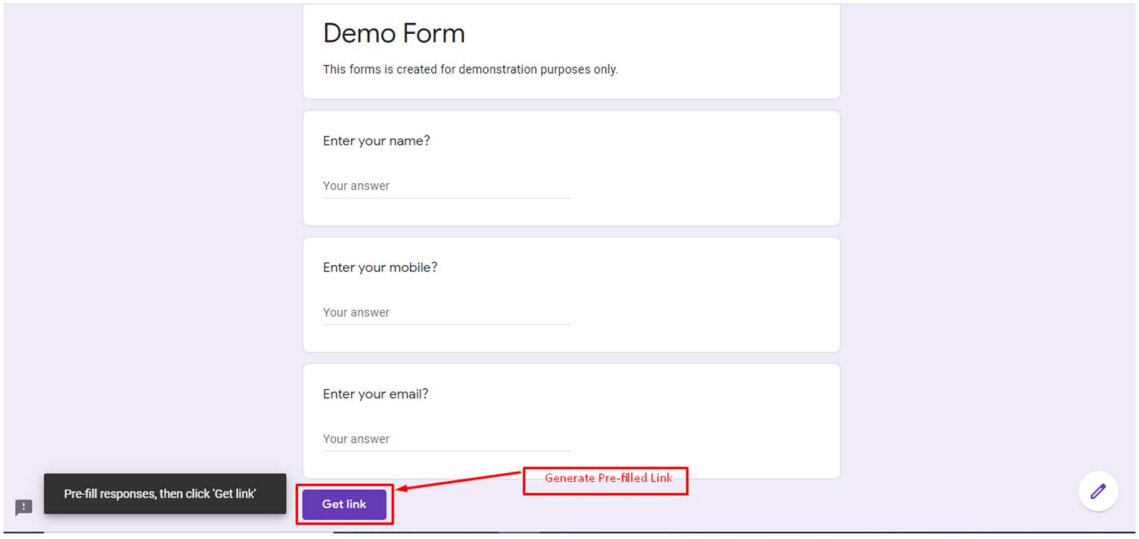

Figure 15.22 Google Forms, create pre-filled link

After filling the pre-specified fields, you can click on **Get Link** button to generate, pre-filled link of your google form.

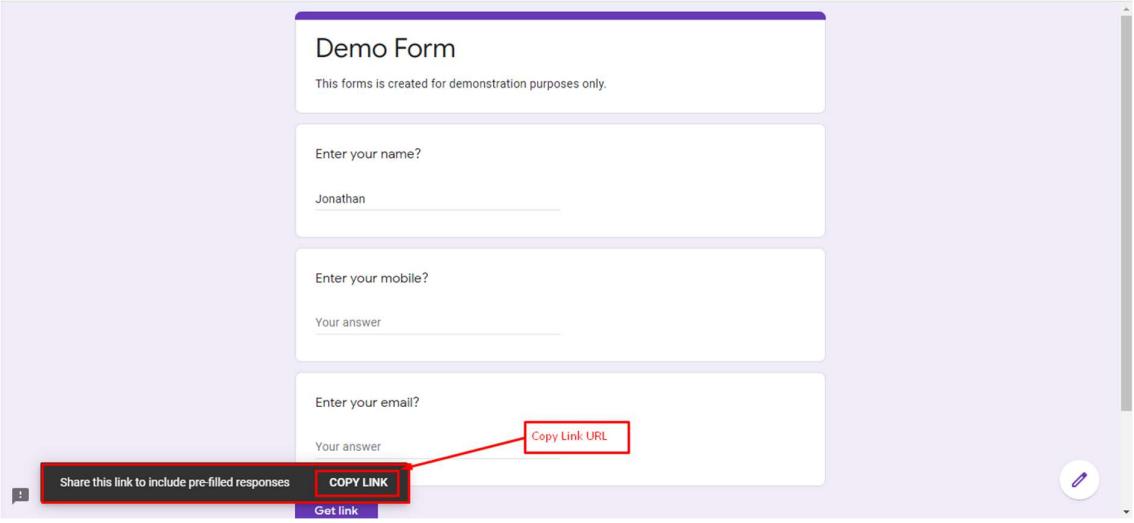

Figure 15.23 Google Forms, copy pre-filled link

After clicking on Copy Link, URL of pre-filled form will be copied to your clipboard. Any person having the pre-filled will found the fields be filled automatically.

15.13 POINTS TO REMEMBER

- Google Forms are used to create quizzes, surveys and for collecting information from people.
- Google Forms are web based forms. You can access it with your Internet anytime, anywhere.
- To create Google Forms, you need to have a google account compulsorily, however for responding, google account is not required until the form creator have specified to sign in before response submission.
- Google Forms can also be converted to quizzes easily by the settings. For each question, you can assign weightage for it.
- Google Forms supports Multiple Choice, Checkboxes, Drop Down, File Upload, Linear Scale, Date, Time, Linear Scale, and Grid based questions.
- To personalize look and feel of google form, theme icon is available at top right corner. It can be used to change header image, theme colour, background colour and font of the form.
- Responses of google forms are automatically saved to forms. To send them into an excel sheet, you need to create and excel sheet or link an existing excel sheet.

15.14 GLOSSARY

Google Forms

Google Forms are used to create quizzes, take feedbacks and also for surveys. They can also be used to create a poll and sending surveys in the class.

Google Drive

Google Drive is a file storage service, provided by Google LLC. It is used to store personal data like documents, forms, images etc.

Google Docs

Google Docs are used to create and manage office documents like word, spreadsheets and slides etc.

Google Sites

Using Google Sites, we can create sites for learning, announcements and postings.

Google Calendar

Google calendar is used to create and manage events. It is also used to view and create upcoming assignments.

Google Classroom

Google Classroom is used to simplify creating, distributing and grading assignments. The aim of Google Classroom is to connect teachers and students with each other.

15.15 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) What are the online office documents?
b) What is Google Form and why it is used?
c) List five advantages of using online documents editors instead of offline editors?
d) Define briefly how can you create a google form and share it with other users?

e) What are the supported questions types in Google Forms? Explain each one briefly?

Objective Type Questions-

a) Online office documents requires internet connectivity to run themselves. (True/False)
b) Google forms are used to send emails to other users. (True/False)
c) A google account is required to create a new google form. (True/False)
d) Google Forms only supports 5 collaborators at a particular time. (True/False)
e) Google Forms responses are automatically saved to a spreadsheet on your google account. (True/False)
f) Google Forms can grade the quizzes automatically. (True/False)
g) You can restrict your google form to limit ..... response per person.
h) The theme icon is available to personalize google form at … position

Answer (Objective Type Question)-

a) True b) False c) True d) False e) False

f) True g) 1 h) Right – Top

15.16 BIBLIOGRAPHY/ REFERENCES

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15.17 SUGGESTED READINGS

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UNIT- 16

COLLABORATION AND MESSAGING SERVICES

16.1 INTRODUCTION

Recent technological developments and increasing use of computer, internet and mobile technologies has created a collaborative work environment of business world to a great extent. The evolution of various messaging and collaboration services is one of the changes experienced by corporate world during last few years. These online collaboration services have made it easy to manage the business even if its employees are located at different location within the country or across the world. These messaging and collaboration services help in reducing the cost of communication and travelling along with increasing employee satisfaction and accessibility to information.

16.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Explore Discussion Forum.

- Define online messaging services.
- Explore scheduler and to do list tools.

16.3 BRIEF OVERVIEW OF MESSAGING SERVICES

Some of the popular messaging and collaboration services are briefly discussed here under to help you know them more closely to find the most suitable for your business.

G Suite-

It is a good web communication tool that can be used for collaborating with the teams of professionals but also for messaging instantly. It is one of the communication apps introduced by Google for especially for corporate world. It can be used by anyone having an account with Google. The users of this collaboration service can enjoy the instant messaging and email facilities along with other provided by Google. While collaborating with your team in real-time it allows you to share everything you want from screen of your desktop to your whiteboard presentations documents and files etc. you can also enjoy your own domain Gmail address, better security options, live 24/7 customer support, management of mobile devices and strong administration control along with basic benefits just by creating a G Business account. You can also perfectly integrate the reliability and power of Google while using G Suite.

ezTalks Meetings-

The increasing needs of communication in business have introduced various types of messaging and collaboration services for the corporate world. ezTalks Meetings is one of such services can help you to connect with your clients and employees by sending them messages along with collaborating with them online to solve same problem or work on same project, regardless of their location in this world. Some of the exclusive features of this service include scheduling meetings online, sharing screens, instant messaging, record and playback meeting proceedings along with making it easy for you to collaborate with your teams. You can get crystal clear quality of audio files and HD quality videos by using it with various types of devices including iPhone, iPad, Windows, Mac and Android phones.

Workflow Max-

It is another web communication software that offers messaging and collaboration services to the business world to improve the collaboration between their teams. Basically it provides comprehensive communication solution to the businesses to allow them access anything from anywhere. In this way it is a good tool for the businesses having offices at different locations all over the world. Along with messaging and collaborating with your teams it also allows you to track the progress of your work, invoicing the work completed and monitor several other important things required to achieve the goal. It can also help in managing a project, tracking the time, managing accounts at back-end, status and financial reporting and

generating quotes etc. Initially you can use its free version but if you require more features then you can opt for its paid version also.

Trello-

It can be very difficult for a person to organize various projects without being present there. But it cannot be possible unless you are using effective services for messaging and collaboration. You can use Trello on various operating systems including iOS, Android and web for effective organization of your projects. It can be used flexibly for managing various types of projects through its mobile and web versions. You can also use it for chatting with your friends along with organizing your projects. Its free version allows you to create boards and lists for your business but if you want to add more features to its services then you have to use its premium version.

Slack-

It is one of the most popular collaboration tools used these days that also allow instant messaging to communicate instantly with your friends or the participants of your choice. It can be used on various platforms including Windows, Web, Android, Windows phone and iOS to provide you security, excellent interface and free services. Millions of people all over the world are growing their business fast after using Slack for instant messaging and collaboration with their remotely placed teams. It can be used to send files and messages directly to different groups of people or individuals regardless of their location in this world. Along with it this online service also allows calling through video conferencing which males it better than various other online collaboration tools. It is design to be compatible with Dropbox and Google Drive.

Thus, after going through the reviews of 5 top messaging and collaboration services it can be easier for you to choose the best one for your business. You should compare their features and needs of your business while choosing one for it.

16.4 ONLINE DISCUSSION FORUM

Online forums can be used for many purposes, such as helping students to review material prior to an assignment or exam, engaging students in discussion of course material before coming to class, and reflecting on material that they have read or worked with outside of class.

