PG BA S1-04 (DSC)

TWO YEAR MASTER'S DEGREE COURSE
(CBCS in Accordance with NEP 2020)

SEMESTER - I

INFORMATION TECHNOLOGY IN MANAGEMENT

MANAGEMENT

Maniram Dewan School of Management
KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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COURSE INTRODUCTION

The course “Information Technology in Management” of MBA 1st semester will focus on the different aspects of Information Technology and cpomputer application in management. The course is meant to create interest in computer usage. This course will help the student in enhancing their knowledge in the field of Information Technology. The topics like Information Technology, Introduction to LibreOffice, Working with templates and styles in Writer, Working with functions and formulas in Calc, Introduction to Impress, Introduction to Base, Working with Internet and Management Issues in MIS have been included in this course which will help you in understanding the importance of financial management in business. This course deals with Information Technology, Introduction to LibreOffice, Working with templates and styles in Writer, Working with functions and formulas in Calc, Advanced formatting and charting in Calc, Introduction to Impress, Working with multimedia and animations in Impress:, Introduction to Base, Working with Internet, Internet Tool: and Management Issues in MIS

Each unit of these blocks includes some along-side boxes to help you know some of the difficult, unseen terms. Some “EXERCISES” have been included to help you apply your own thoughts. You may find some boxes marked with: “LET US KNOW”. These boxes will provide you with some additional interesting and relevant information. Again, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be helpful for you if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit. And, at the end of each section, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.

UNIT 1 : INFORMATION TECHNOLOGY

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Areas of Information Technology

1.4 Advantages and Disadvantages of Information Technology

1.5 Application of Information Technology

1.6 Let Us Sum Up

1.7 Further Reading

1.8 Answer to Check Your Progress

1.9 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- define Areas of Information Technology
- explain Applications of Information Technology
- explain Advantages and disadvantages of Information Technology.

1.2 INTRODUCTION

Information Technology (IT) may be defined as the technology which is used to acquire, store, organize and process data to a form which can be used in specified applications, and disseminate the processed data. Information is processed data or processing of data, based on which decisions can be taken and appropriate actions initiated.

Information is also processed data which improved our knowledge, enabling us to do our work better. As an example of how organizing data enhances our understanding, let us consider marks obtained by students in an examination. The marks by themselves do not give any immediate idea about the performance of the class. By processing this data, a bar chart may be obtained, which gives the number of students with marks between 100 and 90, 90 and 80, 80 and 70, an so on. This Chart (**Fig. 1.1**)

gives the teacher of the class information on the performance of the class, which would enable him or her to initiate appropriate action.

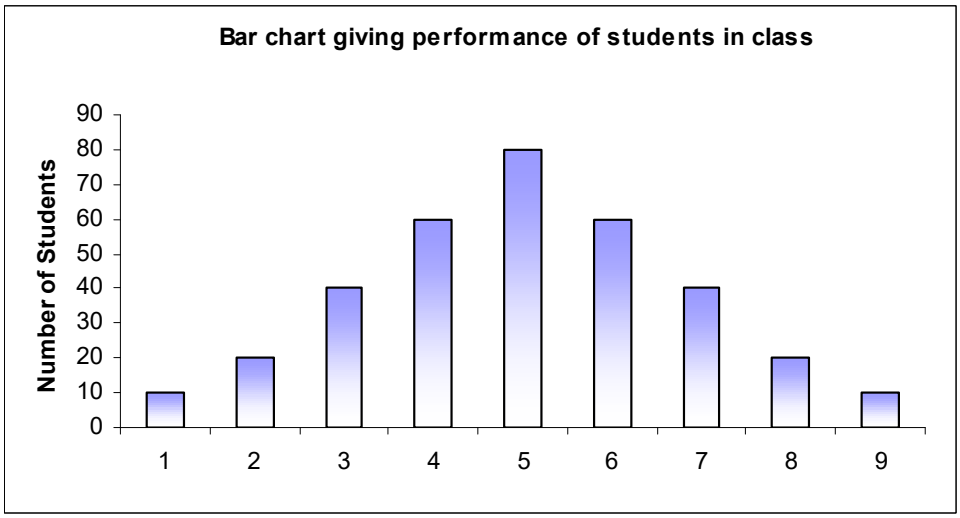


Fig. 1.1

This is a simple example to have a basic idea and concept of information technology. Actually data is processed through computer based systems for various applications.

1.3 AREAS OF INFORMATION TECHNOLOGY

There are various areas of information technology. These areas could be broadly classified as :

1) **Hardware Engineering :** It is a science related to electronic circuits and components. The hardware of the computer consists of different types of units such as memory devices, CPU, input and output devices. Memory devices are the devices based on electronic circuits and components to store the instructions and data required for operation.

   Memory is needed for the following purposes :

   i) To store the program and data during execution.

   ii) To store the program for repetitive use.

   iii) To store the data for the future.

   iv) To store the result of execution.

   Semi-conductor memory and magnetic disk memory are two-types of memory we use.

- **CPU (Central Processing Unit) :** The Control Unit, Arithmetic Logic Unit and Memory Unit together form the Central Processing Unit (CPU) of the computer.
- **Input Devices :** These devices allow supply of data to the computers. The data can be fed in the form text or graphics. Keyboard, light pen and mouse are the examples of input devices.The input devices help us to communicate with the electronic computer by converting the human understandable signals and numbers into appropriate electric signals.
- **Output Devices :** These devices provide output result which are processed by the user. Visual Display Unit (VDU), Printer and Plotter are the examples of output devices.

The output devices help the computer to communicate with us by converting the electric signals to human understandable signals.

2) Networking : It is a science related to Internet and interconnected network of computers. A network is a communication system that enables computer users to share computer equipment, application software, data voice and video transmissions. Networks can link users who are across the room or across the world. Network information is transmitted by wire or through radio waves, such as microwaves. There are two primary reasons for having a network.

First : By sharing software and equipment, network owners are able to save expenses on resources. One printer can be used for an entire office, saving the cost of attaching a printer to each computer.

Second : Networks make people more productive. People are able to share information without leaving their offices or homes.

- **Networking Elements :** Today's networks have several common elements:
  - **i) Nodes :** Any device or entity or computer connected to a network is a node.
  - **ii) Cabling :** The communication wire used to connect equipment in a network is called a cable. The cable provides

a medium for the electrical signal that carries information from one networked computer to another. The signal contains data that are used by workstations, hosts and printers. Most nodes (or computers) have a network interface card (NIC) that can capture the signal and translates it for use by the node.

iii) **Topology :** All networks have a physical layout that determines how the data signal goes from one node to the next. The physical layout is the topology of the network. The topology is most easily represented by drawing the connections between network nodes.Nodes connected in star patterns are known as the Star Topology, in circles known as the Ring Topology, and in a straight line pattern is known as the Bus Topology.

3) **MIS (Management Information System) :** It is a tool used by management for improving the productivities. A system is a set of processes interacting with each other in response to inputs to produce outputs. A process is a set of operations carried on inputs with the system. Management Information System (MIS) is an application of management of the information of a system. The processing of data is carried out by various persons trained in the organization. The processing of data is performed by using computer which utilizes hardware and software components. The principle of management is utilized for operation on a data system. This may involve:

i) Planning of data processing.
ii) Planning of software and hardware.
iii) Planning for new software.
iv) Planning for advanced hardware.
v) Coordinating the personnel.
vi) Organizing and arranging day-to-day operation.
vii) Communicating with programmers and data entry operators.
viii) Motivating the personnel for better accuracy and efficiency.

ix) Initiating the personnel for learning new system and crating there interest.

x) Establishing the control over the complete system to avoid unnecessary expenditure, work, waste of time etc.

The MIS cell performs some of the major functions :

i) Monitoring of useful information.

ii) Designing of better procedure.

iii) To assist in decision making.

iv) To form an interface between different systems.

4) Internet and Software : It is the area in which the sharing of resources and communication can be performed. We consider three types of network:

i) Local Area Network (LAN) : A series of interconnected computers, printers and other computer equipments that share hardware and software resources. The service area is usually limited to a given floor, office area, or building.

ii) Metropolital Area Network (MAN) : A network that reaches throughout a large area such as a city or a large university campus.

iii) Wide Area Network (WAN) : A far reaching system of networks. WANs can across state lines and across continents. They make it possible for thousands of users to send data to one another.

We may define Internet as a worldwide Computer networks whose constituents are computer networks such as LAN, MAN and WAN located in organizations. All these individual networks are interconnected using routers and publish switched telephone networks. All computers connected to the Internet communicate with one another using a common set of rules. The common set of rules is called a protocol. TCP/IP (Transmission Control Protocol/ Internet Protocol) is the protocol used by the Internet.

An important point to note use any technology such as Ethernet, token ring or any type of connection such as ring, bus, star etc. provided the rules of communications among computers is standardized as TCP/IP.

The Network Interface Unit (NIU) of every computer/device which wants to send or receive messages must have an address. Such an address is called an IP address. It should be noted that routers which interconnect local networks are special purpose computers and will require IP addresses. The IP address is 4 bytes long. It is difficult for people to remember a string of 32 bits. Thus IP address is expressed in the so called dotted decimal format.

For example, an IP address is : 144.16.79.48

Where each number is the decimal equivalent of a byte (Remember that with 8 bits we can represent 0 to 255). Fortunately, in day-to-day use, it is not necessary to remember the IP address of your machine in numerical form. A character string which is easy to remember is usually assigned as your address. The actual assignment of IP addresses follows a systematic process to make it easy to route messages between networks. Each Internet Service Provider (ISP) who manages a group of users is assigned a set of IP addresses by an international agency. The ISP in-turns assigns a subset of addresses to each organization from this set.

The heart of any network is the communication software used to guide data along their way. All networks use or more software protocols that enable data packaging and transmission. Protocols define the rules for handling and interpreting transmitted data. Each data packet is constructed according to the rules of the network protocol. For example, many college campuses use the Transmission Control Protocol/Internet Protocol (TCP/IP) to transmit data. Novell Netware networks use the Internet Packet Exchange (IPX) and the Sequence Packet Exchange (SPX) protocols. These protocols can be transmitted on a single network as long as workstations can recognize the protocols.

The speed at which data are transported on a network is called Data transmission on a network is called Data transmission rate. On some networks the speed may be as low as one megabits per second (Mbps), and others it may be over 100 Mbps.

5) **Enterprise Resource Planning (ERP) :** It is the area in which the planning of available resources and forecast the demand of the customer is performed by use of computer system. ERP is also known as Enterprise Systems which appear to be dream come true. These commercial software packages promise the seamless integration of all the information flowing through a company, financial and accounting information, supply chain information, customer informati0on.

   An enterprise system enable a company to integrate the data used throughout its entire organization. This list shows some of the many functions supported by SPA' R/3 package. Germany's SAP is the fastest software company in the world.

   At the heart of an enterprise system is a central database that draws data from and feeds data into a series of applications supporting diverse company functions.

6) **GUI Applications :** There are front end tools used for customization of software. Graphical User Interfaces or GUIs are found on most of today's microcomputers. GUIs are based on the philosophy that people can use computers intuitively – that is with minimal training – if they can manipulate on screen objects that represents tasks or commands.

   GUI is a work environment, ranks etc., provided by software like windows, Presenting picture and graphics to operate various commands.

   Graphical objects are the key elements of GUIs. A graphical object is a small picture on the screen that you can manipulate using a mouse or other input device. Each graphical object represents a computer task, command or a rat world object. You show the computer what you want it to do by manipulating an object instead of entering commands or selecting menu options.

   Most graphical user interface are based on a metaphor in which computer components are represented by real-world objects. For example, a user interface using a desktop metaphor might represent documents as file folders and storage as a filing cabinet.

The greatest advance is provision of very good graphical user interface, which makes it easy for any one to use the system for information.

7) **Database Application :** There are the database related applications software.

Data : Data is defined as facts related to people, places, events or things, which can be represented using number and letter.

Example : Name, address, age or facts related to people. These facts are represented using alphabets, numbers or a mix of both.

Database : A collection of interrelated data stoned together with controlled redundancy to serve one or more applications, so that the data stored are independent of the programs that use them and so that a common, controlled approach can be used for adding, modifying and retrieving data.

It is a form of data construction created to store the data in a suitable format. The database provides an information about the type of application or th case for which the data is stored.

Example : Address File

Name	Age	Address	Occupation

Database System : A database system is an integrated collection of related files along with details of the interpretation of the data contained therein.

Database Management System (DBMS) is a software or a software system – a collection of software required for using a database.

Example : MS-ACCESS, FOXPRO, ORACLE etc. Two main types of facilities are supported by the DBMS :

i) **The Data Definition Facility or Data Definition Language (DDL) :** DDL can be used to define the conceptual scheme and also give some details about hoe to implement this scheme in the physical devices used to store the data.

ii) **The Data Manipulation Facility or Data Manipulation Language (DML) :** DML is a language used to manipulate data in the database. Data manipulation involves retrieval of data from the database, insertion of new data into the database and deletion or modification of existing data.

8) **Operating Systems :** This is a science of study of operational system of computer.

A Operating System is the software that controls the computer's use of its hardware resources such as memory and disk storage space. An operating system works like an air traffic controller to coordinate the activities within the computer. Just as an airport cannot function without air traffic controllers, a computer cannot function with an operating system.

The operating system also works as a liaison between the computer hardware and application software. An operating system helps you start an application, then it works "behind the scenes" while an application software is running to perform tasks essential to the efficient functioning of the computer system.

The names of the most popular microcomputer operating systems are FOS (Disk Operating System), Microsoft Windows, OS/2 and Mac OS, UNIX, VMS and MVS, LINUX are the familiar names of the operating systems used in mini or mainframe computers. Operating systems for micro, mini and mainframe computers perform many similar tasks.

9) **Computer Aided Design :** It is the design of the product by use of the computer software. There are several readymade tools available in computer systems to generate pictures. We will classify the pictures as geometrical objects which can be drawn using line segments, circles, curves, edipses, triangles etc. and as natural objects such as an elephant, and human face. Geometrical objects are easy to generate using the primitive operations available on a PC. Generating figures using line segments, circles etc. is known as vector graphics, vector graphics programs are used extensively

to create engineering design drawings, generally called Computer Aided Design (CAD) tools. One of the most popular CAD tools is called AUTOCAD which allows viewing different aspects of an object such as top view, side view, frontal view, and a 3D perspective. The major advantages of tools such as AUTOCAD are:

i) Precise drawings to scale and control of colour.
ii) Blending colous and shading
iii) Ability to slowly rotate a 3D object view on the screen and make alterations as needed.

10) E-Commerce : It is the commercial activity performed by use of electronic media. The virtual world of business is E-Commerce. The Internet has inter-connected number of users creating a new world markets and new business opportunities.

E-Commerce is a commercial activity by using electronic media by executing business transaction such as contract ordering, invoicing payment on interactive electronic media. This refers to all types of transactions relating to commercial activities based on processing and transmission of digitized data, text, sound and images.

It is defined as any transfer involving some exchange of value over an Internet. The E-Commerce involves a user with a computer linked to the Internet which employs an Internet browser to contact web sites in order to exchange the value for goods or services or transfer of funds between accounts. The goods exchanged may be electronic documents, images and sound files. The electronic services may include ATM, Financial Planning, Online Games etc.

The E-Commerce is used in number of fields such as –

i) Sharing of information
ii) Document exchange
iii) Messages dispatch
iv) Market and advertising
v) Payment transaction

It is used in wide areas of business and commercial applications. Some of the applications are :

a) **Web Site Development :** The website can be created for any business organization which contains the information of the organization, the products manufactured and the location, capacity etc. of the company. The website contains number of files having photograph and picture of the company products. It also provides information about the communications to be done with different departments.

b) **Online Training :** It is possible to provide training to the students by using the Internet and video conferencing system. The training can be given in various areas of engineering, science, medical etc.

c) **Shopping :** It is used for purpose of shopping where the products could be displayed and the information regarding the product can be provided. The orders could be accepted.

d) **Real Estate :** The e-commerce for real estate business is for display and choice of various properties and their locations.

e) **Customer Services :** It can be used for providing various services to the customers like the information about trains, buses, hotels etc. The e-mail service can also be provided.

f) **Medical Consultations :** It can be used for consultation of the expert doctor regarding the diagnosis.

g) **Online Library :** It can be used for the library in which online books could be provided and e-books could be obtained on the Internet.

h) **Online Banking :** It can be used for online banking services where the transactions of payment could be made on the Internet through the credit cards system.

The E-Commerce applications are :

1) **Business to business E-Commerce :** The Intranet can connect all businesses to one another regardless of their locations or positions the supply chain of Internet connections.

2) **Business to consumer E-Commerce :** The connection of business houses or companies to consumer for display of their advertisement and marketing of their products.

3) **Intra Company E-Commerce :** The new tools of E-Commerce such as TCP/IP connectivity and WEB browser have finally enable the building and sharing of information within the company. The intra company applications of WEB based technology are called intranets

11) **Webpage Development :** This is a development of customize marketing documents placed on the Internet site for the view of the customers. The Word Wide Web (WWW, W3 or the Web for Short) is the most visual part of the Internet. It is also the fastest growing part of the Internet which may be because it is so easy to access and explore. It is based on the display of Web pages, which are computer documents that can present text, graphics and sounds.

A Web page represents a single location on the Web. A Web site is made up of two or more interconnected Web pages presented as a unified place on the Web. A common term used on the Web is home page. This is the intended central or starting place on a Web site.

In 1989 Tim Banners Lee and his team in the European Laboratory for Particle Physics designed the present form of the documentation language and called it Hypertext Markup Language (HTML for short) which is a basic tool for designing Web page. It is a documentation language to mark the headings, title, table and forms.

The Web is visual, allowing you to see more than just text on year computer screen. For example, with the Web you can preview a piece of art and then download it, copying it to your computer.

You can still view written information as well, but text can be formatted in different ways to fit the overall presentation of the Web page.

The Web is an ideal medium for the transmission of multi-media information. With the click of a button you can download clip from your favorite movie or hear a snippet (to remove by cutting off) of audio from a famous radio address.

The Web's highly graphical nature makes it ideal for presenting artwork and photographic images. Pictures of family, friends and especially pets have become increasingly popular among Web creators.

Web pages also serve as an ideal medium for transferring computer software. Many corporate Web sites, for example, allow users to download free demonstration programs, add-on pieces, or upgrades to existing computer applications.

HTML and hyperlinks are the basis of web's versatility. Links on a web page can take the viewer to another place on the same web page or to different web page altogether. They can be links to images, or they can activate the transfer of digitized information such as video or audio clips. (Web links are also commonly known as hyperlinked) Hyperlinks can call up windows for sending e-mail, or even take the views to locations on the internet outside the web.

Hyperlinks are the easiest way to access information on the Internet. Hyperlinks are based on the principles of hypertext, which is a method of publishing that relies on interactive participation.

When a web page is developed the following are to be planned :

i) Content of the Page

ii) Appearance of the Page

The appearance of the web page is coded in HTML language using HTML tags.

12) Application Developers : This is an area of software development of the commercial applications, business and engineering application. This is an area of application software. Application software helps you accomplish a specific task using the computer. It helps you produce documents, perform calculation, manage financial resources, create graphics, compose music, play games, maintain files of information, and so on.

Because there is such a vast amount of application software developed so far, it is helpful to classify it. One way to classify application software is to use these categories : Productivity, business, education, reference and entertainment.

Productivity software can be classified as follows :

a) ***Electronic Mail Software :*** provides you with a computerized mail box that collect documents or "mail" you receive electronically from other computer users. You can send electronic mail messages, you can read your electronic mail on your computer screen, you can save or throw away your electronic mail after you read it, and you can compose electronic replies to the mail you receive.

b) ***Graphical Software*** helps you draw pictures, 3-D images, and animations

c) ***Desktop Publishing Software*** provides you with computerized tools for page layout and design that combine text and graphics.

d) ***Scheduling Software*** helps you keep tracks of appointment, due date, and special dates such as birthdays and holidays.

e) ***Word Processing Software*** helps you produce documents such as reports, letters, papers, and manuscripts.

f) ***Spreadsheet software*** is frequently used by financial analysis to examine investment opportunities, by managers to create budgets, by entrepreneurs to create business plans, and even by educators to keep track of student grades. It helps you work with numbers.

g) ***Database Management Software*** helps you work with facts and figures, particularly stored in database.

h) ***Business Software*** helps business and organizations efficiently accomplish routine tasks.

i) ***Entertainment software*** transforms your computer from productivity and business to fun and games.

j) Education Software is designed to help you learn more about a particular topic.

k) ***Reference Software***, such as an electronic encyclopedia, helps you look up facts on any topic.

l) ***Educational simulations*** let you work with a computerized model of something in the real world, manipulate it, and see what happens.

13) **Multimedia System :** These are the recreational systems used for entertainment, games, fun etc.Multimedia system is defined as an integrated collection of computer-based text, graphics, sound, animation, photo images, and video. It also refers to the integrated use of multiple media, such as slides, video tapes, audio tapes, records, CD-ROMs and Photos.

Computer technology is replacing or controlling many of the technologies and media that were previously used for multimedia presentations. Advances in computer technology have made it possible to combine text, photo images, speech, music animated sequences, and vid4eo into a single interactive computer presentation. To display realistic graphic and video, you computer system must have a high-resolution monitor and a CD-Rom drive.

1.4 ADVANTAGES AND DISADVANTAGES OF INFORMATION TECHNOLOGY

The information technology is the technology used for processing of information on the computer system. The use of computer system provides a large number of advantages for processing information.

Advantages :

a) The data can be stored permanently
b) Large number of calculation can be performed at very fast processing speed.
c) The degree of accuracy is very high
d) The operations like deletion of data, modification of data can be done very easily.
e) The operations of retrieval of data can be performed and the data can be searched immediately from the stored data.
f) The operations such as indexing or arranging the data is possible
g) The variety of functions can be utilized in the operations.
h) It allows for the decisions and logical comparisons.
i) It allows for creation of standard libraries.
j) It is possible to obtain the results in the formatted form.

k) It allows for production of graphics and aesthetics (the study of the nature of beauty).

The information technology revolution has occurred because of the above advances which are obtained in processing of data.

Disadvantages : The following are the important disadvantages:

1) ***Cost of software/hardware and migration*** **:** A significant disadvantage of information technology/system is cost. In addition to the cost of purchasing and/or developing the software, the hardware has to be upgraded to allow for the extensive programs and the workspaces required for their execution and storage.

   An additional cost is that of migration from a traditionally separate application environment to an integrated one.

2) ***Problems associated with centralizatio*****n:** Centralization also means that the data is accessible form a single source, namely the database. This increases the potential severity of security breaches and disruption of operation of the organization because of downtimes and failure. The replacement of monolithic centralized database by a federation of independent and cooperating distributed database resolves some of the problems resulting from failures and downtimes.

3) ***Complexity of backup and recovery*** **:** While centralization reduces duplication, the lack of duplication requires that the database be adequately backup so that in the case of failure the data can be recovered. Backup and recovery operations are fairly complex in the information system management.

1.5 APPLICATION OF INFORMATION TECHNOLOGY

The Information Technology can be utilized in a large number of fields such as:

1) **Railway Reservation System :** In this system the reservation records of the passengers are maintained for different trains and classes. The reservation system maintains the records of passenger name, age, destination etc. in database files.

2) **Industries and Commerce :** The profitability being the prime motto, industries and commercial houses have exploited the use of computers to a large extent to achieve the aim. The versatility of the computers to handle a wide variety of situations, calculations and decision making capacity has been proved as a boon to the commercial world. The tremendous speed and accuracy which could be depended upon have been put to use effectively. The voluminous, tedious and repetitive arithmetic figures and operations involved in the commercial transactions were invariably source of monotony and fatigue for man.

   The errors were common, therefore rechecking meant more time and effort and loss of profit. Since the computers have been loaded with these responsibilities the efficiency has increased beyond imagination.

3) **Banks :** The Information Technology is used in the bank for maintaining the accounts of the saving and current accounts. These records are maintained in the files and the calculations of transactions can be done very easily. These are used for clearing of cheques and even counting of cash.

4) **Inventory Control :** Inventory Control is control of store records. The aim being to avoid the dead inventory, it would be highly desirable to have an all-time up-to-date information about the position of the stock of raw materials, finished, goods and semi-finished goods. The daily receipt of stocks have to be added to the books. The issue of raw materials for processing deducted from the stock and the stock at the end of the day is known to plan the future procurement. This involves tedious calculations and repetitive operation leading to monotony or errors. The use of computers for this purpose has been highly accepted by industries in general. The inventory costs have in fact been reduced considerably. By an up-to-date maintenance of inventory and purchases the industrial operations are stream lined for the higher efficiency.

5) **Production Planning and Control :** The computers have been the best aids to planning the production schedules. The client wise

demand of the goods, production wise manufacturing requirements, item wise actual production, capacity wise manufacturing planning, various such combinations for planning the production control of and industry can be possible only if the computers come to rescue.

6) **Costing and Budgetary Control :** To achieve the goal of profit making in an industry, the control over manufacturing cost becomes an effective remedy. The industries having a series of manufacturing process, the product costing world involves a number of calculations and a range of decision makings. The computers can take up this job and provide the necessary costing figures to control the manufacturing costs. The budget of an industry world involve a number of factors like market behaviour, product demands, financial resources, man power costing and the management policies. The computers can provide useful database for an efficient budgetary control.

7) **Sales Analysis and Market Research :** The efficient marketing management of an industry can be supported by the information available by the computer in a variety of classification and combinations like data wise, item wise, party wise, product wise, territory wise and salesman wise sale figures. The computer can also prepare product invoices if required. This type of analysis can certainly become a strong base for marketing managers.

8) **Financial Accounting and Pay Roll :** The computers have become the most efficient tool in financial accounting and auditing. The entire book keeping is made through the computers. The preparation of tax balances, profits and loss statements, financial balance sheet which used to take months for the account department, involving number of commerce figures and the scope for many other supporting information.

9) **Social and Educational Fields :** Along with the sale of computer in industries, it has entered the social and educational field of the society. The right from learning a simple programming language upto performing the most complicated calculations of space

technology, the computers have become almost indispensable. The government organizations, educational institutes and research institutes have accepted computer for all their needs of data storage, processing and report retrievals. It is used for online training.

10) **Space Technology :** The assembling of space shuttles followed by an adequate quality control and testing is normally performed with the help of large computers in the space technology. Even the path control of space shuttles is done entirely through computer. Apart from this, number of information regarding atmospheric pressure, temperatures, movements of planet and all relevant information are stored in computer which helps in making the space program a success.

11) **Weather Forecasting :** The computers have extended their use in giving the exact weather forecasting for entire country. The computer stores all the data required about the pressure in air, temperature, hot currents etc. in its memory and supplies the daily forecast after proper calculations and certain logical decisions. The forecast can be possibility of rains, the temperature in different parts of country and trend of sea water regarding tide and ebb. The rain prediction helps the formers for better crops, saves fisherman from tide and temperature information is for the benefit of public in general.

12) **Manufacturing System :** It is used in operation of manufacturing systems. The computer can provide instructions to the manufacturing machine which performs the machining system operations according to the type of drawing supplied. The use of computer system allows animations, and alternate design being evolved.

13) **Crime Detection :** The computer has been proved as an effective tool in keeping track of perfect information regarding crime. The finger prints, the crime pattern, sequences of crime and the personal records of all professional criminals are stored in the computer storage when and incident of a fresh crime comes to the notice of authorities, the execution of crime is compared with that of the

computer records. This helps in the detection of criminal, checking the past record of criminal and for preventive measures to control the crime level in a particular area. The Police Deptt., Central Bureau of Investigations, the Regional Forensic Laboratory are required with full fledged computer systems.

14) **Research :** It is used in scientific research to find new technologies, to obtain assessment of the experimental results. The number of scientific institutions are using large level mini computers for their scientific computations. Because of their basic characteristics of high speed in calculations and wide storage, computers can play a vital role for such institutions, in arriving at a required result.

15) **Government Organizations :** As the union and state government have a large setup of functions, computers can do a lot of them. Management Information System (MIS), for government is fully computerized, which provides upto date data for quick and correct decisions for police. The distribution system of sales supplies, financial control and budgetary systems are based upon the information provided by the mainframe computer systems installed at government offices.

16) **Recreation :** The computers have a variety of software for games and recreations. The games have been designed for all the level of people. This fact has made computer the most popular amongst all the age groups of people.



CHECK YOUR PROGRESS

Q.1 : Fill in the blanks with appropriate words:

i) Management Information System is a tool used by ..... for improving the productivities.

ii) E-Commerce is the ..... activity performed by use of electronic media.

iii) The Control Unit, Arithmetic Logic Unit and ..... together form the Central Processing Unit (CPU) of the computer.

iv) Database Management Software helps to work with facts and figures, particularly stored in .....

v) Entertainment software transforms your computer from productivity and business to .....

Q.2 : Define Web page.

.....

.....

.....

.....



1.6 LET US SUM UP

In this unit we have discussed the following :

- Information Technology is primarily concerned with acquisition, storage, processing and organization of data. It is also concerned with widely disseminating organized and processed data for use by people and organizations. In early days of IT, data mainly meant numbers and text. This has changed now. Now data in all forms numbers, text, graphics, audio and video are processed by computers toolstools.
- The hardware of the computer consists of different types of units such as memory devices, CPU, input and output devices. Networking of computers increases the utility of each computer as it can obtain services of other computers and expensive peripherals attached to the network. Internet is a world wide network whose constituents are millions of smaller networks. In other words it is a network of networks. Operating system is an organized collection of programs that acts as an interface between machine hardware and the user providing the user with a set of facilities and maintenance of the program. Application software are developed for the specific area of application.

- The sharing of business information, maintaining business relationships and conducting business transactions using telecommunication networks is usually defined as E (Electronic)-Commerce.
- Multimedia refers to the integrated use of multiple media, such as slides, video taps, audio tapes, records, CD-ROMs, and photos.
- Information Technology (IT) is profoundly affecting our day-to-day living. Computers are everywhere: in government offices, courts, businesses, public utilities, banks, homes etc. It is essential to be conversant with their applications and know how to use them to live in today's world.



1.7 FURTHER READING

1) Jain, V.; *MS Excel 2002–Training Guide*, BPB Publication, New Delhi.
2) Lotia, M.; *World 2000–An Introduction*, BPB Publication, New Delhi.
3) Rajaraman, V. (2004); *Fundamentals of Computers*, 4th Edition, Pentice-Hall of India, New Delhi.
4) Syganski; *Introduction to Information Technology*, Pearson Education, Delhi-110092.
5) Witherspoon; *PowerPoint 2000 Fast & Easy*, BPB Publication, New Delhi.



1.8 ANSWER TO CHECK YOUR PROGRESS

Ans. to Q. No. 1 : i) Management, ii) commercial, iii) Memory Unit, iv) database, v) fun and games.

Ans. to Q. No. 2 : A Web page represents a single location on the Web. A Web site is made up of two or more interconnected Web pages presented as a unified place on the Web. A common term used on the Web is home page. This is the intended central or starting place on a Web site.



1.9 MODEL QUESTIONS

Q.1 : Define Information Technology. What is the difference between data and information? Give an example of organizing data which allows human decision making.

Q.2 : Discuss the different areas of Information Technology.

Q.3 : How does Information Technology impact our daily lives?

*** ***** ***

UNIT 2: INTRODUCTION TO LIBREOFFICE

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Overview of LibreOffice

2.3.1 Purpose of LibreOffice

2.3.2 Components of LibreOffice

2.3.3 Comparison with Other Office Suites

2.4 Advantages of Using LibreOffice

2.5 Installation of LibreOffice

2.6 Let Us Sum Up

2.7 Answers to Check Your Progress

2.8 Further Reading

2.9 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- define LibreOffice and its purpose.
- identify the components of LibreOffice, including Writer, Calc, Impress and Base.
- compare LibreOffice with other popular office suites, such as Microsoft Office and Google Docs.
- discuss the advantages of using LibreOffice, including cost savings, compatibility with different operating systems and devices, and the open-source nature of the software.
- outline the process of downloading, installing, and configuring LibreOffice on Windows operating system

2.2 INTRODUCTION

LibreOffice is a free, open-source office suite that provides a variety of powerful tools for creating, editing, and sharing documents, spreadsheets, and presentations. With components such as Writer, Calc, Impress and, Base. LibreOffice offers a comprehensive set of features that can meet the needs of both individuals and businesses alike. In this unit, we will explore the definition, purpose, components, features, advantages, and installation and configuration of LibreOffice, as well as compare it with other office suites such as Microsoft Office and Google Docs. Whether you are a student, a professional, or just someone looking for a reliable and cost-effective solution for your office needs, LibreOffice is definitely worth considering.

2.3 OVERVIEW OF LIBREOFFICE

LibreOffice is a free, open-source office suite that provides users with a comprehensive set of tools for creating, editing, and sharing documents, spreadsheets, and presentations. It was initially released in 2010 as a fork of the OpenOffice.org project and has since become one of the most popular alternatives to proprietary office suites like Microsoft Office.

LibreOffice consists of several components, including Writer for word processing, Calc for spreadsheets, Impress for presentations, and Base for database management system (DBMS).

One of the key advantages of LibreOffice is its cost-effectiveness, as it is completely free to download and use. It is also compatible with a wide range of operating systems and devices, including Windows, Mac, and Linux. Additionally, the open-source nature of the software allows for community support and customization through extensions and add-ons.

Overall, LibreOffice is a powerful and versatile office suite that can meet the needs of individuals and businesses looking for a reliable and cost-effective solution for their office needs.

2.3.1 Purpose of LibreOffice

LibreOffice is a free and open-source office suite, designed to provide users with a powerful and flexible set of tools for creating, editing, and managing various types of documents, spreadsheets, presentations, and other digital content. The primary purpose of LibreOffice is to provide users with an alternative to commercial office suites such as Microsoft Office, by offering a range of features and tools that can be used to create professional-grade documents and content without the need for expensive software licenses.

Some of the key features of LibreOffice include word processing, spreadsheet creation and management, presentation design, graphic design, database management, and more. It also offers a variety of import and export options, allowing users to work with a wide range of file formats and collaborate with other users who may be using different software tools.

Overall, the purpose of LibreOffice is to provide a free and open-source office suite that is accessible to everyone, regardless of their budget or technical expertise. By providing users with a comprehensive set of tools and features, LibreOffice enables users to create and manage high-quality content for personal or professional use.

2.3.2 Components of LibreOffice

LibreOffice is a comprehensive office suite that includes several components or applications that allow users to create and manage different types of digital content. The main components of LibreOffice are:

(a) **Writer:** A word processing application that allows users to create and edit text documents, such as letters, resumes, reports, and more.

(b) **Calc:** A spreadsheet application that allows users to create and manage complex spreadsheets, perform calculations, and analyze data.

(c) **Impress:** A presentation application that allows users to create multimedia presentations with animations, slide transitions, and more.

(d) **Draw:** A graphic design application that allows users to create and edit vector graphics, diagrams, and flowcharts.

(e) **Math:** A formula editor application that allows users to create and edit mathematical equations and formulas.

(f) **Base:** A database management application that allows users to create and manage databases, create forms, and generate reports.

In addition to these primary components, LibreOffice also includes a range of additional tools and features, such as spell-checking, document templates, mail merge, and more, that make it a powerful and versatile office suite.

2.3.3 Comparison with other office suites

LibreOffice is a free and open-source office suite that is often compared with other popular office suites, such as Microsoft Office and Google Docs. Here are some of the key differences and similarities between these office suites:

Cost: LibreOffice is free to download and use, while Microsoft Office requires a paid subscription or a one-time purchase. Google Docs is free to use but requires a Google account.

Features: All three office suites offer similar features, such as word processing, spreadsheet creation, presentation design, and more. However, Microsoft Office tends to offer more advanced features and functionality compared to LibreOffice and Google Docs.

Compatibility: Microsoft Office is widely used in many organizations, and files created with Microsoft Office are often preferred for compatibility reasons. LibreOffice can open and save files in various file formats, including Microsoft Office formats, while Google Docs tends to work best with its own file formats.

Collaboration: Google Docs is known for its collaborative features, allowing multiple users to edit a document simultaneously in real-time. Microsoft Office also offers collaboration features, but LibreOffice has more limited collaboration options.

Privacy: Google Docs requires users to sign in to a Google account, which may raise privacy concerns. LibreOffice and Microsoft Office are both desktop applications that can be used offline, so there are fewer privacy concerns with these office suites.

Overall, the choice of office suite depends on individual needs and preferences. LibreOffice is a great option for those looking for a free and open-source office suite with basic features, while Microsoft Office is the go-to option for more advanced features and compatibility with Microsoft Office files. Google Docs is a popular choice for collaboration and cloud-based accessibility.

2.5 ADVANTAGES OF USING LIBREOFFICE

One of the major advantages of using LibreOffice is its cost-effectiveness compared to proprietary software. LibreOffice is an open-source software suite that is free to download and use, without any licensing fees or subscription costs. This can result in significant cost savings for both individuals and organizations, especially those on a tight budget. Here are some of the ways LibreOffice can help save costs:

(a) No licensing fees: LibreOffice is licensed under the GNU Lesser General Public License, which means that it can be freely used, copied, modified, and distributed by anyone without any licensing fees.

(b) No subscription costs: Unlike proprietary software that often requires users to pay a recurring subscription fee, LibreOffice is completely free to use for as long as you want.