Why and how did you use an online discussion forum?

I used a discussion forum to offer students a structured opportunity to interact with each other online around exam time. For the purpose of reviewing for the exam students posted questions they had about course material and other students answered them in the online forum. I also agreed to weigh in on student comments after each question had received at

least one response from another student. I had a few reasons for my decision to use the forum in this way. First, I knew that I would not have enough time to answer all of my students' questions around exam time as I was preparing for my own qualifying exams during the same semester. I was also fairly certain that my students could be effective in teaching each other and answering one another's questions; I wanted them to depend more on each other and less on me in the time leading up to the exam. By using an online discussion, I hoped to encourage collaboration and to give students a structured opportunity to work together to find the answers to questions that they were having difficulty with. This activity would also have another desired benefit; it would help students to practice writing and explaining concepts prior to doing so on the exam.

Reddit-

Reddit is lovingly known as the front page of the internet. At its simplest Reddit is really just a good old-fashioned discussion forum. It's a place where millions of people go every day to discuss politics, post memes and share every odd thought that's ever occurred to them in the shower. The site is divided into subreddits, with each user choosing which subreddits they would like to subscribe to according to interest like this online casino discussion. This is a bustling community of entrepreneurs who are intent on helping each other find the best solutions. Topics are organized into threads that anyone can start. The essence of Reddit is the upvote system. Users can either upvote or downvote a post according to their opinion of it.

Quora-

Even if you've been living under a rock, chances are you've heard of Quora. Founded in June 2009 by Adam D'Angelo and Charlie Cheever, Quora is a Q&A site where anyone can ask a question and get answers. Quora allows users to create personalized homepages that feature the things they want to learn more about by following topics, questions, people and boards. Also, rather than getting one answer the site allows all users to weigh in on what they think the best answers are. The genius behind Quora is that users can upvote answers that are the best.

Stack Overflow-

Stack Overflow is a platform where students and professionals post queries and answer questions about programming. It is a platform to showcase their knowledge. It is a free community where programmers write quality answers that help other users. Based on the quality of answers, the people who have answered them gain popularity when other users have upvoted the said answers.

XDA-Developers-

It is a community of several million Android and Windows Phone developers who use the XDA website and forums to discuss OS versions, specific devices and customization. At XDA you can find solutions for your problems and get the most out of your smartphone device, Android particularly. The best part is you don't need to be a programmer or specially-abled personnel to be a developer at XDA.

GamesSpot-

GameSpot is a video gaming website that provides news, reviews, previews, downloads, and other information on video games. The site reviews game both popular and small on every platform. GameSpot is used by 26m gamers worldwide, who contribute content and network with other gamers through the website.

Final Thoughts-

Forum and chat websites are probably one of the oldest forms of community on the internet. These forums are doing well in their respective niches, raking the owners millions of dollars in revenue on annual bases. Most importantly helping the end user by giving information which they seek.

16.5 SHARED CALENDAR/SCHEDULER/OPEN-SOURCE TOOLS OF TO-DO LIST

It's hard to remember everything when there's too much to do at work or in everyday life. Some still prefer to put to-dos and ideas on paper, but technologies offer a better way to handle forgetfulness. Apps for mobile devices, PCs and the Web remind you when something needs to get done, help you share your ideas and collaborate with others to accomplish tasks sooner. Here's our list of the best to-do list apps that will prevent you from forgetting important things and add fun to your daily routine.

Wunderlist

One of the most popular to-do list apps, Wunderlist provides an easy daily planning for work tasks, household routine, and movies to watch – literally everything you might forget. Reminders and due dates will help you avoid missing deadlines and failing to get important tasks done. Hashtags and folders simplify organization of a work process. Share your to-dos with colleagues, friends or family; comment the items and add notes to capture your ideas. The app is available for the widest range of devices: iPhone, iPad, Mac, Android, Windows, Kindle Fire and the Web.

Any.do

Another simple tool that helps you remembers every task. Reminders, systematization and chats are available – like in many other similar apps. The specific feature is Any.do Assistant that automatically reviews your tasks and suggests the ones that it can do for you. The

authors declare that "smart robots and diligent humans will help you accomplish your tasks." In the paid version, collaboration, location-based reminders and unlimited attachments are offered additionally. The app can be accessed through iPhone, iPad, Android phones and tablets, Web, Chrome and Mac.

Todoist

Available for almost any platform, Todoist is considered one of the best to-do list apps for work and everyday life. It offers access to your task lists from anywhere. You can share your tasks with friends, family or colleagues to get more done. Breakdown into subtasks, reminders, comments and attachments are available, as in many other apps. The fun feature is Karma that allows you to track productivity and visualize the dynamics of your achievements.

TickTick

The app offers task lists with subtasks, deadlines, reminders and attachments. The free basic version has limited number of lists, tasks and users. Apart from unlimited tasks and bigger user count, the Pro version includes calendar view, task filters, Siri integration and some other advanced options. This tool might be one of the best to-do list apps for teams, as it allows sharing lists and assigning tasks to colleagues.

Tasks.org

Back then, there was an open-source to-do list app named Astrid, which was purchased and then shut down by Yahoo. The source code was still available, so user Alex decided to clone the old tool for those who were missing it, and built Tasks. The app has major Astrid features and more: task priorities, categories and tags, reminders of due and overdue tasks, synchronization with Google Tasks and customizable color schemes. Additional plugins and extensions are available as an in-app purchase.

One List

Those who hate the minimalistic (some would rather call it depressive) color schemes of most to-do lists probably remember the Clear iOS app. It had stunning colorful interfaces, but now it seems to be abandoned by the developer. One List for iOS is one of the possible replacements: it has bright task lists with customizable themes and allows color-coded prioritizing, setting due dates and configuring reminders. "One list to rule them all," as the developer promises.

Suru

For many of us, a to-do list has to be attractive or we'll never open it. Folks at Esoteric Development, the authors of Suru, definitely know that. The beautiful interface with seven color palettes is not the only advantage: this iOS app allows to break down tasks into

subtasks, prioritize, structure and share your projects, and to export task lists into PDF. You can add descriptions and photos to your to-dos so nothing slips out of your mind.

Google Keep

This note and to-do list tool for Android and iOS is a convenient way to capture tasks and ideas, collaborate with others, plan projects or events. The app is available from almost any device and offers task lists, tagging and reminders (including location-based ones). Add photos to your notes to avoid long verbal descriptions. What's more, instead of typing your notes, you can just record a voice memo and Google Keep will transcribe it.

Google Tasks

A simple Google Tasks manager, available for iOS and Android. It easily synchronizes with Google Calendar and Gmail, which helps you back up important tasks and access your to-do lists from anywhere. Break down tasks into subtasks, set up recurring tasks and create lists. Get reminded at the right time and place by setting up geo-reminders, like for example "remind me to take out the trash when I get home."

16.6 APPLICATIONS OF GOOGLE CALENDAR

Google Calendar is the time management and scheduling tool created by Google. It allows you to make appointments, organize your daily tasks, and more. The time management tool works best for people who need to simplify and plan their busy schedule. You can schedule Google Hangout calls with a click of a button while scheduling a remote meeting. My personal calendar is currently being used to help me coordinate meetings with vendors and highlight payment schedules for my upcoming wedding. So, it can definitely be used to plan some non-work-related stuff, too.

You can type either "what's my Google calendar" or "what is google calendar" to have a full view of your upcoming events.

Looking to synchronize all your calendars in Google Calendar? Doing this will allow you to see all of your events in one calendar so you can get a clear picture of what your schedule is like. So if you have both a personal and work calendar, you can synchronize the two to view it all in one. Steps below (Open Google Calendar)-

a) Click the "Settings menu" gear, then "Settings"
b) Scroll to "Import & Export"
c) Export your calendar
d) Then head into your main calendar
e) Click the "Settings menu" gear, then "Settings
f) Scroll to "Import & Export"
g) And Import your calendar

Note- Get the official Google Calendar app for your Android phone and tablet to save time and make the most of every day.

16.7 APPLICATIONS OF GOOGLE MEET (HOW TO USE?)

Google is making enterprise-grade video conferencing available to everyone. Now, anyone with a Google Account can create an online meeting with up to 100 participants and meet for up to 60 minutes per meeting. Businesses, schools, and other organizations can take advantage of advanced features, including meetings with up to 250 internal or external participants and live streaming to up to 100,000 viewers within a domain.

How to use Google Meet?

It's free!

To sign up for the free version of Google Meet, go to the Google Meet page. Enter your name, email, country and primary use for Google Meet (personal, business, education or government). Agree to Google's terms of service, and hit Submit. Once you sign up, here's how to use the free version of Google Meet:

a) Go to meet.google.com (or, open the app on iOS or Android, or start a meeting from Google Calendar).
b) Click Start new meeting, or enter your meeting code.
c) Choose the Google account you want to use.
d) Click Join meeting. You'll have the ability to add others to your meeting, too; And that's it! Happy video chatting.

16.8 POINTS TO REMEMBER

- The evolution of various messaging and collaboration services is one of the changes experienced by corporate world during last few years.
- Online forums can be used for many purposes, such as helping students to review material prior to an assignment or exam, engaging students in discussion of course material before coming to class, and reflecting on material that they have read or worked with outside of class.
- Google Calendar is the time management and scheduling tool created by Google. It allows you to make appointments, organize your daily tasks, and more.
- Google is making enterprise-grade video conferencing available to everyone. Now, anyone with a Google Account can create an online meeting with up to 100 participants and meet for up to 60 minutes per meeting.

16.9 GLOSSARY

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16.10 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) Explain various messaging and collaboration services.

b) What is the use of Online Discussion Forum? Explain.

c) How online meeting tools are useful? Explain.

d) Define the role of scheduler?

e) Why the to-do list tools are useful? Explain.

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UNIT- 17

DATA SECURITY

17.1 INTRODUCTION

Computers and other digital devices have become essential to business and commerce; they have also increasingly become a target for attacks. In order for a company or an individual to use a computing device with confidence, they must first be assured that the device is not compromised in any way and that all communications will be secure. In this chapter, we will review the fundamental concepts of information systems security and discuss some of the measures that can be taken to mitigate security threats. We will begin with an overview focusing on how organizations can stay secure. Several different measures that a company can take to improve security will be discussed. We will then follow up by reviewing security precautions that individuals can take in order to secure their personal computing environment.

When protecting information, we want to be able to restrict access to those who are allowed to see it; everyone else should be disallowed from learning anything about its contents. This is the essence of confidentiality.