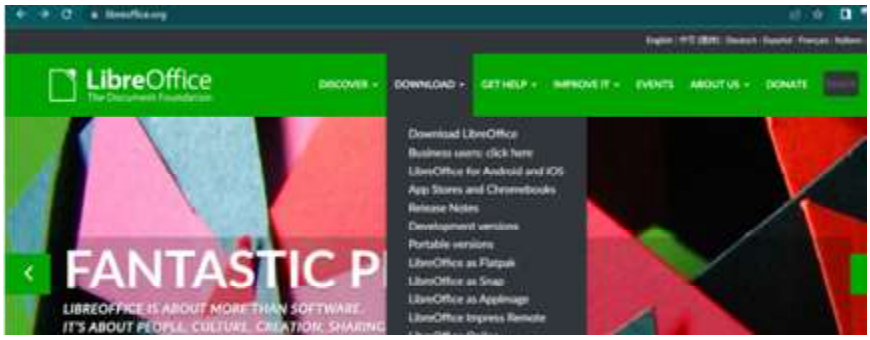
(c) Compatible with multiple platforms: LibreOffice is available for Windows, macOS, and Linux, so you don't have to purchase different versions for different platforms.

(d) Support for multiple file formats: LibreOffice supports a wide range of file formats, including Microsoft Office formats like .docx, .xlsx, and .pptx, so you don't have to purchase expensive proprietary software to be able to read and edit those files.

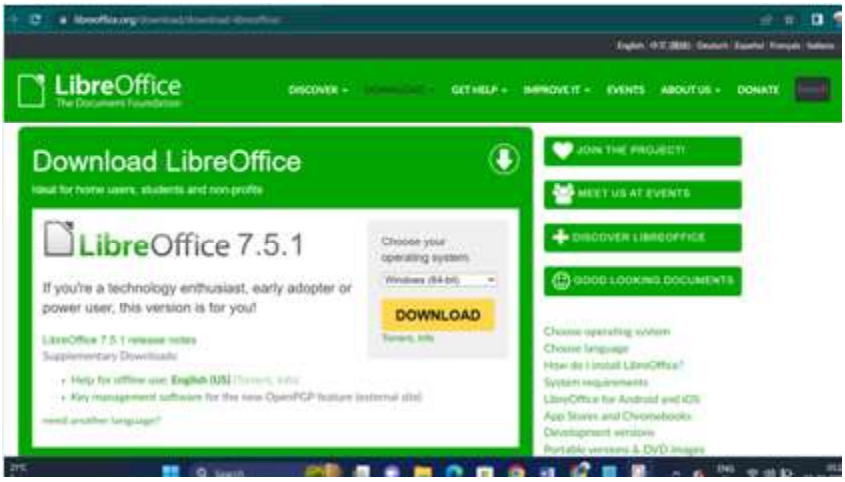
2.6 INSTALLATION OF LIBREOFFICE

Here's a step-by-step guide on how to install LibreOffice:

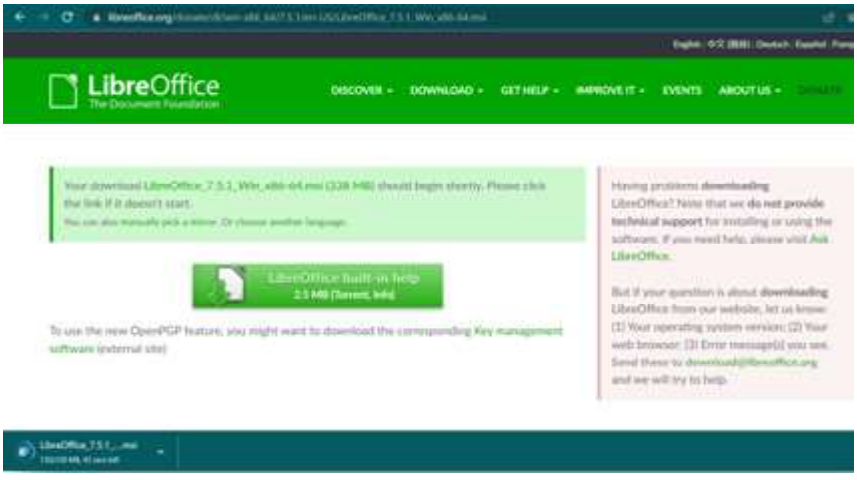
1. Go to the LibreOffice website (https://www.libreoffice.org/) and click on the "Download" button in the top menu.



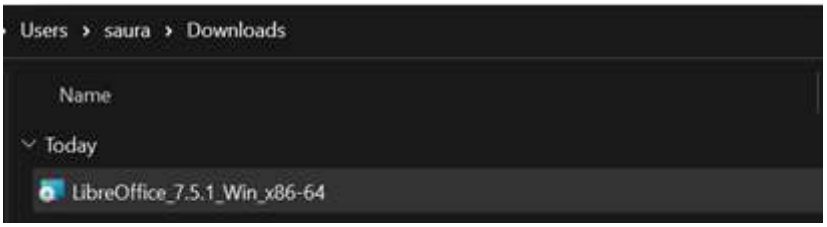
2. On the download page, you'll be prompted to choose your operating system. Select the appropriate option for your computer (e.g. Windows, Mac, Linux).



3. Once you've selected your operating system, you'll be taken to a page with download options. Choose the version you want to install (e.g. stable or beta), and click on the corresponding "Download" button.

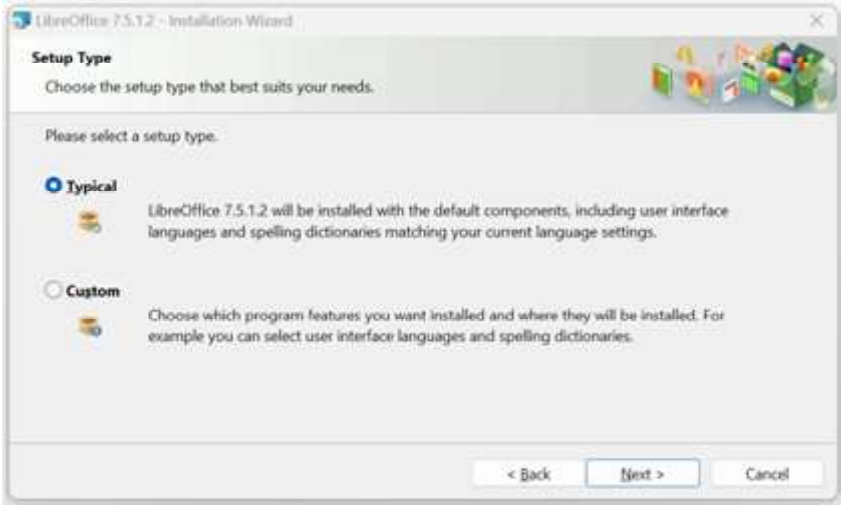


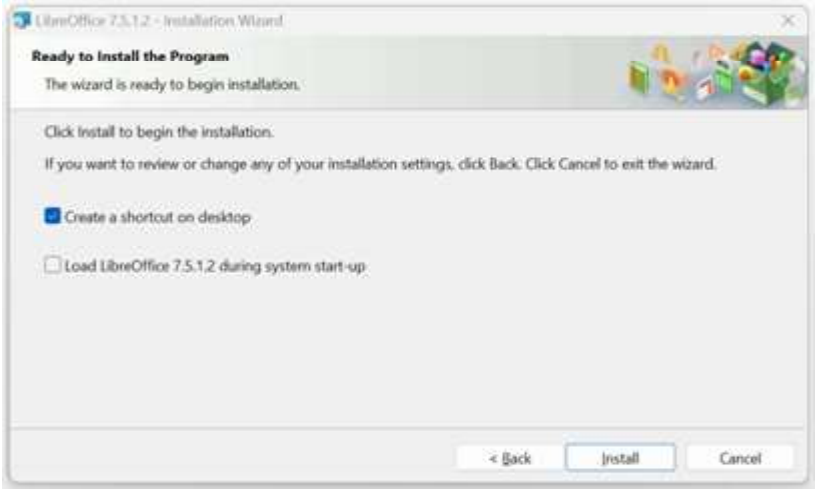
4. Once the download is complete, locate the downloaded file on your computer and double-click it to begin the installation process.

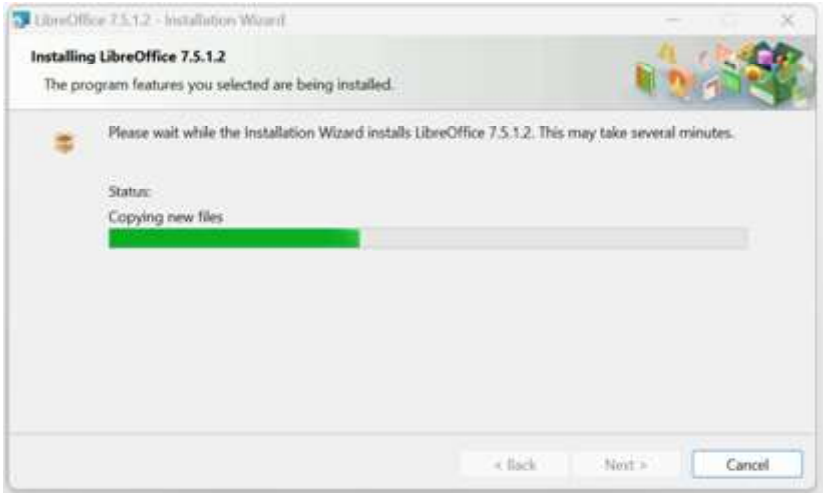


5. Follow the on-screen instructions to install LibreOffice. You may be asked to agree to the terms and conditions, select a location for the installation, and choose which components of the software to install.





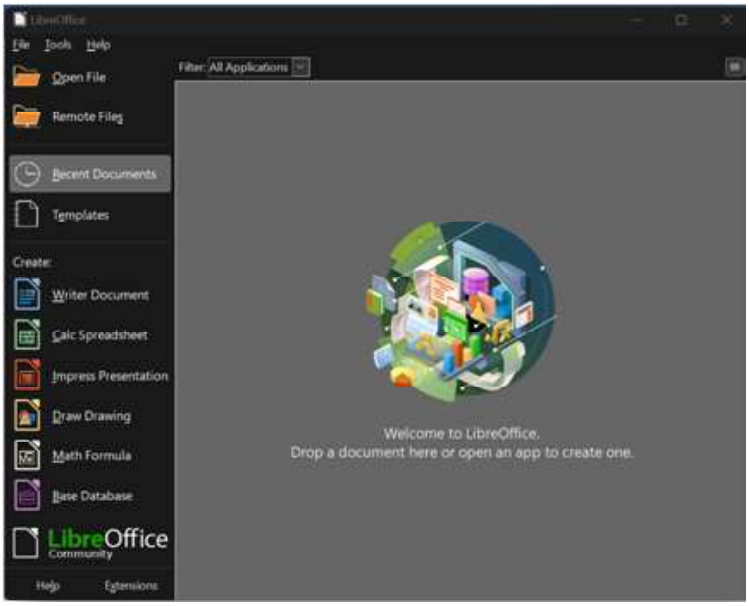






6. Once the installation is complete, you should be able to launch LibreOffice from your computer's desktop or programs menu.





You can now run any application of the LibreOffice Suite.



CHECK YOUR PROGRESS

1. Choose the correct option:

A. What is LibreOffice?

a) A proprietary office suite

b) A free, open-source office suite

c) A database management system

d) A graphic design application

B. What is the purpose of LibreOffice?

a) To provide a free and open-source office suite

b) To provide an alternative to expensive software licenses

c) To provide a comprehensive set of tools for creating and managing digital content

d) All of the above

C. Which of the following is a component of LibreOffice?

a) PowerPoint

b) Photoshop

c) Calc

d) Adobe Reader

D. How does LibreOffice compare with Microsoft Office?

a) LibreOffice is more expensive than Microsoft Office

b) LibreOffice offers more advanced features than Microsoft Office

c) LibreOffice has more limited collaboration options than Microsoft Office

d) LibreOffice can open and save files in various file formats, including Microsoft Office formats

E. What is one of the advantages of using LibreOffice?

a) It has more advanced features than proprietary software

b) It is a cloud-based office suite

c) It is more privacy-oriented than other office suites

d) It is cost-effective compared to proprietary software



2.7 LET US SUM UP

In this unit we have discussed the following :

- LibreOffice is a free and open-source office suite that provides users with a comprehensive set of tools for creating, editing, and sharing documents, spreadsheets, and presentations.
- It is compatible with a wide range of operating systems and devices, including Windows, Mac, and Linux.
- LibreOffice consists of several components, including Writer for word processing, Calc for spreadsheets, Impress for presentations, and Base for database management system (DBMS).
- Its primary purpose is to provide users with an alternative to commercial office suites such as Microsoft Office, by offering a range of features and tools that can be used to create professional-grade documents and content without the need for expensive software licenses.
- LibreOffice is a powerful and versatile office suite that can meet the needs of individuals and businesses looking for a reliable and cost-effective solution for their office needs.
- It is often compared with other popular office suites, such as Microsoft Office and Google Docs, and the choice of office suite depends on individual needs and preferences.
- One of the major advantages of using LibreOffice is its cost-effectiveness compared to proprietary software, as it is completely free to use and has no licensing fees or subscription costs.
- Other advantages of using LibreOffice include its compatibility with a wide range of file formats, its community support and customization options through extensions and add-ons, and its privacy and security features as a desktop application.

2.8 ANSWERS TO CHECK YOUR PROGRESS

Ans.to.Q.No.1: A.(b) B.(d) C.(c) D.(d) E.(d)

2.9 FURTHER READING

1) https://documentation.libreoffice.org/en/english-documentation/

2.10 MODEL QUESTIONS

Q.1: What is LibreOffice, and how does it differ from other office suites like Microsoft Office?

Q.2: What are the primary components of LibreOffice, and how can they be used to create and manage digital content?

Q.3: How does the cost of LibreOffice compare to other office suites, and what are the potential cost savings for individuals and organizations?

Q.4: What are some of the key advantages of using LibreOffice, and how can they benefit users in different contexts?

Q.5: What types of files can be imported and exported using LibreOffice, and how can this help user work with other software tools and collaborators?

Q.6: What role does community support play in the development of LibreOffice, and how can users contribute to the project?

Q.7: What are some of the limitations of LibreOffice, and how can users work around these to achieve their desired outcomes?

Q.8: How does LibreOffice compare with other open-source software projects, and what are some of the unique challenges and opportunities it presents?

Q.9: What are some of the key features of LibreOffice that make it a popular choice for individuals and organizations looking for a free and open-source office suite?

Q.10: How can users get started with LibreOffice, and what resources are available to help them learn and master its various components and features?

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UNIT 3: GETTING STARTED WITH WRITER

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Launch Writer and Create a New Document

3.4 Understand the Writer Interface

3.5 Working with Writer

- 3.5.1 Entering and Formatting Text
- 3.5.2 Applying Font Styles
- 3.5.3 Working with Paragraphs
- 3.5.4 Find and Replace
- 3.5.5 Saving, Closing and Opening Existing Document

3.6 Let Us Sum Up

3.7 Answer to Check Your Progress

3.8 Further Reading

3.9 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- launch Writer and create a new document.
- describe the Writer interface and its different components.
- enter and format text using Writer's tools and features.
- apply different font styles to their text.
- work with paragraphs, including changing alignment, indentation, and spacing.
- save, close, and open existing Writer documents.

3.2 INTRODUCTION

Writer is a word processing software that is part of the LibreOffice suite of productivity applications. It allows users to create, edit, and format text documents with ease. In this context, we will discuss some of the essential

features of Writer that will enable you to work effectively with the software. We will cover how to launch Writer and create a new document, understand the interface, and work with text and paragraphs. We will also discuss how to apply different font styles, save, close, and open existing documents. By the end of this unit, you will have gained a solid foundation in using Writer.

3.3 LAUNCH WRITER AND CREATE A NEW DOCUMENT

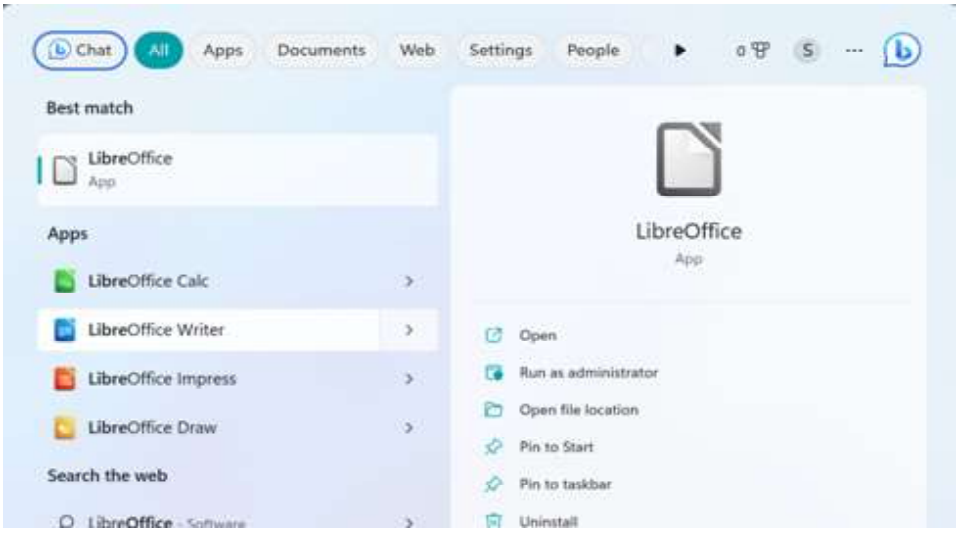
Following are step-by-step procedures to launch LibreOffice Writer and open a new document:

Step 1: Open your computer or laptop and ensure that LibreOffice is installed. If not, you can download it from the official website and install it on your computer.

Step 2: Click on the Start menu button on your desktop screen or press the Windows key on your keyboard to open the Start menu.

Step 3: Search for LibreOffice Writer in the search bar of the Start menu.

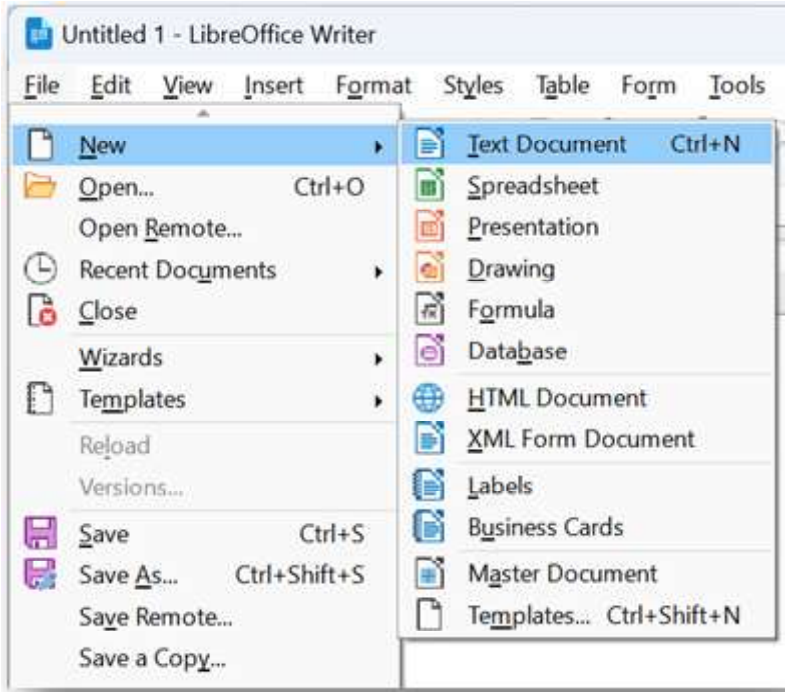
Step 4: Click on the LibreOffice Writer icon to launch the program.



Step 5: Once Writer is launched, click on the File menu in the top left corner of the screen.

Step 6: Click on the New option from the File menu.

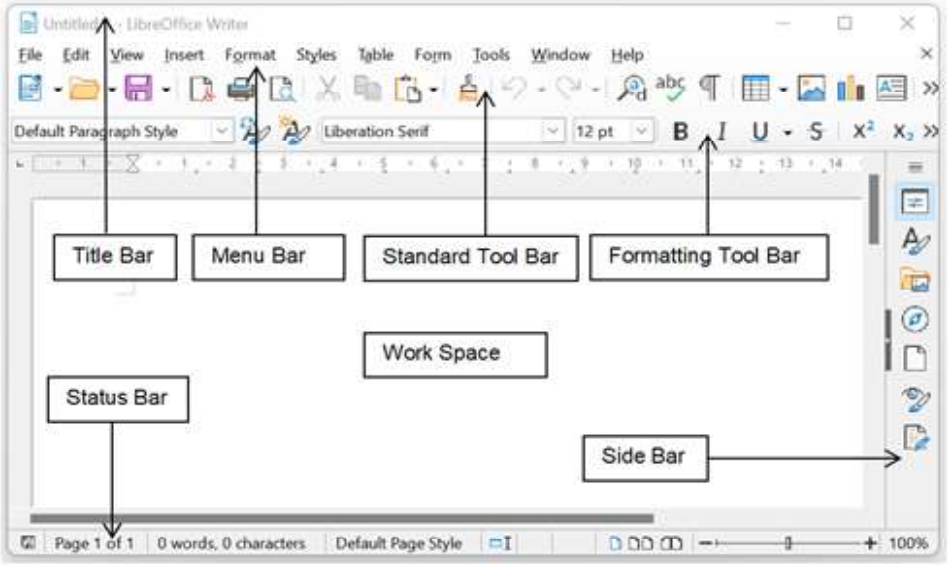
Step 7: A new window will appear with a list of different document types. Choose the type of document you want to create and click on it.



You can now start typing your document and use the various formatting tools and features available in Writer to format your text as needed.

3.4 UNDERSTANDING THE WRITER INTERFACE

Followings are the components of LibreOffice Writer interface:



- **Menu Bar:** The Menu Bar is located at the top of the LibreOffice Writer window and contains various menus such as File, Edit, View, Insert, Format, Table, Tools, Window, and Help.

- **Standard Toolbar:** The Standard Toolbar is located directly below the Menu Bar and contains commonly used tools such as Save, Undo, Redo, Cut, Copy, and Paste.
- **Formatting Toolbar:** The Formatting Toolbar is located below the Standard Toolbar and contains tools for formatting text such as font style, size, color, alignment, and highlighting.
- **Ruler:** The Ruler is located at the top of the document window and provides visual aids for adjusting margins, tabs, and indentation.
- **Status Bar:** The Status Bar is located at the bottom of the LibreOffice Writer window and displays information about the current document such as page number, word count, and zoom level.
- **Scroll Bar:** The Scroll Bar is located on the right-hand side of the document window and allows you to scroll up and down the document.
- **Document Area:** The Document Area is the main area where you can create and edit your document. This is where you will enter and format your text.
- **Sidebar:** The Sidebar is located on the right-hand side of the LibreOffice Writer window and contains various options and features such as styles, formatting, and properties.

The LibreOffice Writer interface is designed to be user-friendly and intuitive, with various tools and features readily accessible through the Menu Bar and toolbars. The Ruler, Status Bar, and Sidebar provide additional functionality and customization options, making it easy to create professional-looking documents with LibreOffice Writer.

3.5 WORKING WITH WRITER

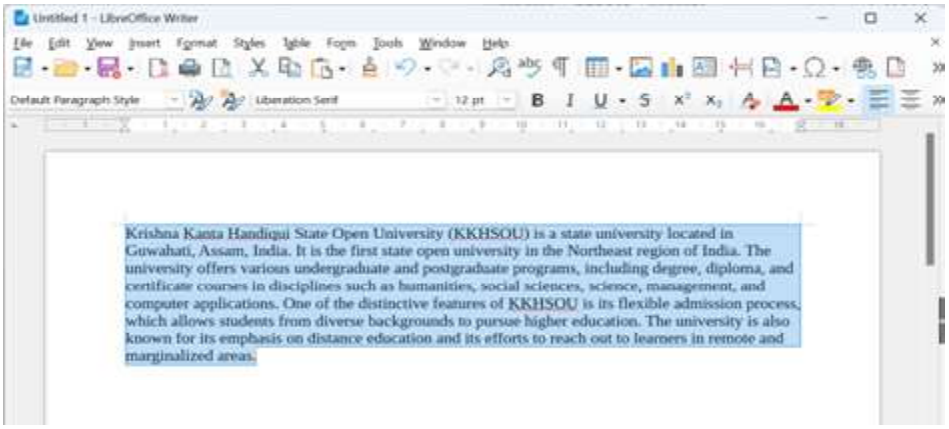
3.5.1 Entering and Formatting Text

here's a step-by-step procedure to enter and format text in a LibreOffice Writer document:

1. Launch LibreOffice Writer and create a new document by clicking on the File menu and selecting New, or by pressing Ctrl+N on your keyboard.

2. Type in the text that you want to include in your document.

3. To format your text, select the text by clicking and dragging your mouse over the text that you want to format.



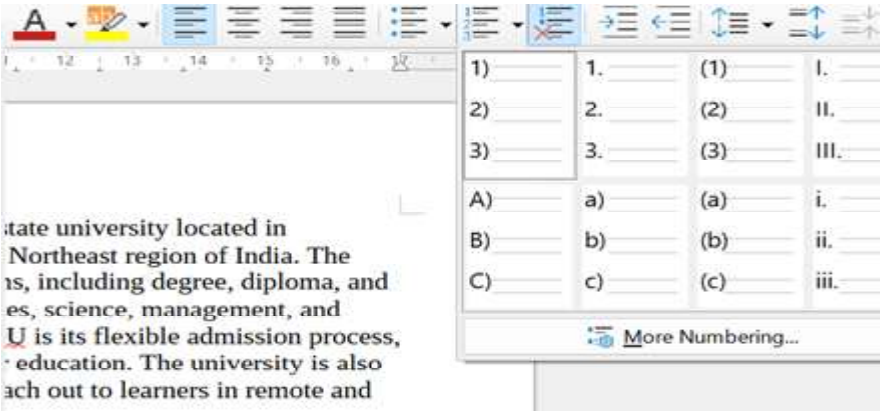
4. Use the formatting tools available in the Formatting Toolbar to apply formatting options such as font style, font size, bold, italic, underline, strikethrough, and color.



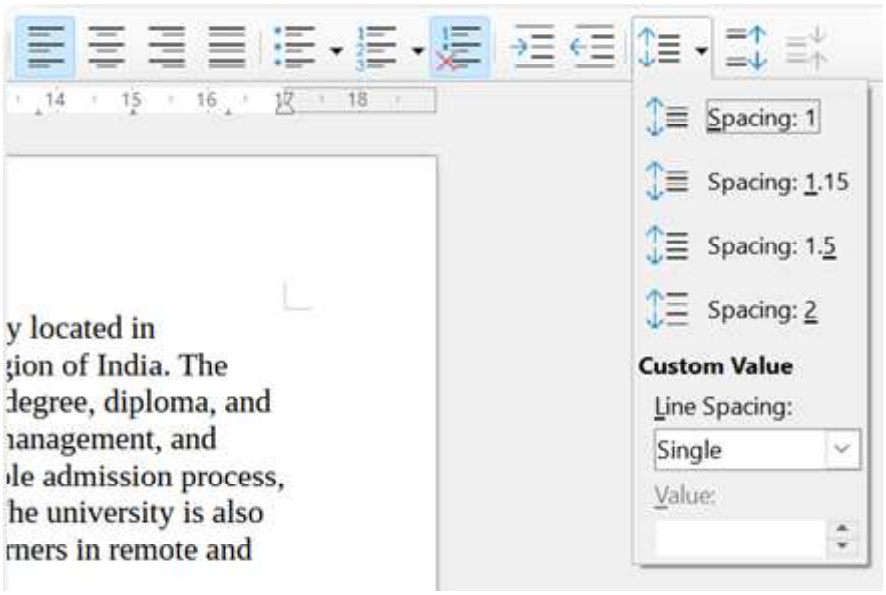
5. To change the alignment of your text, use the Alignment buttons available in the Formatting Toolbar. You can align your text to the left, center, right, or justified.



6. To add bulleted or numbered lists, click on the Bullets or Numbering buttons available in the Formatting Toolbar. This will automatically add bullet points or numbers to your text.

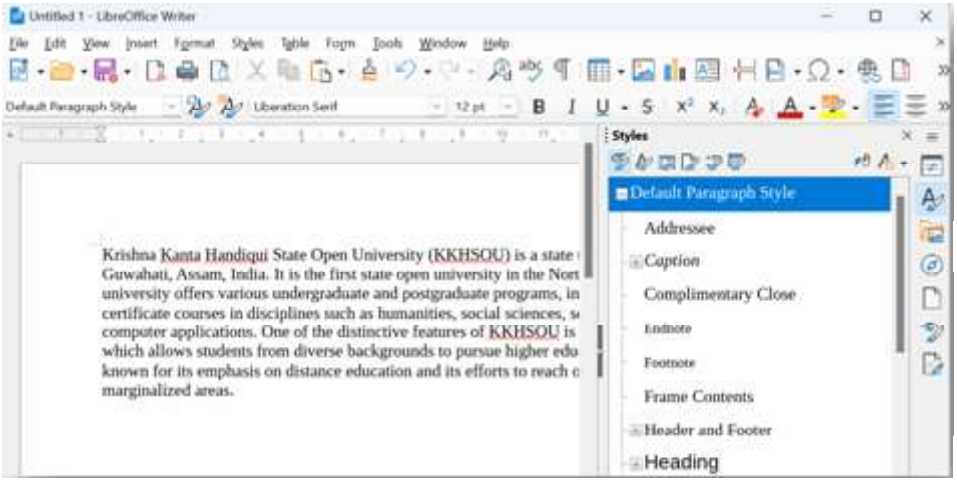


7. To adjust the spacing between lines or paragraphs, use the Line Spacing or Paragraph Spacing options available in the Formatting Toolbar.



8. To change the indentation of your text, use the Indent buttons available in the Formatting Toolbar. You can indent your text to the left or right.

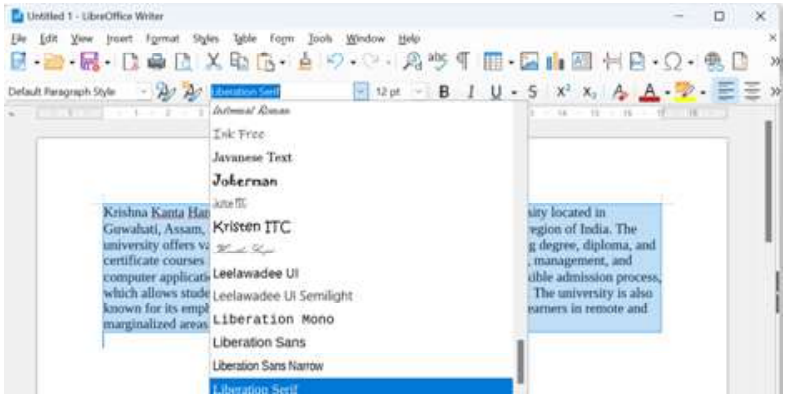
9. To apply a specific style to your text, use the Styles and Formatting feature available in the Sidebar. Click on the Styles and Formatting button in the Sidebar, select the style that you want to apply, and click on the Apply button.



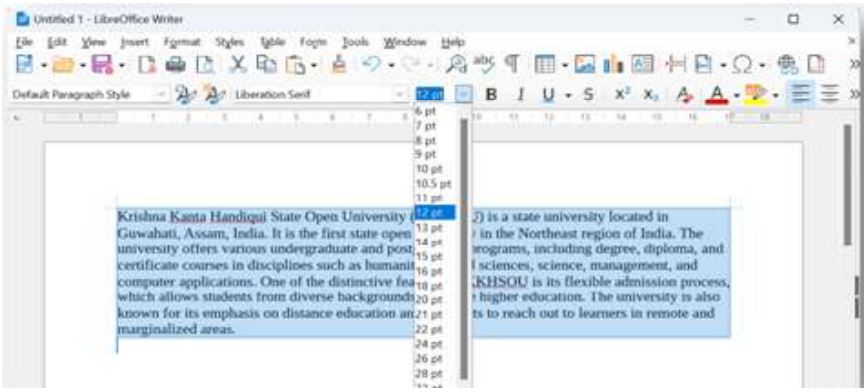
3.5.2 Applying Font Styles

Here's a step-by-step procedure to apply font styles in LibreOffice Writer:

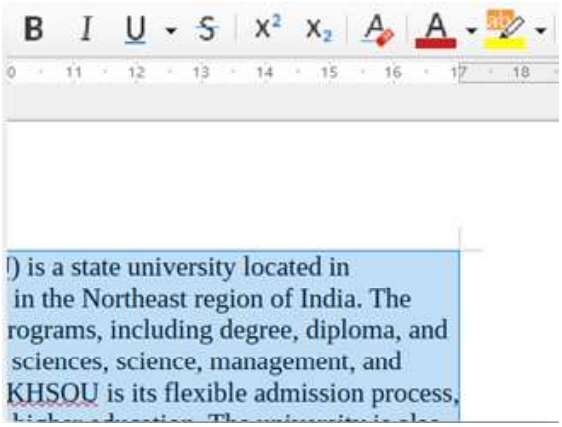
1. Launch LibreOffice Writer and create a new document.
2. Type in the text that you want to format.
3. Select the text that you want to apply the font style to.
4. Go to the Formatting Toolbar located at the top of the LibreOffice Writer window.
5. In the Formatting Toolbar, locate the Font Name dropdown menu. This dropdown menu displays the font styles that are currently available.



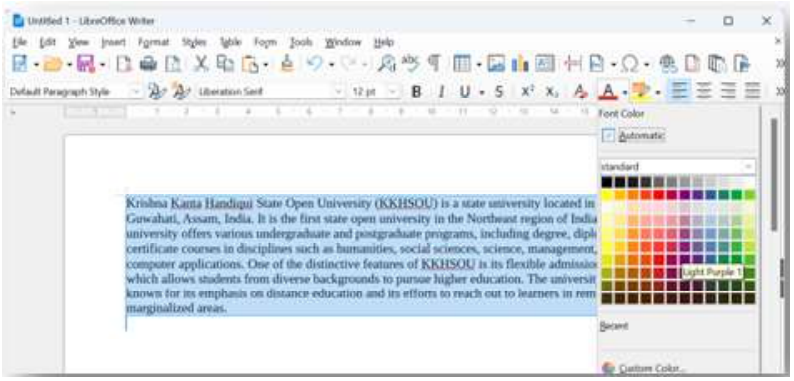
6. Click on the Font Name dropdown menu and select the font style that you want to apply to your text. The font style will be applied to the selected text.
7. You can also change the font size of your text by selecting the text that you want to format and then selecting a font size from the Font Size dropdown menu in the Formatting Toolbar.



8. Additionally, you can make your text bold, italic, or underlined by clicking on the corresponding buttons in the Formatting Toolbar.



9. To change the color of your text, click on the Font Color button in the Formatting Toolbar and select a color from the color palette.

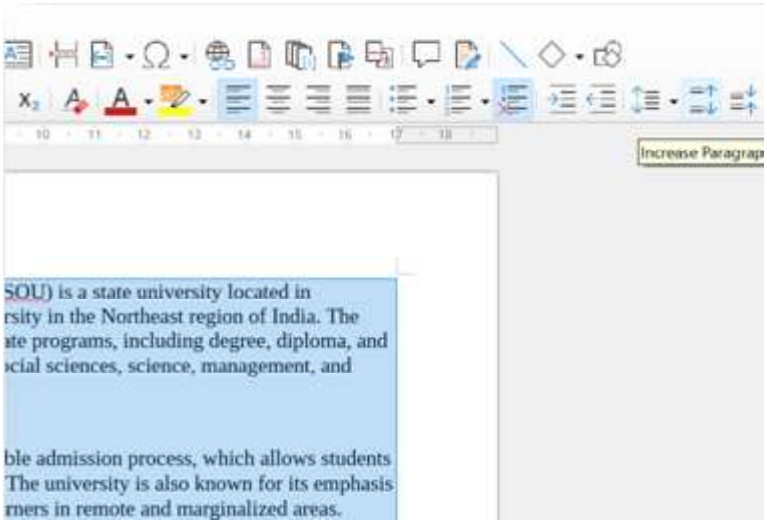


By following the above procedures, you can successfully apply font styles to your text in LibreOffice Writer. You can continue to use these formatting tools to customize the appearance of your document.

3.5.3 Working with Paragraphs

Sure, here's a step-by-step procedure to work with paragraphs in Writer:

1. Launch LibreOffice Writer and create a new document.
2. Type in the text that you want to include in your document.
3. To start a new paragraph, press the Enter key on your keyboard.
4. To add spacing between paragraphs, select the paragraph(s) that you want to add spacing to, and then use the Paragraph Spacing options available in the Formatting Toolbar.



5. To change the alignment of a paragraph, select the paragraph that you want to align, and then use the Alignment buttons available in the Formatting Toolbar. You can align your paragraph to the left, center, right, or justified.
6. To add bullet points or numbers to a paragraph, place your cursor at the beginning of the paragraph and then click on the Bullets or Numbering button available in the Formatting Toolbar.
7. To indent a paragraph, select the paragraph that you want to indent and then use the Indent buttons available in the Formatting Toolbar. You can indent your paragraph to the left or right.
8. To apply a specific paragraph style to your text, use the Styles and Formatting feature available in the Sidebar. Click on the Styles and Formatting button in the Sidebar, select the paragraph style that you want to apply, and click on the Apply button.
9. To create a numbered or bulleted list, type in the list items one after the other, each on a new line, and then click on the Numbering or Bullets button available in the Formatting Toolbar.

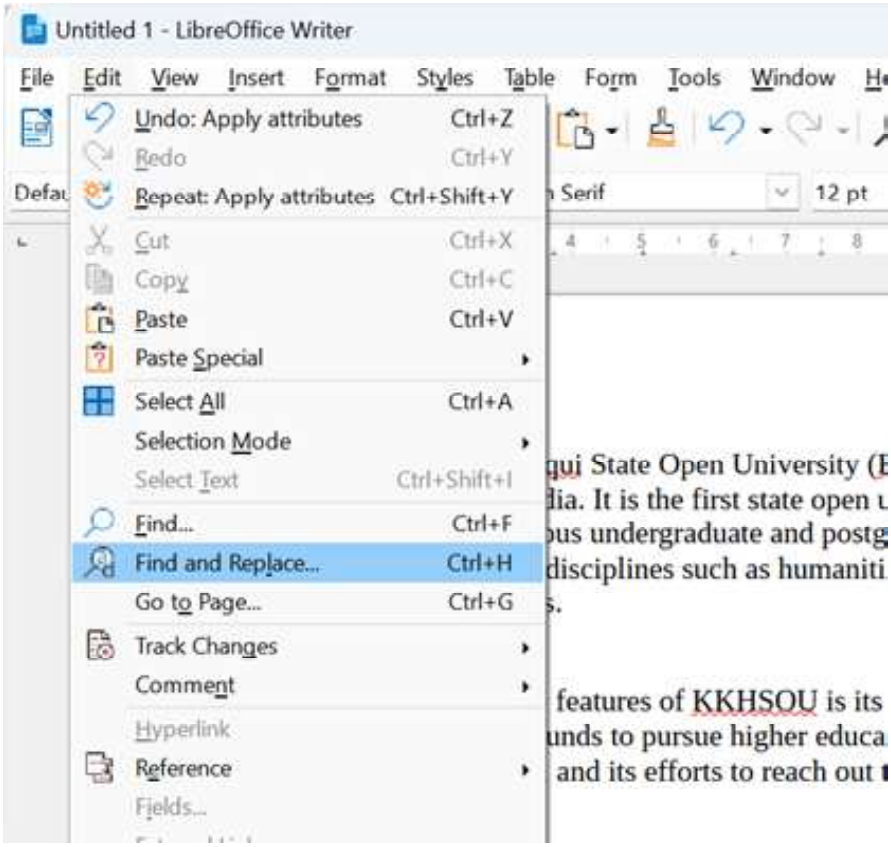
You can continue to use these formatting tools to customize the appearance of your document.

3.5.4 Find and Replace

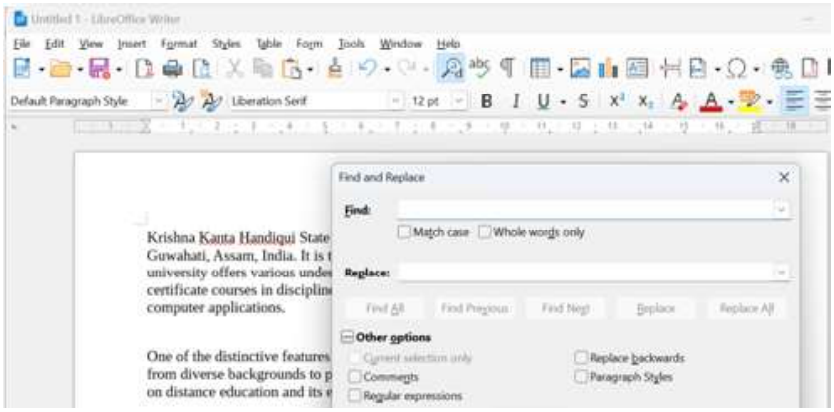
The “Find and Replace” feature in LibreOffice Writer is a powerful tool that allows you to search for a specific word, phrase or character in your document, and replace it with another word, phrase or character.

Following are step-by-step procedures to find and replace text in LibreOffice Writer:

1. Launch LibreOffice Writer and open the document that you want to search and replace text in.
2. Click on the Edit menu in the top-left corner of the window.
3. Click on the Find & Replace option. Alternatively, you can use the keyboard shortcut Ctrl+H.



4. In the Find & Replace dialog box, type in the text that you want to search for in the Search for field.



5. If you want to search for a whole word, check the Whole words only option.
6. If you want to match the case of the text that you're searching for, check the Match case option.
7. Click on the Find button to find the first occurrence of the text that you're searching for.
8. To replace the found text, click on the Replace button.
9. To replace all occurrences of the text, click on the Replace All button.
10. If you want to search for and replace more text, click on the Find Next button to find the next occurrence of the text.
11. Once you're done searching and replacing text, click on the Close button to close the Find & Replace dialog box.

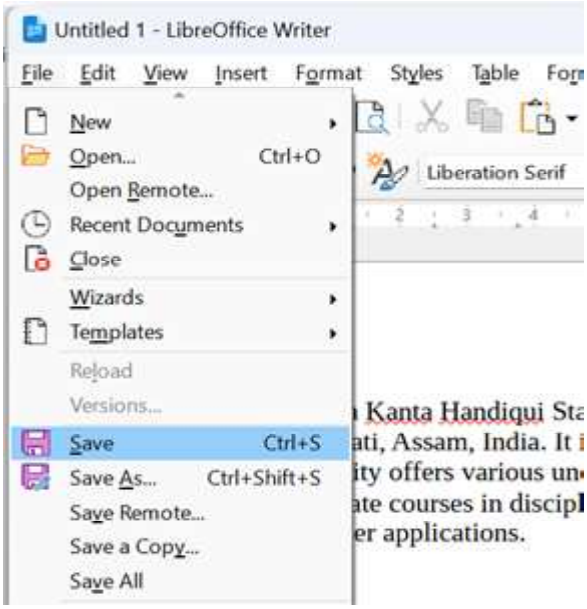
In this way, you can find and replace text in LibreOffice Writer. You can use these steps to quickly search and replace text in your documents.

3.5.5 Saving, Closing and Opening Existing Document

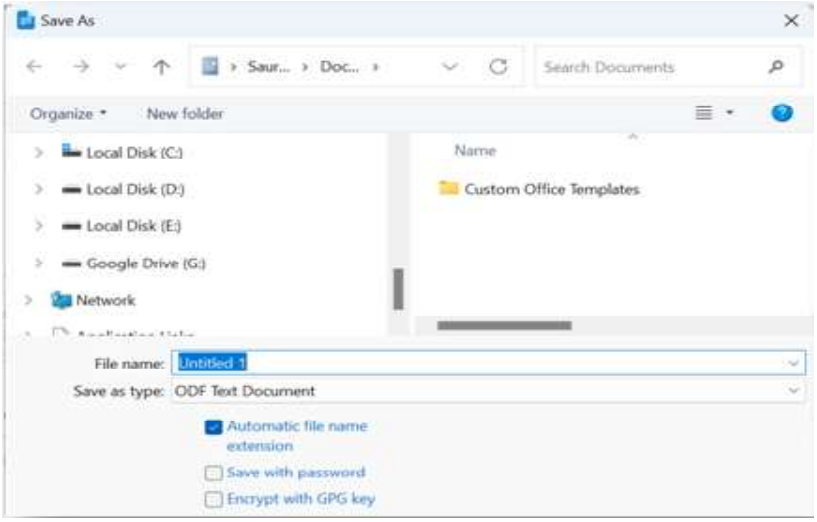
Following are step-by-step procedures to save, close, and open an existing document in LibreOffice Writer:

To save a document:

1. Click on the File menu in the top-left corner of the LibreOffice Writer window.
2. Click on the Save option. Alternatively, you can press the Ctrl+S keys on your keyboard.



1. Choose a location where you want to save the document.

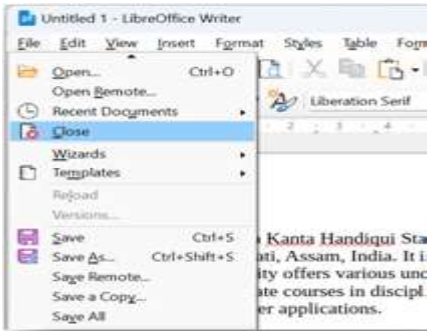


1. In the Save As dialog box, give your document a name and select the file type you want to save it in.
2. Click on the Save button.

To close a document:

1. Click on the File menu in the top-left corner of the LibreOffice Writer window.
2. Click on the Close option. Alternatively, you can press the Ctrl+W keys on your keyboard.

1. If there are any unsaved changes to your document, LibreOffice Writer will prompt you to save your changes before closing the document.



To open an existing document:

1. Click on the File menu in the top-left corner of the LibreOffice Writer window.
2. Click on the Open option. Alternatively, you can press the Ctrl+O keys on your keyboard.
3. Choose the location where the document is saved.
4. Select the document that you want to open.
5. Click on the Open button.

By following these steps, you can successfully save, close, and open an existing document in LibreOffice Writer.



CHECK YOUR PROGRESS

1. Answer the following questions:

(a) What is LibreOffice Writer?

(b) What are the components of the LibreOffice Writer interface?

(c) How can you launch LibreOffice Writer?

(d) How can you open a new document in LibreOffice Writer?

(e) What is the purpose of the Ruler in LibreOffice Writer?

(f) Where is the Sidebar located in LibreOffice Writer?

(g) What options are available in the Formatting Toolbar in LibreOffice Writer?

(h) How can you apply font styles in LibreOffice Writer?

(i) How can you add bulleted or numbered lists in LibreOffice Writer?

(j) What is the purpose of the Styles and Formatting feature in LibreOffice Writer?



3.6 LET US SUM UP

In this unit we have discussed the following :

- The Writer interface consists of a Menu Bar, Standard Toolbar, Formatting Toolbar, Ruler, Status Bar, Scroll Bar, Document Area, and Sidebar.
- The Ruler, Status Bar, and Sidebar provide additional functionality and customization options.
- To enter and format text in a LibreOffice Writer document, create a new document, type in the text, select the text, and use the formatting tools available in the Formatting Toolbar.
- The Formatting Toolbar includes options for font style, font size, alignment, bullet points, numbering, line spacing, paragraph spacing, and indentation.
- The Styles and Formatting feature available in the Sidebar can be used to apply a specific style to your text.
- Font styles can be applied by selecting the text, choosing a font style from the Font Name dropdown menu, changing the font size, making the text bold, italic or underlined, and changing the text color.
- LibreOffice Writer is user-friendly and intuitive with various tools and features readily accessible through the Menu Bar and toolbars.
- LibreOffice Writer is a good alternative to Microsoft Word for creating professional-looking documents.



3.7 ANSWER TO CHECK YOUR PROGRESS

Ans.to.Q.No.1:

(a) LibreOffice Writer is a free and open-source word processor software.

(b) The components of the LibreOffice Writer interface are Menu Bar, Standard Toolbar, Formatting Toolbar, Ruler, Status Bar, Scroll Bar, Document Area, and Sidebar.

(c) You can launch LibreOffice Writer by searching for it in the Start menu or by clicking on the LibreOffice Writer icon on your desktop.

(d) You can open a new document in LibreOffice Writer by clicking on the File menu and selecting New, or by pressing Ctrl+N on your keyboard.

(e) The Ruler in LibreOffice Writer provides visual aids for adjusting margins, tabs, and indentation.

(f) The Sidebar is located on the right-hand side of the LibreOffice Writer window.

(g) The Formatting Toolbar in LibreOffice Writer contains options for formatting text such as font style, font size, alignment, and highlighting.

(h) You can apply font styles in LibreOffice Writer by selecting the text you want to format and using the Font Name dropdown menu and other formatting tools in the Formatting Toolbar.

(i) You can add bulleted or numbered lists in LibreOffice Writer by clicking on the Bullets or Numbering buttons in the Formatting Toolbar.

(j) The Styles and Formatting feature in LibreOffice Writer allows you to apply a specific style to your text.



3.8 FURTHER READING

1) "Getting Started with LibreOffice Writer," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/getting-started-writer/.

2) "LibreOffice Writer Guide," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/writer-guide/.

3) "LibreOffice Writer Tutorial," Tutorials Point, accessed March 11, 2023, https://www.tutorialspoint.com/libreoffice/libreoffice_writer_tutorial.htm.



3.9 MODEL QUESTIONS

Q.1: What are the components of the LibreOffice Writer interface?

Q.2: How do you enter and format text in a LibreOffice Writer document?

Q.3: What is the purpose of the Ruler in LibreOffice Writer?

Q.4: How can you add bulleted or numbered lists in a Writer document?

Q.5: How do you apply specific styles to text in Writer using the Styles and Formatting feature?

Q.6: What is the purpose of the Sidebar in LibreOffice Writer?

Q.7: How do you change the alignment of text in a Writer document?

Q.8: How can you adjust the spacing between lines or paragraphs in a Writer document?

Q.9: How can you indent text to the left or right in a Writer document?

Q.10: What are some of the font styles that can be applied to text in LibreOffice Writer?

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UNIT 4: WORKING WITH TEMPLATES AND STYLES IN WRITER

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Creating Document Templates

- 4.3.1 Understanding Document Templates
- 4.3.2 Creating a New Template
- 4.3.3 Modifying an Existing Template

4.4 Using Document Templates

- 4.4.1 Applying a Template to A New Document
- 4.4.2 Changing the Template for an Existing Document

4.5 Paragraph Styles

- 4.5.1 Understanding Paragraph Styles
- 4.5.2 Creating a New Paragraph Style
- 4.5.3 Modifying a Paragraph Style
- 4.5.4 Applying Paragraph Styles to Text

4.6 Managing Styles in the Styles and Formatting Dialog Box

- 4.6.1 Opening the Styles and Formatting Dialog Box
- 4.6.2 Navigating the Dialog Box
- 4.6.3 Managing Styles in The Dialog Box

4.7 Let Us Sum Up

4.8 Answers to Check Your Progress

4.9 Further Reading

4.10 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- learn the concept of document templates and their importance in creating new documents.
- create a new document template in LibreOffice Writer.

- modify an existing document template to meet specific needs.
- save and use document templates efficiently in LibreOffice Writer.
- apply a document template to a new document and change it for an existing document.
- update a document template to reflect any changes made in the document.
- learn the concept of paragraph styles and their role in creating consistent formatting throughout a document.
- create new paragraph styles in LibreOffice Writer.
- modify existing paragraph styles to meet specific formatting needs.
- apply paragraph styles to text efficiently in LibreOffice Writer.
- navigate and manage styles effectively in the Styles and Formatting dialog box of LibreOffice Writer.

4.2 INTRODUCTION

LibreOffice Writer is a powerful word processing software that allows users to create professional-looking documents with ease. One of the most useful features of Writer is its ability to create and use document templates, which are pre-designed formats that can be used as a starting point for new documents. In this section, we will explore how to create, modify, and save document templates, as well as how to apply them to new and existing documents. Additionally, we will discuss the use of paragraph and character styles to further enhance the appearance of your documents. Finally, we will take a closer look at managing styles in the Styles and Formatting dialog box, which is a useful tool for organizing and manipulating styles. With these skills, you can create consistent, professional-looking documents quickly and easily in LibreOffice Writer.

4.3 CREATING DOCUMENT TEMPLATES

4.3.1 Understanding Document Templates

In LibreOffice Writer, document templates are pre-designed formats that can be used to create new documents. These templates include various

elements such as page layout, font styles, header and footer, and other design elements that make the document look professional and consistent.

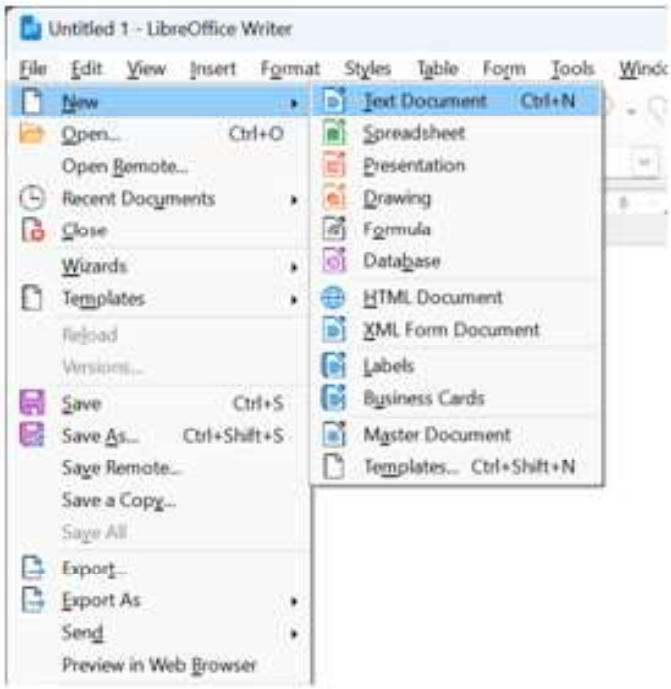
Document templates can save time and effort by providing a starting point for creating a new document. Instead of starting from scratch, you can select a template that best suits your needs, and then modify it to create your own document.

LibreOffice Writer comes with a range of built-in templates, and you can also create your own custom templates. To create a new template, you can start with a blank document or an existing document and customize it to suit your needs. Once you have created a template, you can save it and use it to create new documents in the future.

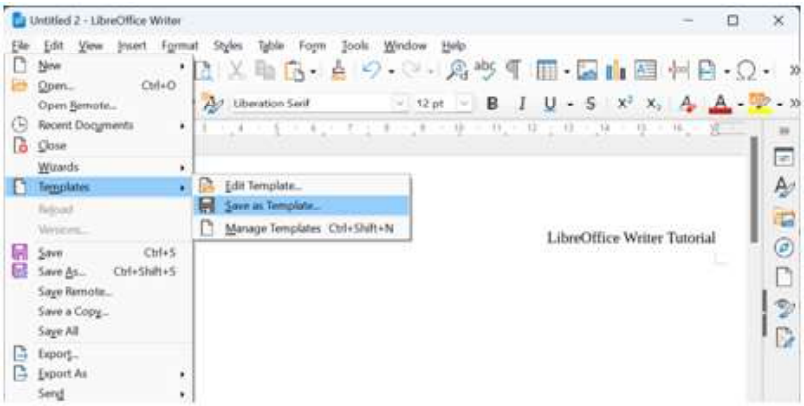
4.3.2 Creating a New Template

Here is the step-by-step procedure to create a new template in LibreOffice Writer:

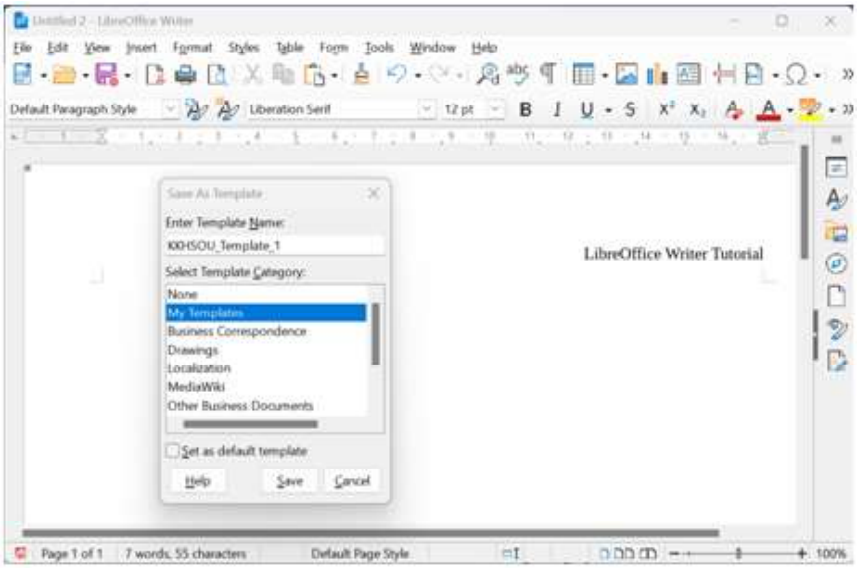
1. Open LibreOffice Writer and click on the “File” menu in the top-left corner.
2. From the drop-down menu, click on “New” and select “Text Document” from the options.



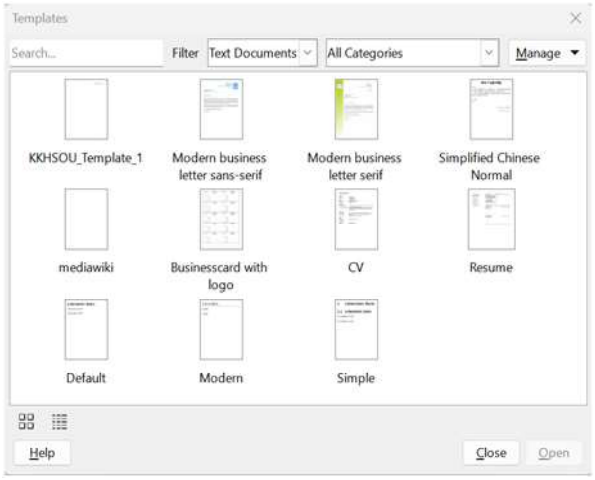
3. Customize the new document as per your requirements. This can include formatting the text, changing the page layout, adding headers and footers, and inserting any required design elements.
4. Once you have customized the document, click on the “File” menu again and select “Templates” > “Save as Template.”



5. In the “Save As Template” dialog box, enter a name for the template in the “Name” field.
6. Select the category where you want to save the template. Click on the “Save” button to save the template.



7. Your new template is now saved and can be accessed from the “File” menu > “New” > “Templates” > “KKHSOU_Template_1” in the future.



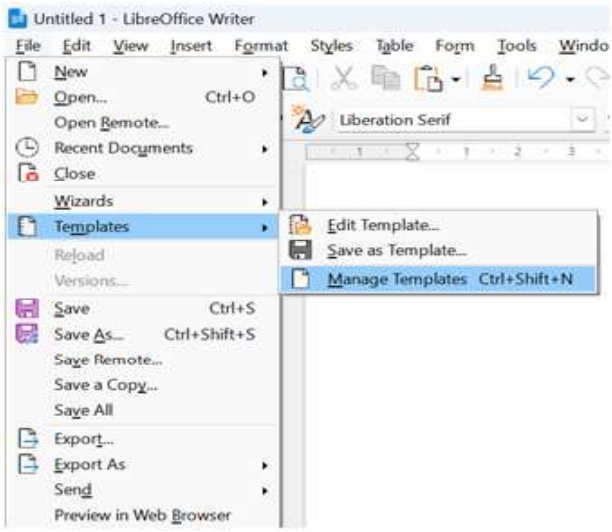
8. To use the template, simply open a new document from the “File” menu > “New” > “Templates” and select the template you want to use.

By following these steps, you can create a new template in LibreOffice Writer and save it for future use.

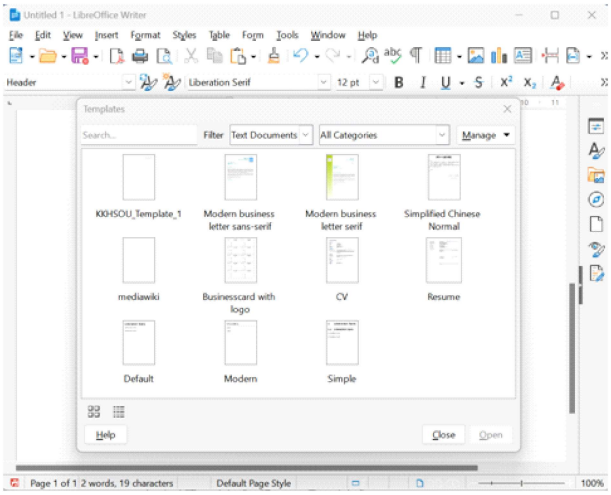
4.3.3 Modifying an Existing Template

You can modify an existing template by following the steps mentioned below:

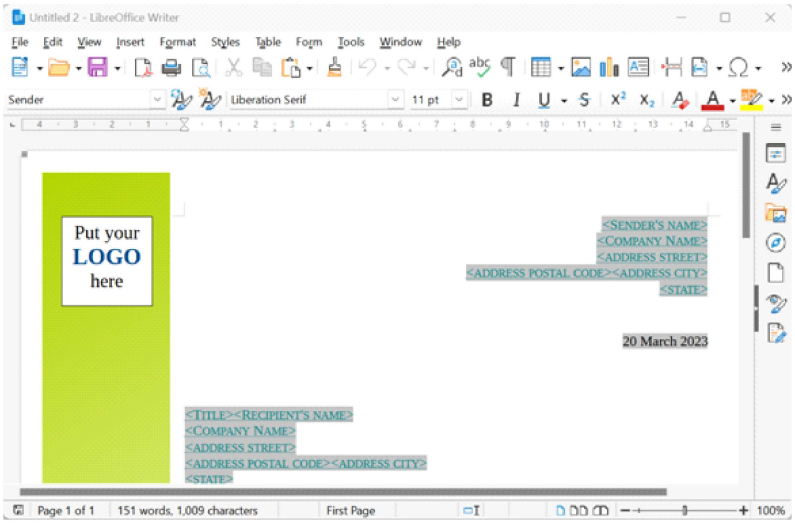
1. Open LibreOffice Writer and click on the “File” menu in the top-left corner.
2. From the drop-down menu, click on “Templates” > “Manage Templates” to open the “Template Manager” dialog box.



3. In the “Template Manager” dialog box, select the category where your existing template is saved. You can use the search bar to find the template quickly.



4. Once you have found the template, click on it to select it and then click on the “Edit” button. For example, we will edit the template named “Modern business letter serif”.



5. This will open the template in a new Writer document. You can now modify the template as per your requirements. You can add or delete text, change formatting, and modify design elements.

6. Once you have made the necessary changes, click on the “File” menu and select “Templates” > “Save as Template.”

7. In the “Save As Template” dialog box, ensure that the same template name and category are selected as the existing template.

8. Click on the “OK” button to save the modified template.

Your modified template is now saved and can be accessed from the “File” menu > “New” > “Templates” in the future.

4.4 USING DOCUMENT TEMPLATES

4.4.1 Applying a Template to a New Document

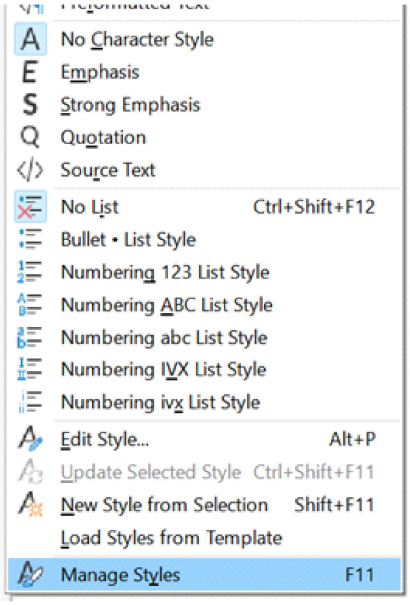
You can apply a template to a new document in by following the steps mentioned below:

1. Open LibreOffice Writer.
2. Click on “File” in the menu bar and select “New” to create a new document.
3. In the “New Document” dialog box, select “Templates” on the left-hand side.
4. Click on the template category you want to use. For example, if you want to create a business letter, select “Business Correspondence” and then select the “Business Letter” template.
5. Once you have selected the template, click on “Create” at the bottom of the dialog box.
6. A new document will be created based on the selected template. You can now edit the document as needed.
7. If you want to save the document using a different name or location, click on “File” in the menu bar and select “Save As”. Enter the desired file name and location and click “Save”.

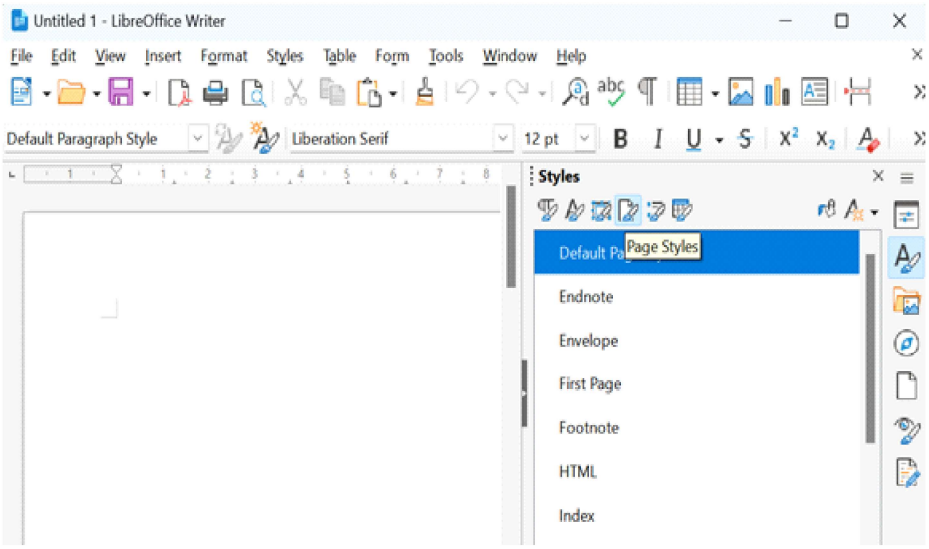
4.4.2 Changing the Template for an Existing Document

You can change the template for an existing document in LibreOffice Writer by following the steps mentioned below:

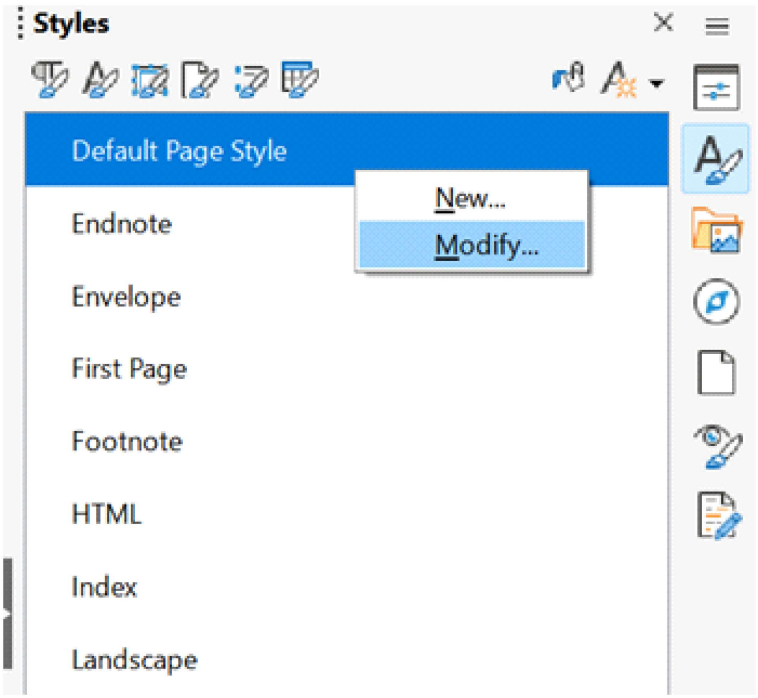
1. Open the document you want to change the template for in LibreOffice Writer.
2. Click on “Styles” in the menu bar and select “Manage Styles” from the drop-down menu.



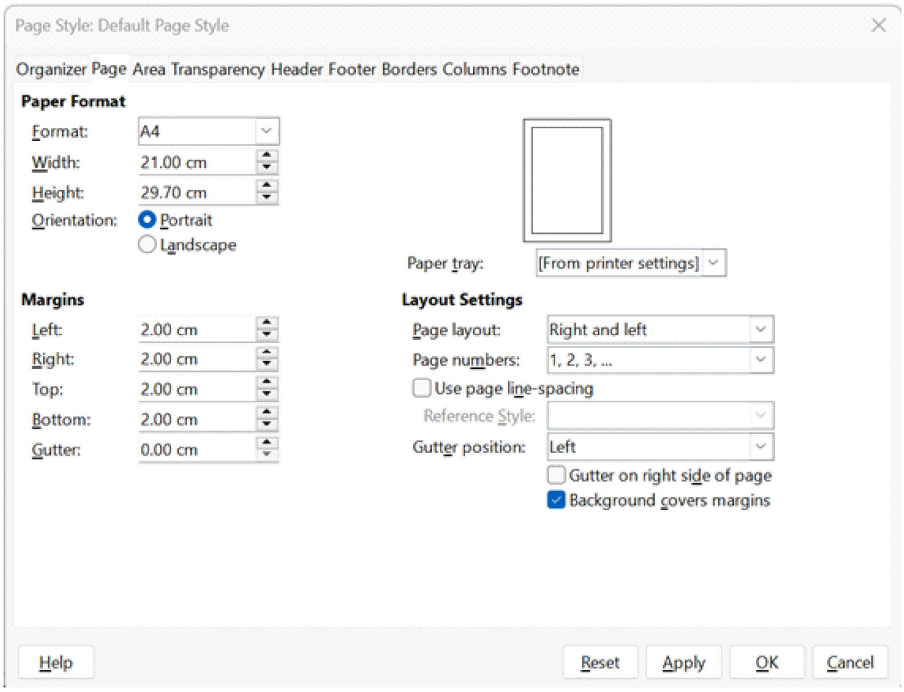
3. In the “Styles and Formatting” dialog box, click on the “Page Styles” icon.



4. Right-click on the current page style applied to the document and select “Modify” from the pop-up menu.



5. In the following window, you can change the page styles by clicking the tabs.



6. Save the changes to the document by clicking on the “Apply” and then the “OK” button.

4.5 PARAGRAPH STYLES

4.5.1 Understanding Paragraph Styles

In LibreOffice Writer, paragraph styles are a way to apply consistent formatting to a group of paragraphs. They allow you to define attributes such as font, font size, line spacing, indentation, and alignment. By applying paragraph styles, you can quickly and easily format your document, while ensuring consistency and making it easier to modify the formatting later on.

To apply a paragraph style, you can either use the Styles and Formatting dialog or the sidebar. In the Styles and Formatting dialog, select the text you want to format and then double-click the appropriate paragraph style in the list. In the sidebar, select the text you want to format, expand the Styles section, and then click the appropriate paragraph style.

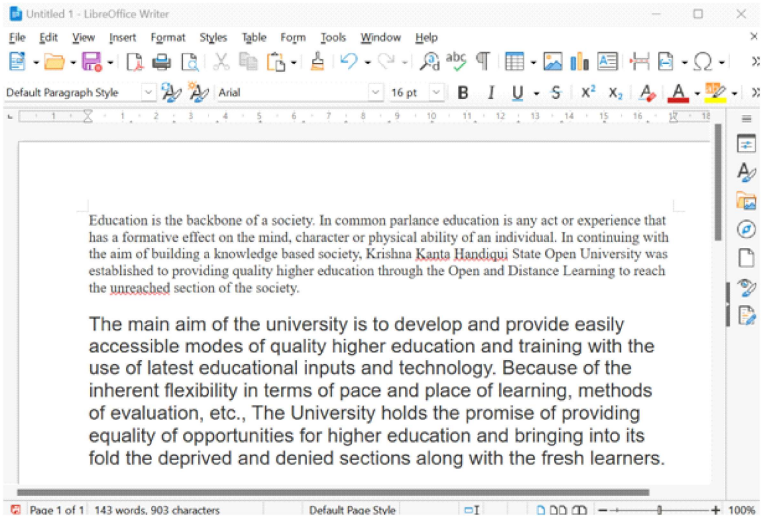
You can also modify existing paragraph styles or create new ones. To modify an existing style, right-click the style in the Styles and Formatting dialog and select Modify. You can then make changes to the attributes and save the modified style. To create a new style, click the New Style button in the Styles and Formatting dialog or in the sidebar, and then define the attributes for the new style.

Using paragraph styles in LibreOffice Writer can save you time and effort in formatting your document, while also ensuring consistency and making it easier to make changes later on.

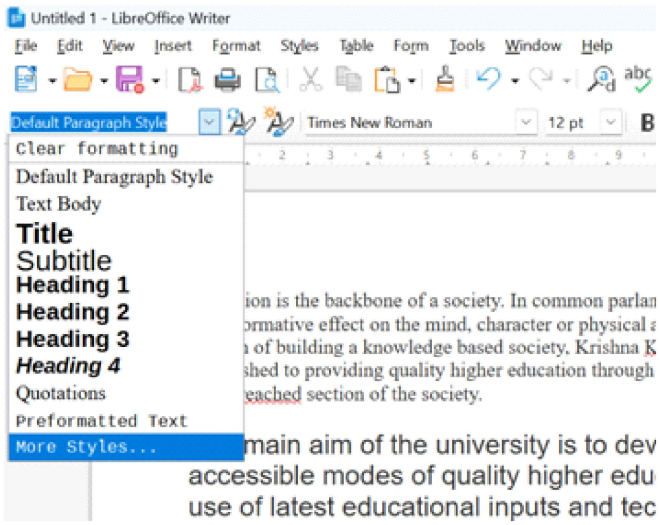
4.5.2 Creating a New Paragraph style

To create a new paragraph style in LibreOffice Writer, follow these steps:

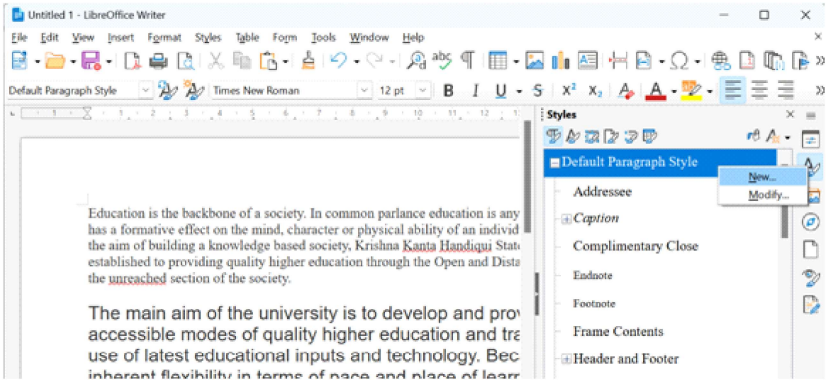
1. Open a new or existing document in Writer. For example, let us open an existing document which contains two paragraphs of different styles as shown below:



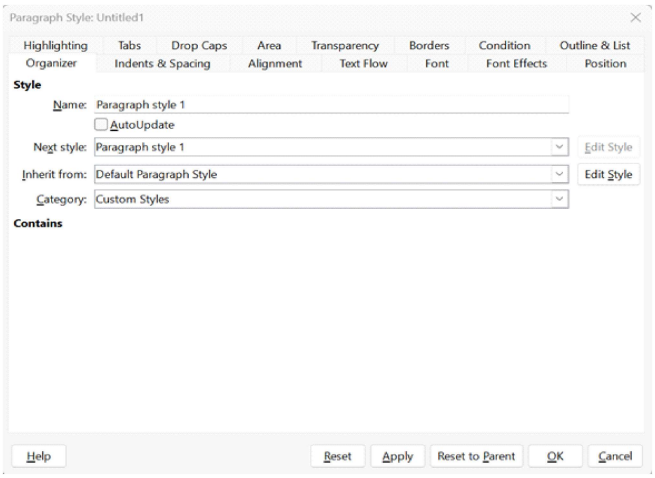
1. Go to “Default Paragraph Styles” > “More Styles” option (as shown below).