17.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Define the importance of Data Security
- Explore Data Security in India.
- Types of data security.
- Know the challenges of data security in India.

17.3 DATA SECCURITY- AN OVERVIEW

Data security is both the practice and the technology of protecting valuable and sensitive company's and customer's data, such as personal or financial information. Think about the valuable data your company collects, stores, and manages. Information like financial or payment related data, intellectual property, and sensitive personal information about your employees and customers are a goldmines for the hackers. Data security, the processes and technologies you should be using to safeguard that data is a crucial element in protecting your company's reputation and fiscal health.

Importance Of Data Security-

The data that your company creates collects, stores, and exchanges is a valuable asset. Safeguarding it from corruption and unauthorized access by internal or external people protects your company from financial loss, reputation damage, consumer confidence disintegration, and brand erosion. Furthermore, government and industry regulation around data security make it imperative that your company achieve and maintain compliance with these rules wherever you do business.

17.4 TYPES OF DATA SECURITY CONTROL

Understanding the importance of data security will help you formulate a plan to protect that data. There are many data security technologies and processes that can support your company's productivity while safeguarding data. Types of data security controls include:

Authentication-

Authentication, along with authorization, is one of the recommended ways to boost data security and protect against data breaches. Authentication technology verifies if a user's credentials match those stored in your database. Today's standard authentication processes include using a combination of ways to identify an authorized user, such as passwords, PINS, security tokens, a swipe card, or biometrics. Authentication is made easier through single sign-on technology, which, with one security token, allows an authenticated user access to multiple systems, platforms, and applications. Authorization technology determines what an authenticated user are allowed to do or see on your website or server.

Access control-

Authentication and authorization happen through the process called access control. Access control systems can include: (i) Discretionary access control (the least restrictive), which allows access to resources based on the identity of users or groups, (ii) Role-based access control, which assigns access based on organizational role and allows users access only to specific information, (iii) And mandatory access control, which allows a system administrator to strictly control access to all information.

Backups and recovery-

Prioritizing data security also requires a plan for how to access your company's and client's data in the event of system failure, disaster, data corruption, or breach. Doing regular data backups is an important activity to help with that access. A data backup entails making a copy of your data and storing it on a separate system or medium such as a tape, disk, or in the cloud. You can then recover lost data by using your backup.

Encryption-

Data encryption software effectively enhances data security by using an algorithm (called a cipher) and an encryption key to turn normal text into encrypted ciphertext. To an unauthorized person, the cipher data will be unreadable. That data can then be decrypted only by a user with an authorized key. Encryption is used to protect the data that you store (called data at rest) and data exchanged between databases, mobile devices, and the cloud (called data in transit). Your encryption keys must be securely managed, including protecting your critical management systems, managing a secure, off-site encryption backup, and restricting access.

Data masking-

Data masking software hides data by obscuring letters and numbers with proxy characters. The data is still there, behind the masking. The software changes the data back to its original form only when an authorized user receives that data.

Tokenization-

Tokenization substitutes sensitive data with random characters that are not algorithmically reversible. The relationship between the data and its token values is stored in a protected database lookup table, rather than being generated by and decrypted by a mathematical algorithm (as in the case of encryption). The token representing the real data is used across different systems as a replacement, while the actual data is stored on a separate, secure platform.

Deletions and erasure-

When electronic data is no longer needed and must be permanently cleared from the system, erasure can overwrite that data so that it is irretrievable. Erasure is different from deletion, which is a process that simply hides data in such a way that makes it easy to retrieve.

17.5 DATA SECURITY TECHNOLOGIES

The following are data security technologies used to prevent security breaches, reduce risk and sustain protections.

Data Auditing-

The question isn't if a security breach occurs, but when a security breach will occur. When forensics gets involved in investigating the root cause of a breach, having a data auditing solution in place to capture and report on access control changes to data, who had access to sensitive data, when it was accessed, file path, etc. are vital to the investigation process. Alternatively, with proper data auditing solutions, IT administrators can gain the visibility necessary to prevent unauthorized changes and potential breaches.

Data Real-Time Alerts-

Typically, it takes companies several months (or 206 days) to discover a breach. Companies often find out about breaches through their customers or third parties instead of their own IT departments. By monitoring data activity and suspicious behavior in real-time, you can discover more quickly security breaches that lead to accidental destruction, loss, alteration, unauthorized disclosure of, or access to personal data.

Data Risk Assessment-

Data risk assessments help companies identify their most overexposed sensitive data and offer reliable and repeatable steps to prioritize and fix serious security risks. The process starts with identifying sensitive data accessed via global groups, stale data, and/or inconsistent permissions. Risk assessments summarize important findings, expose data vulnerabilities, provide a detailed explanation of each vulnerability, and include prioritized remediation recommendations.

Data Minimization-

The last decade of IT management has seen a shift in the perception of data. Previously, having more data was almost always better than less. You could never be sure ahead of time what you might want to do with it. Today, data is a liability. The threat of a reputation-destroying data breach, loss in the millions or stiff regulatory fines all reinforce the thought that collecting anything beyond the minimum amount of sensitive data is extremely dangerous. To that end: follow data minimization best practices and review all data collection needs and procedures from a business standpoint.

Purge Stale Data-

Data that is not on your network is data that can't be compromised. Put in systems that can track file access and automatically archive unused files. In the modern age of yearly acquisitions, reorganizations and "synergistic relocations," it's quite likely that networks of any significant size have multiple forgotten servers that are kept around for no good reason.

17.6 PROTECTING YOUR COMPANY'S DATA

In recent years, data protection has become a must for all companies, no matter their size. While big organizations suffering data breaches such as Facebook, Orbitz or Quora are the ones making headlines, a more troubling reality awaits small and mid-sized companies: 60% of them go out of business within six months of a cyber-attack, according to the National Cyber Security Alliance. Additionally, the rise of data protection regulations around the world, has added an extra layer of urgency to the need for all companies to implement concrete data protection measures. Big companies are, in many cases, way ahead of the game, having already built their cyber security policies and tested them over the course of the last few years. Let's have a look at some of their most successful strategies:

Write up a strategy-

Rather than having a vague idea of policy and procedures, businesses of all sizes should have a formal IT security strategy that's as detailed and exhaustive as possible. It's imperative that it not only lays out how to protect data and resources, but what to do should things go wrong. An incident-response strategy ensures you'll be a step ahead, rather than making any rash heat-of-the-moment reactions that might make things worse. Keep it updated and close to hand too; there's no point putting in all that effort writing it up only for the document to collect dust in a drawer somewhere.

Protect against malware-

Ward off data threats by securing your PCs and network against malware. Malicious software that can cause massive amounts of data damage, malware can swarm on unprotected machines without you even knowing about it. It's essential that you protect yourself from malware through the following:

- Apply the firewall: While not enough on its own, your router's on-board firewall provides the first line of defence, so turn it on.
- PC protection: Sophisticated security software protects without compromising on the performance of your computer or network. Look for protection that can deal with identity theft, suspect websites and hacking in one fell swoop.

- Keep emails clean: Antispam software protects against unwanted emails, which can create risks and distractions for employees. Stop them in their tracks with the necessary precautions.

Keep your wireless network secure-

If you have a wireless network, then beware: hackers are waiting to pounce on it without warning. An encryption key may flummox those who aren't especially tech savvy, but to hackers, it's be a breeze to bypass. Strengthen your router by using the strongest encryption setting you can to protect your business, and turn off the broadcasting function to make your network invisible. As far as hackers are concerned, they can't hack what they can't actually see.

Safeguard passwords-

Even something as simple as a password can be optimised to fortify your data. They might be a nuisance to remember, but the more complex your passwords, the more protection you can provide. Make your passwords at least eight characters long, and embed numbers and other non-standard characters within them, so they can't be easily guessed. Changing them frequently can also help – as can employing credentials which aren't words, but combinations of seemingly random letters, numbers and special characters. Here's where passwords managers really come into their own, meaning your employees don't have to worry about remembering them and won't risk writing them down.

Create a plan for personal devices-

More common in small-to-medium sized businesses make sure you're staying abreast of the security risks associated with employees bringing in and using their own devices. Create a plan for the practice in order to provide some protection against legal repercussions and mobile system costs. A clear, comprehensive policy covering pertinent data deletion, location tracking, and Internet monitoring issues can be very valuable. Additionally, businesses should look to make proper provision for employees who work remotely or use their own devices as part of their roles. While these practices can increase productivity and reduce overheads, they can also introduce new security concerns if not properly managed.

Set up automatic software updates-

Hackers love to scan a network or site to see which version of software it's running on to make it easier for them to exploit the vulnerabilities of older versions. Updating device security settings, operating systems and other software to their latest versions can prevent this from happening. Set any patches and improvements to automatically update in the background to further safeguard against potential threats.

Conduct background checks-

Be extra vigilant with regards to hiring new employees; safeguarding against internal threats plays a key role in effective cyber security. Look into their background and give yourself an idea of what kind of person they are. Additionally, be mindful of changes in the character of existing employees, as this could be indicative of other issues.

Dispose of data properly-

Having the appropriate measures in place to dispose of data which is no longer required is a critical factor in reducing the risk of a security breach. Ensuring that retired and reused devices and storage media have had their contents properly removed will ensure that confidential company data can't be retrieved further down the line – and won't fall into the wrong hands. Remember; Reinstalling your operating system, formatting your hard drive or deleting specific files and folders doesn't ensure your data is gone. In fact, in most cases your data is still completely accessible with freely-available tools. Ensure your IT disposal partner is using a tool that overwrites your data multiple times ensuring your data is unrecoverable. Businesses should look to implement a sound data destruction policy which outlines the protocol for each use case (computers, phones, external hard drives and flash memory) – whether these devices are being redistributed within the business or discarded at the end of their lifecycles.

Use the cloud-

If your business doesn't have the time or expertise to stay on top of all the security issues updates requiring attention, then it might be worth looking at a cloud service provider instead. A reputable cloud provider will be able to store data, maintain software patches and implement security. While not likely to be suitable for enterprise-level organisations, this can be a good approach for small businesses looking to provide themselves with a degree of protection.

Educate your employees-

Making sure everyone in your business understands company security policy is important. Whether you opt to do it during onboarding or conduct bi-annual refresher courses, it's worth carrying out – just make sure everyone is heeding the practices, throughout the entire company.

17.7 A SECURITY CHECKLIST

According to the National Cyber Security Alliance, 83% of small businesses do not have a formal cyber security plan (2012). Unless businesses take the necessary precautions, they will be more vulnerable to data breaches placing their employees, customers and business at risk. The financial liability associated with a breach can temporarily or permanently disrupt

business operations. By having a plan, you will be less vulnerable and more resilient. Below is a list of basic considerations.