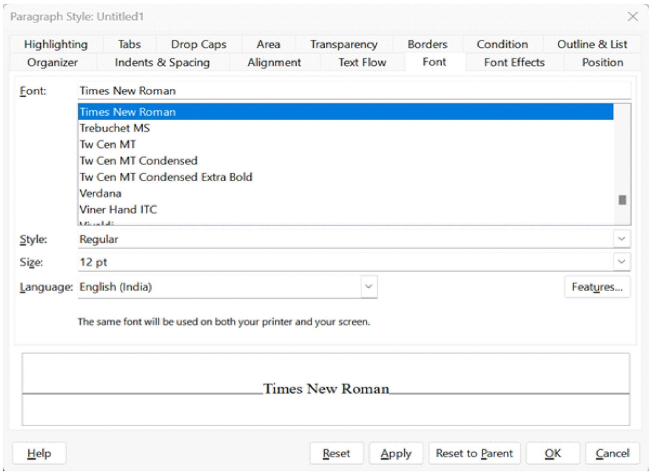


A Styles sidebar will appear in the right side of the document (as shown below).



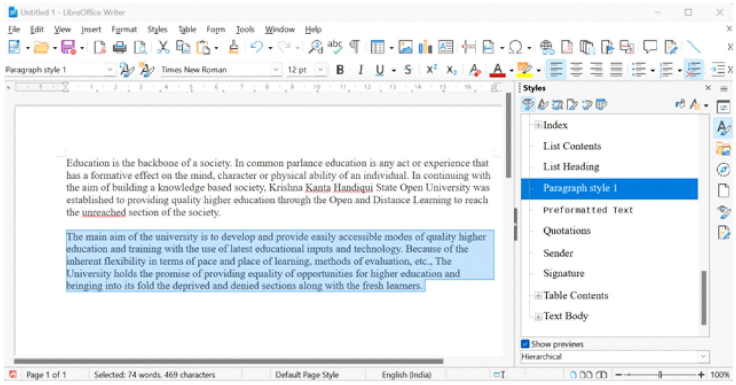
3. Right-click over the “Default Paragraph Styles” and select “New”.
4. In the Paragraph Style dialog box, give your new style a name, and then make any changes to the settings that you want to apply to the style, such as font, alignment, line spacing, or indentation. You can also choose to base your new style on an existing style by selecting it from the list of styles. (as shown below)





1. Click “Apply” and then “OK” to save your new paragraph style.

Your new style will now appear in the list of paragraph styles in the Styles and Formatting window. You can apply the style to any paragraph in your document by selecting the paragraph and then clicking on the style in the list. Let us change the second paragraph to this new style. For this, select the second paragraph in the document, then double click over the new paragraph style just created. The two paragraph styles will now be same.



You can also modify or delete the style by right-clicking on it and selecting Modify or Delete.

4.5.3 Modifying a Paragraph Style

To modify a paragraph style in LibreOffice Writer, follow these steps:

1. Open the document in which you want to modify the paragraph style.
2. Select the text whose paragraph style you want to modify.
3. Right-click on the selected text and choose “Paragraph” from the context menu.
4. In the Paragraph dialog box, you can modify various parameters such as alignment, line spacing, indentation, and borders.
5. Once you have made the necessary changes, click on the “OK” button to apply the changes to the selected text.
6. To apply the modified paragraph style to other text in the document, select the text and right-click on it. Choose “Styles” from the context menu and then select the modified paragraph style from the list of styles.
7. If you want to save the modified paragraph style as a new style, click on the “New Style” button in the Paragraph dialog box. Give a name to the new style and click on the “OK” button to save it.

By following these steps, you can easily modify a paragraph style in LibreOffice Writer.

4.5.4 Applying Paragraph Styles to Text

To apply paragraph styles to text in LibreOffice Writer, follow these steps:

1. First, select the text that you want to apply a style to.
2. Next, click the “Styles” menu.
3. You will see a list of available paragraph styles. Click on the style that you want to apply to the selected text.
4. If the style you want to apply is not listed, you can create a new style by right-clicking on an existing style and selecting “New”. You can then modify the new style to fit your needs.
5. Once you have selected the style you want to apply, the text will be automatically formatted according to the style’s settings.
6. If you want to modify the formatting of a style, you can go to the “Style” menu options again and select “Edit Style” options. This will allow you to change the font, size, color, and other formatting options for the style.

By using paragraph styles in LibreOffice Writer, you can quickly and easily format your text according to a consistent set of rules, which can save you time and effort when working on larger documents



CHECK YOUR PROGRESS

1. Answer the following questions:

(a) What are document templates in LibreOffice Writer?

(b) How can you create a new template in LibreOffice Writer?

(c) How can you modify an existing template in LibreOffice Writer?

(d) How can you apply a template to a new document in LibreOffice Writer?

(e) What are paragraph styles in LibreOffice Writer?

4.6 MANAGING STYLES IN THE STYLES AND FORMATTING DIALOG BOX

4.6.1 Opening the Styles and Formatting Dialog Box

To open the Styles and Formatting dialog box in LibreOffice Writer, there are a few different ways:

1. Method 1: Use the F11 key
   Press the F11 key on your keyboard. This will open the Styles and Formatting dialog box.
2. Method 2: Use the Format menu
   Click on the “Format” menu in the menu bar at the top of the Writer window. From the drop-down menu, select “Styles and Formatting”. This will open the Styles and Formatting dialog box.
3. Method 3: Use the sidebar
   If the sidebar is visible in your Writer window, click on the “Styles and Formatting” icon in the sidebar. This will open the Styles and Formatting dialog box.

Once you have opened the Styles and Formatting dialog box, you can use it to manage styles for your document. You can apply styles to text, modify existing styles, or create new styles.

4.6.2 Navigating the Dialog Box

When working with dialog boxes in LibreOffice Writer, you can navigate through the various options and settings using several methods. Here are some common ways to navigate dialog boxes in Writer:

1. Use the Tab key: In most dialog boxes, you can use the Tab key to move between fields and options. Pressing Tab will move the cursor to the next field, and Shift+Tab will move the cursor to the previous field.

2. Use the arrow keys: You can also use the arrow keys to move between fields and options. The up and down arrow keys will move the cursor between options, while the left and right arrow keys will move the cursor within a field.
3. Use the mouse: You can also use the mouse to select options and fields in the dialog box. Clicking on an option or field will select it, and you can then enter text or use the drop-down menus to select options.
4. Use keyboard shortcuts: Many dialog boxes have keyboard shortcuts that can be used to quickly navigate between options and fields. These shortcuts can be found in the menu bar or by hovering over the buttons in the dialog box.
5. Use the Enter key: In some dialog boxes, pressing the Enter key will select the current option and close the dialog box. This can be useful for quickly making changes without having to navigate through all the options.

By using these methods to navigate through dialog boxes in LibreOffice Writer, you can quickly and easily make changes to your documents and settings.

4.6.3 Managing Styles in the Dialog Box

To manage styles in the dialog box in LibreOffice Writer, follow these steps:

1. Open the Styles and Formatting window by pressing the F11 key or selecting “Styles” from the “Format” menu.
2. In the Styles and Formatting window, click on the “Manage Styles” button at the bottom of the window. This will open the “Organizer” dialog box.
3. In the Organizer dialog box, you can manage the styles in several ways:
4. To create a new style, click on the “New” button at the bottom of the window. This will open the “New Style” dialog box, where you can specify the properties of the new style.

5. To modify an existing style, select the style in the list on the left-hand side of the window and click on the “Modify” button. This will open the “Modify Style” dialog box, where you can change the properties of the style.
6. To delete a style, select the style in the list and click on the “Delete” button. Note that you cannot delete built-in styles.
7. To rename a style, select the style in the list and click on the “Rename” button. Enter the new name for the style in the dialog box that appears.
8. To import styles from another document or template, click on the “Import” button and select the document or template that contains the styles you want to import.
9. To export styles to another document or template, select the styles you want to export and click on the “Export” button. Save the styles as a separate document or template.

Once you have made any necessary changes to the styles, click on the “OK” button to close the Organizer dialog box and return to the Styles and Formatting window.

By managing styles in the dialog box, you can more easily create and modify styles in LibreOffice Writer. This can help you to create documents with a consistent and professional appearance.



4.7 LET US SUM UP

In this unit we have discussed the following :

- Document templates in LibreOffice Writer are pre-designed formats that include page layout, font styles, header and footer, and other design elements to create a professional-looking document.
- These templates can save time and effort by providing a starting point for creating a new document.
- LibreOffice Writer comes with built-in templates, and you can also create your own custom templates.

- To create a new template, you can start with a blank document or an existing document and customize it to suit your needs.
- You can modify an existing template by opening it in LibreOffice Writer, making the necessary changes, and saving it as a new template.
- To use a template, you can select it from the “Templates” option under the “New” menu or from the “Template Manager” dialog box.
- LibreOffice Writer uses paragraph styles to apply consistent formatting to a group of paragraphs, including font, font size, line spacing, indentation, and alignment.
- Paragraph styles can be applied using the Styles and Formatting dialog or the sidebar, and existing styles can be modified or new ones created.
- Modifying a paragraph style can be done through the Paragraph dialog box, and the modified style can be saved as a new style.
- Applying paragraph styles to text is a simple process of selecting the text and choosing the appropriate style from the Styles and Formatting window.



4.8 ANSWERS TO CHECK YOUR PROGRESS

Ans.to.Q.No.1:

(a) Document templates are pre-designed formats that can be used to create new documents in LibreOffice Writer.

(b) To create a new template in LibreOffice Writer, you can customize a new or existing document and then click on “File” > “Templates” > “Save as Template.”

(c) To modify an existing template in LibreOffice Writer, you can select the template from the “Template Manager” dialog box, click on “Edit,” make the necessary changes, and then save the modified template.

(d) To apply a template to a new document in LibreOffice Writer, you can click on “File” > “New” > “Templates,” select the template category, choose the desired template, and then click on “Create.”

(e) Paragraph styles are a way to apply consistent formatting to multiple paragraphs in LibreOffice Writer.



4.9 FURTHER READING

1) “Getting Started with LibreOffice Writer,” The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/getting-started-writer/.
2) “LibreOffice Writer Guide,” The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/writer-guide/.
3) “LibreOffice Writer Tutorial,” Tutorials Point, accessed March 11, 2023, https://www.tutorialspoint.com/libreoffice/libreoffice_writer_tutorial.htm.



4.10 MODEL QUESTIONS

Q.1: What are document templates, and how can they be useful in LibreOffice Writer?

Q.2: How can you create a new template in LibreOffice Writer, and what steps are involved in the process?

Q.3: Can you modify an existing template in LibreOffice Writer? If so, how can you do it?

Q.4: What is the procedure for saving and using templates in LibreOffice Writer?

Q.5: How can you apply a template to a new document in LibreOffice Writer, and what are the steps involved in the process?

Q.6: Can you customize a document template in LibreOffice Writer, and if yes, what kind of modifications can you make?

Q.7: What are paragraph styles in LibreOffice Writer and how can they be useful in formatting a document?

Q.8: Can you explain the process of creating a new paragraph style in LibreOffice Writer?

Q.9: How can you modify an existing paragraph style in LibreOffice Writer?

Q.10: What are character styles in LibreOffice Writer and how do they differ from paragraph styles?

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UNIT 5: FORMATTING DOCUMENTS IN WRITER

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Inserting and Formatting Images

- 5.3.1 Adding images
- 5.3.2 Resizing images
- 5.3.3 Wrapping text around images
- 5.3.4 Applying image effects

5.4 Adding and Formatting Tables

- 5.4.1 Creating tables
- 5.4.4 Merging and splitting cells

5.5 Applying Advanced Formatting Options

- 5.5.1 Adding page borders
- 5.5.2 Applying page backgrounds

5.6 Using Writer's Built-in Tools for Checking and Translation

- 5.6.1 Spell-checking and autocorrect
- 5.6.2 Thesaurus and word completion

5.7 Let Us Sum Up

5.8 Answers to Check Your Progress

5.9 Further Readings

5.10 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- add images to a Writer document
- resize images to fit your document's layout
- wrap text around images to create an aesthetically pleasing design
- apply image effects such as brightness, contrast, and transparency
- create tables and add rows and columns to organize your content

- format table cells to adjust their appearance and alignment
- merge and split table cells as necessary
- apply table styles to improve the overall look of your tables
- add page borders, columns, and backgrounds to your document for advanced formatting options
- work with templates to save time and streamline your document creation process
- utilize Writer's built-in tools such as spell-checking, grammar-checking, thesaurus and word completion, and language translation to improve the quality of your writing.

5.2 INTRODUCTION

In Writer, LibreOffice's word processing software, you can enhance your documents by adding images and tables, as well as applying advanced formatting options. In this section, we will explore how to insert and format images, including resizing, wrapping text around images, and applying image effects. Additionally, we will learn how to create and format tables, including adding rows and columns, merging and splitting cells, and applying table styles. Finally, we will delve into advanced formatting options such as adding page borders, using columns, applying page backgrounds, and working with templates. To further improve your document's quality, Writer also provides built-in tools for checking spelling, grammar, thesaurus and word completion, and even language translation.

5.3 INSERTING AND FORMATTING IMAGES

5.3.1 Adding images

Here is a step-by-step procedure to add images to your LibreOffice Writer document:

1. Open the LibreOffice Writer document in which you want to add an image.

2. Click on the location in the document where you want to insert the image.
3. Click on the “Insert” tab in the menu bar at the top of the screen.
4. Click on the “Image” option from the drop-down menu.
5. In the “Insert Image” dialog box that appears, navigate to the folder where the image you want to insert is located.
6. Click on the image file to select it and then click on the “Open” button.
7. The “Insert Image” dialog box will reappear, showing a preview of the image you have selected. You can adjust the settings for the image, such as size and position, using the options available.
8. Once you have made the desired adjustments, click on the “Insert” button to insert the image into your document.
9. You can then move and resize the image as necessary by clicking and dragging it to the desired location and dragging its edges to adjust its size.
10. To apply image effects, such as brightness, contrast, and transparency, select the image and click on the “Image” tab in the sidebar that appears. Here, you will find options to adjust the image’s color, position, size, and more.

When you are finished working with the image, save your document by clicking on “File” in the menu bar and selecting “Save” or “Save As.”

5.3.2 Resizing images

Here is the step-by-step procedure to resize images in LibreOffice Writer:

1. Open the LibreOffice Writer document that contains the image you want to resize.
2. Click on the image to select it. You should see small boxes or handles around the image, indicating that it is selected.
3. To resize the image, hover your mouse over one of the handles until it changes to a double-headed arrow. Click and hold the mouse button, then drag the handle to adjust the size of the image.

4. As you resize the image, you may notice that its aspect ratio changes. To maintain the original aspect ratio, hold down the Shift key while dragging the handle.
5. You can also adjust the size of the image by right-clicking on it and selecting “Picture” from the context menu. In the Picture dialog box, go to the “Type” tab and adjust the values in the “Size” section.
6. To further customize the image size, you can use the “Crop” and “Position” tabs in the Picture dialog box. The “Crop” tab allows you to trim the edges of the image, while the “Position” tab lets you adjust the image’s position within the frame.
7. Once you are satisfied with the image size and positioning, click “OK” to apply the changes.
8. Save your document to ensure that the resized image is saved with the document.

5.3.3 Wrapping text around images

Here are the steps to wrap text around images in LibreOffice Writer:

1. Insert the image into your document by clicking on “Insert” in the menu bar and then selecting “Image.”
2. Select the image by clicking on it.
3. Click on the “Wrap” tab in the “Image” dialog box that appears.
4. Choose one of the text wrapping options: “Right,” “Left,” or “Through.” These options allow you to position the image to the left or right of your text or to have the text flow around the image.
5. Adjust the distance between the text and the image by setting the “Spacing” option. You can specify the distance in inches or centimeters.
6. Set the “Anchor” option to determine how the image will be positioned on the page. You can anchor the image to the paragraph, the page, or to a character.
7. Click “OK” to apply the changes.

You can further adjust the image and text wrapping settings by selecting the image and going back to the “Wrap” tab in the “Image” dialog box. Experiment with different options to achieve the desired layout for your document.

5.3.4 Applying image effects

1. Open the document in which you want to apply image effects.
2. Insert an image in the document by going to Insert > Image.
3. Once the image is inserted, click on the image to select it.
4. Go to the Format menu and select Image.
5. In the Image dialog box, you will see various tabs such as Type, Crop, Borders, and Effects. Click on the Effects tab.
6. Under the Effects tab, you will see several options for adjusting the image’s brightness, contrast, and transparency.
7. To adjust the brightness, move the slider to the left to decrease the brightness or to the right to increase the brightness.
8. To adjust the contrast, move the slider to the left to decrease the contrast or to the right to increase the contrast.
9. To adjust the transparency, move the slider to the left to decrease the opacity or to the right to increase the opacity.
10. You can also choose to apply a color filter to the image. To do so, select the desired color from the drop-down menu under the Color Filter section.
11. Once you have adjusted the image effects to your liking, click OK to apply the changes.
12. Save the document to ensure that the image effects are retained.

By following these steps, you can easily apply image effects to your images in LibreOffice Writer.

5.4 ADDING AND FORMATTING TABLES

5.4.1 Creating tables

Here’s a step-by-step procedure to create a table in LibreOffice Writer:

1. Open a new or existing document in LibreOffice Writer.

2. Place the cursor where you want to insert the table.
3. Click on the “Table” menu in the top menu bar.
4. Select “Insert Table” from the drop-down menu and click on it.
5. In the “Insert Table” dialog box, specify the number of rows and columns you want in the table.
6. Select a style for the table.
7. Click “Insert” to insert the table into your document.
8. Your cursor will now be in the top-left cell of the table, allowing you to begin entering data.
9. To add rows or columns to the table, right-click anywhere within the table and select “Insert” from the context menu. From there, you can choose to insert a row above or below the current row, or a column to the left or right of the current column.
10. To format the table, you can change the font, text alignment, cell borders, and more using the formatting options in the top menu bar or by right-clicking within the table and selecting “Table Properties” from the context menu.

5.4.2 Merging and splitting cells

Merging Cells:

1. Open your Writer document and locate the table that you want to edit.
2. Select the cells that you want to merge by clicking and dragging the mouse over them.
3. Right-click on the selected cells and click “Merge Cells” from the dropdown menu.
4. The selected cells will now be merged into one cell.

Splitting Cells:

1. Open your Writer document and locate the table that you want to edit.
2. Place the cursor inside the cell that you want to split.
3. Right-click on the cell and click “Split Cells” from the dropdown menu.

4. In the “Split Cells” dialog box, specify the number of rows and columns you want to split the cell into.



CHECK YOUR PROGRESS

1. Write short answers of the followings:

(a) How do you add an image to a LibreOffice Writer document?

(b) How do you resize an image in LibreOffice Writer?

(c) How do you wrap text around an image in LibreOffice Writer?

(d) Can you adjust the size and position of an image in LibreOffice Writer?

(e) What is the purpose of the “Wrap” tab in the “Image” dialog box?

(f) What is the “Effects” tab in the “Image” dialog box used for?

Click “OK” to split the cell into the specified number of rows and columns.

5.5 APPLYING ADVANCED FORMATTING OPTIONS

5.5.1 Adding page borders

1. Open your document in LibreOffice Writer.
2. Click on the “Format” menu in the top menu bar.
3. Select “Page Styles” from the dropdown menu.
4. In the Page Style dialog box, click on the Borders tab.
5. Choose the type of border you want from the dropdown list of border styles.
6. Choose the line style, color, and width of the border by clicking on the corresponding buttons.
7. Select the desired border spacing from the dropdown list.
8. Once you are satisfied with your border settings, click on the OK and then Apply button to apply the border to your document.

5.5.2 Applying page backgrounds

To apply page backgrounds in LibreOffice Writer, follow these steps:

1. Open your Writer document and go to the page where you want to add a background.
2. Click on the “Format” menu in the menu bar and select “Page Style”.
3. In the “Page Style” dialog box that appears, click on the “Area” tab.
4. Choose your option
5. Once you have selected your background type and made any necessary adjustments, click “OK” to apply the background to your page.

Your page background should now be visible in your document. You can repeat these steps to add a background to any other pages in your document as needed.

5.6 USING WRITER’S BUILT-IN TOOLS FOR CHECKING AND TRANSLATION

5.6.1 Spell-checking and autocorrect

Here is a step-by-step procedure to use spell-checking and autocorrect in LibreOffice Writer:

1. Open the document you want to spell-check in LibreOffice Writer.
2. Click on the ‘Tools’ menu in the top menu bar.
3. Select ‘Spelling’ from the drop-down menu.
4. The spell-checker will start scanning your document from the beginning, highlighting any misspelled words or grammar errors as it goes. Suggestions for corrections will appear in a pop-up window.
5. To correct an error, select the suggested word from the pop-up window and click ‘Correct’. Alternatively, you can choose to ignore the error by clicking ‘Ignore Once’ or ‘Ignore All’.
6. If a suggested correction is not suitable, you can edit the word directly in the document or add it to the dictionary by clicking ‘Add to Dictionary’.

7. If you want LibreOffice Writer to automatically correct certain errors for you, click on the 'Tools' menu again and select 'Automatic Spell Checking" Option.
8. Click 'OK' to save your changes and close the AutoCorrect dialog box.
9. When you're finished spell-checking your document, click 'Close' in the 'Spelling' dialog box to close it.

By following these steps, you can quickly and easily check your document for spelling and grammar errors and set up autocorrect options to save time and improve the quality of your writing.

5.6.2 Thesaurus and word completion

Here is the step-by-step procedure to use the Thesaurus and word completion features in LibreOffice Writer:

Thesaurus:

1. Open the LibreOffice Writer document.
2. Select the word that you want to look up synonyms for.
3. Click on the "Tools" menu from the top menu bar and select " Thesaurus".
4. A new dialog box will appear that will display a list of synonyms for the selected word. You can choose any word from the list and click "Replace" to replace the original word with the new one.

Word Completion:

1. Open the LibreOffice Writer document.
2. Start typing a word that you want to complete.
3. Click on the "Tools" menu from the top menu bar and select "AutoCorrect Options."
4. In the "Aut Once word completion is enabled, you can start using it by typing a word. As you type, LibreOffice Writer will suggest words that match what you have typed so far. You can press Tab to accept the suggestion, or keep typing to see other suggestions.

5. You can also use the arrow keys to move through the list of suggestions. To insert a suggested word without accepting it, press the Spacebar.

Once word completion is enabled, you can start using it by typing a word. As you type, LibreOffice Writer will suggest words that match what you have typed so far. You can press Tab to accept the suggestion, or keep typing to see other suggestions. You can also use the arrow keys to move through the list of suggestions. To insert a suggested word without accepting it, press the Spacebar. To disable word completion, follow the same steps as above, but uncheck the Enable Word Completion checkbox.



CHECK YOUR PROGRESS

2. Fill in the blanks:

(a) To apply page backgrounds in LibreOffice Writer, go to the _____ where you want to add a background.

(b) The spell-checker in LibreOffice Writer will highlight any misspelled words or grammar errors and suggest corrections in a _____ window.

(c) To use the Thesaurus feature in LibreOffice Writer, select the word you want to look up _____ for.

(d) To enable word completion in LibreOffice Writer, go to the "AutoCorrect" tab in the "AutoCorrect Options" dialog box and make sure that the "Enable word completion" option is _____.

These features can help you to save time and improve the quality of your writing by providing you with synonyms and completing words for you as you type.



5.7 LET US SUM UP

- LibreOffice Writer is a popular word processing software that allows users to add and format images in their documents.
- Users can insert images in a Writer document by clicking on the "Insert" tab and selecting "Image" from the drop-down menu.
- The image can be resized by dragging the handles or by adjusting the values in the "Size" section of the Picture dialog box.
- Users can wrap text around images by selecting the image and going to the "Wrap" tab in the "Image" dialog box.
- The "Effects" tab in the "Image" dialog box allows users to adjust the brightness, contrast, transparency, and color filter of an image.
- Images can be anchored to a paragraph, page, or character by adjusting the "Anchor" option in the "Wrap" tab.
- The "Crop" tab in the "Picture" dialog box allows users to trim the edges of the image.
- The "Position" tab in the "Picture" dialog box allows users to adjust the image's position within the frame.
- Users can adjust the spacing between the text and image by setting the "Spacing" option in the "Wrap" tab.
- Once the desired adjustments have been made to the image, users can save their document to ensure that the changes are retained.



5.8 ANSWERS TO CHECK YOUR PROGRESS

Ans.to.Q.No.1:

(a) Click on the "Insert" tab in the menu bar, select "Image," navigate to the folder where the image is located, select the image file, and click "Open."

(b) Click on the image to select it and drag the handles to adjust its size. Hold down the Shift key to maintain the original aspect ratio.

(c) Insert the image, select it, click on the "Wrap" tab in the "Image" dialog box, choose a wrapping option, adjust the spacing, and set the anchor.

(d) Yes, by dragging the image and adjusting its settings in the "Image" dialog box.

(e) It allows you to adjust how text flows around the inserted image.

(f) It is used to adjust the brightness, contrast, transparency, and color filter of an image.

Ans.to.Q.No.2.

(a) page (b) pop-up (c) synonyms (d) selected



5.9 FURTHER READING

1) "Getting Started with LibreOffice Writer," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/getting-started-writer/.

2) "LibreOffice Writer Guide," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/writer-guide/.

3) "LibreOffice Writer Tutorial," Tutorials Point, accessed March 11, 2023, https://www.tutorialspoint.com/libreoffice/libreoffice_writer_tutorial.htm.



5.10 MODEL QUESTIONS

1. How do you add an image to a LibreOffice Writer document?
2. What is the purpose of the "Wrap" tab in the "Image" dialog box in LibreOffice Writer?
3. How do you resize an image in LibreOffice Writer?

4. What options are available for text wrapping around an image in LibreOffice Writer?
5. Can you adjust the brightness and contrast of an image in LibreOffice Writer? If so, how?
6. How do you adjust the transparency of an image in LibreOffice Writer?
7. What is the purpose of the “Crop” and “Position” tabs in the Picture dialog box in LibreOffice Writer?
8. How can you apply a color filter to an image in LibreOffice Writer?
9. Can you apply image effects to multiple images at once in LibreOffice Writer?
10. How do you save a document to ensure that the resized image and image effects are retained in LibreOffice Writer?

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UNIT 6: INTRODUCTION TO CALC

UNIT STRUCTURE

6.1 Learning Objective

6.2 Introduction

6.3 Overview of Calc and its features as a spreadsheet program

6.4 Launching Calc and creating a new spreadsheet

6.5 Navigating the Calc interface and understanding the different components of the worksheet window

6.6 Entering and formatting data

6.7 Applying cell formatting

6.8 Let Us Sum Up

6.9 Answers to Check Your Progress

6.10 Further Reading

6.11 Model Questions

6.1 LEARNING OBJECTIVE

After going through this unit you will be able to :

- explore the LibreOffice calc
- create a spreadsheet using calc
- explore the ways to enter and format data in calc
- practice formatting of data and cells in calc

6.2 INTRODUCTION

LibreOffice Calc is a robust spreadsheet programme that is available for free and may be used for a variety of data processing activities. Calc is a fantastic alternative to proprietary spreadsheet software because to its simple user interface and wealth of functionality. In this post, we'll examine some of LibreOffice Calc's most useful capabilities and how they may be applied to efficient data management and analysis.

6.3 OVERVIEW OF CALC AND ITS FEATURES AS A SPREADSHEET PROGRAM

One of the most widely used spreadsheet programmes accessible today is Calc, an open-source spreadsheet programme created by the Apache OpenOffice project. It offers users a robust range of functions for managing and analysing data, making it an indispensable tool for organisations, people, and students.

Calc allows users to create and edit spreadsheets, perform calculations, and analyse data in various formats. Here are some of its key features:

- **Spreadsheet Creation and Editing:** Spreadsheets can be readily created, edited, and formatted with Calc. Cells, rows, and columns may be added, removed, or moved by users. Calc also offers a number of templates for typical spreadsheets including budget sheets, calendars, and invoicing.
- **Calculation and Formulas:** Calc provides a wide range of mathematical and financial functions that enable users to perform complex calculations on their data. It supports a range of operators, including arithmetic, comparison, and logical operators. Users can create complex formulas using functions and operators to perform calculations on their data.
- **Data Analysis:** A variety of tools are available in Calc to assist users in data analysis. Data can be sorted and filtered by users, pivot tables can be made, and the DataPilot function can be used to build sophisticated data analysis models. Moreover, Calc supports a number of chart types, enabling users to rapidly and simply visualise their data.
- **Compatibility:** Calc is compatible with Microsoft Excel, which means users can open, edit, and save Excel files using Calc. This makes it easy to share files with others who use Excel.
- **Collaboration:** Calc supports collaboration features that enable users to work together on a spreadsheet. Users can share their

spreadsheets with others and track changes made by different users. Additionally, Calc supports a range of file formats, making it easy to exchange files with other spreadsheet programs.

- **Macros:** Calc allows users to create macros, which are sets of instructions that automate repetitive tasks. Users can create macros using Calc's built-in macro recorder or write macros using a programming language called OpenOffice Basic.

Calc is a robust and adaptable spreadsheet tool that offers a number of functions for data management and analysis. It is the perfect solution for businesses and individuals who need to use spreadsheets because of its interoperability with Microsoft Excel and collaborative features. Calc offers the tools you need to complete the task, whether you're making a budget, evaluating data, or working with colleagues.

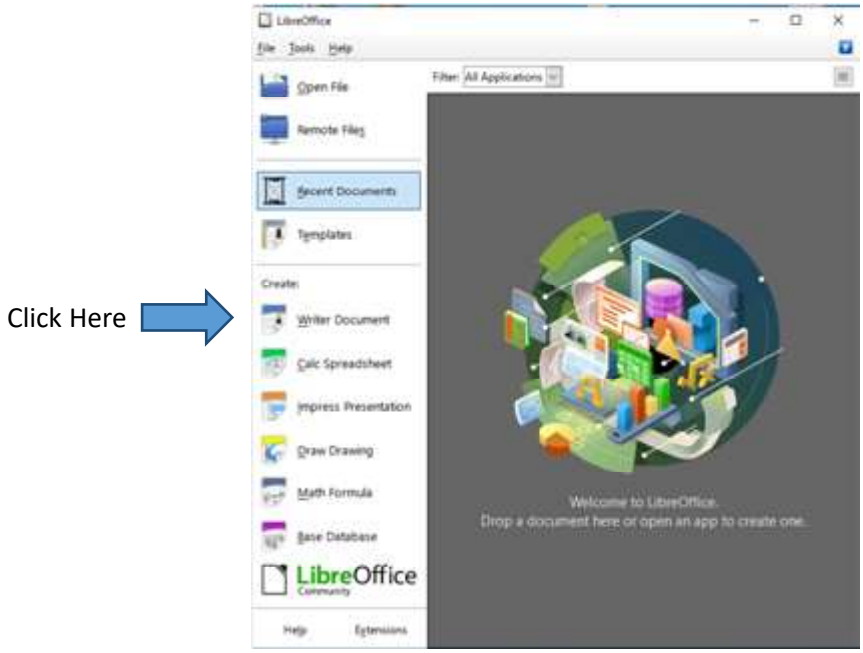
6.4 LAUNCHING CALC AND CREATING A NEW SPREADSHEET

LibreOffice Calc is a free and open-source spreadsheet program that allows users to create and edit spreadsheets. It is part of the LibreOffice suite, which is available for Windows, macOS, and Linux. Here are the steps to launch LibreOffice Calc and create a new spreadsheet:

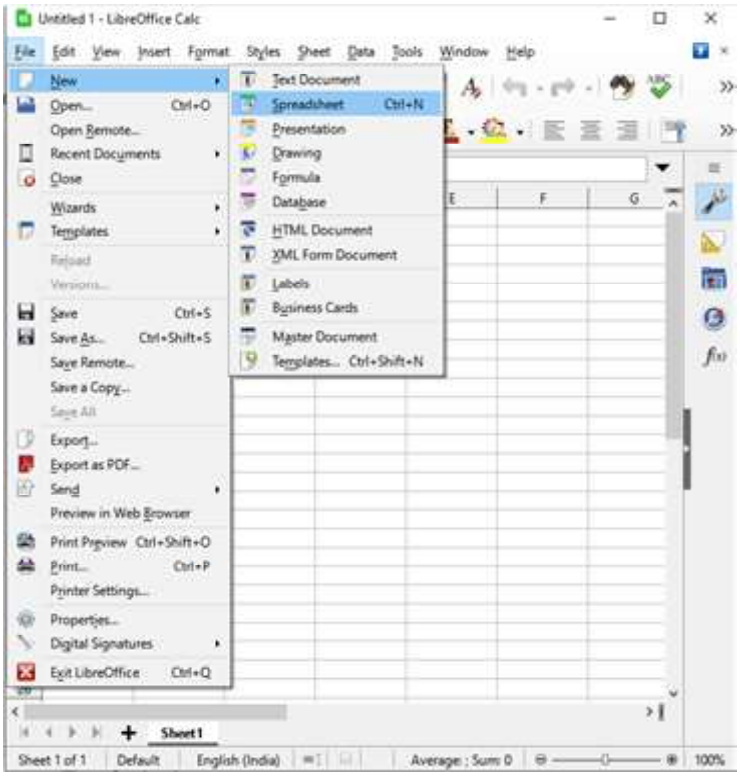
1. **Launch LibreOffice:** To launch LibreOffice, you can either click on the LibreOffice shortcut on your desktop or open the Start menu and search for LibreOffice. Click on the LibreOffice icon to launch the program.



2. **Open Calc:** Once LibreOffice is open, click on the Calc Spreadsheet



3. **Create a new spreadsheet:** To create a new spreadsheet, click on the File menu and select New > Spreadsheet. Alternatively, you can press the shortcut key Ctrl+N to create a new spreadsheet.



4. **Customize the spreadsheet:** Once you've created a new spreadsheet, you can customize it by adding or removing rows and columns, changing the font size and style, and changing the background color. You can also add borders and shading to cells, merge cells, and add conditional formatting.

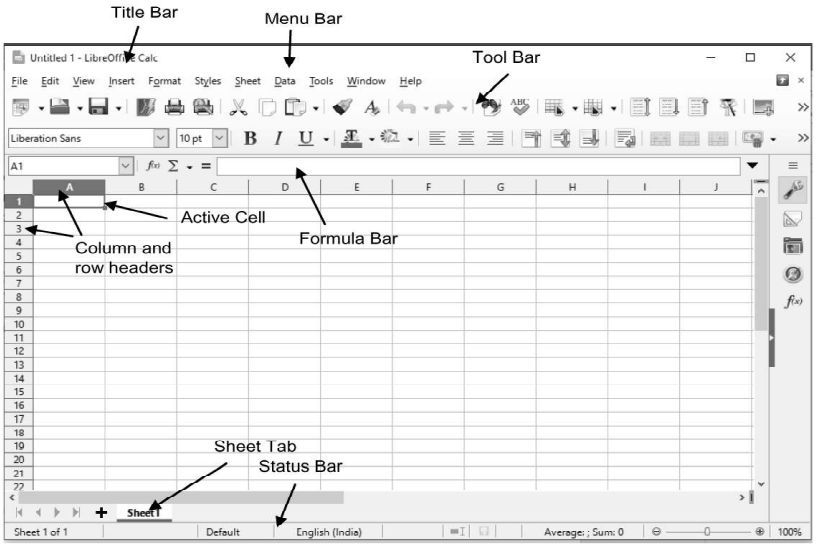
5. **Add data:** To add data to your spreadsheet, simply click on a cell and start typing. You can also copy and paste data from other sources, such as a website or another spreadsheet program. Once you've added your data, you can use Calc's calculation and formula functions to perform calculations and analyse your data.