[1] Activate firewalls and install anti-virus, anti-malware and anti-spyware software-Your Internet service provider may provide free software that you can download.

[2] Virus software should be updated and run weekly, at a minimum.

[3] Update software immediately- Security breaches may occur through vulnerabilities in software. Hackers learn about the security flaws that are patched with an update and attempt to exploit those vulnerabilities with companies that haven't updated.

[4] Keep software updated and stay informed about the latest security features and vulnerabilities.

[5] Create strong passwords- Weak passwords are the easiest way to infiltrate a computer network. Do all employees create strong passwords that are long and unique? Create a firm policy for employees and managers that includes the following recommendations:

- Do not use the same user IDs and passwords for work and home accounts. This way the company will not be at risk if an employee's personal accounts are breached.
- Select passwords that are unique, ideally random, 16 characters or longer with letters, numbers and punctuation. There are online tools that can help with password generation.
- Require password changes at least 6-12 times per year.
- Prohibit posting passwords on computers and work spaces.
- Provide your team with a multi-user password manager tool if needed.

[6] Cancel accounts upon employee terminations- Any time an employee leaves the company, either voluntarily or involuntarily, immediately cancel their account.

[7] Restrict access- Define what data your employees need access to. Restrict access to any area that is not necessary for the job.

[8] Encrypt confidential information- Use encryption software to protect confidential information on laptops, tablets, backups and other media.

[9] Reduce spam and phishing vulnerabilities- Scammers use emails that appear to be from legitimate sources to bait unsuspecting users into providing personal information or clicking on links containing malicious software. Ways to reduce these issues:

- Adust the protection level of your spam filter to reduce the amount of spam emails that are deposited to inboxes. Employees can assist with this effort by marking messages as spam or forwarding messages to the spam filter, whatever applies.

- Train employees how to identify phishing emails, so that they are less likely to click on links to malicious software and provide sensitive personal and company information to scammers.
- Have a policy that employees should immediately report any suspicious email that they've responded to or link that they've clicked on, so that you can assess if there are any security concerns.

[10] Establish two-factor authentication- on your web logins and online accounts. This security feature requires two forms of verification to gain access to accounts i.e. a password plus a code that is texted to a smartphone. It stops hackers from gaining access to an account when a password is compromised. Perform a secure wipe of all devices and copiers before they are recycled. Often data is retrievable even after it is deleted. A wipe overwrites the info several times making it difficult to recover.

[11] Limit login attempts on your website: - If someone can login to any public part of your website, ensure there is a login limiter i.e. WordPress has a Limit Login Attempts plugin. Hackers use software to attempt thousands to millions of user ids and password combinations to hack a company's website. Utilize software that allows you to set an account lockout threshold. When an IP address fails to input a correct user id and password for a specific number of attempts, the system will lock the user out.

[12] Adopt a backup plan for your files: The continuity of your business hinges on your resilience in the event of a disaster or your data being compromised by ransomware. Some aspects to consider in your policy:

- What storage medium(s) will you use to back up your data i.e. local device or cloud?
- How many backups do you need?
- How often do you need to back up? Frequency depends on how often you make changes to websites and account data. Ideally, back up your data more frequently than needed.
- Where will you store local drives?

[13] Secure your Wi-Fi networks with encryption and passwords- Securing Wi-Fi networks also means keeping a separate network for guest access, using a different router connection whenever feasible. Change the passwords to Wi-Fi accounts regularly.

[14] Establish security policies for employees who work remotely. Your level of security may be impacted by an employee's security practices outside of the office. Work cell phones and laptops must be password protected and never left unattended in public places including vehicles. Use only a private, secure Wi-Fi and a Virtual Private Network.

[15] Set firm policies of what apps can be downloaded- Have a policy about what apps employees can install on phones, tablets and computers. Employees should never jail break their phones or tablets to download apps because this bypasses security features provided by

the operating system. They should be prohibited from downloading applications and visiting websites not related to the job. This will reduce unnecessary risks.

[16] Consider vulnerabilities related to contractors: - Contractor access to your company's network can be vulnerability if policies aren't in place. If you employ third party contractors who must access your computer network:

- Restrict access to only the data that they will need.
- Require them to adopt the same security policies as employees where applicable.
- When their contract is complete, immediately terminate their user ids and passwords.

[17] Research local computer support companies who can help: - If you get into a bind, you want to have a contact for a trusted specialist who can help you immediately. Establish connections before there are problems.

[18] Screen companies that you hire to maintain your server- If you hire someone to maintain your server, did you research the best companies and seek referrals from other businesses? How do they protect your data against malware and natural disasters? What are their security policies?

[19] If a device is infected with malware, immediately remove it from the network so that it doesn't affect other computers. Turn off the device and change online and network passwords where possible.

17.8 CHALLENGES AND ISSUES

Some of the key security challenges and issues are discussed here, As-

- Vulnerability to fake data generation
- Potential presence of untrusted mappers
- Troubles of cryptographic protection
- Possibility of sensitive information mining
- Struggles of granular access control
- Data provenance difficulties
- High speed of NoSQL databases' evolution and lack of security focus
- Absent security audits

[1] Vulnerability to fake data generation

Before proceeding to all the operational security challenges of big data, we should mention the concerns of fake data generation. To deliberately undermine the quality of your big data analysis, cybercriminals can fabricate data and 'pour' it into your data lake. For instance, if your manufacturing company uses sensor data to detect malfunctioning production processes, cybercriminals can penetrate your system and make your sensors show fake results, say, wrong temperatures. This way, you can fail to notice alarming trends and miss the

opportunity to solve problems before serious damage is caused. Such challenges can be solved through applying fraud detection approach.

[2] Potential presence of untrusted mappers

Once your big data is collected, it undergoes parallel processing. One of the methods used here is MapReduce paradigm. When the data is split into numerous bulks, a mapper processes them and allocates to particular storage options. If an outsider has access to your mappers' code, they can change the settings of the existing mappers or add 'alien' ones. This way, your data processing can be effectively ruined: cybercriminals can make mappers produce inadequate lists of key/value pairs. Which is why the results brought up by the Reduce process will be faulty. Besides, outsiders can get access to sensitive information.

The problem here is that getting such access may not be too difficult since generally big data technologies don't provide an additional security layer to protect data. They usually tend to rely on perimeter security systems. But if those are faulty, your big data becomes a low hanging fruit.

[3] Troubles of cryptographic protection

Although encryption is a well-known way of protecting sensitive information, it is further on our list of big data security issues. Despite the possibility to encrypt big data and the essentiality of doing so, this security measure is often ignored. Sensitive data is generally stored in the cloud without any encrypted protection. And the reason for acting so recklessly is simple: *constant encryptions and decryptions of huge data chunks slow things down*, which entails the loss of big data's initial advantage – speed.

[4] Possibility of sensitive information mining

Perimeter-based security is typically used for big data protection. It means that all 'points of entry and exit' are secured. But what IT specialists do inside your system remains a mystery. Such a lack of control within your big data solution may let your corrupt IT specialists or evil business rivals mine unprotected data and sell it for their own benefit. Your company, in its turn, can incur huge losses, if such information is connected with new product/service launch, company's financial operations or users' personal information. Here, data can be better protected by adding extra perimeters. Also, your system's security could benefit from anonymization. If somebody gets personal data of your users with absent names, addresses and telephones, they can do practically no harm.

[5] Struggles of granular access control

Sometimes, data items fall under restrictions and practically no users can see the secret info in them, like, personal information in medical records (name, email, blood sugar, etc.). But some parts of such items (free of 'harsh' restrictions) could theoretically be helpful for users with no access to the secret parts, say, for medical researchers. Nevertheless, all the useful

contents are hidden from them. And this is where talk of granular access starts. Using that, people can access needed data sets but can view only the info they are allowed to see.

The trick is that in big data such access is difficult to grant and control simply because big data technologies aren't initially designed to do so. Generally, as a way out, the parts of needed data sets, that users have right to see, are copied to a separate big data warehouse and provided to particular user groups as a new 'whole'. For a medical research, for instance, only the medical info (without the names, addresses and so on) gets copied. Though, the volumes of your big data grow even faster this way. Other complex solutions of granular access issues can also adversely affect the system's performance and maintenance.

[6] Data provenance difficulties

Data provenance or historical records about your data complicates matters even more. Since its job is to document the source of data and all manipulations performed with it, we can only image what a gigantic collection of metadata that can be. Big data isn't small in volume itself. And now picture that every data item it contains has detailed information about its origin and the ways it was influenced (which is difficult to get in the first place). For now, data provenance is a broad big data concern. From data security perspective, it is crucial because, unauthorized changes in metadata can lead you to the wrong data sets, which will make it difficult to find needed information. Untraceable data sources can be a huge impediment to finding the roots of security breaches and fake data generation cases.

[7] High speed of NoSQL databases' evolution and lack of security focus

This point may seem as a positive one, while it actually is a serious concern. Now NoSQL databases are a popular trend in big data science. And its popularity is exactly what causes problems. Technically, NoSQL databases are continuously being honed with new features. And just like we said in the beginning of this article, security is being mistreated and left in the background. It is universally hoped that the security of big data solutions will be provided externally. But rather often it is ignored even on that level.

[8] Absent security audits

Big data security audits help companies gain awareness of their security gaps. And although it is advised to perform them on a regular basis, this recommendation is rarely met in reality. Working with big data has enough challenges and concerns as it is, and an audit would only add to the list. Besides, the lack of time, resources, qualified personnel or clarity in business-side security requirements makes such audits even more unrealistic.

Few more burning issues about data security, as-

[i] Not knowing who uses what data and where it is?

You can't secure data without knowing in detail how it moves through your organisation's network. Begin by doing a thorough inventory of sensitive data (See fig 1).Then develop a "Sensitive Data Utilisation Map" documenting your findings. Also consider building a series of diagrams to show where and how data moves through the system. All the parties involved should check these diagrams, and this process will itself raise awareness of both the value and the risk to sensitive data.

[ii] Treating all data equally

Business managers need to classify data according to its sensitivity and its worth to the organisation so they can correctly evaluate and fund different levels of protection. "Data Asset Valuation" is a very worthwhile ROI-type of activity. The goal is to correlate a variety of criteria, including regulatory compliance mandate, application utilisation, access frequency, update cost and competitive vulnerability to arrive at both a value for the data and a ratio for determining justifiable security costs.