6. **Save the spreadsheet:** To save your spreadsheet, click on the File menu and select Save. You can also use the shortcut key Ctrl+S. Choose a location on your computer to save the spreadsheet, give it a name, and select a file format. Calc supports a range of file formats, including ODS, XLS, and CSV.

6.5 NAVIGATING THE CALC INTERFACE AND UNDERSTANDING THE DIFFERENT COMPONENTS OF THE WORKSHEET WINDOW

LibreOffice Calc is a spreadsheet application that allows users to create, edit, and manipulate data in a table format. Navigating the interface of LibreOffice Calc is essential to efficiently work with data in the worksheet window. The following steps will help you navigate the LibreOffice Calc interface and understand its different components.

Let us again open Calc as described above and open a new spreadsheet. Now the spreadsheet window is the primary working area of LibreOffice Calc, where you enter and manipulate data. The worksheet window is divided into several components, which include:



Title bar: The Title Bar is located at the very top of the window. On the Title Bar, Calc displays the name of the spreadsheet you are currently using with the application name. At the top of your window, you could see "Untitled 1 -LibreOffice Calc'' or a similar name.

Menu bar: The menu bar is located at the top of the LibreOffice Calc window and contains a list of commands that you can use to manipulate data in your worksheet.

Toolbars: Toolbars are located below the menu bar and contain a set of tools that you can use to perform various tasks.

Formula bar: The formula bar is located below the toolbars and displays the contents of the currently selected cell or range of cells.

Column and row headers: Columns are labeled with letters from A to Z, and then AA to AZ, BA to BZ, and so on. Rows are labeled with numbers from 1 to 1048576.

Sheet tabs: Sheet tabs are located at the bottom of the worksheet window and allow you to switch between different sheets in your workbook.

Status bar: The status bar is located at the bottom of the LibreOffice Calc window and displays information about the current status of your worksheet.

1. Navigating the worksheet window: To navigate the worksheet window, you can use the arrow keys on your keyboard or use the scroll bars on the right and bottom of the window to move up, down, left, or right.

2. Selecting cells and ranges: To select a single cell, click on it. To select a range of cells, click and drag the cursor over the cells you want to select, or hold down the Shift key while using the arrow keys to move to the range you want to select.
3. Entering data: To enter data in a cell, click on the cell, and start typing. You can also use the formula bar to enter data by typing it directly into the formula bar.
4. Saving your work: To save your work, click on the File menu and select Save or use the shortcut key Ctrl+S. You can also use the Save As option to save your workbook with a different name or in a different location.



CHECK YOUR PROGRESS

Choose the correct option

1. What is Calc?

A) A word processing program B) A presentation program
C) A spreadsheet program D) A database program

2. What is the purpose of macros in Calc?

A) To create data charts

B) To automate repetitive tasks

C) To import data from other sources

D) To filter and sort data

3. What is the shortcut key to create a new spreadsheet in LibreOffice Calc?

A) Ctrl+S B) Ctrl+N

C) Ctrl+O D) Ctrl+P

4. What is the purpose of the Formula bar in LibreOffice Calc?

A) To display the contents of the currently selected cell or range of cells

B) To customize the appearance of cells

C) To add or remove rows and columns

D) To save a spreadsheet

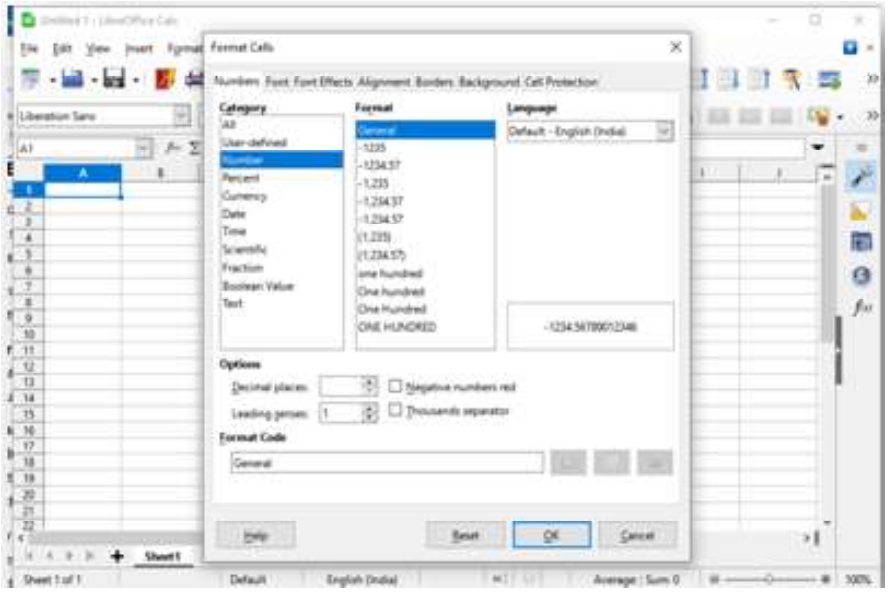
6.6 ENTERING AND FORMATTING DATA

Till now we have discussed about how to start LibreOffice Calc and create a new spreadsheet. Now let us discuss the steps involved in Entering and formatting data in LibreOffice Calc.

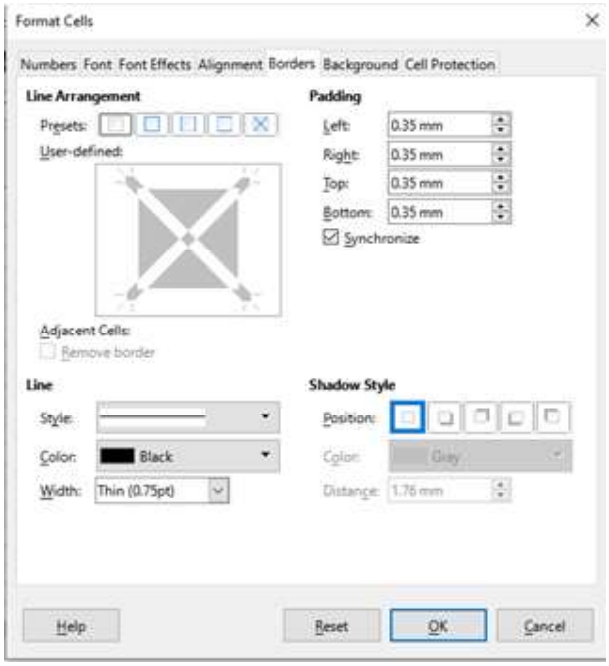
To enter data into a cell, simply click on the cell you want to enter data into and start typing. You can enter text, numbers, dates, and formulas.

Enter data into cells: To enter data into a cell, simply click on the cell you want to enter data into and start typing. You can enter text, numbers, dates, and formulas.

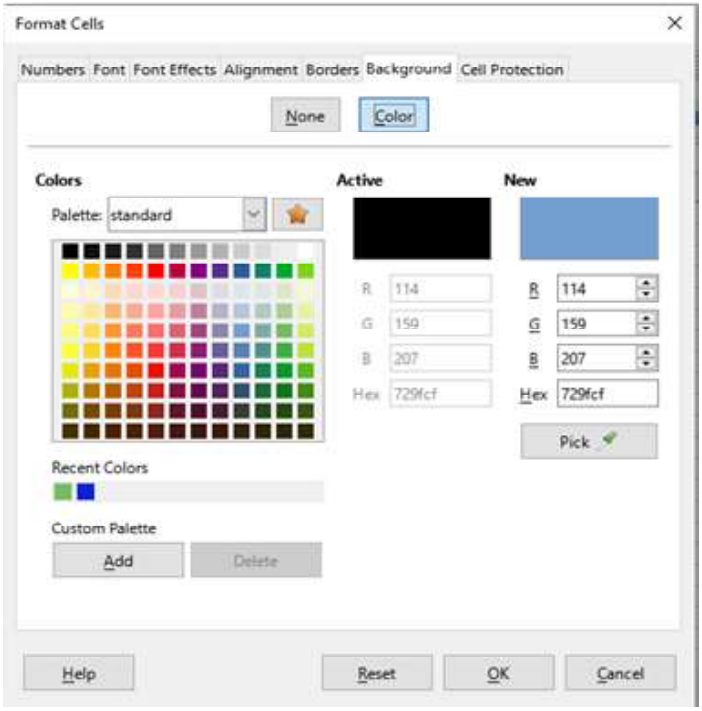
Format cells: To format cells, select the cells you want to format by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. This will open the “Format Cells” dialog box, where you can choose the formatting options you want to apply.



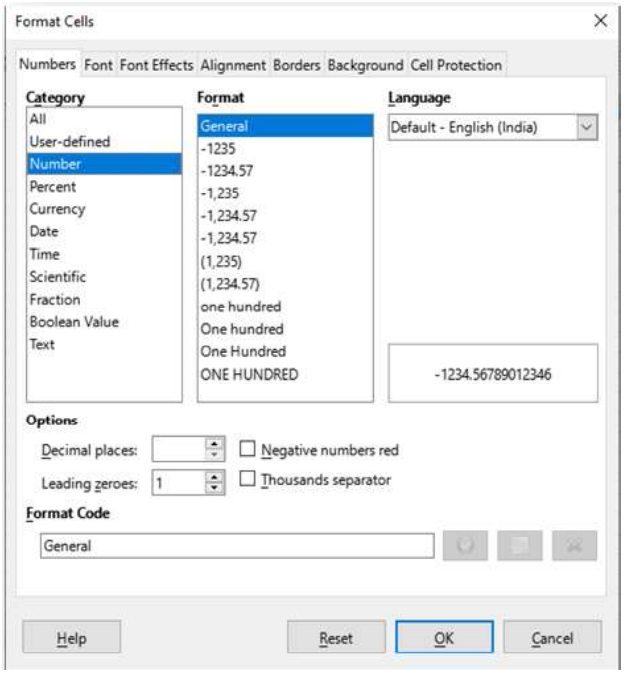
Apply cell borders: To apply cell borders, select the cells you want to apply borders to by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. In the “Format Cells” dialog box, select the “Borders” tab and choose the border style you want to apply.



Apply cell background colour: To apply a background colour to cells, select the cells you want to apply the background colour to by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. In the “Format Cells” dialog box, select the “Background” tab and choose the background color you want to apply.



Apply number formatting: To apply number formatting to cells, select the cells you want to apply number formatting to by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. In the “Format Cells” dialog box, select the “Numbers” tab and choose the number formatting you want to apply.



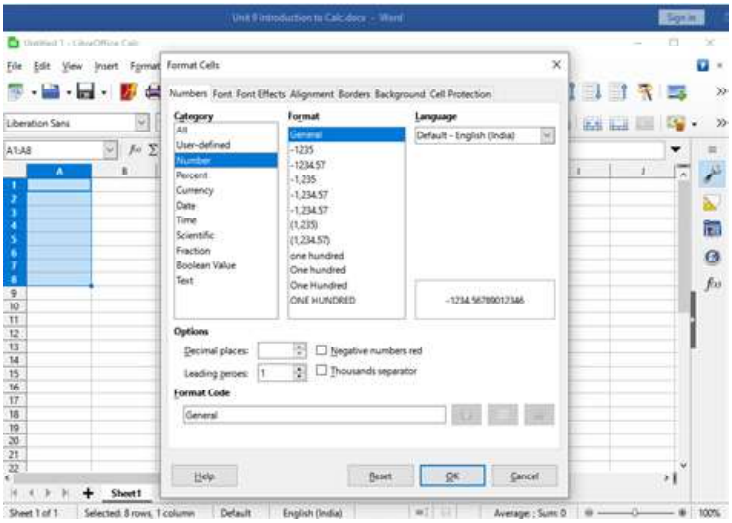
Save your work: Once you have entered and formatted your data, it is important to save your work. To do this, select “File” > “Save” from the menu and choose a location on your computer to save the spreadsheet

6.7 APPLYING CELL FORMATTING

LibreOffice Calc is a powerful spreadsheet program that allows you to apply a variety of cell formatting options to your data. Here are the steps involved in applying cell formatting in LibreOffice Calc:

1. Select the cell(s) you want to format: To apply formatting to a cell, first, you need to select the cell or range of cells you want to format. You can do this by clicking and dragging your mouse over the cells or by clicking on the first cell and then holding down the Shift key while clicking on the last cell in the range.

2. Open the “Format Cells” dialog box: Once you have selected the cell(s) you want to format, right-click on the selected cell(s) and select “Format Cells” from the context menu. Alternatively, you can go to the “Format” menu and select “Cells.”



3. Choose the type of formatting you want to apply: In the “Format Cells” dialog box, you will see several tabs that allow you to choose the type of formatting you want to apply. For example, you can choose to format the cells as numbers, currency, percentages, dates, times, or text. You can also apply different types of alignment, borders, and background colors.

4. Customize the formatting options: Once you have selected the type of formatting you want to apply, you can customize the formatting options to meet your specific needs. For example, you can choose the number of decimal places to display, the currency symbol to use, or the date format o apply.

5. Preview your formatting: As you make changes to your formatting options, you can preview the changes in the “Preview” section of the “Format Cells” dialog box. This allows you to see how your data will look before you apply the formatting.

6. Apply your formatting: Once you are satisfied with the formatting options, click the “OK” button to apply the formatting to your selected cells.

By following these simple steps, you can apply a wide range of formatting options to your data in LibreOffice Calc, making it easy to present your data in a clear and professional manner.



CHECK YOUR PROGRESS

Fill-up the gaps for the following

5. To enter data into a cell in LibreOffice Calc, simply click on the cell you want to enter data into and start _____.
6. To format cells in LibreOffice Calc, select the cells you want to format by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the _____ menu.
7. To apply cell borders in LibreOffice Calc, select the cells you want to apply borders to by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. In the “Format Cells” dialog box, select the “Borders” tab and choose the border style you want to _____.
8. To apply number formatting to cells in LibreOffice Calc, select the cells you want to apply number formatting to by clicking and dragging your mouse over them. Then, right-click and select “Format Cells” from the context menu. In the “Format Cells” dialog box, select the “Numbers” tab and choose the number formatting you want to _____.



6.8 LET US SUM UP

In this unit we have discussed the following :

- Calc is a versatile and powerful open-source spreadsheet program that provides users with a range of functions for managing and analyzing data, including spreadsheet creation and editing, calculation and formulas, data analysis, compatibility with Microsoft Excel, collaboration features, and macros.
- With its ease of use, robust features, and compatibility with Microsoft Excel, Calc is an essential tool for businesses, individuals, and students who need to create and manage spreadsheets, perform complex calculations, analyze data, and collaborate with others.
- LibreOffice Calc is a free and open-source spreadsheet program that is available for Windows, macOS, and Linux and allows users to create and edit spreadsheets.
- To launch LibreOffice Calc and create a new spreadsheet, users need to open the LibreOffice program, select Calc Spreadsheet, create a new spreadsheet, customize it, add data, and save the file in a chosen file format.
- The LibreOffice Calc interface consists of several components, including the title bar, menu bar, toolbars, formula bar, column and row headers, sheet tabs, and status bar. Navigating and working with data in Calc requires an understanding of these different components.
- To enter and format data in Calc, you can click on a cell to enter data, select cells to apply formatting, and use various formatting options, such as cell borders, background colors, and number formatting. It is important to save your work regularly to avoid losing any changes.

- The steps involved in applying cell formatting in LibreOffice Calc include selecting the cell(s), opening the “Format Cells” dialog box, choosing the type of formatting, customizing the formatting options, previewing the formatting changes, and applying the formatting to the selected cells. By following these steps, users can apply various formatting options to their data in LibreOffice Calc to present it in a clear and professional manner.



6.9 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No 1: C) A spreadsheet program

Answer to Q No 2: B) To automate repetitive tasks

Answer to Q No 3: B) Ctrl+N

Answer to Q No 4: A) To display the contents of the currently selected cell or range of cells

Answer to Q No 5: typing

Answer to Q No 6: context

Answer to Q No 7: apply

Answer to Q No 8: apply



6.10 FURTHER READING

1. Lowenthal, M. (2015). Calc for dummies. John Wiley & Sons.
2. Starks, C. (2013). LibreOffice Calc Guide. The Document Foundation.



6.11 MODEL QUESTIONS

1. What are some of the key features of LibreOffice Calc as a spreadsheet program, and how can they be used for data management and analysis?

2. How can users launch LibreOffice Calc and create a new spreadsheet, and what customization options are available to them?
3. What are the different components of the worksheet window in LibreOffice Calc, and how can users navigate the interface?
4. How does LibreOffice Calc support collaboration among users, and what tools are available for sharing and tracking changes to spreadsheets?
5. How can users automate repetitive tasks in LibreOffice Calc using macros, and what programming language is used to write macros?

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UNIT 7: WORKING WITH FUNCTIONS AND FORMULAS IN CALC

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Using built-in functions and formulas for common calculations in Calc

7.4 Creating custom functions and formulas for complex calculations

7.5 Using conditional formatting to highlight data based on certain criteria

7.6 Let us sum up

7.7 Answers to Check Your Progress

7.8 Further Readings

7.9 Model Questions

7.1 LEANING OBJECTIVES

After going through this unit you will be able to :

- apply the built in function in LibreOffice Calc.
- create custom functions and formulas in LibreOffice Calc
- utilize the conditional formatting facility in Calc

7.2 INTRODUCTION

In this unit, we will explore working with functions and formulas in LibreOffice Calc. Calc comes with a variety of built-in functions that allow you to perform common calculations on your data, such as summing a range of cells, finding the average of a range of cells, counting the number of cells with a certain value, and more. In addition to these built-in functions, you can also create custom functions and formulas using the Basic programming

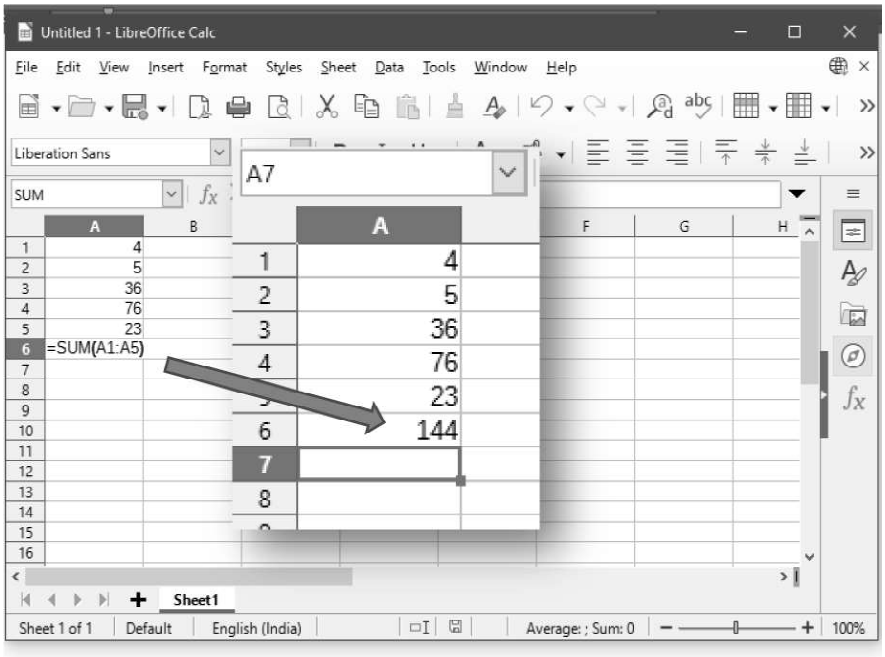
language to perform complex calculations. We will also look at how to use conditional formatting to highlight data based on certain criteria. By the end of this unit, you will have a solid understanding of how to work with functions and formulas in Calc to efficiently analyse and manipulate your data.

7.3 USING BUILT-IN FUNCTIONS AND FORMULAS FOR COMMON CALCULATIONS IN CALC

LibreOffice Calc comes with a variety of built-in functions that you can use to perform common calculations on your data. Here is a detailed guide on using built-in functions and formulas for common calculations in LibreOffice Calc, along with examples:

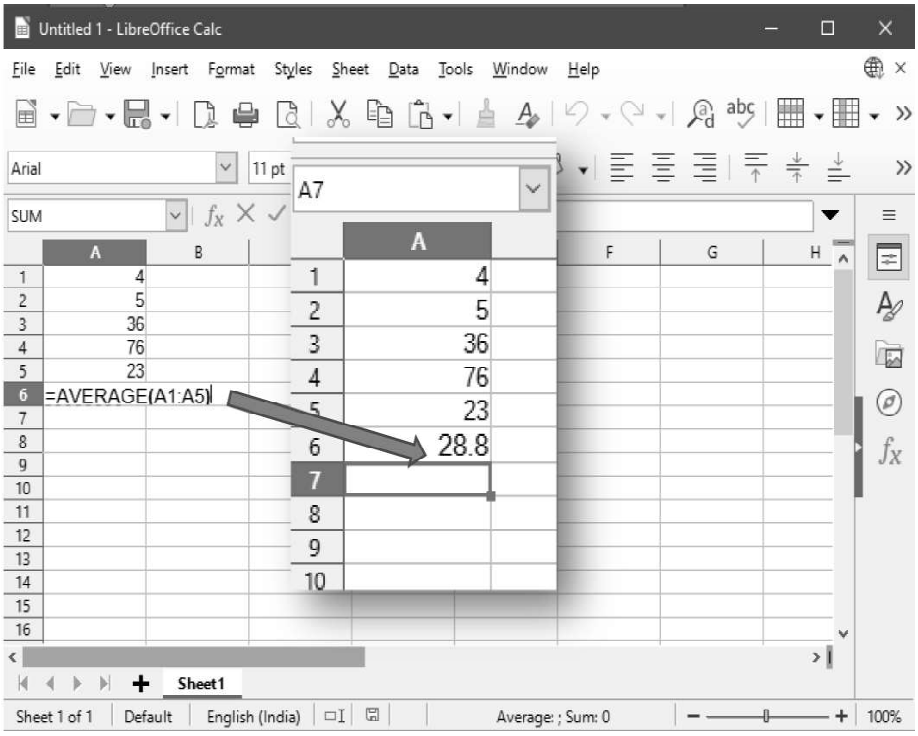
1. Summing a range of cells: One of the most common calculations you may need to perform is adding up a range of cells. You can use the SUM function to do this.

   For example, if you have a list of numbers in cells A1 to A5 and want to calculate their sum, you can use the formula “=SUM(A1:A5)” in another cell. This will add up the values in cells A1 to A5 and display the result in the cell with the formula.



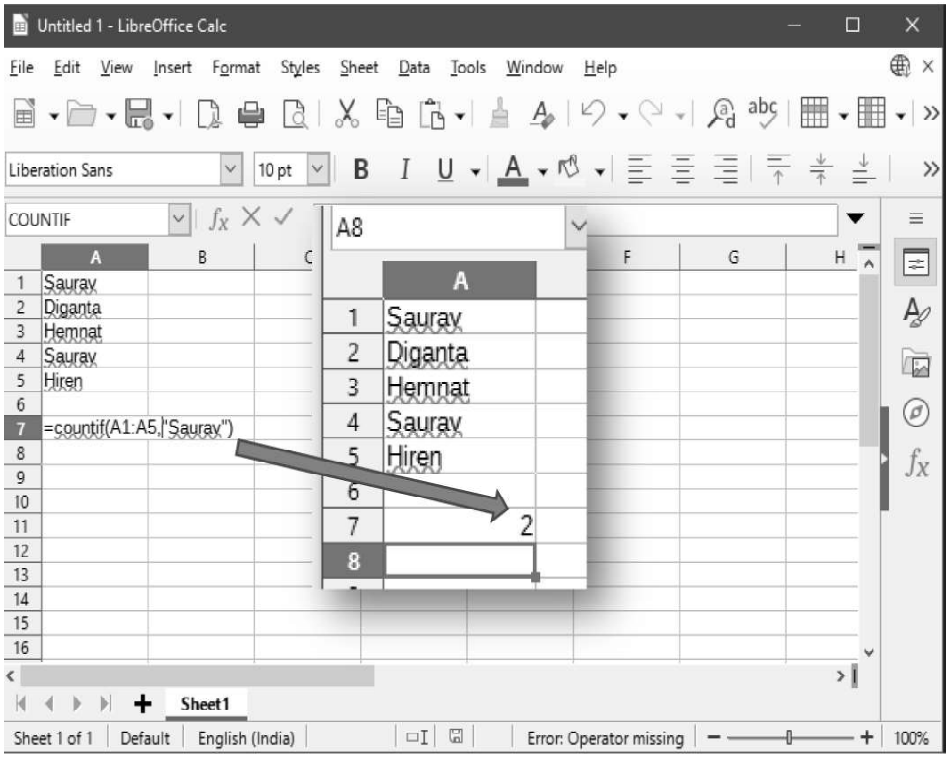
2. Finding the average of a range of cells: If you have a list of numbers and want to find their average, you can use the AVERAGE function.

   For example, if you have a list of test scores in cells A1 to A5 and want to find their average, you can use the formula "=AVERAGE(A1:A5)" in another cell. This will calculate the average of the values in cells A1 to A5 and display the result in the cell with the formula.



3. Counting the number of cells with a certain value: If you want to count the number of cells in a range that contain a certain value, you can use the COUNTIF function.

For example, if you have a list of names in cells A1 to A5 and want to count the number of cells that contain the name "Saurav," you can use the formula "=COUNTIF(A1:A5,"Saurav")" in another cell. This will count the number of cells in cells A1 to A5 that contain the name "Saurav" and display the result in the cell with the formula.

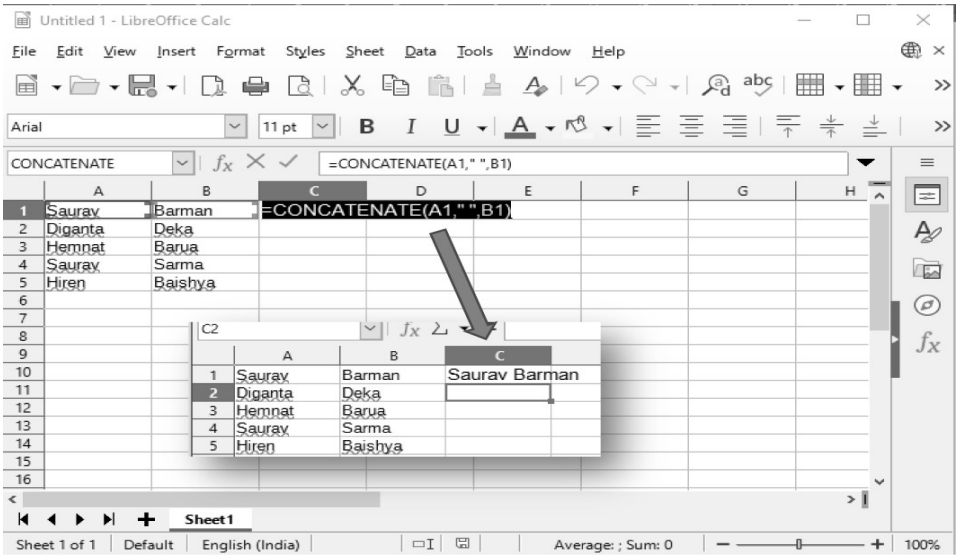


4. Finding the maximum or minimum value in a range of cells: If you want to find the maximum or minimum value in a range of cells, you can use the MAX or MIN function.

   For example, if you have a list of prices in cells A1 to A5 and want to find the highest price, you can use the formula "=MAX(A1:A5)" in another cell. This will find the maximum value in cells A1 to A5 and display the result in the cell with the formula.

5. Concatenating text strings: If you want to combine two or more text strings into one cell, you can use the CONCATENATE function.

   For example, if you have a first name in cell A1 and a last name in cell B1 and want to combine them into one cell, you can use the formula "=CONCATENATE(A1," ",B1)" in another cell. This will combine the values in cells A1 and B1 with a space in between and display the result in the cell with the formula.



6. Converting between units: If you want to convert a value from one unit to another, you can use the CONVERT function.

For example, if you have a length in inches in cell A1 and want to convert it to centimeters, you can use the formula "=CONVERT(A1,"in","cm")" in another cell. This will convert the value in inches to centimeters and display the result in the cell with the formula.

In conclusion, LibreOffice Calc comes with a wide range of built-in functions and formulas that you can use to perform common calculations on your data. By using these functions and formulas, you can save time and ensure accuracy in your calculations.



CHECK YOUR PROGRESS

1. What function can you use to find the sum of a range of cells in LibreOffice Calc?

   .....

2. How do you calculate the average of a range of cells in LibreOffice Calc?

   .....

3. What function can you use to find the maximum or minimum value in a range of cells in LibreOffice Calc?

.....

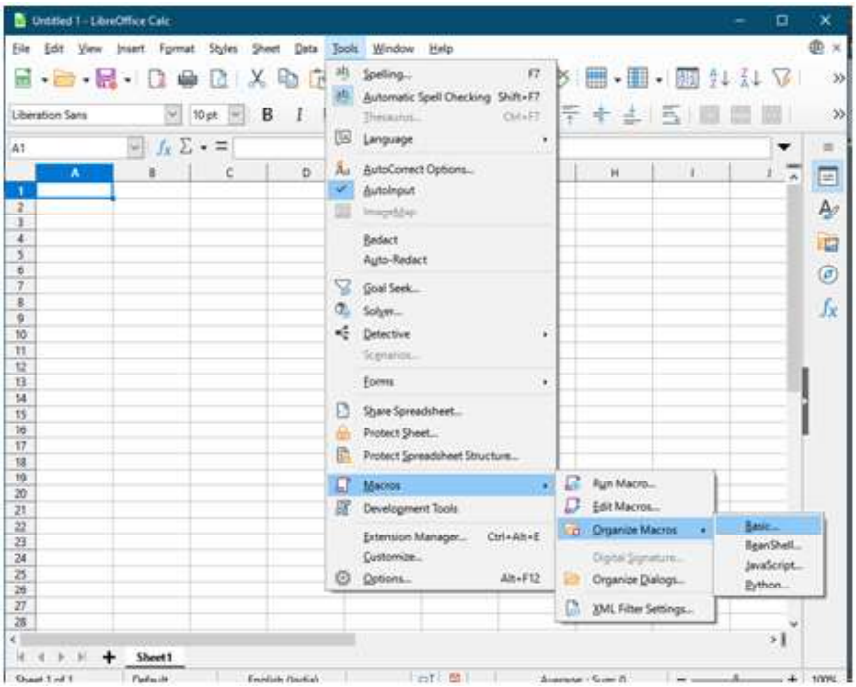
7.4 CREATING CUSTOM FUNCTIONS AND FORMULAS FOR COMPLEX CALCULATIONS

LibreOffice Calc is a spreadsheet program that allows users to create complex calculations and formulas using built-in functions and also create custom functions to meet specific requirements. In this note, we will discuss how to create custom functions and formulas in LibreOffice Calc with basic examples.

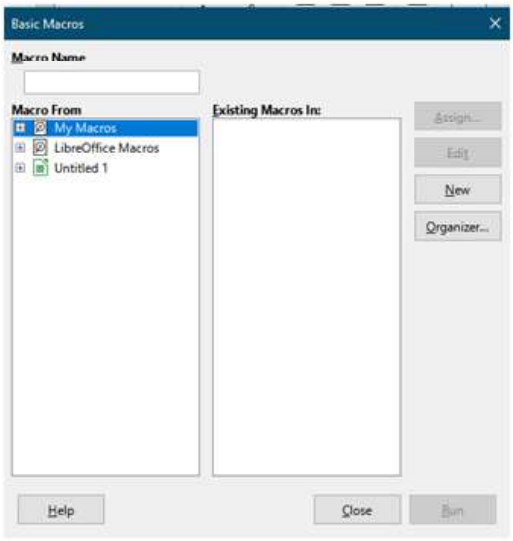
Creating Custom Functions:

Custom functions are user-defined functions that can be created to perform specific calculations. LibreOffice Calc supports the creation of custom functions using the Basic programming language. Here are the steps to create a custom function:

- Open a new or existing spreadsheet in LibreOffice Calc.
- Go to “Tools” on the menu bar and select “Macros” -> “Organize Macros” -> “ Basic...”.



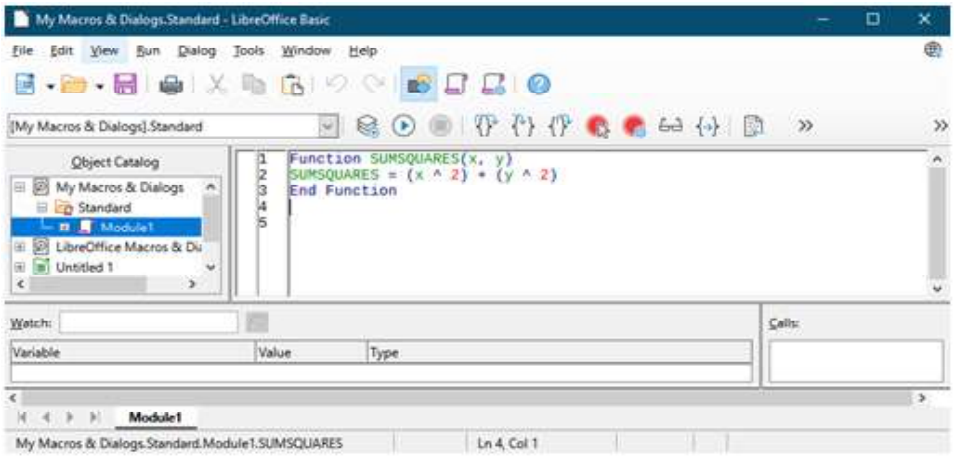
- In the " Basic Macros" dialog box, select "My Macros" and click "New".
- In the "New Module" dialog box, give a name to the module and click "OK".



- In the Basic editor window, write the code for the custom function. For example, the following code creates a custom function called "SUMSQUARES" that calculates the sum of squares of two numbers:

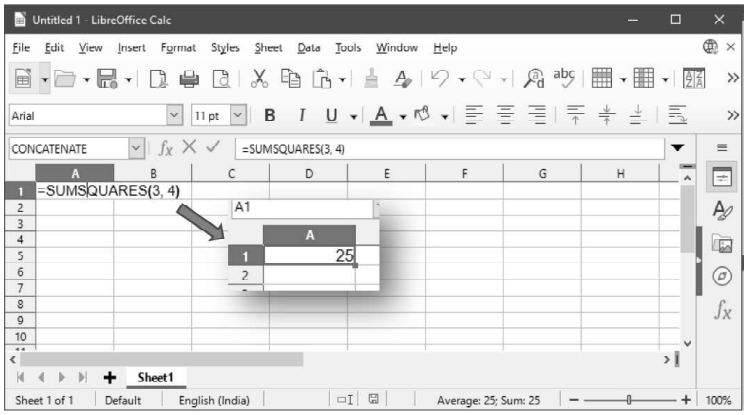
```
Function SUMSQUARES(x, y)
SUMSQUARES = (x ^ 2) + (y ^ 2)
End Function
```

- Save the module by selecting "File" -> "Save" on the menu bar.



- Close the Basic editor window.

Now that we have created the custom function, we can use it in our spreadsheet just like any other built-in function. For example, to use the SUMSQUARES function, we can type “=SUMSQUARES(3, 4)” in a cell, which would return the value 25.

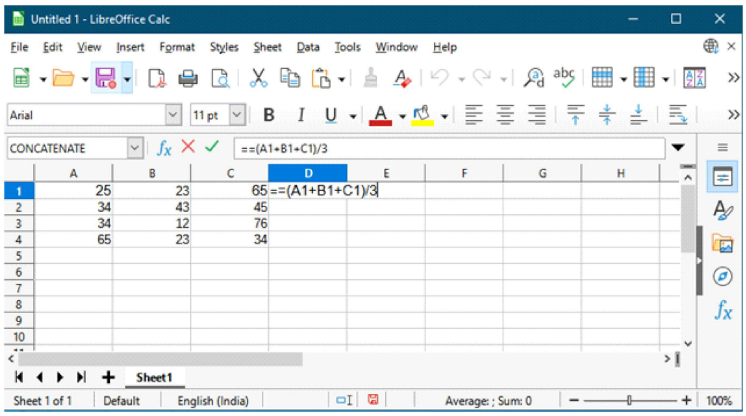


Creating Custom Formulas:

Custom formulas are user-defined formulas that can be created to perform specific calculations. LibreOffice Calc supports the creation of custom formulas using built-in functions and operators. Here are the steps to create a custom formula:

- Open a new or existing spreadsheet in LibreOffice Calc.
- Select a cell where you want to create the custom formula.
- In the formula bar, type the formula using built-in functions and operators. For example, the following formula calculates the average of three numbers:

  =(A1+B1+C1)/3



- Once you have typed the formula, press “Enter” to calculate the result.
- To save the custom formula, select the cell with the formula and drag the fill handle (a small square at the bottom right corner of the cell) to other cells where you want to use the formula.
- Now that we have created the custom formula, we can use it in other cells just like any other built-in formula. For example, if we want to calculate the average of four numbers, we can simply change the formula to include the fourth number, like this:

  =(A1+B1+C1+D1)/4

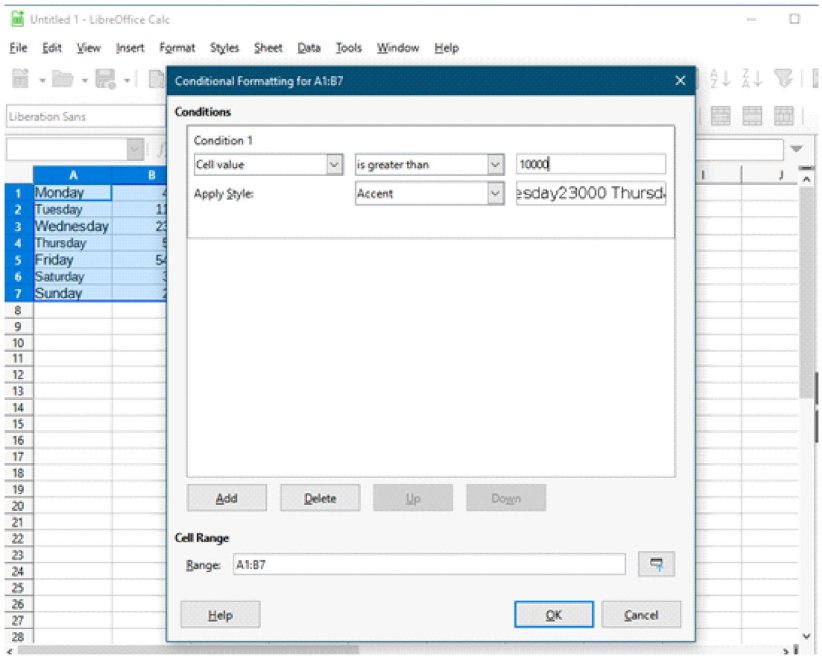
Thus we can see that LibreOffice Calc provides powerful tools for creating custom functions and formulas to perform complex calculations. By using these tools, users can meet specific requirements and achieve greater efficiency in their spreadsheet work.