[iii] Focusing solely on regulatory compliance concerns

Virtually all government and industry privacy and security regulations boil down to the most basic best practices of data security. So being able to pass a regulatory audit does not automatically ensure effective security. Instead of trying to protect your organisation's data assets by solely striving to meet individual regulatory requirements, focus on complying with security-centred processes, policies and people, reinforced by security solutions such as automated policy enforcement, encryption, role-based access and system auditing. In other words, do the right things instead of just the required things.

[iv] Keeping what you don't need

You can reduce the risk of retaining sensitive customer data by removing the electronic and paper data from all systems and files. However, just deleting files with infrequently accessed, highly sensitive data won't work - it would violate multiple data retention regulations not to mention annoying your marketing department. A better way is to look at the specific data retention and protection regulations governing each of the sensitive data elements that need protecting, working in conjunction with legal department and the data librarian who will usually know the relevant regulations.

[v] Security triage

We have to move beyond dealing with the crisis of the moment and focus on securing data holistically and consistently. And while it may be difficult to free up the time and the budget to institute a comprehensive data security plan, ultimately a unified approach will be far more effective than the fragmented practices present at too many companies, increasing security and saving both time and money.

Data-driven security cannot be an occasional event sparked by a crisis; it needs to be an integral part of the organisation's daily routine.

[vi] Outsourcing responsibility

Virtually all data protection and privacy regulations state that firms can't share the risk of compliance, which means that if your outsourcing partner fails to protect your company's data, your company is at fault and is liable for any associated penalties or legal actions that might arise from the exposure of that data. Laws concerning data privacy and security vary internationally. To lessen the chance of sensitive data being exposed deliberately or by mistake, you must ensure that the company you are partnering with offshore or domestic takes data security seriously and fully understands the regulations that affect your business.

[vii] Putting too much faith in risk assessments

The simplistic Yes/No questions that are part of the generic ISO 17799 and PCI requirements focus on whether a particular technology, policy or control is in place, and not how effective these controls can be against careless or malicious insiders or outsiders. Risk assessments tend to look at one item at a time, and do not offer a holistic view of the system. Each component may look secure, but risk may still occur at the interface points or the points of inconsistency across systems. Think holistically to secure a system, considering the flow of data through the entire system rather than testing individual points.

[viii] Settling For Less Than Real Security

Knowing what enterprise data protection technologies, policies and procedures are "reasonable" relative to peer organisations is useful information, but don't allow others' actions to determine your security plan and goals. Model your policies and processes after the best practices of the most secure organisations in your industry, rather than those used by the common denominator. Strive for excellence.

[ix] Fragmented processes and policies

Despite claims that protecting data assets is strategic to an enterprise, the scope of data protection projects is all too often either regulation or department-specific. Look at developing an enterprise-wide data protection strategy instead. The goal of the project is not to produce a report, but to build awareness and executive support for the treatment of sensitive data assets with technologies, policies and procedures that match with the regulations, the utilisation and the potential loss if the data assets were to be compromised.

[x] Retaining sensitive data without balancing risks against rewards

Retaining sensitive data can be very valuable for analytic, marketing and relationship purposes. The rewards can be very high, provided you can properly secure the data and reduce the risks of storing it.

Make sure that your organisation's risk reward ratio is balanced toward reward and the data is being used in a way that brings real benefits to your organisation. And if securely storing data is costing more than its value to your organisation, it's time to refine your data retention policy.

17.9 POINTS TO REMEMBER

- Data security is both the practice and the technology of protecting valuable and sensitive company and customer data, such as personal or financial information.
- Data security—the processes and technologies you should be using to safeguard that data is a crucial element in protecting your company's reputation and fiscal health.
- Safeguarding it from corruption and unauthorized access by internal or external people protects your company from financial loss, reputation damage, consumer confidence disintegration, and brand erosion.
- Authentication technology verifies if a user's credentials match those stored in your database.
- Tokenization substitutes sensitive data with random characters that are not algorithmically reversible. The relationship between the data and its token values is stored in a protected database lookup table, rather than being generated by and decrypted by a mathematical algorithm.
- Data masking software hides data by obscuring letters and numbers with proxy characters. The data is still there, behind the masking
- Data encryption software effectively enhances data security by using an algorithm (called a cipher) and an encryption key to turn normal text into encrypted ciphertext. To an unauthorized person, the cipher data will be unreadable
- A data backup entails making a copy of your data and storing it on a separate system or medium such as a tape, disk, or in the cloud. You can then recover lost data by using your backup.

17.10 GLOSSARY

- Authentication is the process of identifying a piece of information, the veracity of information provided.
- An attack is an action with malicious intention to interrupt the operations of a network or steal the data, etc.
- Antivirus software is s program or a set of programs that help prevent any malicious code, program from entering your computer or network.

- A Distributed Denial of Service is a Denial of Service technique that uses numerous hosts to perform the task.
- A computer worm is a standalone malware computer program that replicates itself in order to spread to other computers.
- Vulnerability is a weakness which can be exploited by a threat actor such as an attacker to perform unauthorised actions within a computer system.

17.11 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) What is Cryptography?
b) What is the difference between Threat, Vulnerability and Risk?
c) What is the use of Firewall?
d) List the common types of cyber security attacks.
e) Define data leakage?
f) What is Distributed Denial of Service?

Objective Type Questions-

a) Data security means protecting digital data those in a database from destructive forces and from the unwanted actions of unauthorized users such as cyber-attack. (True/False)

b) A Firewall is a network security system that monitor and controls and outgoing network traffic.(True/False)

c) A threat is a potential negative action facilitated by vulnerability that results in unwanted impact to a computer system. (True/False)

d) Cryptography is a method of stealing information unwanted users (True/False)

e) Antivirus software is a program or a set of programs that help steal any malicious code, program from entering your computer or network. (True/False)

f) ……is the process of identifying a piece of information, the veracity of information provided.

g) A computer …… is a standalone malware computer program that replicates itself in order to spread to other computers.

Answer (Objective Type Question)-

[a] True	[b] True	[c] True	[d] False
[e] False	[f] Authentication	[g] worm	

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17.13 SUGGESTED READINGS

- Hacking: The art of Exploitation by Jon Erickson.
- The art of invisibility by Kevin Mitnick.

UNIT- 18

E-BANKING

18.1 INTRODUCTION

E- Banking is a process of banking services and products through electronic channels such as telephone, internet, cell phones etc. today many people are moving towards e-banking as buy its use it become easy for customers to manage their account from a place and at any time and this charge very nominal cost. It is not wrong to say that e-banking is one of the most popular and latest technological wonder in field of banking which has given a banking sector a new dimension for growth. E-banking has helped the banking industry in

several new ways but the biggest advantage that it has imparted to this sector in developing countries especially country like INDIA is related to improving customer relations.

E-banking is the electronic banking process that provides the financial service for the individual client by means of Internet. The evolution of electronic banking (E-banking) started with the use of automatic teller machines (ATMs) and has included telephone banking, direct bill payment, electronic fund transfer and online banking. According to some, the future direction of E-banking is the acceptance of mobile telephone (WAP-enabled) banking and interactive-TV banking. However, it has been forecast by many that online banking will continue to be the most popular method for future electronic financial transactions. Electronic funds transfer (EFT), refers to the computer-based systems used to perform financial transaction electronically. The term is used for a number of different concepts including electronic payments and cardholder-initiated transactions, where a cardholder makes use of a payment card such as a credit card or debit card. Card-based EFT transactions are often covered by the ISO 8583 series of standards. In order for customers to use their banks online services they need to have a personal computer and Internet connection.

18.2 OBJECTIVES

After the successful completion of this unit, you will be able to-

- Define the importance of e-banking
- Explore online banking in India.
- Define the electronic payment system.
- Know the challenges of e-banking in India.

18.3 E-BANKING- AN OVERVIEW

In its very basic form, E-banking can mean the provision of information about a bank and its services via a home page on the World Wide Web (WWW). More sophisticated E-banking services provide customer access to accounts, the ability to move their money between different accounts, and making payments or applying for loans via e-Channels. In the context of E-banking, electronic delivery of services means a customer conducting transactions using online electronic channels such as the Internet. Many banks and other organizations are eager to use this channel to deliver their services because of its relatively lower delivery cost, higher sales and potential for offering greater convenience for customers. But this medium offers many more benefits, which will be discussed in the next section. A large number of organizations from within and outside the financial sector are currently offering E-banking which includes delivering services using Wireless Application Protocol (WAP) phones and Interactive Television (iTV).

In entire Indian banking system, Electronic Banking has turned emerged as an important part. The concept of e- banking is off to some extent latest origin in India. Traditional model of banking i.e. branch based banking was widespread till 1990s, and after that non-branch banking services began. IT Act, 2000, was created by government of India with effect from the 17th October 2000. A Committee was laid down to study various aspects of Internet banking. The committee had paid enough consideration on three most important areas of Internet banking, Security issues, legal issues and regulatory issues. Recommendations and guiding principles of working committee was acknowledged by Reserve Bank of India and accordingly plans were issued to banks to employ internet banking in India.

E-banking is a popular modern technology that delivers the new and traditional banking products and services to the customers electronically. Any type of intelligent electronic devices such as, personal computer (PC), Personal Digital Assistant (PDA), Automated Teller Machine (ATM), kiosk or Touch Tone Telephone. But from among these the ATM card, Debit card, Credit card, online banking, phone banking, SMS banking etc. are most used for e-banking. In the developed countries e-banking has become an invaluable part of everyday life. Besides the developed world, the developing countries also come into contact with vast increase in e-banking such as; India.

Benefits of E-Banking-

Banking has witnessed many innovations in last 3 decade and one of the major among it is e- banking which was result of information and technological revolution. These IT revolutions changed the entire working of banking sector as e- banking gave birth to new type of financial services which was created by the intersection of tradition retail financial services with the internet. E-banking provides provision of performing basic banking services or transaction through web. These services include

- Checking and savings accounts
- Consumer loans and mortgage financing
- Credit and debit cards
- Private banking services

Introduction of e- banking made banking very convenient and time saving. Main focus of e- banking is to provide a customer with convenient and secure methods of doing online financial transactions like automatic deposits, automatic bill payments from their bank account, getting online loan and many more.

18.4 INTERNET BANKING

Online banking, also known as internet banking or web banking, is an electronic payment system that enables customers of a bank or other financial institutions to conduct a range

of financial transactions through the financial institution's website. The online banking system will typically connect to or be part of the core banking system operated by a bank and is in contrast to branch banking which was the traditional way customers accessed banking services.