7.5 USING CONDITIONAL FORMATTING TO HIGHLIGHT DATA BASED ON CERTAIN CRITERIA

Conditional formatting in LibreOffice Calc is a useful feature that allows you to automatically format cells based on specific criteria. This can help you to quickly identify important data in your spreadsheets.

Here are some examples of how you can use conditional formatting to highlight data based on certain criteria in LibreOffice Calc:

1. **Highlight cells that contain a certain value**: Let’s say you have a spreadsheet of sales data, and you want to highlight all the cells that contain sales over Rs 10,000. To do this, select the cells you want to format, and then click on Format > Conditional Formatting > Condition. In the Condition dialog box, select “Cell value is” from the first drop-down menu, and then select “greater than” from the second drop-down menu. In the third field, enter the value “10000”. Then, choose the formatting you want to apply to the cells, such as a different background colour or font colour



2. Highlight cells that are within a certain range: Let's say you have a spreadsheet of student grades, and you want to highlight all the cells that are between 70 and 90. To do this, select the cells you want to format, and then click on Format > Conditional Formatting > Condition. In the Condition dialog box, select "Cell value is" from the first drop-down menu, and then select "between" from the second drop-down menu. In the third field, enter the values "70" and "90". Then, choose the formatting you want to apply to the cells.
3. Highlight cells that contain a certain text string: Let's say you have a spreadsheet of customer data, and you want to highlight all the cells that contain the text "VIP". To do this, select the cells you want to format, and then click on Format > Conditional Formatting > Condition. In the Condition dialog box, select "Cell contains" from the first drop-down menu, and then enter the text "VIP" in the second field. Then, choose the formatting you want to apply to the cells.

These are just a few examples of how you can use conditional formatting to highlight data based on certain criteria in LibreOffice Calc. There are many more possibilities, and you can experiment with different options to find the ones that work best for your needs.



CHECK YOUR PROGRESS

4. What is conditional formatting in LibreOffice Calc?

   .....

5. How can you highlight cells that contain a certain value using conditional formatting in LibreOffice Calc?

   .....

6. How can you create custom functions in LibreOffice Calc using Basic programming language?

   .....



7.6 LET US SUM UP

In this unit we have discussed the following :

- LibreOffice Calc has built-in functions for common calculations, such as SUM, AVERAGE, COUNTIF, MAX, MIN, CONCATENATE, and CONVERT.
- You can use the SUM function to add up a range of cells, AVERAGE to find the average of a range of cells, COUNTIF to count the number of cells with a certain value, MAX or MIN to find the highest or lowest value in a range of cells, CONCATENATE to combine two or more text strings, and CONVERT to convert between units.
- Using built-in functions and formulas can save time and ensure accuracy in calculations.
- Custom functions and formulas can be created in LibreOffice Calc to perform specific calculations.
- Custom functions can be created using the Basic programming language by going to “Tools” -> “Macros” -> “Organize Macros” -> “Basic...” and writing the code in the Basic editor window.

- Custom formulas can be created using built-in functions and operators by typing the formula in a cell and pressing enter.
- Using custom functions and formulas can help meet specific requirements for complex calculations.



7.7 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No 1: The SUM function.

Answer to Q No 2: By using the AVERAGE function.

Answer to Q No 3: The MAX or MIN function.

Answer to Q No 4: Conditional formatting is a feature in LibreOffice Calc that allows users to automatically format cells based on specific criteria.

Answer to Q No 5: To highlight cells that contain a certain value, select the cells to format, go to Format > Conditional Formatting > Condition, select “Cell value is” from the first drop-down menu, select “greater than” or “less than” from the second drop-down menu, and enter the desired value in the third field.

Answer to Q No 6: To create custom functions in LibreOffice Calc, go to “Tools” on the menu bar and select “Macros” -> “Organize Macros” -> “Basic...”. In the “Basic Macros” dialog box, select “My Macros” and click “New”. In the “New Module” dialog box, give a name to the module and click “OK”. In the Basic editor window, write the code for the custom function and save the module by selecting “File” -> “Save” on the menu bar.



7.8 FURTHER READING

1. Lowenthal, M. (2015). Calc for dummies. John Wiley & Sons.
2. Starks, C. (2013). LibreOffice Calc Guide. The Document Foundation.



7.9 MODEL QUESTIONS

1. What are some of the most common built-in functions in LibreOffice Calc and how can they be used to perform common calculations on data? Provide examples of how to use these functions to perform tasks such as summing a range of cells, finding the average of a range of cells, counting the number of cells with a certain value, finding the maximum or minimum value in a range of cells, and concatenating text strings.
2. How can you create custom functions in LibreOffice Calc to perform specific calculations? What programming language does LibreOffice Calc support for creating custom functions? Provide a step-by-step guide on how to create a custom function in LibreOffice Calc, using an example of a custom function that calculates the sum of squares of two numbers.
3. How can you create custom formulas in LibreOffice Calc to perform specific calculations using built-in functions and operators? Provide a step-by-step guide on how to create a custom formula in LibreOffice Calc, using an example of a custom formula that calculates the area of a circle based on its radius.
4. What are some of the benefits of using built-in functions and formulas in LibreOffice Calc for common calculations, as opposed to manual calculations? How can these functions and formulas save time and ensure accuracy in your calculations? Provide examples to illustrate your answer.

5. What are some of the limitations of using built-in functions and formulas in LibreOffice Calc for complex calculations? When might it be necessary to create custom functions or formulas to perform more complex calculations? Provide examples to illustrate your answer.

UNIT 8: ADVANCED FORMATTING AND CHARTING IN CALC

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Applying Advanced Formatting Options

8.4 Creating and modifying charts

8.5 Using Calc's built-in tools

8.6 Let Us Sum Up

8.7 Answers to Check Your Progress

8.8 Further Reading

8.9 Model Questions

8.1 LEARNING OBJECTIVE

After going through this unit you will be able to :

- apply conditional formatting to highlight specific data.
- validate data inputs to ensure they meet predefined criteria.
- customize number formats
- create and modify charts
- use Calc's built-in filtering and sorting tools
- analyse and extract specific information from a dataset.

8.2 INTRODUCTION

The spreadsheet programme Calc, which is part of the LibreOffice package, is an effective tool for compiling and analysing data. Calc provides a variety of sophisticated formatting options and data analysis capabilities that let users to make sense of complicated datasets, in addition to fundamental spreadsheet features like entering and manipulating numerical data. A few of these features, including as conditional formatting, data validation, custom number formats, the construction and editing of charts, and built-in tools

for data filtering, sorting, and analysis, will be covered in this unit. You will have a good understanding of how to use these features by the conclusion of this unit to improve the look and ease of analysis of your data.

8.3 APPLYING ADVANCED FORMATTING OPTIONS

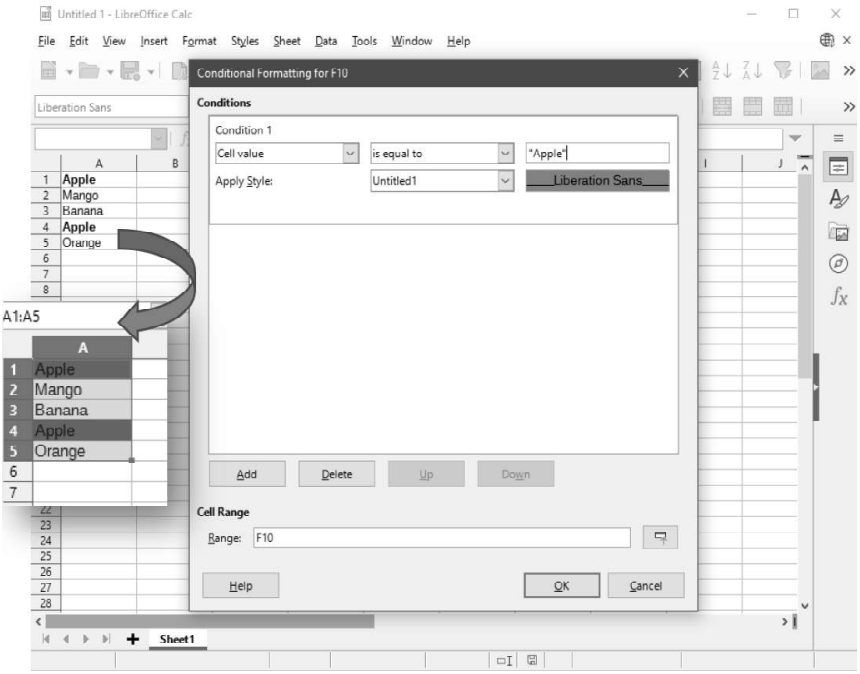
LibreOffice Calc offers a wide range of advanced formatting options that allow users to customize and present their data in a visually appealing and informative way. These options include conditional formatting, data validation, cell styles, custom number formats, and more. With conditional formatting, users can highlight specific cells or ranges of cells based on certain criteria, such as cell values or text. Data validation enables users to set rules for data entry, ensuring that only valid and accurate data is entered. Cell styles allow users to apply a consistent look and feel to their worksheets, while custom number formats enable users to format numbers in a way that makes them more easily understandable. Overall, the advanced formatting options in LibreOffice Calc provide users with powerful tools to create professional-looking spreadsheets and effectively communicate their data.

Conditional Formatting

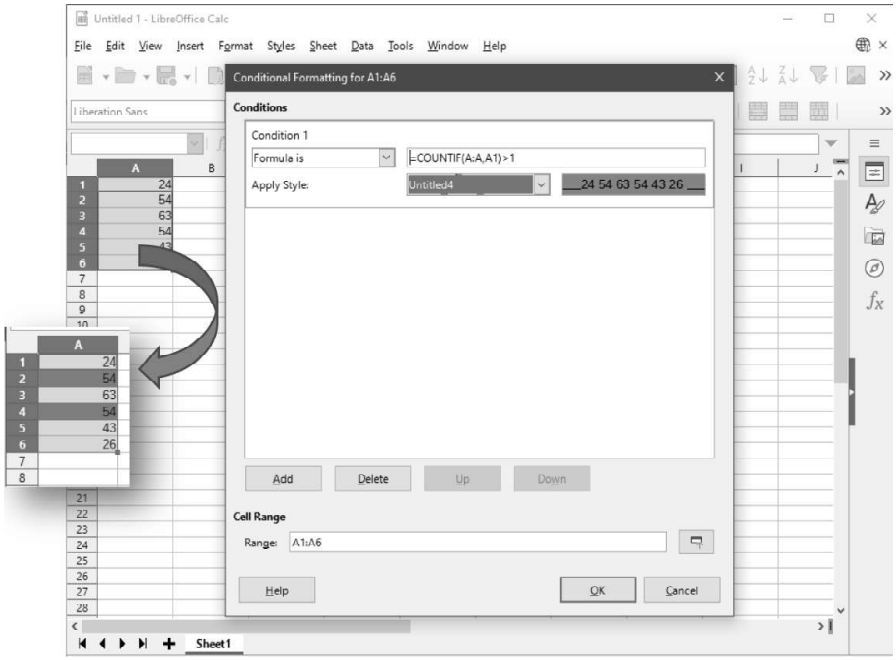
Conditional formatting in LibreOffice Calc is a powerful feature that allows users to apply formatting to cells based on certain conditions. By using conditional formatting, users can easily highlight cells that meet specific criteria, making it easier to identify trends and patterns in their data.

Here are some examples of how to use conditional formatting in LibreOffice Calc:

1. Highlight cells with specific text: Assume you have a column of data with different types of fruits in it. Cells that contain a particular fruit can be highlighted using conditional formatting. To do this, choose the range of cells you wish to format, then select “Conditional Formatting” from the menu bar’s “Format” drop-down menu. Select “Equal to” from the second drop-down list after selecting “Cell Value is” from the first drop-down list in the “Conditional Formatting” dialogue box. Type the name of the fruit you want to highlight, such as “Apples,” in the following box. Select the formatting options you want to use, such as a background colour or font style, in the final step.



1. Highlight cells based on numerical values: Suppose you have a list of test scores and you want to highlight all scores above a certain threshold. To do this, select the range of cells you want to format, click on “Format” from the menu bar, and select “Conditional Formatting”. In the “Conditional Formatting” dialog box, choose “Cell Value is” from the drop-down list, and then select “Greater than” from the second drop-down list. In the next box, enter the threshold score, such as “80”. Finally, choose the formatting options you want to apply, such as a background colour or font style.
2. 1. Highlight cells based on numerical values: Assume you have a list of test results and want to emphasise any scores that are higher than a particular cutoff. To do this, choose the range of cells you wish to format, then select “Conditional Formatting” from the menu bar’s “Format” drop-down menu. Choose “Cell Value is” from the drop-down list in the “Conditional Formatting” dialogue box, and then pick “Greater than” from the subsequent drop-down list. Put the required score—for example, “80”—in the following box. Select the formatting options you want to use, such as a background colour or font style, in the final step.



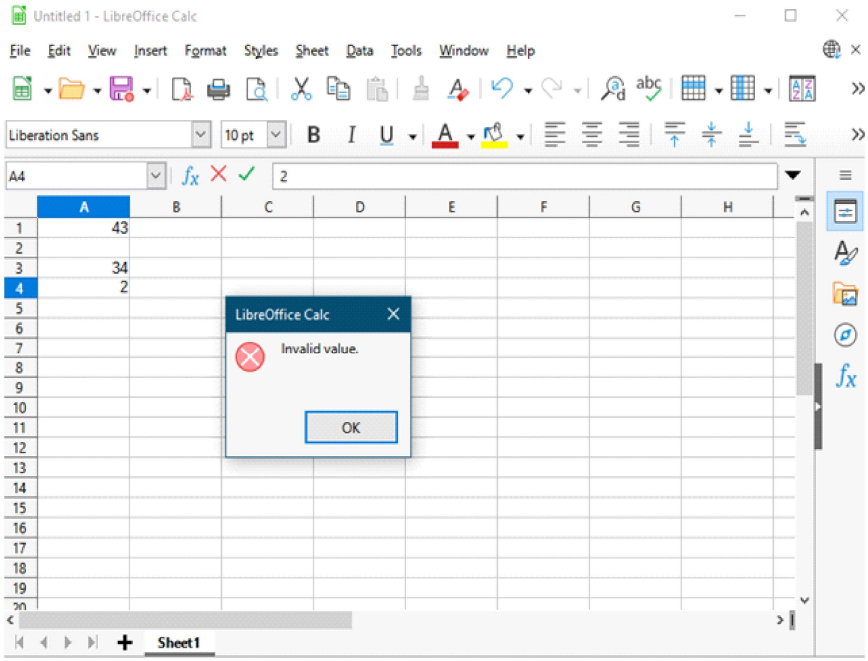
Data Validation

Users of LibreOffice Calc can regulate the kind and scope of data that can be entered into cells using the data validation feature. This makes it easier to make sure that the information entered is correct and complies with a particular set of rules or guidelines. In LibreOffice Calc, you can choose from a variety of data validation options, including those for text, numbers, dates, and more.

1. The steps below explain how to apply data validation to a cell or range of cells in LibreOffice Calc.
2. Choose the cell or range of cells to which data validation should be applied.
3. Select “Validity” from the “Data” menu by clicking on it.
4. From the “Allow” dropdown menu in the “Validity” dialogue box, choose the category of data you want to validate. There are many options available, including “Whole number,” “Decimal,” “Date,” “Time,” “Text length,” and more.
5. Set the parameters for the chosen data type. You can specify a minimum and maximum value for the number, for instance, if you chose “Whole number”.

6. You have the option to specify an error message that will be displayed if the user enters incorrect information.
7. To apply the data validation to the chosen cells, click “OK”.

For example, suppose you have a spreadsheet with a column for product prices, and you want to ensure that the prices entered are between Rs 10/- and Rs 100/-. To do this, select the column of prices, go to “Data” > “Validity”, select “Whole number” from the “Allow” dropdown menu, and enter 10 and 100 as the minimum and maximum values. Now, any time someone enters a price that falls outside of this range, an error message will appear.

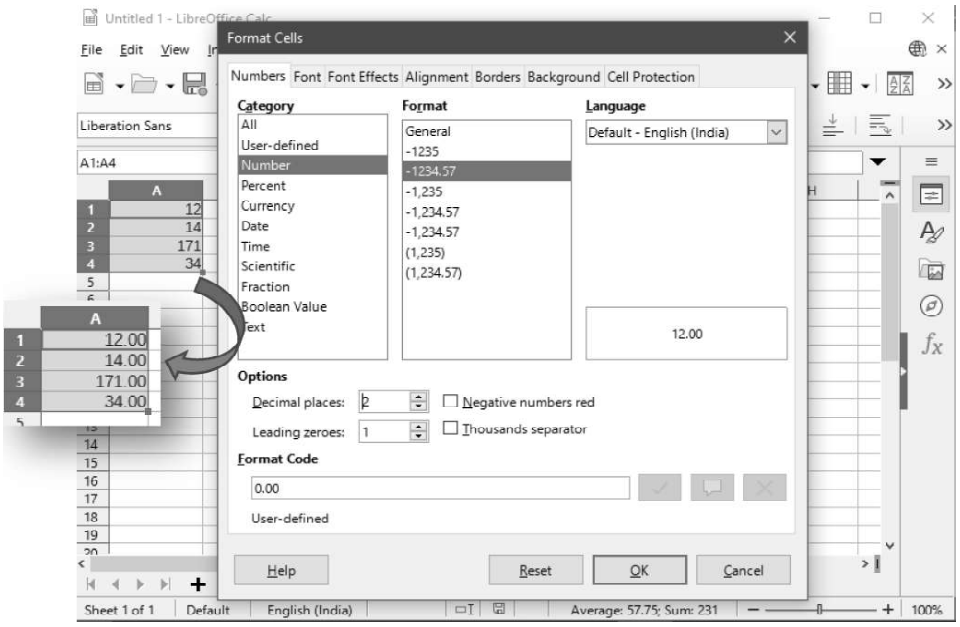


Setting up a dropdown list for a cell is another illustration of data validation. When you want to restrict the options available for a specific cell, this can be helpful. To accomplish this, first choose the cell that needs validation, then navigate to “Data” > “Validity,” choose “List” from the “Allow” dropdown menu, and then enter the options you want to show up in the dropdown list. Now, only the options you listed will be available to anyone who selects that cell.

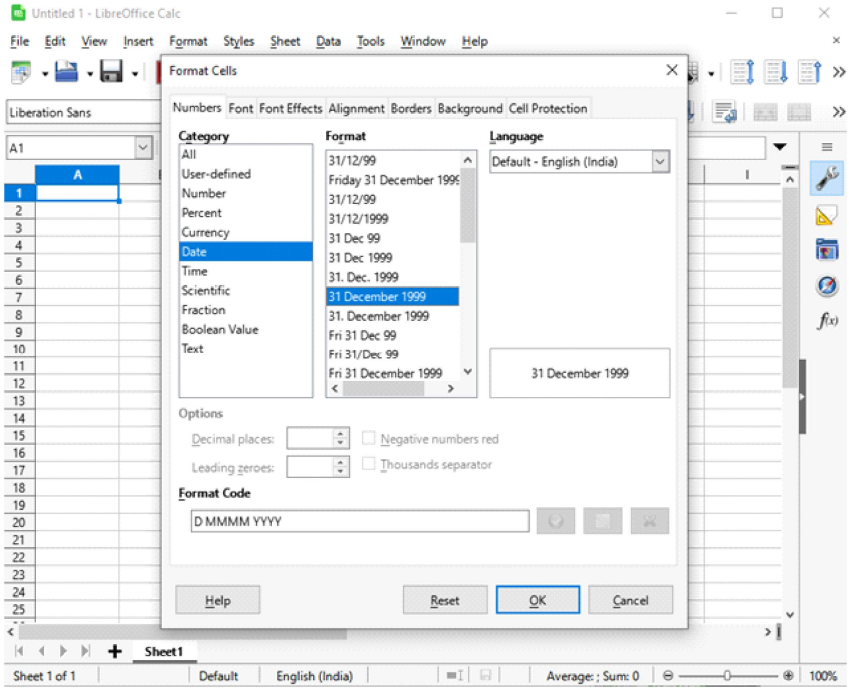
Custom Number Formats

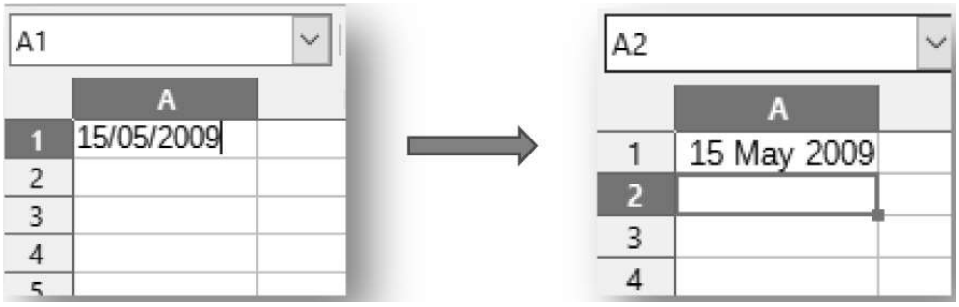
Users of LibreOffice Calc can format numbers in a way that best suits their needs by using custom number formats. The appearance of numbers, including the number of decimal places, the use of currency symbols, and the display of negative numbers, can be customised by users. Dates, times, and other types of data can be displayed using custom number formats in a way that is simple to understand and read.Here are some examples of custom number formats in LibreOffice Calc:

1. **Number format with decimal places:** Select the cells you want to format, then select “Format” > “Cells” to format numbers with two decimal places. Select “Numbers” from the “Format Cells” dialogue box, and then type “0.00” in the “Format Code” field.



2. Currency format: Select the cells you want to format and choose “Format” > “Cells” to format numbers as currencies. Choose “Numbers” from the “Format Cells” dialogue box, then choose the desired currency symbol from the drop-down list.
3. Formatting dates: Choose the desired cells and choose “Format” > “Cells” to format dates. Select “Date” in the “Format Cells” dialogue box, then select the desired format from the drop-down list.





5. Scientific notation format: Select the cells you want to format and choose “Format” > “Cells” to format numbers in scientific notation. Select “Numbers” in the “Format Cells” dialogue box, and then type “#.###E+00” in the “Format Code” field.
6. Custom format for negative numbers: Negative numbers can be formatted in a specific way by choosing the desired cells and choosing “Format” > “Cells.” 6. Custom format for negative numbers. To display negative numbers in parentheses and with a currency symbol, choose “Numbers” from the “Format Cells” dialogue box, and then type a custom format code, such as “($#,##0.00);($#,##0.00)”.



CHECK YOUR PROGRESS

Fill in the blanks

1. LibreOffice Calc offers a wide range of _____ options to customize and present data.
2. Conditional formatting allows users to easily highlight cells that meet specific _____.
3. Data validation is a feature in LibreOffice Calc that allows users to control the type and range of data that can be entered into _____.
4. Custom number formats in LibreOffice Calc allow users to format numbers in a way that meets their specific _____.
5. A dropdown list can be set up for a cell using the _____ feature in LibreOffice Calc.

8.4 CREATING AND MODIFYING CHARTS

With the help of the robust spreadsheet programme LibreOffice Calc, users can design and edit charts that present data in an easier-to-understand manner. Chart creation and modification in Calc is a fairly simple process that can be finished in a few easy steps.

Here are the steps to create and modify charts in LibreOffice Calc:

1. Preparing the Data:

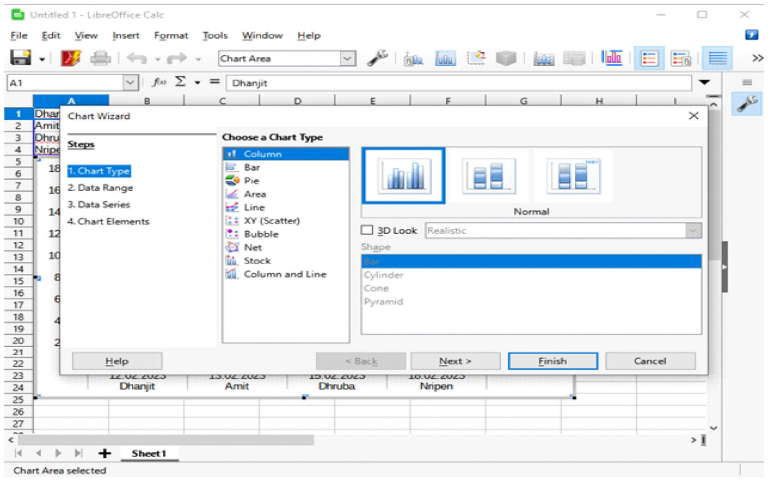
It is essential to prepare the data that will be represented in the chart before beginning to create one. Each set of data should have its own row and column headings in a table with the data. Columns for salesperson names, sale dates, and sale amounts, for instance, might be included in a chart that displays sales data for a business.

2. Selecting the Data:

Choose the cells you want to include in the chart after you have prepared the data. To select multiple cells at once, hold down the Shift key while clicking and dragging the mouse over the desired cells.

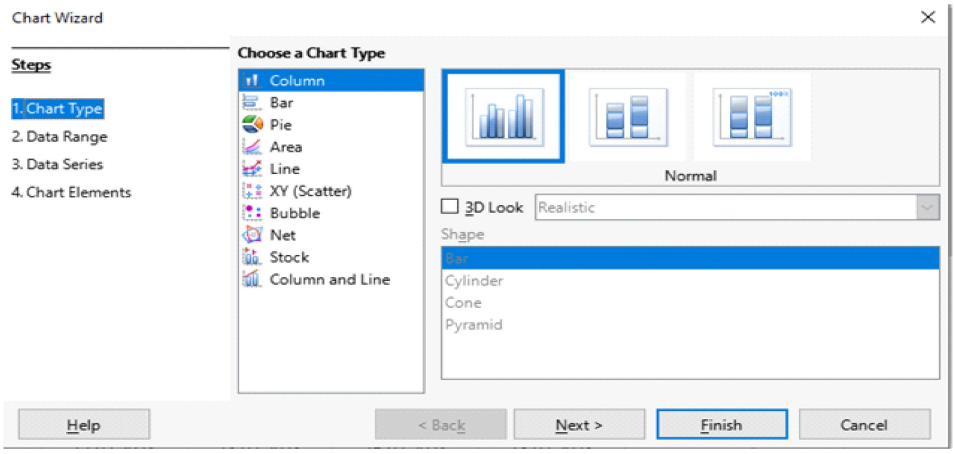
3. Inserting the Chart:

After choosing your data, choose “Chart” from the “Insert” menu in the menu bar. You can then follow the instructions in the “Chart Wizard” dialogue box to create the chart. In addition, you can utilise the “Chart” icon located in the toolbar..



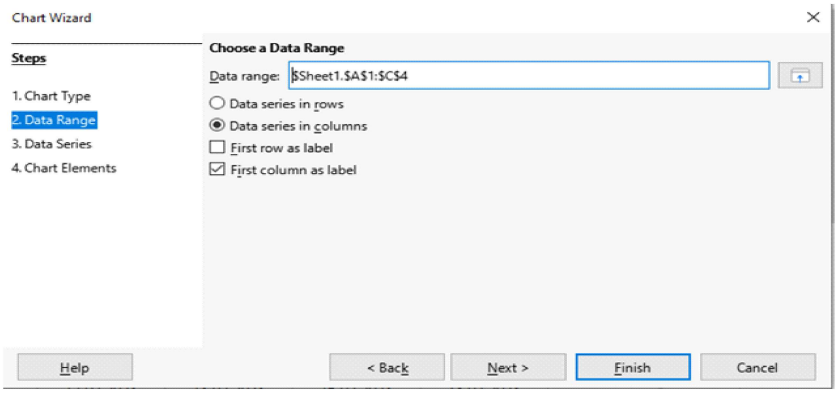
4. Choosing the Chart Type:

You must choose the type of chart you want to make in the Chart Wizard dialogue box. Calc supports the following chart types: Column, Line, Pie, Bar, Area, XY (Scatter), Net, and Stock. Pick the option that most closely fits your needs.



5. Defining the Chart Data Range:

The next step is to specify the data range for your chart. The categories and data series must be specified in this. A data series is a collection of associated data points, and each data series has a category label. The values of each data point are shown next to the data point in the chart as data labels, which are an additional option.



6. Customizing the Chart:

You can alter the chart's appearance, layout, and formatting after specifying the data range. The chart's title, legend, axis labels, and axis scales can all be changed. Additionally, you can alter the chart's colours, fonts, and other visual components.

7. Saving and Exporting the Chart:

Once the chart has been designed and customised, you can export it to a file format like PNG, JPG, or PDF or save it to your spreadsheet.

ACTIVITY

Suppose you have a table with sales data for the past six months. To create a column chart for this data, follow these steps:

1. Select the cells that contain the sales data.
2. Click on the "Insert" menu in the menu bar and select "Chart."
3. In the Chart Wizard dialog box, select "Column" as the chart type.
4. Define the data range by selecting the cells containing the data series and categories.
5. Customize the chart by changing the title, axis labels, and colours.
6. Save the chart to your spreadsheet or export it to a file format.

8.5 USING CALC'S BUILT-IN TOOLS

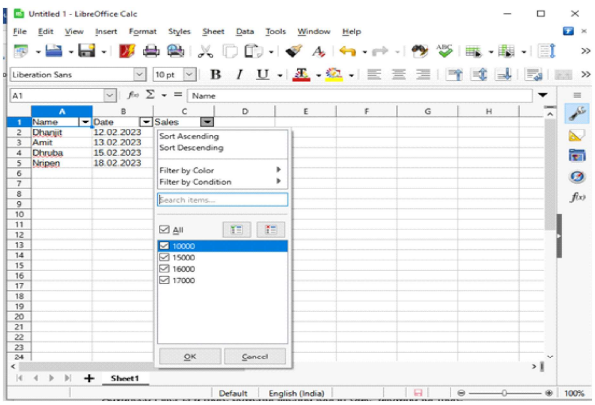
Dealing with large datasets is made simpler by a variety of built-in tools for filtering, sorting, and analysis provided by LibreOffice Calc. Users of the filtering tool can limit the display of data to only that which satisfies their criteria, enabling more focused analysis. Sorting enables users to group data according to different criteria, such as numerical value or alphabetical order, making it simpler to spot patterns and trends in the data. Additionally, Calc offers a variety of tools for data analysis, including pivot tables, which enable users to meaningfully summarise and visualise data. Overall, Calc's built-in tools make it simpler for users to work with data and extract insights from sizable datasets without the use of additional programmes or tools.

1. FILTERING DATA

- There is a robust set of built-in data filtering tools available in LibreOffice Calc. With the help of these tools, users can choose to display only the data that satisfies specific criteria, which can aid in performing focused analysis and comprehending particular subsets of data. Here are some examples and instructions for using these tools to filter data in Calc:

AutoFilter:

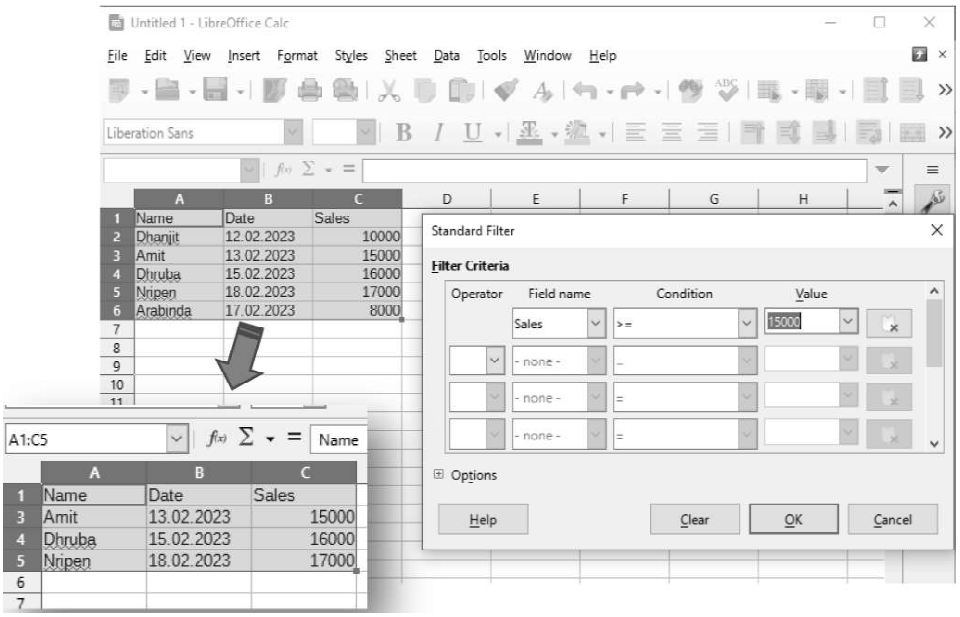
Data filtering in Calc is quick and simple thanks to AutoFilter. Selecting the cells containing the data you wish to filter before selecting the "Data" menu from the menu bar will activate AutoFilter. Choose "Filter" and then "AutoFilter" from there. Each column's header will have a tiny arrow that you can use to select or deselect particular values to filter the data.



- **Advanced Filter:**

Calc's Advanced Filter is a more powerful filtering tool that supports more complicated filtering criteria. Select the cells containing the data you wish to filter, and then click the "Data" menu link in the menu bar to access Advanced Filter. Choose "Filter" and then "Advanced Filter" from there. You can specify the filtering criteria based on various conditions in the ensuing dialogue box, such as values in other cells, regular expressions, and more.

For example, suppose you have a table containing the sales data for different salespersons, and you want to see only the sales figures for the salespersons who sold more than Rs 15,000 worth of products. Using Advanced Filter, you can specify the filtering criteria to show only the salespersons whose sales figures meet this condition.



- **Form Filter:**

Another filtering tool in Calc that lets users filter data based on form entries is called Form Filter. To use Form Filter, click the "Data" menu in the menu bar, choose "Form," and then fill out the form that appears with the filtering requirements.

Consider the scenario where you have a table with the sales information for various salespeople and you want to view only the sales data for a

particular salesperson. The salesperson's name can be entered into the form using Form Filter, and then the filter can be applied to only show the data that matches the entered criteria.

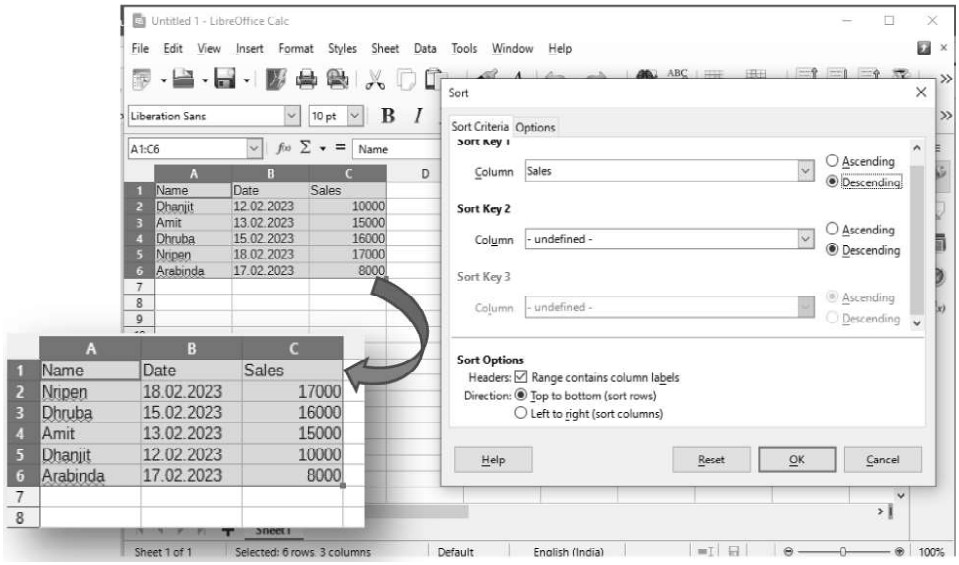
2. SORTING OF DATA

Many built-in data sorting tools in LibreOffice Calc can aid in more effective data organisation and analysis for huge datasets. Basic sorting, multi-level sorting, and custom sorting are some of these tools.