Some banks operate as a "direct bank" (or “virtual bank”), where they rely completely on internet banking. Internet banking software provides personal and corporate banking services offering features such as viewing account balances, obtaining statements, checking recent transactions, transferring money between accounts, and making payments.

Advantages of Internet Banking- The most prominent benefits provided by online banking include:

- Speed and efficiency
- Online bill payment
- Low overhead can mean high interest rates on deposit accounts
- Low overhead can mean low fees
- 24/7 account and service access

Disadvantages of internet Banking- There are some drawbacks to using online banks as well. Here are some of the downsides of working with an online bank:

- No relationship with personal banker
- Inconvenient to make deposits
- Technology issues
- Security issues
- Inefficient at complex transactions

18.5 HOME BANKING

Home banking is the practice of conducting banking transactions from home rather than at branch locations. Home banking generally refers to mobile banking, web banking, banking over the telephone, or banking by mail. The first experiments with online banking started in the early 1980s. However, it did not become popular until the rise of the Internet in the mid-1990s. Many Internet banks maintain few, if any, physical branches.

The increasing popularity of home banking has fundamentally changed the character of the banking industry. Many people can arrange their affairs so that they seldom need to visit a physical branch. Online-only banks have profited from this shift in the industry. The absence of brick-and-mortar locations allows many online banks to offer favorable interest rates, lower service charges, and other incentives for those willing to bank online.

Many of the limits on home banking revolve around initiating large transactions. Requiring a personal appearance reduces and even prevents some forms of fraud. Although there is an increasing trend toward offering more services online, many banks normally require that some transactions occur in person. For instance, applying for a personal or business loan often calls for an appearance at a branch office. Applying for a mortgage is another financial transaction where the applicant historically had to visit the bank at some point.

Advantages of Home Banking-

Saving time and reducing physical risks are the main benefits of home banking. Financial transactions can often be completed in minutes at home. At best, banking in person requires walking over to a small branch office in a convenient location, such as a grocery store. At worst, traditional banking demands a separate trip and waiting in a long line upon arrival. Home banking also eliminates the need to take physical risks, which are not limited to the coronavirus. Car accidents killed tens of thousands of Americans every year in the early 21st century. Furthermore, many people are afraid of being robbed at ATMs.

Disadvantages of Home Banking-

With the increased shift to online banking, new security threats have arisen. All online information, such as account numbers and recent transactions, is vulnerable to malicious hackers and other thieves. Commercial banks with online arms have put into place cyber security measures to prevent such thefts from occurring. Cyber security has become essential as the world becomes more reliant on computers than ever before.

18.6 MOBILE BANKING

Mobile banking has become immensely popular among customers as a suitable method for money transaction. Banks are assertively adopting this mode. It is playing a vital role in availing banking services in remote areas where placing branch or ATM booth is not economically feasible. Mobile banking is so far the easiest way of expanding banking coverage. But there is huge possibility of fraud in case of mobile banking as authentication & all type of transaction information is provided via mobile phone including pin. So mobile banking is not intended to be used for big transactions where ATM transactions are suitable because of its two layer authentication system. In this paper, a new system is introduced that provides ATM service without traditional booths but two layer authentications with a tiny OS independent device has been introduced named VATM. This paper discusses how this system works using a low cost device made of micro-controller & CDMA module for communicating with bank for authentication which is used as an alternate of Automated teller machine for providing two layer authentications. There are both advantages and disadvantages of mobile banking some of which have been highlighted below.

Advantages

- It utilizes the mobile connectivity of telecom operators and therefore does not require an internet connection.
- With mobile banking, users of mobile phones can perform several financial functions conveniently and securely from their mobile.
- You can check your account balance, review recent transaction, transfer funds, pay bills, locate ATMs, deposit cheques, manage investments, etc.
- Mobile banking is available round the clock 24/7/365, it is easy and convenient and an ideal choice for accessing financial services for most mobile phone owners in the rural areas.
- Mobile banking is said to be even more secure than online/internet banking.

Disadvantages

- Mobile banking users are at risk of receiving fake SMS messages and scams.
- The loss of a person's mobile device often means that criminals can gain access to your mobile banking PIN and other sensitive information.
- Modern mobile devices like Smartphone and tablets are better suited for mobile banking than old models of mobile phones and devices.
- Regular users of mobile banking over time can accumulate significant charges from their banks.

18.7 VIRTUAL BANKING

In the present scenario all clients related to the Banking and other sectors has to do some sort of transaction in their everyday life. Their transaction come through various location and time which includes Railway Station, Airports, Hospitals, Super Market etc., This is possible through Virtual Banking wherein the customers have no time restriction or do they need any electronic device to any transaction. It is a form of self-made support system. Innumerable number of clients / customers now prefers to carry on their banking related transactions in a simpler, cheaper way at all the time irrespective of the geographical locations. This is where this Virtual Banking comes as a boon to all the clients.

Virtual Banking (VB) is a strategy of distribution channels which are used to provide financial services and seeks to expand the concept of the traditional bank branch. This is done through the growth and development of technology. This is the latest and foremost form of present day banking where most of the services are delivered "Virtually". Means the services are delivered through Web and there is almost 1 to 2% eventuality that customers require their physical presence at their Bank Branch. Virmati's iCBS Middleware is based on the integration of such technologies as the internet, mobile phone,

and others which allow the client identification, and recording transactions carried out by clients, but electronically.

It is a comprehensive solution for banks/institutaions to manage the full-fledged Branchless Delivery or Direct Banking, thru the internet or mobile or call-center. It allows banks to expand in new markets, reduce operational issues, take banking services to the doorsteps of its existing & potential customers. In a nutshell, iCBS Middleware is a technology enabler or technology infrastructure to drive customer acquisition, servicing & thus extend branch-less bank's outreach. The different channels are utilised as an interface with a Host CBS - core banking solution through a custom built middle-ware. It provides customers of the bank, real-time access to their relationships in the bank such as account inquiries, fund transfers, credit cards, payments and remittances, where one can make payments to individuals or institutions and other general payments on-line.

ICBS Middleware e-Banking is based on n-tier architecture. It offers a high degree of scalability as it can be used in both small application server environments and in multi-server distributed processing environments. The solution is platform independent. It is highly secured and provides support for different authentication mechanisms.

Advantages

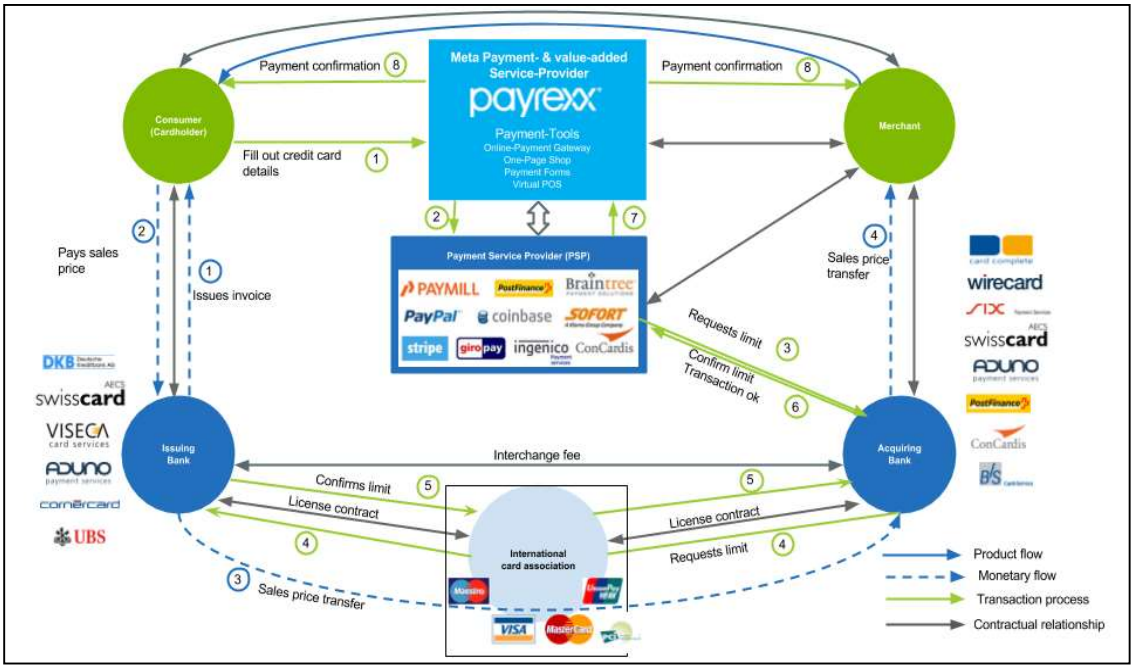
- **More advanced web technology:** Virtual banks usually employ more advanced web features and online tools for customers than traditional banks. As a result, they usually come with a more robust, comprehensive set of features.
- **Environmentally friendly:** There will be no paper statements, no errands driving to the bank and no additional space needs for staffing or housing of operations.
- **Higher interest rates and lower mortgage and loan rates:** Internet-only banks do not have the same level of expenses for staffing and space as conventional banks with physical locations. These savings in infrastructure and personnel costs can be passed onto the consumers in the forms of higher interest rates on savings or checking accounts and lower mortgage or loan rates. Some virtual banks are even able to offer no-fee, interest-bearing accounts without minimum balance requirements.
- **Completely free checking:** Nearly all internet-only banks provide checking accounts at no cost. Though most brick-and-mortar banks also offer no-fee checking, conditions usually are attached, such as the requirement of direct deposit.
- **Convenience and mobility:** Virtual banks do not close. Your account is accessible around the clock.

Disadvantages

- **Website outages:** Though increasingly uncommon, websites do go down at times, whether for planned maintenance or an unplanned glitch. If that happens, there is no physical place to go as a backup.
- **Lack of relationship:** Some transactions are easier when conducted face-to-face and more complicated issues can benefit from a personal interaction that is lacking in virtual banking.
- **Slower deposits:** Because there is no physical branch at which to make a deposit, adding money to an account can be delayed sometimes if a check has to be mailed. Advances in technology though are easing these delays, since most direct banks now allow remote deposits of checks through mobile phones. Cash, of course, still can present challenges unless the virtual bank partners with a network of banks or credit unions to allow members' deposits.

18.8 E-PAYMENTS

An electronic payment (e-payment), in short, can be simply defined as paying for goods or services on the internet. It includes all financial operations using electronic devices, such as computers, smartphones or tablets. E-payments come with various methods, like credit or debit card payments or bank transfers. Note that one of the most popular and common online payment methods nowadays is credit cards.



Online payments are made instantly, so it's convenient and saves lots of time. It is important, especially today when every aspect of our lives happens at a fast pace. The entire process behind the payment button is complicated, so here's the basic to make you understand it better.

- **Customer action** – The process begins when a customer visits the merchant's site and adds to the cart items (products or services) they want to buy. They, then need to fill out the payment form with certain information (e.g. card number, expiration date, CVV code, address). Depending on the payment method, the customer is either redirected to external service or bank's website or continues the payment on the website or in an app.
- **Payment authentication by the operator** – The payment gateway (with other parties involved) checks whether the payment information is valid. If everything's OK, the process continues and the payment gateway reports back the successful transaction. After that, the customer receives a payment confirmation the notification is usually displayed in real-time.
- **Payment to the seller's account** – An online payment provider receives a payment from a customer's bank and transfers it to the merchant's account.

Popular e-payment mediums-

[1] ATM CARD/ BIOMETRIC CARD- ATM is known as an automated teller machine or automatic teller machine. In simple sense it is an electronic computerized telecommunications device that allows customers to complete financial transaction like cash withdrawals or cash deposit by using their ATM cards and report of the account's balance can also be received that too without the aid of any bank branch representative or teller. In simple words, it is simple to use self-service solution.

[2] DEBIT CARD/ CREDIT CARD- Debit cards are also known as a bank card or check cards. Debit cards look like credit cards or ATM (automated teller machine) cards it is a plastic payment card that can be used instead of cash when making purchases but operate like cash or a personal check. But still Debit cards are different from credit cards as credit card is a way to "pay later," but debit card is a way to "pay now." When any customer uses a debit card his/her money is quickly deducted from their account. In simple words by use of debit card the money comes directly from the user's bank account when a transaction is being performed.

[3] SMART CARD- A smart card is also known chip card, or integrated circuit card (ICC) it is a pocket-sized plastic card that has embedded in form of computer chip. The microprocessor is under a contact pad on one side of the card. Think of the microprocessor as replacing the usual magnetic stripe present on a credit card or debit card. The microprocessor on the smart card is there for security. The host computer and card reader actually "talk" to the microprocessor. The microprocessor enforces access to the data on the card. The chips in these cards are capable of many kinds of transactions like cash withdrawal, deposit and balance inquire etc.

[4] EFT- Electronic funds transfer (EFT) is a service that allows a bank to transfer large amounts of money to another bank by sending an electronic message. Electronic transfers take only an instant. An electronic message instructs a computer to deduct a certain amount of money from one bank account and then add the same amount to another bank account. The message is sent, and the appropriate amount is transferred. No cash or paper changes hands, but money is transferred just the same.

[5] ECS- When you take a loan like a home loan or personal loan, you are required to pay its EMI on a fixed date every month. We are generally so busy with our personal and professional lives that it can be challenging to remember the EMI date. Missing EMI date could result in a penalty, and regular late payments can also affect your credit rating.

To eliminate this inconvenience, lenders in India now offer Electronic Clearing Service (ECS) facility to the borrowers. Let us have a look at what this facility is and how it works. ECS was launched by the RBI for facilitating bulk transfer of funds from one bank account to another bank account. Loan providers use this facility to debit loan EMIs on a fixed date from the bank account of the borrower. This is done with the help of a clearinghouse. In India, ECS debit is mostly handled by the NACH (National Automated Clearing House) which works under NPCI (National Payments Corporation of India).

How Does ECS Works?

When you take a loan, you are required to sign an ECS payment mandate. This mandate gives the authority to the clearinghouse to debit the monthly EMI from your bank account and credit the same into your loan account, or lenders account on a fixed date. This mandate will have detailed information about your bank account, bank branch, ECS debit date and amount.

How to Stop ECS?

If for some reason you want to stop ECS debit from your bank account, you need to inform the same first to your loan provider. A written application needs to be submitted in a format prescribed by the loan provider. Once this is done, you also need to inform the same to your bank by submitting a written application.

Submit the application to the loan provider as well as your bank at least a couple weeks before your EMI debit date so that the necessary steps can be taken in time.

Things to Keep in Mind When Using ECS-

While the ECS facility eliminates the need for you to issue a cheque or go to an online payment gateway for regular payments like loan EMIs, you should make sure that your bank account has adequate funds for clearing the ECS. If at all you do not have adequate funds in your bank account and the ECS bounces, you will mostly be required to pay a penalty which can be as high as the penalty you pay for a bounced cheque. So, be a little cautious while using this facility for automating your EMI payments.

18.9 E-MONEY

Electronic money or e-money is a payment system which now is getting popular. E-money is a cashless payment system which now is many used in several big cities in Indonesia, including Jakarta. The existence of electronic money has been replacing the function of cash. You don't have to pull out your money from your wallet to paying anything, you only have to use one card and all is done. Although behind its advantages, don't mean there is no disadvantage. Below are advantages and disadvantages of electronic money.

Advantages-

- **More practical-** To use electronic money, you have to charge the balance. You can top up at the merchants and now is easier to find the merchant. The balance in your e-money can be used for any transactions, wherever and whenever. You only have to use one card and you can pay anything you want as long as you never run out of your balance.
- **Faster Transaction-** Payments using electronic money are indeed faster than use cash. As example when you want to pay for a train ticket. you can directly tap in on an available machine, then go to the platform, and wait for your train to come. No need to long queue at the counter, pull out money, or waiting for the change.
- **Global Transaction-** For those who love online shopping, e-money also can be useful. Because, it can be used as a payment on any e-commerce sites, including overseas. It is because e-money applies globally. In online transaction, e-money has the same function with credit card. You only have to enter your card number, and the payment is done.

Disadvantages-

- **Consumptive-** Aware or not, e-money who gives us a lot of convenience has make us into a consumptive person. Why? Because the convenience make us want to buy things a lot, until we don't realize that the balance almost run out.
- **Low Security-** E-money can change hands easily. No need to entering password or something, everyone can use it without any permission. When your card is lost, the people who find your card can directly use it. That is the consequences behind its convenience which incriminating. All you have to do as the owner is keep it very well.
- **The Left Balance Can't Turn Into Cash-** Although transaction using electronic money card is very easy, not all payments can be made using electronic money. When you want to pay for something cash, or you are top up your balance too much, the balance that has been transferred can't be cashed or turn into cash. Unless your

electronic money card is lost or damaged, you can report it to the bank concerned and the remaining balance can be cashed.

E-Purse (Electronic Purse)

An electronic purse is "designed to facilitate small-value face-to-face retail payments by offering a substitute for banknotes and coins. They are intended to complement rather than substitute for traditional retail payment instruments such as cheques and credit and debit cards. "Electronic purses differ from other cashless payment instruments in that they are supplied in advance with generally accepted purchasing power. They can be loaded at bank counters, through Automated Teller Machines (ATMs) or through specifically equipped telephones, against a debit entry in a credit institution account, or against banknotes and coins. The embedded purchasing power is drawn down at the point of sale by an electronic device that can suitably adjust the information on the card. Their potential to reduce significantly the use of notes and coins is even greater than that of other debit instruments since they are the first cashless instrument which would be used for very small amounts.

Their potential to replace other cashless instruments will depend: 1) on the level of fees and other costs levied by the issuer on those who use or accept these new instruments; 2) on the technical possibility, and the issuer's willingness, to remunerate the purchasing power embedded in electronic purses; and 3) on solutions adopted to compensate users in case of the loss, theft or malfunction of the card. "For electronic purses to become a success, a distinct business case must exist for cardholders, for shopkeepers and for issuers. Electronic purses can have various advantages for cardholders. The most important aspect relates to convenience as there would be less need to carry loose change for low-value transactions. An additional advantage might be that, compared with notes and coins, the risk of robbery might diminish if the use of the electronic purses included a security feature such as a PIN code. Furthermore, prepaid cards would have the advantage that non-cash payment transactions could be made without necessarily being linked to a bank account. On the other hand, there are disadvantages as well: first, transaction costs may apply, and second, the electronic purse has to be supplied with value in advance, which may give rise to a transfer of float income from consumers to card issuers.

18.10 DIGITAL CASH AND DIGITAL TRANSCATION

Electronic money is broadly defined as an electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument.

Basic Model of Digital Cash transaction- A Digital Cash transaction usually involves three types of users:

- A Payer (P) or consumer
- A Payee (R), such as a merchant
- A financial network like a Bank with whom both Payer and Payee have accounts, And usually involves three transaction: (i) Withdrawl, the Payer (P) transfer some money (token) from his/her account to her wallet (which could be a computer or smart case); (ii) Payment, the Payer (P) transfer the withdrawn money (token) to the Payee's (R) wallet; (iii) Deposit, the Payee (R) transfers the received money (token) to his/her account.

Important properties of a Digital Cash system

- **Security**- The most important feature of a Digital Cash system is that it should ensure a high-level of security through sophisticated authentification techniques, Which means it should not be copied or reused by the payer, the payee or anyone else.
- **Anonymity**- It should be able to maintain the anonymity of the person, i.e the transaction carried out should not be traceable.
- **Portability**- The use of such a system should be independent of the location. The transactions can be carried over computer networks and into storage devices and vice versa.
- **Tranferability**- The user can spend the money received in payment without having to contact a bank for authentication
- **Divisibility**- This allows the digital cash to be sub-divided into smaller denominations and the customer can choose to spend only a part of it.
- **User friendly**- Both the payer and payee should be able to use it with ease which would make it widely acceptable.

DIGITAL TRANSACTION-

A digital transaction is a seamless system involving one or more participants, where transactions are effected without the need for cash. Digital transaction involves a constantly evolving way of doing things where financial technology (fintech) companies collaborate with various sectors of the economy for the purpose of meeting the increasingly sophisticated demands of the growing tech-savvy users.

As the needs of investors and financial service users become more complex, there is a demand for effective tools to simplify the processes and transactions carried out by end-

users. It is inevitable that financial institutions would have to increase the number of digitized services and offerings, given a rise in the use of automated services. Implementing technology in the financial industry is a necessity for the survival of businesses as customers seek lower-cost alternatives to traditional financial services. Fintech companies have led the revolution in transforming the financial sector by digitalizing the end-client's transactional eco-system.