Basic Sorting:

Users of Calc's basic sorting tool can arrange data according to a single column or row. To use this tool, choose the desired data, then click the "Data" menu and choose "Sort." By doing so, the "Sort" dialogue box will open, allowing you to choose the column or row and the sort order (ascending or descending).

For instance, if you have a table of sales data with columns for salesperson names and sales amounts, you can use the basic sorting tool to determine which salesperson has sold the most by sorting the data based on the sales amounts in descending order.



- **Multi-Level Sorting:**

  Users of Calc can sort data based on multiple columns or rows using the multi-level sorting tool. To use this tool, choose the desired data, then click the "Data" menu and choose "Sort." You can add more sorting

levels in the “Sort” dialogue box by selecting the “Add Level” button. This will enable you to group the data according to a variety of criteria, such as sales volume followed by salesperson name.

For example, if you have a table of sales data that includes columns for salesperson names, sales dates, and sales amounts, you can use the multi-level sorting tool to sort the data first by salesperson name and then by sales amount in descending order to see the total sales amount for each salesperson.

- **Custom Sorting:**

Users can sort data in Calc using custom criteria by using the tool for custom sorting. To use this tool, choose the desired data, then click the “Data” menu and choose “Sort.” Choose “Custom sort order” from the “Sort by” drop-down menu in the “Sort” dialogue box. By adding new criteria, you can customise the sort order by opening the “Custom Sort” dialogue box.

For example, if you have a table of inventory data that includes columns for item names and stock levels, you can use the custom sorting tool to sort the data based on the item names, but with a custom sort order that places certain items at the top of the list, regardless of their alphabetical order.

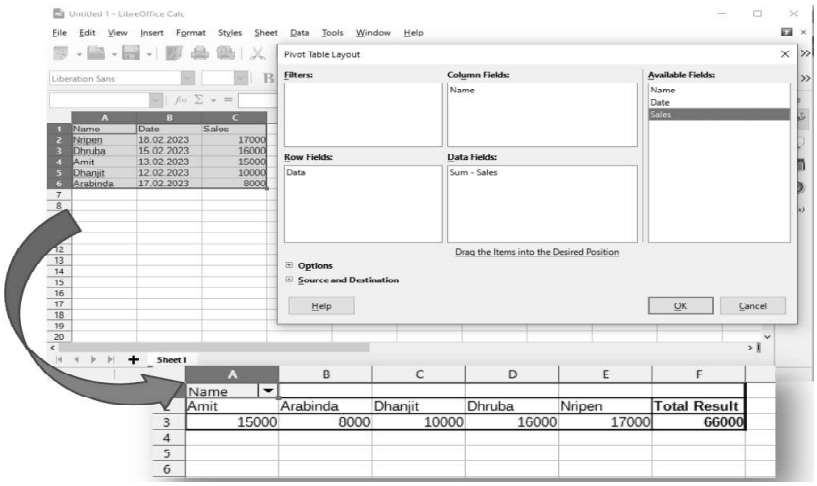
3. ANALYSING DATA

Several built-in data analysis tools in LibreOffice Calc are helpful for gaining insights into sizable datasets. Here are a few instances of how to analyse data using Calc’s built-in tools:

- **Pivot Tables:**

Powerful tools for data analysis and summarization include pivot tables. They enable you to easily summarise sizable datasets and present them in a more readable manner. Select the data you want to analyse before you can create a pivot table in Calc. Then click the “Data” menu, choose “Pivot Table,” and adhere to the wizard’s directions. A pivot table can be made more unique by dragging and dropping fields to alter the layout and produce different summaries after it has been created.

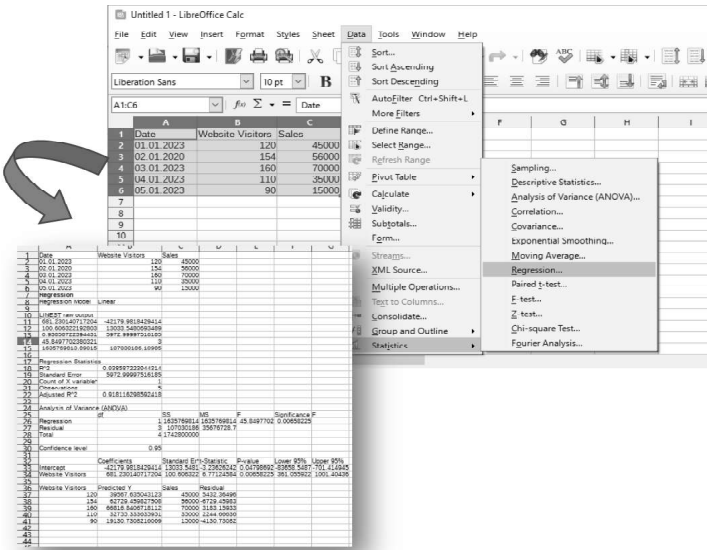
Example: Suppose you have a dataset that includes sales data for a company. You could use a pivot table to summarize the data by salesperson, month, or product category, and analyse which salesperson or product category is performing the best.



- **Data Analysis Tools:**

Regression analysis, Fourier analysis, and moving average are just a few of the data analysis tools available in Calc. These tools can help you predict the future based on historical data and understand the relationship between various variables. Click on the “Data” menu, choose “Statistics,” and then select the tool you want to use to access the data analysis tools.

Example: Suppose you have a dataset that includes information on the number of visitors to a website and the corresponding sales data. You could use regression analysis to understand the relationship between the number of visitors and sales, and predict future sales based on the number of visitors.



Similarly, other analysis like sampling, co-relation, chi-square etc can be done using Calc and all these above potential makes Libre office a great open source software for data analysis.



CHECK YOUR PROGRESS

6. What is the first step to create and modify charts in LibreOffice Calc?
   a) Insert the chart
   b) Define the chart data range
   c) Select the data
   d) Customize the chart
7. Which of the following is a built-in tool in LibreOffice Calc for analyzing data?
   a) Pivot tables
   b) Photoshop
   c) AutoCAD
   d) InDesign
8. How can users use AutoFilter to filter data in Calc?
   a) Click on the “Insert” menu and select “AutoFilter”
   b) Click on the “Data” menu and select “Filter” and then “AutoFilter”
   c) Click on the “Chart” menu and select “AutoFilter”
   d) Click on the “Format” menu and select “AutoFilter”
9. Which of the following is a more powerful filtering tool in Calc?
   a) AutoFilter
   b) Basic Filter
   c) Advanced Filter
   d) Form Filter
10. What is the purpose of sorting data in LibreOffice Calc?
    a) To create charts
    b) To customize the chart
    c) To organize and analyse large datasets
    d) None of these



8.6 LET US SUM UP

In this unit we have discussed the following :

- LibreOffice Calc offers a variety of advanced formatting options that allow users to customize and present their data in a visually appealing and informative way.
- Conditional formatting is a powerful feature in LibreOffice Calc that allows users to highlight cells based on specific conditions, making it easier to identify trends and patterns in their data.
- Data validation is another feature in LibreOffice Calc that enables users to control the type and range of data that can be entered into cells, ensuring that only valid and accurate data is entered.
- Cell styles and custom number formats can be used to apply a consistent look and feel to worksheets and format numbers in a way that makes them more easily understandable.
- Examples of how to use conditional formatting in LibreOffice Calc include highlighting cells based on specific text, numerical values, and duplicate values.
- Data validation can be applied to cells to ensure that the data entered conforms to specific rules or guidelines, such as limiting the options available for a particular cell or setting minimum and maximum values for numerical data.
- LibreOffice Calc is a powerful spreadsheet application that allows users to create and modify charts to visualize data in a more accessible and understandable format.
- To create and modify charts in Calc, the data needs to be prepared in a table with headings for each column and rows for each set of data.
- Calc provides a variety of built-in tools for filtering, sorting, and analyzing data, making it easier to work with large datasets.
- Filtering tools in Calc allow users to selectively display only the data that meets certain criteria, which can help in performing targeted analysis and understanding specific subsets of data.

- Sorting tools in Calc allow users to organize data based on various criteria, such as alphabetically or by numerical value, making it easier to see patterns and trends in the data.
- Calc also provides a range of tools for analyzing data, such as pivot tables, which can help users summarize and visualize data in a meaningful way.
- Overall, these built-in tools make it easier for users to work with data in Calc and gain insights from large datasets without the need for external software or tools.



8.7 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No 1: formatting

Answer to Q No 2: criteria

Answer to Q No 3: cells

Answer to Q No 4: needs

Answer to Q No 5: data validation

Answer to Q No 6: c) Select the data

Answer to Q No 7: a) Pivot tables

Answer to Q No 8: b) Click on the “Data” menu and select “Filter” and then “AutoFilter”

Answer to Q No 9: c) Advanced Filter

Answer to Q No 10: c) To organize and analyse large datasets



8.8 FURTHER READING

1. Lowenthal, M. (2015). Calc for dummies. John Wiley & Sons.
2. Starks, C. (2013). LibreOffice Calc Guide. The Document Foundation.



8.9 MODEL QUESTIONS

1. How can conditional formatting be used to highlight specific cells or ranges of cells based on certain criteria in LibreOffice Calc? Provide at least three examples of how conditional formatting can be used effectively to analyse data and improve its presentation.
2. Data validation is an important feature in LibreOffice Calc that allows users to control the type and range of data that can be entered into cells. Explain how to apply data validation to a cell or range of cells in LibreOffice Calc, and provide an example of how data validation can be used to ensure accurate data entry. In addition, discuss at least two other types of data validation options available in LibreOffice Calc and how they can be useful in data analysis.
3. How can LibreOffice Calc's built-in tools for filtering, sorting, and analyzing data be used to gain insights from large datasets? Provide examples of how each tool can be used to manipulate data and extract specific information from a dataset.
4. Describe the steps involved in creating and modifying charts in LibreOffice Calc. What are some of the customization options available to users when creating a chart, and how can these options be used to create a visually appealing and informative chart?
5. How can LibreOffice Calc be used to perform statistical analysis on a dataset? What are some of the statistical functions and tools available in Calc, and how can they be used to extract meaningful insights from a dataset? Provide examples of how statistical analysis can be used to identify trends and patterns in data.

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UNIT 9: INTRODUCTION TO IMPRESS

UNIT STRUCTURE

9.1 Learning Objectives
9.2 Introduction
9.3 Overview of Impress
9.4 Features as a Presentation Program
9.5 Launching Impress
9.6 Creating a New Presentation
9.7 Navigating the Impress Interface
9.8 Understanding the Different Components of the Slide Window
9.9 Adding and Formatting Slides
9.10 Applying Transitions
9.11 Customizing Presentations Settings
9.12 Let Us Sum Up
9.13 Answers to Check Your Progress
9.14 Further Reading
9.15 Model Questions

9.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- start with Impress
- learn the different parts of the Impress such as the Title bar, Menu bar, Status bar, Horizontal and Vertical Scroll bar
- learn different component of Impress
- create a new presentation

9.2 INTRODUCTION

LibreOffice Impress is a powerful and free presentation software that is part of the LibreOffice suite. It allows you to create stunning presentations with a wide range of features and tools.In the same way as Microsoft PowerPoint, it helps users create professional-looking presentations.You can easily create professional-looking slide presentations using Impress. The program features a number of tools and features to make your presentations more effective.The aim of this unit is to guide you through the Impress environment when designing your presentations.

9.3 OVERVIEW OF IMPRESS

Impress is a powerful presentation software developed as part of the LibreOffice suite. It is a free and open-source alternative to commercial software like Microsoft PowerPoint and it is available for Windows, macOS, and Linux operating systems.LibreOffice Impress allows users to create, edit, and deliver professional-looking slideshows and presentations.It offers a variety of templates and themes to choose from, or users can create their own custom designs. The software also supports a wide range of file formats, including Microsoft PowerPoint files, making it easy to import and export presentations to and from other software.Users can add and edit slides, create and format text, insert and manipulate images and other multimedia, and create animations and transitions between slides. Impress also includes drawing tools, charts, and diagrams, which can be used to create custom graphics within the presentation.

LibreOffice Impress offers a robust set of features and is suitable for personal, academic, and professional use. You can create slides that contain many different features, including text, bulleted and numbered lists, tables, charts, and a wide range of graphic objects such as clip-art, drawings and photographs. Impress also includes a spelling checker, a thesaurus, text styles, and background styles.

9.4 FEATURES AS A PRESENTATION PROGRAM

LibreOffice Impress, as a presentation program, offers a wide range of features to help you create and deliver impactful presentations.LibreOffice Impress provides a comprehensive set of features for creating, designing, and delivering professional presentations. Its open-source nature and compatibility with different file formats make it a versatile and accessible option for users seeking a free and powerful presentation program.

Here are some of the important features of LibreOffice Impress:

- Slide Creation and Editing: Impress provides an easy-to-use interface for creating and editing slides. It offers a range of formatting options for text, images, charts, tables, and other graphical elements, allowing users to customize their presentations to their needs.

- Slide Transitions and Animations: Impress offers a range of transition effects to smoothly transition between slides, and animation options to bring content to life during the presentation.
- Templates and Styles: Impress includes a collection of built-in templates and styles to give your presentations a professional look. You can choose from various themes and layouts or create your own custom templates to maintain consistency throughout your presentation.
- Multimedia Support: Impress supports adding multimedia content such as images, audio files, and videos directly into slides, enhancing the overall presentation experience.
- Presenter View: Impress provides a Presenter View option that displays additional information to the presenter while showing the slides to the audience. You can see your speaker notes, next slides, and slide timings, helping you deliver your presentation more effectively
- Customization Options: Impress allows users to customize the appearance and layout of their presentations, with a range of templates and themes available.
- Slide Show Settings: Impress offers customizable slide show settings. You can define the order in which your slides appear, set slide timings, and control slide transitions. The software also provides options for looping slide shows, enabling automatic advancements, and rehearsing timings.
- Collaboration and Compatibility: LibreOffice Impress supports a wide range of file formats, including the Microsoft PowerPoint formats (PPT, PPTX), making it easy to collaborate with users of other presentation software. You can import and export files in different formats, ensuring compatibility with different platforms.
- Master Slides and Templates: Impress supports master slides, which act as templates for your presentation. Master slides allow you to define the overall layout, background, fonts, and placeholders that

are used consistently across multiple slides. This feature helps maintain a consistent design throughout your presentation and saves time when creating or modifying slides.

- Speaker Notes and Presenter View: Impress enables you to add speaker notes to your slides, which can be displayed separately to assist you during the presentation. The Presenter View provides a dual-screen setup where you can view your current slide, upcoming slides, speaker notes, and a timer, while your audience sees only the slides.

9.5 LAUNCHING IMPRESS

To launch LibreOffice Impress, you can follow these steps:

1. Ensure that you have LibreOffice installed on your computer. If you don't have it installed, you can download it for free from the official LibreOffice website (https://www.libreoffice.org).
2. Once LibreOffice is installed, open the application launcher or the Start menu on your computer.
3. Open your computer's start menu or launcher
4. Type "LibreOffice" in the search bar to find the LibreOffice program.
5. Click on the "LibreOffice Impress" icon to launch the program.
6. Once LibreOffice is open, click on the "Impress" icon, which should be located in the bottom row of icons. Alternatively, you can select "Impress" from the list of LibreOffice applications that appears when you click on the "Applications" menu at the top of the screen.
7. If you want to create a new presentation, select a blank slide or choose a template from the available options. Alternatively, you can open an existing presentation by selecting "Open" from the File menu.
8. Begin working on your presentation by adding slides, content, and formatting elements using the various tools and options available in the user interface.

Once you have launched LibreOffice Impress, you can start creating or editing your presentation. The software offers a range of tools and features to help you customize your slides, add multimedia content, apply animations and transitions, and many more.

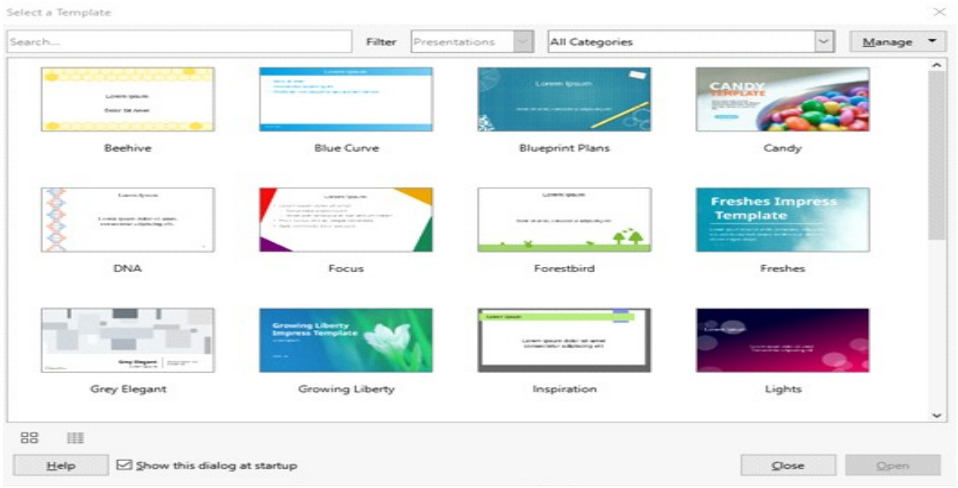


Figure 14.1:Template dialog

9.6 CREATING A NEW PRESENTATION

To create a new presentation in LibreOffice Impress, you can follow these steps:

- Launch LibreOffice Impress by following the instructions provided in the previous section.
- Once Impress is open, you will see a start screen with various options. To create a new presentation, click on the “Empty Presentation” option. This will open a new blank presentation for you to work on.
- Alternatively, you can also click on “Open File” if you want to start with an existing presentation template or a previously saved presentation.
- The main Impress interface will now be displayed, with a blank slide ready for editing. The slide pane on the right-hand side will show the thumbnail of the current slide.

- You can start building your presentation by adding slides. To add a new slide, you have a few options:
    - Click on the “New Slide” button on the toolbar. It typically looks like a plus symbol or a blank slide icon.
    - Go to the “Insert” menu and select “Slide” or “New Slide.”
    - Use the keyboard shortcut “Ctrl+M” (Windows/Linux) or “Cmd+M” (Mac) to insert a new slide.
- Impress offers various slide layouts to choose from. You can select a layout that suits your content by clicking on the desired layout in the “Layouts” panel. The layout options are typically displayed on the right side of the interface.
- Now you can start adding content to your slides. Click on the text boxes provided on the slide and begin typing to enter your text. You can format the text by selecting it and using the formatting options available in the toolbar.
- To add images, charts, tables, or other graphical elements, go to the “Insert” menu and choose the desired option. You can also use the icons in the toolbar to insert these elements directly.
- Customize the appearance of your slides by applying different fonts, colors, backgrounds, and other formatting options available in the toolbar. You can also modify the slide master to ensure consistent formatting across all slides.
- To save your presentation, go to the “File” menu and choose “Save” or “Save As.” Give your presentation a name and select the desired file location on your computer.
- As you work on your presentation, remember to save your progress regularly to avoid losing any changes.

By following these steps, you can create a new presentation in LibreOffice Impress and begin designing your slides with various content elements and customization options.

9.7 NAVIGATING THE IMPRESS INTERFACE

When you first open LibreOffice Impress, you will see a user-friendly interface that consists of several elements. Here's an overview of the main parts of the Impress interface and how to navigate them:

- Title Bar: The title bar at the top of the window displays the name of the program and the name of the current presentation.
- Menu Bar: The menu bar contains all the menus available in Impress, such as File, Edit, View, Insert, Format, Slide, etc. You can access various options and settings from the menus.
- Toolbars: Impress has several toolbars, such as the Standard toolbar, the Formatting toolbar, and the Drawing toolbar. These toolbars contain various buttons and tools to help you create and edit your presentation.
- Slides Pane: The Slides pane is located on the left side of the window and displays a list of all the slides in your presentation. You can use it to navigate to a specific slide, add new slides, or delete existing slides.
- Workspace: The workspace is the main area where you create and edit your slides. It occupies the majority of the Impress window.
- Status Bar: The status bar is located at the bottom of the window and displays information about the current slide, such as the slide number, the slide layout, and the zoom level. You can also use it to switch between the normal and slide master views.

9.8 UNDERSTANDING THE DIFFERENT COMPONENTS OF THE SLIDE WINDOW

When working with slides in LibreOffice Impress, the Slide Window is the main area where you create and edit individual slides. Here are the different components of the Slide Window in LibreOffice Impress:

1. **Slide Area:** The largest section of the Slide Window is the Slide Area. It displays the content of the currently selected slide. You can add and format text, images, shapes, charts, and other elements within this area. It serves as a canvas for designing your slide layout.

2. **Slide Thumbnails:** On the left side of the Slide Window, you will find a vertical pane called the Slide Thumbnails pane. It provides a visual overview of all the slides in your presentation. You can click on a thumbnail to select and edit a specific slide. The selected slide's thumbnail is usually highlighted or visually differentiated from the rest.
3. **Slide Layout Pane:** Towards the right side of the Slide Window, you may find the Slide Layout pane. It displays different slide layout options available for the selected slide. Each layout represents a predefined arrangement of placeholders for text, images, titles, and other content. You can select a layout that best suits your needs or modify it to fit your content.
4. **Properties Pane:** The Properties pane is located on the right side of the Slide Window, adjacent to the Slide Layout pane. It provides options to customize the properties and attributes of the selected slide or its elements. You can adjust settings related to slide transitions, animations, background color or image, and more. The options available in the Properties pane may vary depending on the selected slide element or the view mode.
5. **Ruler and Guides:** The Slide Window may have horizontal and vertical rulers at the top and left edges, respectively. The rulers help you align and position objects precisely on the slide. You can drag guides from the rulers onto the slide to create alignment guides, which assist in maintaining consistent spacing and alignment between slide elements.
6. **Task Panes:** Task Panes are additional panels that can be accessed through the View menu or specific toolbar buttons. These panes provide extended functionality for tasks such as formatting, applying transitions and animations, managing master slides, working with styles, and more. Task Panes can be docked to the Slide Window or placed as floating windows based on your preference.

Understanding these components of the Slide Window in LibreOffice Impress will allow you to efficiently create and design your slides, customize their layout and properties, and navigate through your presentation with ease.

These components of the Slide Window in LibreOffice Impress provide different ways to view, edit, and manage your slides. You can switch between these views and utilize their respective functionalities based on your specific needs during the creation and editing process of your presentation.

9.9 ADDING AND FORMATTING SLIDES

To add and format slides in LibreOffice Impress, follow these steps:

1. Open LibreOffice Impress and click on the “New Presentation” option.
2. Choose a template or create a new blank presentation.
3. To add a new slide, click on the “New Slide” button located in the toolbar or go to the “Insert” menu and select “Slide”.
4. Choose the type of slide layout you want to use. You can select from a variety of pre-designed layouts or create your own.
5. To add content to your slide, click on the text boxes and insert your text. You can also insert images, shapes, charts, and other objects by going to the “Insert” menu.
6. To format your slide, go to the “Format” menu and choose the formatting options you want to apply. You can change the font, color, background, and other aspects of your slide.
7. To rearrange your slides, click and drag them to the desired position in the slide sorter view.
8. To apply transitions and animations to your slides, go to the “Slide Transition” and “Custom Animation” options located in the sidebar.
9. Save your presentation by going to the “File” menu and selecting “Save” or “Save As”.

By following these steps, you can create and format slides in LibreOffice Impress to create an engaging and visually appealing presentation.

9.10 APPLYING TRANSITIONS

LibreOffice Impress is a presentation software that allows users to create and edit slideshows with various effects, including transitions. Here are the steps to apply transitions to slides in LibreOffice Impress:

1. Open your presentation in LibreOffice Impress.
2. Select the slide to which you want to apply a transition.
3. Click on the “Slide Transition” icon located in the sidebar or go to the “Slide” menu and select “Slide Transition.”
4. In the “Slide Transition” panel, select the transition effect you want to apply to the slide. You can choose from various options, such as fade, dissolve, push, wipe, and more.
5. Set the transition options, such as direction, speed, sound, and duration, by using the corresponding controls in the “Slide Transition” panel.
6. Preview the transition by clicking on the “Preview” button located at the bottom of the panel.
7. Apply the transition by clicking on the “Apply” button.
8. Repeat the process for other slides if you want to apply transitions to them as well.
9. Save your presentation by going to the “File” menu and selecting “Save” or “Save As.”

By following these steps, you can apply transitions to slides in LibreOffice Impress to create a dynamic and engaging slideshow.

9.11 CUSTOMIZING PRESENTATIONS SETTINGS

LibreOffice Impress is a presentation software that allows users to customize various settings to create and edit presentations. Here are the steps to customize presentation settings in LibreOffice Impress:

1. Open your presentation in LibreOffice Impress.

2. Click on the “Tools” menu and select “Options.”
3. In the “Options” dialog box, select “LibreOffice Impress” from the left-hand menu.
4. Customize the settings in the “General” tab, such as the default presentation format, the number of undo steps, and the default language.
5. Customize the settings in the “Print” tab, such as the printer settings, the number of copies, and the page layout.
6. Customize the settings in the “View” tab, such as the display options, the grid settings, and the zoom level.
7. Customize the settings in the “Slide Show” tab, such as the timing, the slide transition speed, and the sound.
8. Customize the settings in the “Compatibility” tab, such as the file format options and the font embedding.
9. Click on the “OK” button to apply the changes.



CHECK YOUR PROGRSS

Q.1: What do you understand by a presentation?

Q.2: Define a template in Impress.

Q.3: What is a Normal view? Explain.

Q.4: How many types of views are provided by Impress to its users?

Q.5: Define the Slide Sorter view and its significance.



9.12 LET US SUM UP

In this unit we have discussed the following :

- To create a new presentation, click File > New... and then click "Blank Presentation'' in ''New Presentation'' task pane.
- There are three types of views of a presentation – Normal View, Slide Sorter View and Reading View.
- To create/insert a new slide in to your presentation, click on the slide after which you want to insert the new slide then click Home –> New Slide.
- You can change your font and font-styles of your text with the help of either Home menu or by short-cut buttons/keys.
- To delete an existing slide, right-click on the slide and then click "Delete Slide'' option.
- You can also apply designs to your slides by using the design templates provided in Impress. To apply design template, select the "Design'' menu and then select a design template.



9.13 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No1: An Impress presentation refers to a type of presentation created using LibreOffice Impress, which is a free and open-source presentation software. Impress is part of the LibreOffice suite, which provides a range of office productivity tools similar to Microsoft Office.Impress is designed to help users create professional-looking slideshows and presentations. It offers a variety of features and tools for creating, editing, and delivering presentations.

Answer to Q No 2: In Impress, a template refers to a pre-designed layout or format that serves as a starting point for creating presentations. It is a predefined structure that includes placeholders for text, images, charts, and other visual elements. Templates in Impress provide users

with a consistent and professional-looking design, helping them save time and effort in creating visually appealing presentations.

Answer to Q No 3: In the context of presentation software such as Impress or PowerPoint, the "Normal view" is a working mode that provides users with a comprehensive and versatile interface for creating and editing slides. It is also commonly referred to as the "Normal editing view" or "Slide editing view."The Normal view is specifically designed to provide a comprehensive workspace for efficiently creating and editing presentation slides.

Answer to Q No 4: Impress provides several different views to its users, each serving a specific purpose and offering a unique perspective on the presentation. The various views available in Impress include:(a) Normal View,(b)Slide Sorter View (c) Notes View(d) Handout View (e) Outline View (f) Slide Show View.

Answer to Q No 5: The Slide Sorter view in Impress is a viewing mode that displays a grid of thumbnail representations of all the slides in a presentation. It provides an overview of the entire presentation and allows users to easily manage and manipulate the sequence and arrangement of slides.



9.14 FURTHER READING

1) Gupta, Vikas. Comdex Linux and Open Office Course Kit (with CD Rom). New Delhi: Dreamtech Press, 2010. Print.
2) Wikipedia, the Free Encyclopedia (2012). OpenOffice.org. Web. 15 April 2013. <http://en.wikipedia.org/wiki/OpenOffice.org \>.
3) The Document Foundation. LibreOffice 4.0 Getting Started Guide. 2013. Web.20 April 2013.<http://www.libreoffice.org/get-help/documentation>.



9.15 MODEL QUESTIONS

Q.1: What are the purposes for which LibreOffice Impress can be used?

Q.2: What are the different types of views of Impress presentation?

Q.3: What view is useful to see possibly all the slides in a single window?

Q.4: What options are available for applying slide transitions in Impress?

Q.5: What options are available for applying slide transitions in Impress?

Q.6: What are master slides in LibreOffice Impress, and how can you use them?

Q.7: How do you create a new slide in LibreOffice Impress?

Q.8: What are the different slide layouts available in Impress?

*** ***** ***

UNIT 10 : WORKING WITH MULTIMEDIA AND ANIMATIONS IN IMPRESS

UNIT STRUCTURE

10.1 Learning Objectives

10.2 Introduction

10.3 Adding Images, Audio and Video to a Presentation

10.4 Creating and Modifying Animations to Enhance Visual Effects

10.5 Using Impress's Builting Tools for Recording and Rehearsing Presentations

10.6 Let Us Sum Up

10.7 Answers to Check Your Progress

10.8 Further Reading

10.9 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- add images, audio and video to a presentation
- create and modify animations to enhance visual effects
- use Impress's building tools for recording and rehearing presentations.

10.2 INTRODUCTION

In the previous unit we have learnt about the basic concept of Libreoffice Impress. This unit will help you to create and modify your presentation, i.e. inserting and deleting slides, applying existing design templates to the slides, adding animations to the contents of the slides and also adding slide transition effects to the slides.

10.3 ADDING IMAGES, AUDIO AND VIDEO TO A PRESENTATION

To add images, audio, and video to a presentation in LibreOffice Impress, follow these steps:

Adding Images:

1. Open your presentation in LibreOffice Impress.
2. Select the slide where you want to add the image.
3. Go to the “Insert” menu and choose “Image” or click on the “Insert Image” icon in the toolbar.
4. Locate and select the image file you want to insert, then click “Open.”
5. Resize and position the image on the slide as desired by clicking and dragging its corners or edges.

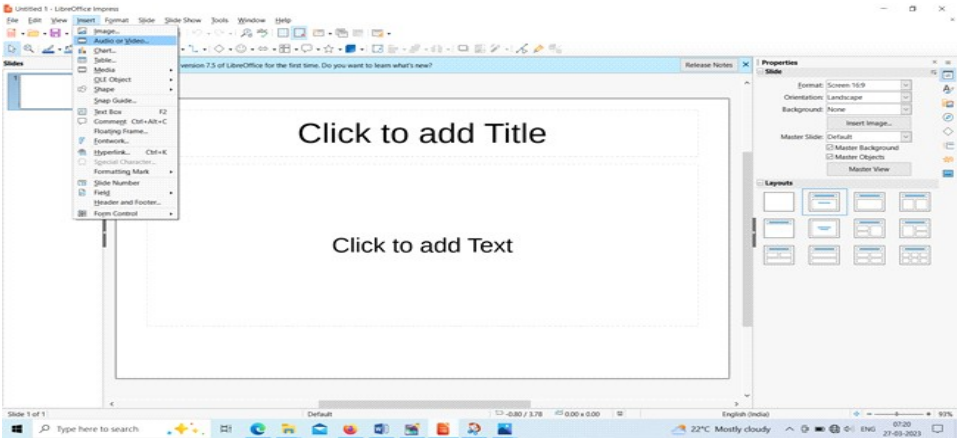


Figure 15.1: Inserting an image using Insert menu

In order to insert an image in OpenOffice Impress, place the cursor in the place where you want the image to be inserted (Figure 15.1).Then, Click Insert ’! select Picture ’! From File option from the Insert menu. OpenOffice Impress will display the dialog box, where you can select the image from the specific location and select open. The image will be inserted in the specified location. Figure 15.2

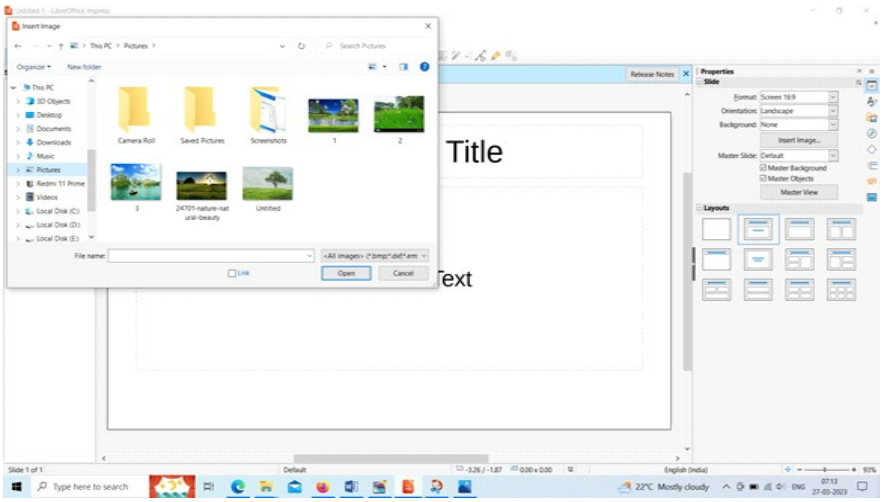


Figure 15.2 Selecting the image from a location

Adding Audio:

1. Open your presentation in LibreOffice Impress.
2. Select the slide where you want to add the audio.
3. Go to the “Insert” menu and choose “Audio or Video” or click on the “Insert Audio or Video” icon in the toolbar.
4. Locate and select the audio file you want to insert, then click “Open.”
5. A dialog box will appear with options to either play the audio automatically or when clicked. Choose the desired option and click “OK.”

Adding Video:

1. Open your presentation in LibreOffice Impress.
2. Select the slide where you want to add the video.
3. Go to the “Insert” menu and choose “Audio or Video” or click on the “Insert Audio or Video” icon in the toolbar.
4. Locate and select the video file you want to insert, then click “Open.”
5. A dialog box will appear with options to either play the video automatically or when clicked. Choose the desired option and click “OK.”

After adding images, audio, or video to your presentation, you can further customize their appearance and settings by selecting the inserted object and using the various formatting options available in LibreOffice Impress.

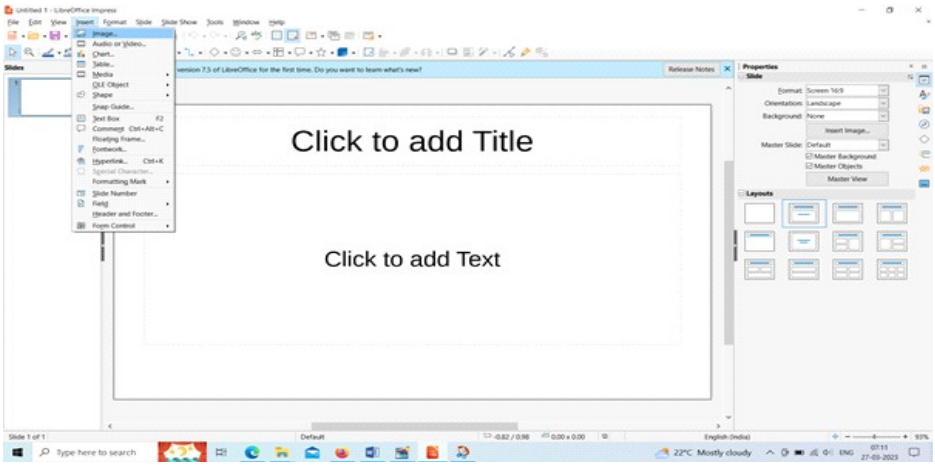


Figure 15.3: Inserting Movie and Sound

By following these steps, you can add images, audio, and video to a presentation in LibreOffice Impress to create a dynamic and engaging slideshow.

Libre Office Impres will let you insert audio files or movie files. The audio and movie files can be inserted by clicking Insert Movie and Sounds option from the Insert menu. Figure 15.3

Same as inserting images here also, a dialog box will be opened. Select the audio or movie file form the specified location and open. It will be opened in the slide. Figure 13.4. The movie or audio file inserted will be played during the slide show by clicking the mouse over it.

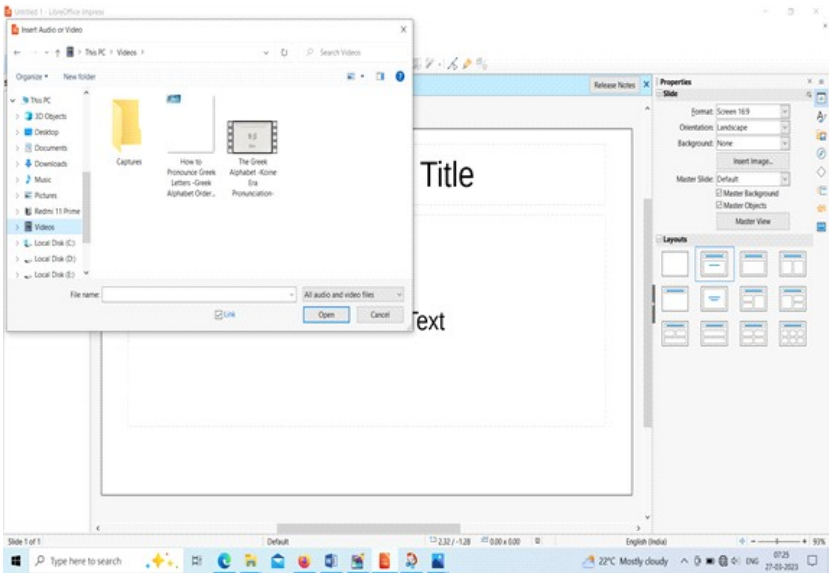


Figure 15.4 :Selecting the Movie / Sound file styles

10.4 CREATING AND MODIFYING ANIMATIONS TO ENHANCE VISUAL EFFECTS

Libre Office Impress allows users to create and modify animations to enhance visual effects and make presentations more dynamic. Here are the steps to create and modify animations in LibreOffice Impress:

Creating Animations:

1. Open your presentation in LibreOffice Impress.
2. Select the slide object (text box, image, shape, etc.) to which you want to apply an animation.
3. Go to the “Slide” menu and select “Custom Animation” or click on the “Custom Animation” icon in the sidebar.
4. In the “Custom Animation” pane, click on the “Add” button to add a new animation to the selected object.
5. Choose the animation effect you want to apply from the list. You can select from options such as entrance, emphasis, exit, or motion paths.
6. Set the animation options, such as duration, delay, and direction, by using the controls in the “Custom Animation” pane.
7. Click on the “Play” button to preview the animation.
8. To add more animations to the same object, repeat steps 4-7.