Digital Transaction Benefits

The example of a digital transaction above was made to show how the benefits of technology adaptation outweighs the costs for businesses, financial institutions, and end-users. Still, there are digital initiatives that come up to disrupt the previous digital transaction setups. Just as credit cards are disrupting the use of cash, processes like online transactions and crypto currencies are disrupting the regimen where physical presence and credit cards, respectively, are required for transactions. The e-commerce portal has provided a means by which buyers and sellers can engage in digital transactions; cloud service platforms have provided a digital process for storing data; crowdfunding gateways have provided a means by which individuals and startups can have access to funds; peer-to-peer lending forums have provided a way for individuals to lend to and borrow from each other without the hassles of the traditional banking regulation; roboadvising tools have provided a way for individuals to plan their retirement phase; etc. These all constitute digital transactions that may eventually get disrupted by new inventions over the years.

18.11 E-BANKING CAUTIOUS

The banking industry is undergoing a radical shift, one driven by new competition from FinTechs, changing business models, mounting regulation and compliance pressures, and disruptive technologies. The emergence of FinTech/non-bank startups is changing the competitive landscape in financial services, forcing traditional institutions to rethink the way they do business. As data breaches become prevalent and privacy concerns intensify, regulatory and compliance requirements become more restrictive as a result. And, if all of that wasn't enough, customer demands are evolving as consumers seek round-the-clock personalized service. These and other banking industry challenges can be resolved by the very technology that's caused this disruption, but the transition from legacy systems to innovative solutions hasn't always been an easy one. That said, banks and credit unions need to embrace digital transformation if they wish to not only survive but thrive in the current landscape.

[1] Increasing Competition

The threat posed by FinTechs, which typically target some of the most profitable areas in financial services, is significant. Goldman Sachs predicted that these startups would account for upwards of $4.7 trillion in annual revenue being diverted from traditional

financial services companies. These new industry entrants are forcing many financial institutions to seek partnerships and/or acquisition opportunities as a stop-gap measure; in fact, Goldman Sachs, themselves, recently made headlines for heavily investing in FinTech. In order to maintain a competitive edge, traditional banks and credit unions must learn from FinTechs, which owe their success to providing a simplified and intuitive customer experience.

[2] A Cultural Shift

From artificial intelligence (AI)-enabled wearables that monitor the wearer's health to smart thermostats that enable you to adjust heating settings from internet-connected devices, technology has become ingrained in our culture — and this extends to the banking industry. In the digital world, there's no room for manual processes and systems. Banks and credit unions need to think of technology-based resolutions to banking industry challenges. Therefore, it's important that financial institutions promote a culture of innovation, in which technology is leveraged to optimize existing processes and procedures for maximum efficiency. This cultural shift toward a technology-first attitude is reflective of the larger industry-wide acceptance of digital transformation.

[3] Regulatory Compliance

Regulatory compliance has become one of the most significant banking industry challenges as a direct result of the dramatic increase in regulatory fees relative to earnings and credit losses since the 2008 financial crisis. From Basel's risk-weighted capital requirements to the Dodd-Frank Act, and from the Financial Account Standards Board's Current Expected Credit Loss (CECL) to the Allowance for Loan and Lease Losses (ALLL), there are a growing number of regulations that banks and credit unions must comply with; compliance can significantly strain resources and is often dependent on the ability to correlate data from disparate sources.

[4] Changing Business Models

The cost associated with compliance management is just one of many banking industry challenges forcing financial institutions to change the way they do business. The increasing cost of capital combined with sustained low interest rates, decreasing return on equity, and decreased proprietary trading are all putting pressure on traditional sources of banking profitability. In spite of this, shareholder expectations remain unchanged.

This culmination of factors has led many institutions to create new competitive service offerings, rationalize business lines, and seek sustainable improvements in operational efficiencies to maintain profitability. Failure to adapt to changing demands is not an option; therefore, financial institutions must be structured for agility and be prepared to pivot when necessary.

[5] Rising Expectations

Today's consumer is smarter, savvier, and more informed than ever before and expects a high degree of personalization and convenience out of their banking experience. Changing customer demographics play a major role in these heightened expectations: With each new generation of banking customer comes a more innate understanding of technology and, as a result, an increased expectation of digitized experiences.

Millennials have led the charge to digitization, with five out of six reporting that they prefer to interact with brands via social media; when surveyed, millennials were also found to make up the largest percentage of mobile banking users, at 47%. Based on this trend, banks can expect future generations, starting with Gen Z, to be even more invested in omnichannel banking and attuned to technology. By comparison, Baby Boomers and older members of Gen X typically value human interaction and prefer to visit physical branch locations.

[6] Customer Retention

Financial services customers expect personalized and meaningful experiences through simple and intuitive interfaces on any device, anywhere, and at any time. Although customer experience can be hard to quantify, customer turnover is tangible and customer loyalty is quickly becoming an endangered concept. Customer loyalty is a product of rich client relationships that begin with knowing the customer and their expectations, as well as implementing an ongoing client-centric approach.

In an Accenture Financial Services global study of nearly 33,000 banking customers spanning 18 markets, 49% of respondents indicated that customer service drives loyalty. By knowing the customer and engaging with them accordingly, financial institutions can optimize interactions that result in increased customer satisfaction and wallet share, and a subsequent decrease in customer churn.

[7] Outdated Mobile Experiences

These days, every bank or credit union has its own branded mobile application — however, just because an organization has a mobile banking strategy doesn't mean that it's being leveraged as effectively as possible. A bank's mobile experience needs to be fast, easy to use, fully featured (think live chat, voice-enabled digital assistance, and the like), secure, and regularly updated in order to keep customers satisfied. Some banks have even started to reimagine what a banking app could be by introducing mobile payment functionality that enables customers to treat their smart phones like secure digital wallets and instantly transfer money to family and friends.

[8] Security Breaches

With a series of high-profile breaches over the past few years, security is one of the leading banking industry challenges, as well as a major concern for bank and credit union customers. Financial institutions must invest in the latest technology-driven security measures to keep sensitive customer safe

[9] Antiquated Applications

Organizations using antiquated business management applications or siloed systems will be unable to keep up with this increasingly digital-first world. Without a solid, forward-thinking technological foundation, organizations will miss out on critical business evolution. In other words, digital transformation is not just a good idea — it's become imperative for survival.

While technologies such as blockchain may still be too immature to realize significant returns from their implementation in the near future, technologies like cloud computing, AI, and bots all offer significant advantages for institutions looking to reduce costs while improving customer satisfaction and growing wallet share.

Cloud computing via software as a service and platform as a service solutions enable firms previously burdened with disparate legacy systems to simplify and standardize IT estates. In doing so, banks and credit unions are able to reduce costs and improve data analytics, all while leveraging leading edge technologies. AI offers a significant competitive advantage by providing deep insights into customer behaviors and needs, giving financial institutions the ability to sell the right product at the right time to the right customer. Additionally, AI can provide key organizational insights required to identify operational opportunities and maintain agility.

[10] Continuous Innovation

Sustainable success in business requires insight, agility, rich client relationships, and continuous innovation. Benchmarking effective practices throughout the industry can provide valuable insight, helping banks and credit unions stay competitive. However, benchmarking alone only enables institutions to keep up with the pack it rarely leads to innovation. As the cliché goes, businesses must benchmark to survive, but innovate to thrive; innovation is a key differentiator that separates the wheat from the chaff.

Innovation stems from insights, and insights are discovered through customer interactions and continuous organizational analysis. Insights without action, however, are impotent — it's vital that financial institutions be prepared to pivot when necessary to address market demands while improving upon the customer experience.

Financial service organizations leveraging the latest business technology, particularly around cloud applications, have a key advantage in the digital transformation race: They can innovate faster. The power of cloud technology is its agility and scalability. Without

system hardware limiting flexibility, cloud technology enables systems to evolve along with your business.

18.12 POINTS TO REMEMBER

- E-banking is the electronic banking process that provides the financial service for the individual client by means of Internet.
- E-banking is a popular modern technology that delivers the new and traditional banking products and services to the customers electronically. Any type of intelligent electronic devices such as, personal computer (PC), Personal Digital Assistant (PDA), Automated Teller Machine (ATM), kiosk or Touch Tone Telephone.
- Most large banks, many regional banks and even smaller banks and credit unions offer some form of online banking, variously known as PC banking, home banking, electronic banking or internet banking.
- Online shoppers use credit for a majority of their Internet purchases. A credit card such as visa or master has a present spending limit based on the users credit limit.
- Debit card can be used for e commerce transactions in much the same way as credit card. Fewer sites offer the facility to use debit cards. Debit cards are not appropriate for very small transactions and do not afford anonymity.
- Electronic checks are another popular form of payment instrument on internet. Most of checks based transactions usually held between businesses and therefore this mode of payment is relevant in B2B e commerce.
- An electronic wallet serving a similar function to a physical wallet, hold credit cards, electronic cash, owner identification, and owner address information and provides that information at an electronic commerce site checkout counter.

18.13 GLOSSARY

- Online Banking: A system that allows individuals to perform banking activities at home via the internet is called online banking.
- E Banking: E banking is a safe, fast, easy and efficient electronic service that enables you access to bank account and to carry out online banking services, 24 hours a day, and 7 days a week.
- Mobile Banking- It is a facility which enables customer to initiate and perform banking tasks on their mobile phones.
- ATM: Automated Teller Machine

- PDA: Personal Digital Assistance
- Debit Card: Debit cards draw money directly from your checking account when you make purchase. They do this by placing a hold on the amount of the purchase.
- Credit Card: A credit card is a card that allows you to borrow money against a line of credit, otherwise known as the card's credit limit.
- Electronic Payment System: An Electronic Payment System (EPS) is a way of paying for goods or services electronically instead of using cash or a cheque.

18.14 CHECK YOUR PROGRESS

Descriptive Type Questions-

a) What is Online Banking?
b) What can I do with Online Banking?
c) What is Mobile Banking? Explain in details.
d) What is E-Money? Explain in details.
e) Explain E Payment System?
f) Difference between credit card and debit card.

Objective Type Questions-

a) Mobile Banking is a facility which enables customer to initiate and perform banking tasks on their mobile phones (True/False)

b) A system that allows individuals to perform banking activities at home via the internet is called online banking. (True/False)

c) An Electronic Payment System (EPS) is a way of paying for goods or services electronically instead of using cash or a cheque. (True/False)

d) ATM stands for Any Time Money. (True/False)

e) A debit card is a card that allows you to borrow money against a line of credit, otherwise known as the card's credit limit (True/False)

f) Electronic checks are popular form of ……. instrument on internet.

g) …… is an electronic payment system that enables customers of a bank or other financial institutions to conduct a range of financial transactions through the financial institution's website

Answer (Objective Type Question)-

[a] True [b] True [c] True [d] False [e] False

[f] Payment [g] Online Banking

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18.16 SUGGESTED READINGS

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