To apply animations to other objects on the slide, select the object and repeat steps 4-8.

Modifying Animations:

1. Select the slide object with the animation you want to modify.
2. Go to the “Slide” menu and select “Custom Animation” or click on the “Custom Animation” icon in the sidebar.
3. In the “Custom Animation” pane, select the animation you want to modify.
4. Adjust the animation options, such as duration, delay, or timing, by using the controls in the “Custom Animation” pane.
5. To change the order of animations, use the up and down arrows in the “Custom Animation” pane to rearrange them.

6. To remove an animation, select it in the “Custom Animation” pane and click on the “Remove” button.
7. Click on the “Play” button to preview the modified animation.
8. To modify animations on other objects, select the object and repeat steps 3-7.

Click on the “Close” button to exit the “Custom Animation” pane.

By following these steps, you can create and modify animations in LibreOffice Impress to enhance the visual effects and make your presentations more engaging.

10.5 USING IMPRESS’S BUILTING TOOLS FOR RECORDING AND REHEARSING PRESENTATION

Libre Office Impress does not have built-in tools specifically for recording and rehearsing presentations. However, you can still achieve similar functionality using external screen recording and rehearsal tools. Here is a general approach you can follow:

Recording Presentations:

1. Set up a screen recording tool on your computer. There are several third-party screen recording software available, such as OBS Studio, Camtasia, or QuickTime Player (for Mac users).
2. Open your presentation in LibreOffice Impress and start the screen recording tool.
3. Begin presenting your slides in LibreOffice Impress while the screen recording tool captures your screen and audio.
4. Go through your entire presentation, and the screen recording tool will record your presentation as a video file.

Rehearsing Presentations:

1. Set up a rehearsal environment where you can practice your presentation comfortably.
2. Open your presentation in LibreOffice Impress.
3. Start a timer or use a stopwatch to time your presentation.

4. Practice presenting your slides, paying attention to your timing, delivery, and overall performance.

5. Make note of any areas where you stumble or need improvement, and consider making revisions to your presentation accordingly.

6. Repeat the rehearsal process until you feel confident with your presentation.

   While LibreOffice Impress does not have built-in features for recording and rehearsing, you can utilize external tools for these purposes.



CHECK YOUR PROGRESS

Q.1. How can you add image or picture in your presentation in Impress?

Q.2: Is there any built in tools for recording and rehearsing presentation?

Q.3. Following are the steps for adding image:



10.6 LET US SUM UP

In this unit we have discussed the following :

- Libre Office Impress allows users to add images, audio, and video to make presentations more lively.
- Libre Office Impress allows users to create and modify animations to enhance visual effects and make presentations more dynamic.



10.7 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q No 4 : LibreOffice Impress does not have built-in tools specifically for recording and rehearsing presentations.

Q.5. Open your presentation in LibreOffice Impress.

Q.6. Select the slide where you want to add the image.

Q.7. Go to the “Insert” menu and choose “Image” or click on the “Insert Image” icon in the toolbar.

Q.8. Locate and select the image file you want to insert, then click “Open”.

Q.9. Resize and position the image on the slide as desired by clicking and dragging its corners of edges.



10.8 FURTHER READING

1) Gupta, Vikas. Comdex Linux and Open Office Course Kit, New Delhi: Dreamtech Press, 2010. Print.

2) Wikipedia, the Free Encyclopedia (2012). OpenOffice.org. Web. 15 April 2013. <http://en.wikipedia.org/wiki/OpenOffice.org \>.

3) The Document Foundation. LibreOffice 4.0 Getting Started Guide. 2013. Web. 20 April 2013. <http://www.libreoffice.org/get-help/documentation>.



10.9 MODEL QUESTIONS

Q.1: What do you mean by custom animation? Write down the steps for applying an animation effect.

Q.2: What are the different kinds of animation effects?

Q.3: Are the slide transition effect and custom animation effect means the same? Explain your answer.

Q.4: Create a Impress about your institute and animation effects and transitions effects to the contents of the slides and the slides respectively. Make at least 5 slides for the presentation.

Q.5: How do you add animations to objects in my presentation?

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UNIT 11: INTRODUCTION TO BASE

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Overview of Base

- 11.3.1 What is Base?
- 11.3.2 Features of Base

11.4 Launching Base and creating a new database

- 11.4.1 Opening Base
- 11.4.2 Creating a new database

11.5 Creating tables

- 11.5.1 What are tables?
- 11.5.2 Creating a table using the Table Design View
- 11.5.3 Entering data into a table

11.6 Creating forms

- 11.6.1 What are forms?
- 11.6.2 Creating a form using the Form Design View
- 11.6.3 Adding fields to a form

11.7 Creating queries

- 11.7.1 What are queries?
- 11.7.2 Creating a query using the Query Design View
- 11.7.3 Adding criteria to a query

11.8 Creating reports

- 11.8.1 What are reports?
- 11.8.2 Creating a report using the Report Design View
- 11.8.3 Adding fields to a report

11.9 Let Us Sum Up

11.10 Answers to Check Your Progress

11.11 Further Reading

11.12 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- understand the purpose and features of Base as a database management system.
- learn how to launch Base and create a new database.
- understand the concept of tables and learn how to create tables using the Table Design View.
- learn how to enter data into a table and manipulate table data.
- understand the concept of forms and learn how to create forms using the Form Design View.
- learn how to add fields to a form and manipulate form data.
- understand the concept of queries and learn how to create queries using the Query Design View.
- learn how to add criteria to a query and retrieve specific data from tables.
- understand the concept of reports and learn how to create reports using the Report Design View.
- learn how to add fields to a report and manipulate report data.

11.2 INTRODUCTION

Base is a powerful database management system (DBMS) that is included in the LibreOffice suite of productivity software. With Base, users can create, edit, and manage databases that can store a wide range of information, from simple lists to complex relational data. It offers features such as creating tables, forms, queries, and reports, and it can connect to various database engines. In this article, we will explore the basic features and functionality of Base, including how to create a new database, design tables, create forms, queries, and reports. By the end of this article, you will have a basic understanding of Base and be able to start creating your own databases.

11.3 OVERVIEW OF BASE

11.3.1 What is Base?

LibreOffice Base is a database management system (DBMS) that is included in the LibreOffice suite of productivity software. It provides a user-friendly interface for creating and managing databases, allowing users to store, organize, and retrieve various types of data. Base allows users to create tables, forms, queries, and reports, and it can connect to various database engines such as MySQL, PostgreSQL, and Microsoft Access. Base is open-source software, which means that it is free to download, use, and distribute. It is available for Windows, macOS, and Linux operating systems, making it a versatile and accessible tool for managing databases across different platforms.

11.3.2 Features of Base

The features of LibreOffice Base, a database management system, are:

(a) Creating and managing databases: Users can create and manage multiple databases within Base. They can connect to various database engines such as MySQL, PostgreSQL, and Microsoft Access.

(b) Designing Tables: Users can design tables with multiple fields and data types, set primary keys, and set relationships between tables.

(c) Creating Forms: Base allows users to create forms to enter, edit, and view data in tables. Users can customize the form layouts, create sub-forms, and add controls such as buttons and drop-down lists.

(d) Creating Queries: Base allows users to create queries to retrieve specific data from one or multiple tables. Users can filter, sort, and calculate data using queries.

(e) Creating Reports: Users can create reports to present data in a visually appealing format. Users can customize the report layout, add charts, graphs, and other design elements.

(f) Importing and Exporting Data: Base allows users to import and export data from various formats, such as CSV, Excel, and Access.

Overall, LibreOffice Base provides a powerful and flexible platform for creating, managing, and analyzing data in a variety of contexts, from personal data tracking to complex business operations.

11.4 LAUNCHING BASE AND CREATING A NEW DATABASE

11.4.1 Opening Base

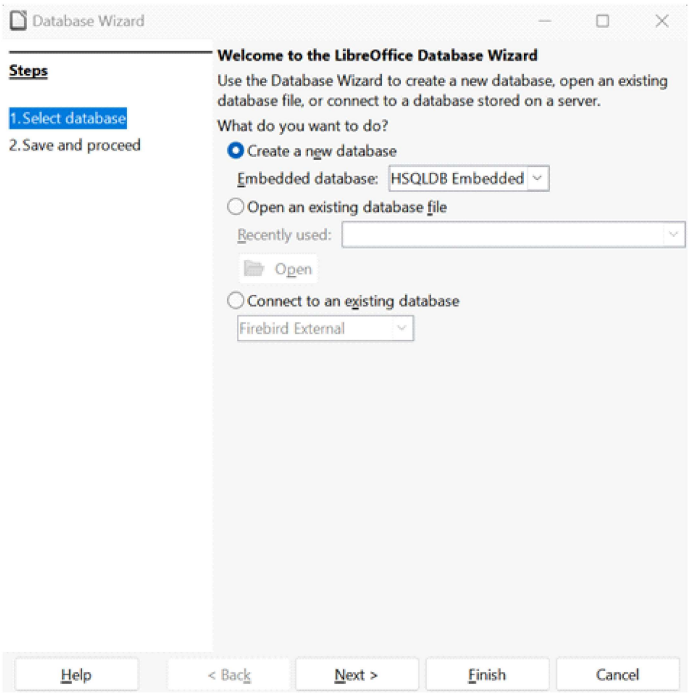
To open LibreOffice Base, you can follow these steps:

1. Click on the “Start” menu button on your computer’s desktop.
2. Type “LibreOffice” in the search bar to locate the application.
3. Click on the “LibreOffice” icon to launch the LibreOffice suite.
4. From the LibreOffice Welcome screen, click on the “Base” icon to launch LibreOffice Base.

11.4.2 Creating a new database

Here is the step-by-step procedure to create a new database in LibreOffice Base:

1. Create a new database: In the LibreOffice Base window, click on the “Create a new database” option.

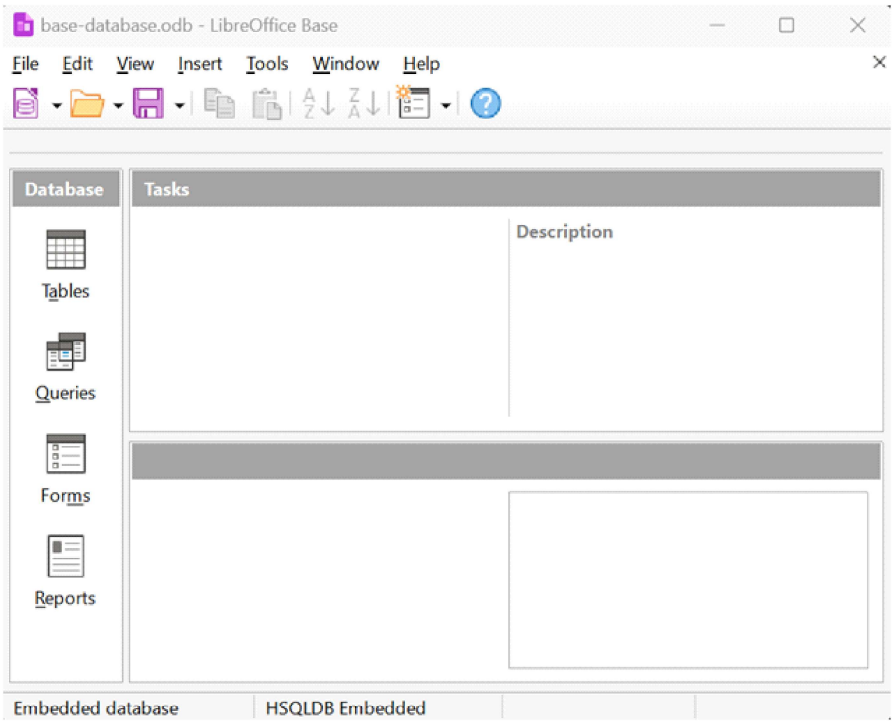


2. Select the database type: Choose the type of database you want to create. You can select from the following options:
   - "Connect to an existing database": Connect to an existing database file.
   - "Create a new database": Create a new database file.
   - "Open an existing database file": Open an existing database file.
3. Choose the location and name of the database: In the "Save As" dialog box, select the location where you want to save the database file, give it a name, and click "Save."
4. Select the database engine: Choose the database engine you want to use. The default is "HSQLDB Embedded," which is suitable for small to medium-sized databases. For larger databases, you may want to consider using a different database engine such as MySQL or PostgreSQL.

5 Set up the database: In the "Set up the database" dialog box, choose the options you want for your database, such as the default table type, default character set, and default collation. Click "Next" when you're done.

5. Choose the user authentication method: Choose the user authentication method you want to use. The default is "User-defined," which means you can create your own usernames and passwords. You can also choose "System" to use the system login information or "No authentication" to have no authentication at all.
7. Create the database: Review your database settings and click "Create" to create the new database. Once the database is created, you can start designing tables, forms, queries, and reports.

   Following is the screenshot of "creating a new database" which is saved with database name "base-database"



11.5 CREATING TABLES

11.5.1 What are tables?

In LibreOffice Base, a table is a collection of related data organized into rows and columns. It is similar to a table in a spreadsheet program like LibreOffice Calc or Microsoft Excel, but in Base, tables are used to store data in a database.

Tables in Base have the following properties:

Columns: Each table has a set of columns that define the type of data that can be stored in each field. For example, a column might be defined as text, date, or number.

Rows: The data stored in a table is organized into rows, with each row representing a separate record. Each row contains data that corresponds to the columns in the table.

Keys: A table can have one or more columns designated as keys, which are used to uniquely identify each record in the table.

Relationships: Tables can be related to one another through common columns, allowing data to be shared between them.

Tables are the foundation of any database in LibreOffice Base, and they are used to store and organize all of the data in the database. Other database objects, such as forms and queries, are built on top of tables, making them an essential component of any database application.Top of Form

11.5.2 Creating a table using the Table Design View

The step-by-step procedure to create a table using the Table Design View:

1. Open LibreOffice Base and create a new database or open an existing one.
2. In the main window of LibreOffice Base, click on the “Tables” icon in the left-hand panel.
3. Click the “Create Table in Design View” button at the bottom of the window.
4. In the “Table Design” dialog box, enter a name for your table in the “Table Name” field.
5. In the “Field Name” column, enter a name for the first field in your table.
6. In the “Type” column, select the data type for the first field. You can choose from options such as “Text”, “Number”, “Date”, etc.
7. If you want to specify any additional options for the field, such as a default value or maximum length, you can do so in the “Properties” column.
8. Repeat steps 5-7 for each additional field you want to add to your table.
9. If you want to set a primary key for your table, select the field or fields that will be part of the key and click the “Primary Key” button at the top of the window.
10. Click the “Save” button to save your new table.
11. In the “Save As” dialog box, choose a location to save the table and enter a name for the table.

12. Click “OK” to save the table and close the “Table Design” dialog box.

Your new table will now be listed in the “Tables” section of the LibreOffice Base window. You can open the table to view and edit the data stored in it, or use it as the basis for creating forms, queries, and reports in LibreOffice Base.

11.5.3 Entering data into a table

Here’s a step-by-step procedure to enter data into a table:

1. Open LibreOffice Base and create a new database file or open an existing one.
2. In the main menu, click on “Tables” and select the table you want to add data to.
3. Click on the “Edit” button to open the table in edit mode.
4. You should see an empty grid with the column names of your table. Start by typing the data for the first row in the appropriate cells.
5. You can use the Tab key to move to the next cell or the Enter key to move to the next row.
6. Keep entering data until you have filled in all the necessary rows and columns.
7. Once you are done, click on the “Save” button to save your changes to the table.
8. Close the table edit mode by clicking on the “Close” button.
9. You can now view the data you entered by going to the “Forms” or “Queries” section, selecting the appropriate form or query, and opening it.

11.6 CREATING FORMS

11.6.1 What are forms?

Forms in LibreOffice Base are graphical user interfaces that allow you to view, input, modify, and delete data in a database. Forms are a fundamental feature of any database application, as they allow users to interact with the

database in a more user-friendly way than working directly with the raw data in tables.

Forms in LibreOffice Base can be created using a wizard or by designing them manually using the Form Design view. Once created, forms can be customized to suit your needs by adding controls such as text boxes, drop-down lists, and buttons, as well as applying formatting and validation rules to ensure data is entered correctly.

11.6.2 Creating a form using the Form Design View

Here are the step-by-step procedure for creating a form using the Form Design View in LibreOffice Base:

1. Open LibreOffice Base and select the database you want to create a form for.
2. Click on the “Forms” tab in the main window to display the available forms.
3. Click on the “Use Wizard to Create Form” button to launch the form creation wizard, or select “Create Form in Design View” from the “Forms” drop-down menu to create a form manually.
4. In the Form Design View, click on the “Design Mode On/Off” button in the toolbar to turn on design mode if it is not already on.
5. Use the “Controls” toolbar to add controls such as text boxes, labels, and buttons to the form. You can click and drag the controls to move them around the form, and resize them by clicking and dragging the handles on the edges.
6. Use the “Properties” panel to customize the properties of each control. For example, you can set the name, data type, and validation rules for a text box.
7. Use the “Form Navigator” panel to add, remove, or rearrange fields on the form. You can also use this panel to create sub-forms or set up master-detail relationships between tables.

8. Use the “Form Design Toolbar” to customize the appearance of the form. You can change the font, color, and style of the form elements, as well as set up conditional formatting to highlight certain data.
9. When you are satisfied with the form design, click on the “Save” button in the toolbar to save the form. You can give the form a name and choose where to save it in the database.
10. To test the form, switch to “Form Design Off” mode by clicking on the “Design Mode On/Off” button in the toolbar. You can then use the form to view, input, modify, or delete data in the database.

With these steps, you should be able to create a form using the Form Design View in LibreOffice Base.

11.6.3 Adding fields to a form

Here are the step-by-step procedures to add fields to a form in LibreOffice Base:

1. Open LibreOffice Base and open the database containing the table to which you want to add fields to the form.
2. Click on the Forms tab at the bottom of the LibreOffice Base window to open the Forms section.
3. Click on the Create Form in Design View option to create a new form in the design view.
4. In the Form Design view, select the Controls icon in the left-hand sidebar, then select the type of control you want to add to the form from the list. For example, select Text Box for a field that will accept text input.
5. Click and drag the control onto the form where you want to place it.
6. Right-click on the new control and select Control Properties from the context menu.
7. In the Control Properties dialog box, select the Data tab.
8. In the Data tab, select the table to which you want to bind the control from the Table drop-down menu.

9. Select the field from the table that you want to associate with the control from the Field drop-down menu.
10. Adjust any other settings or properties for the control as desired, such as default values or validation rules.
11. Repeat the above steps to add additional fields to the form as needed.
12. Save the form when finished by selecting File > Save from the menu bar or by using the keyboard shortcut Ctrl + S.

Your form should now be updated with the new fields, and you can use it to input, view, or modify data in your database.

11.7 CREATING QUERIES

11.7.1 What are queries?

Queries in LibreOffice Base are a powerful tool for retrieving specific data from a database. A query is essentially a search that you perform on the data in your database to extract only the information that meets specific criteria.

Queries can be saved and reused, which makes them a useful tool for generating reports or answering recurring questions. By creating a query once, you can extract the information you need quickly and easily each time you need it, without having to manually search through the entire database.

11.7.2 Creating a query using the Query Design View

Here's a step-by-step procedure to create a query using the Query Design View in LibreOffice Base:

1. Open LibreOffice Base and open the database you want to work with.
2. Click on the "Queries" icon in the left-hand pane of the main window.
3. Click on the "Create Query in Design View" button in the toolbar.

4. In the “Tables” pane, select the tables or queries you want to include in the query by double-clicking on them or dragging them to the main pane.
5. Drag the fields you want to include in the query from the “Tables” pane to the main pane. You can also use the “Add Field” button in the toolbar.
6. If you want to include criteria for the query, use the “Criteria” row in the main pane. For example, if you only want to include records where the value in a certain field is greater than a specific number, you would enter “> [number]” in the Criteria row for that field.
7. If you want to sort the results of the query, use the “Sort” row in the main pane. You can specify ascending or descending order for each field.
8. Click the “Run Query” button in the toolbar to preview the results of the query. You can also use the “Run” menu and select “Run Query”.
9. If the query is returning the results you want, save it by clicking the “Save” button in the toolbar or using the “File” menu.
10. Give the query a name and click “OK”. The query will be saved and can be run or edited in the future.

11.7.3 Adding criteria to a query

Here are the step-by-step procedures to add criteria to a query in LibreOffice Base:

1. Open LibreOffice Base and select the database that contains the table you want to query.
2. Click on the “Queries” icon in the left sidebar to open the Queries section.
3. Click on the “Create Query in SQL View” button to create a new query.
4. In the Query Design View, click on the “Criteria” row in the grid that corresponds to the field you want to filter.

5. Type the criteria you want to use to filter the field. For example, if you want to find all records where the “Age” field is greater than 25, you would enter “>25” in the Criteria cell.
6. Repeat steps 4-5 for each field you want to filter.
7. Click on the “Run Query” button to view the results of your query.
8. If necessary, refine your criteria until you get the desired results. You can do this by changing the values in the Criteria cells or by adding additional criteria.
9. When you’re satisfied with your query, save it by clicking on the “Save” button in the toolbar.
10. You can now reuse your query whenever you need to retrieve data that meets your criteria by opening it from the Queries section in the left sidebar.

Overall, adding criteria to a query in LibreOffice Base is a simple process that allows you to extract specific data from your database quickly and efficiently. By refining your criteria, you can further narrow down your search and get the information you need with ease.

11.8 CREATING REPORTS

11.8.1 What are reports?

In LibreOffice Base, a report is a document that presents data from a database in a structured and formatted manner. Reports can be used to create professional-looking documents such as invoices, letters, or other business documents. Reports can be based on queries or tables, and can include data from multiple tables or queries.

11.8.2 Creating a report using the Report Design View

Followings are step-by-step procedure to create a report using the Report Design View in LibreOffice Base:

1. Open LibreOffice Base and select the database that contains the table or query you want to base your report on.
2. Click on the “Reports” icon in the left-hand panel to open the reports section.

3. Right-click on an empty space in the reports section and select “Create Report in Design View” from the context menu.
4. In the “Select Database Tables” dialog box, select the table or query you want to base your report on and click “Add”.
5. In the “Report Design” view, you will see the “Report Navigator” pane on the left, and the “Design” pane on the right. The “Design” pane is where you will create your report layout.
6. Drag and drop the fields from the “Table Field List” pane onto the “Design” pane to add them to your report. You can also use the “Report Wizard” to guide you through this process.
7. To format your report, select the field or section you want to format, and use the formatting options in the “Properties” pane on the right.
8. To add headers, footers, or page numbers to your report, right-click on the corresponding section in the “Report Navigator” pane, and select “Edit”.
9. Preview your report by clicking the “Preview” button in the toolbar. You can also print your report or export it to a different format.
10. Save your report by clicking on “File” and selecting “Save” or “Save As”.

11.8.3 Adding fields to a report

Followings are step-by-step procedure to add fields to a report in LibreOffice Base:

1. Open your database in LibreOffice Base and click on the “Reports” icon in the main window.
2. Select the report you want to modify from the list of available reports and click “Edit.”
3. In the report editor, click on the “Design View” button to switch to design mode.
4. To add a new field to the report, click on the “Insert Field” button in the toolbar. This will open the “Insert Field” dialog box.

5. In the “Insert Field” dialog box, select the table or query that contains the field you want to add to the report.
6. Choose the field you want to add from the list of available fields, and click “OK.”
7. The new field will now be added to the report, and you can position it by dragging it to the desired location on the report.
8. To modify the formatting of the field, right-click on the field and select “Properties.” This will open the “Properties” dialog box, where you can change the font, color, alignment, and other formatting options for the field.
9. Repeat steps 4-8 to add any additional fields you want to include in the report.
10. Once you have added all the desired fields and modified their formatting, save the report by clicking on the “Save” button in the toolbar.
11. To view the report with the new fields, click on the “Preview” button in the toolbar. This will generate a preview of the report that you can view and print.



CHECK YOUR PROGRESS

Choose the correct option:

1. What is LibreOffice Base?

A. A spreadsheet program

B. A database management system

C. A word processing program

D. An email client

2. What types of data can be stored in a table in Base?

A. Text, images, and videos

B. Numbers, dates, and times

C. Music, movies, and podcasts

D. All of the above

3. Which of the following is NOT a feature of Base?

A. Creating and managing databases

B. Designing tables

C. Creating animations

D. Importing and exporting data

4. Which operating systems is Base available on?

A. Windows and Linux

B. macOS and Windows

C. macOS and Linux

D. iOS and Android

5. What is a key in a table?

A. A tool used to open the table

B. A column used to uniquely identify each record in the table

C. A type of data that can be stored in the table

D. A relationship between tables

6. What is the purpose of a query in Base?

A. To create charts and graphs

B. To filter and sort data from one or multiple tables

C. To create sub-forms

D. To create reports

7. What is a query in LibreOffice Base?

A. A tool for retrieving specific data from a database

B. A tool for creating professional-looking documents

C. A tool for formatting data in a structured manner

D. A tool for creating tables and fields in a database

8. What is the purpose of creating a query in LibreOffice Base?

A. To create reports

B. To create tables

C. To extract specific data from a database
D. To format data in a structured manner

9. Which view is used to create a query in LibreOffice Base?
A. Report Design View
B. Table Design View
C. Form Design View
D. Query Design View

10. How can you add criteria to a query in LibreOffice Base?
A. By using the Report Design View
B. By using the Table Design View
C. By using the Form Design View
D. By using the Query Design View

11. What is a report in LibreOffice Base?
A. A tool for retrieving specific data from a database
B. A tool for creating professional-looking documents
C. A tool for formatting data in a structured manner
D. A tool for creating tables and fields in a database

12. Which view is used to create a report in LibreOffice Base?
A. Report Design View
B. Table Design View
C. Form Design View
D. Query Design View



11.9 LET US SUM UP

In this unit we have discussed the following :

- Base provides various features such as creating and managing databases, designing tables, creating forms, queries, and reports, importing and exporting data, etc.

- To create a new database in LibreOffice Base, users can follow a simple step-by-step process that involves selecting the database type, location, name, database engine, and user authentication method.
- Tables are a fundamental component of a database in Base and consist of columns, rows, keys, and relationships that help store and organize data.
- Queries are a powerful tool in LibreOffice Base used for retrieving specific data from a database by searching and extracting information that meets specific criteria.
- Queries can be saved and reused, which makes them useful for generating reports or answering recurring questions.
- Criteria can be added to a query to further narrow down the search for specific data, and the query can be refined until the desired results are obtained.
- Reports in LibreOffice Base are structured and formatted documents that present data from a database and can be based on queries or tables.
- Reports can be created using the Report Design View, which provides tools for adding fields, formatting options, and sections such as headers, footers, and page numbers.
- Reports can be previewed and saved, and can be used to create professional-looking documents such as invoices, letters, or other business documents.



11.10 ANSWERS TO CHECK YOUR PROGRESS

1.B 2.B 3.C 4.B 5.B 6.B 7.A 8.C 9.D
10.D 11.B 12.A



11.11 FURTHER READING

1. "Getting Started with LibreOffice Writer," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/getting-started-writer/.
2. "LibreOffice Writer Guide," The Document Foundation, accessed March 11, 2023, https://documentation.libreoffice.org/en/english-documentation/writer-guide/.
3. "LibreOffice Writer Tutorial," Tutorials Point, accessed March 11, 2023, https://www.tutorialspoint.com/libreoffice/libreoffice_writer_tutorial.htm.



11.12 MODEL QUESTIONS

Q.No.1: What is LibreOffice Base, and what are its main features?

Q.No.2: How do you launch LibreOffice Base, and what are the steps involved in creating a new database?

Q.No.3: What are tables in LibreOffice Base, and what properties do they have?

Q.No.4: How do you design tables in LibreOffice Base, and what are some of the options available for customizing their structure and properties?

Q.No.5: What are forms in LibreOffice Base and how do they enhance user interaction with the database?

Q.No.6: What are the two ways to create a form in LibreOffice Base, and what are the advantages of each approach?

Q.No.7: What are the basic steps involved in creating a form using the Form Design View in LibreOffice Base, and what are some of the key features and tools available in this view?

Q.No.8: How do you add fields to a form in LibreOffice Base, and what are some of the options and settings you can configure for these fields?

Q.No.9: What are queries in LibreOffice Base, and how do they help you extract specific information from a database? What are the basic steps involved in creating a query using the Query Design View, and what are some of the tools and options available in this view?

Q.No.10: What is a report in LibreOffice Base?

Q.No.11: What are the steps to create a report using the Report Design View in LibreOffice Base?

Q.No.12: How do you add fields to a report in LibreOffice Base?

Q.No.13: Can reports be based on multiple tables or queries in LibreOffice Base?

Q.No.14: How do you modify the formatting of a field in a report in LibreOffice Base?

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UNIT 12: WORKING IN INTERNET

UNIT STRUCTURE

12.1 Learning Objectives

12.2 Introduction

12.3 Internet

12.3.1 Internet Architecture

12.4 Evolution of Internet

12.5 Basic Internet Terminologies

12.6 Getting connected to Internet

12.6.1 Dial-Up Connections

12.6.2 ADSL Connections

12.6.3 Cable Connections

12.7 Application of Internet

12.8 Let Us Sum Up

12.9 Further Reading

12.10 Answers to Check Your Progress

12.11 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- define Internet
- describe the evolution of Internet
- illustrate the steps to getting connected to Internet
- describe the application of Internet

12.2 INTRODUCTION

Ever since the advent of computers, researchers have indulged in a continuous quest to bring the world closer through computers. This effort gave rise to the Internet. It is through the Internet that today millions of people communicate and share information, regardless of their location. This unit will focus on the basics of the Internet and also shed light upon how the Internet works along with its applications.

12.3 INTERNET

The Internet can be defined as a **network** of **globally connected computers** that is **decentralized by design.** This definition can be broken down into three parts. Let's understand each part of the definition in isolation.

It is a network: A network is a collection of computers. The Internet can also be referred to as a network because it is a collection of millions of computers.

Globally connected computers: This means that you can be connected to the Internet, regardless of your location. The Internet has brought people in the world closer by connecting computers located in the remotest of locations.

Decentralized design: The Internet has a decentralized design. That is, there is no centralized body that controls the way in which the Internet functions. The Internet does provide online services that are centrally administered, but as a whole, it would not be incorrect to say that the Internet has a decentralized design. Each computer connected to the Internet is called a *host*. The operator user of a particular host can choose from the millions of available Internet services and can also make services available through the Internet.

You can consider Internet to have the following characteristics:

- A complex network - with simplified definition as a 'network of network'
- Disorganized - Internet can be cumbersome and confusing, even for experienced users
- A decentralized system - millions of individual networks and over 200 million individual computers connected through the world
- Composed of many billions of files (web pages).
- Dynamic - changing every minute of every day. On an average, a new network is connected to the Internet every 30 minutes.
- Expanding exponentially - the Internet is growing at the rate not less than 15% per month.

In order to access the Internet, one requires the following:

- A client computer with necessary hardware and client software

- Connectivity through Internet Service Provider (ISP) for flow of data
- Host computer(s) which is also called Web server hosting the desired
- Processor of Pentium (Intel based) or AMD or Macintosh
- Network Interface Card (NIC)
- Modem, it can be an external or internal (fitted inside the computer)

The necessary software that must be found on the client computer is:

- Operating system like Windows, UNIX, LINUX or OS/2 etc.
- Web browser like Netscape, Internet explorer, Firefox etc. (it must be compatible with the operating system).

Common methods of Internet access in homes include dial-up, landline, broadband (ADSL) **(over coaxial cable, fiber optic or copper wires)**, Wi-Fi, satellite and 3G technology cell phones etc. Let us now look at the architecture of the internet.

12.3.1 Internet Architecture

It is important to understand what the term “architecture” means. The notion of network architecture was introduced during the Internet research phase by the research community that had developed the Arpanet protocols. Network architecture is a set of high-level design principles that guides the technical design of the network, especially the engineering of its protocols and algorithms. There are two commonly used architectures in Internet technology and they are: *peer-to-peer* and *client server architecture*.

Peer-to-peer: Peer-to-peer is a communication model in which each and every node is capable of sharing information and can initiate a communication session. On the Internet, peer-to-peer (referred to as P2P) is a type of transient Internet network that allows a group of computer users with the same networking program to connect with each other and directly access files from one another’s hard drives. **Napster** and **Gnutella** are examples of this kind of peer-to-peer software.

Client Server: The Client-Server Architecture is based on

the principle where the client computer requests for some data and the data are sent by the server computer through the network. The concept of *client/server* computing has particular importance on the Internet because most of the programmes are built using this design. Servers are powerful computers or processes dedicated to managing disk drives (file servers), printers (print servers), or network traffic (network servers). Clients are PCs or workstations on which users run applications. Clients rely on servers for resources, such as files, devices, and even processing power.

The following figure shows the two architectures:

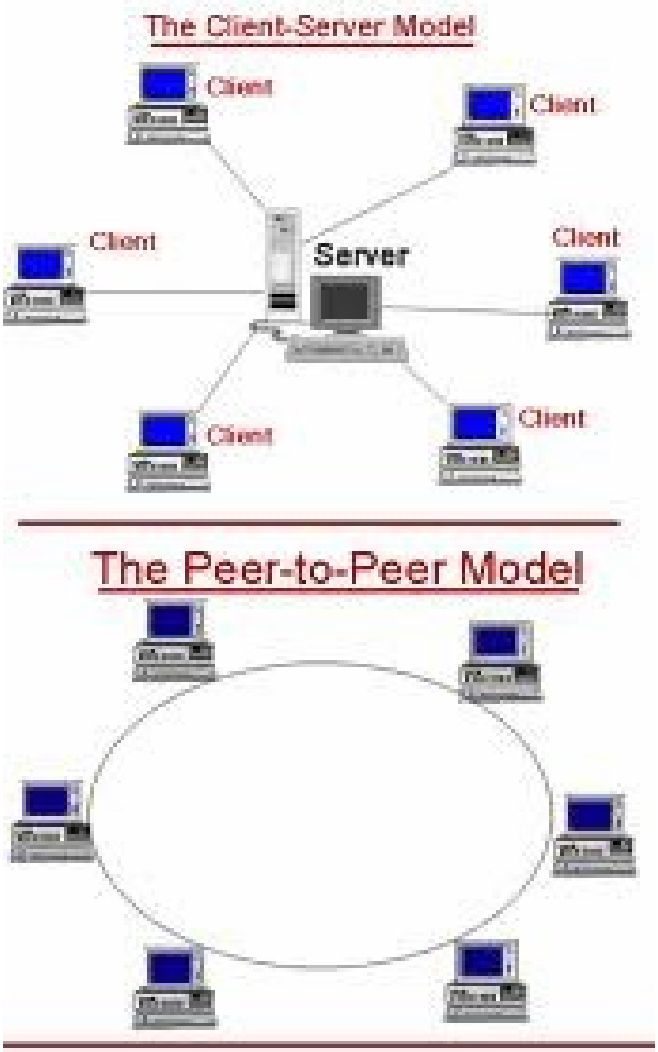


Fig. 12.1: Client Server and peer-to-peer architecture

12.4 EVOLUTION OF INTERNET

The Internet was born in the 1970s in a small government project of the United States of America called the APRANET. The APRANET had many computers connected to each other through modems or leased lines and was aimed for exchange of data between computers using the technique of packet switching. In the 1980s a new concept was introduced where a world-wide network of interconnected TCP/IP networks existed simultaneously called the Internet Protocol Suite (TCP/IP). Later the TCP/IP network was allowed access to supercomputers for research purposes.

In the 1990s the APRANET was decommissioned and the Internet was fully commercialized, which lead to the rapid growth of Internet in not only America, but also in other continents like Europe and Australia. At the same time, the Internet also spread through to Asia.

Another major for the growth of Internet came when the HTML, i.e. Hyper Text Markup Language and web browsers were developed. Together the HTML and browsers, software that helped people view web pages, graphics, and most online content, easily transformed the Internet.

Since the mid-90s many new Internet technologies were launched and well accepted which made the Internet even more popular. Some of these technologies are Email, VoIP, two-way interactive video calls, and the World Wide Web or Web in short. The Web with its collection of shopping sites, online databases, gaming websites, music and video sites, blogs, and discussion forums on any topic, instantly became popular and helped rose the Internet even more and to its present form.

12.5 BASIC INTERNET TERMINOLOGIES

Some basic internet terms and terminologies that are used more often than the others while using internet are:

URL or Uniform Resource Locator – Every website has a specific location or address.

Web Browser – We need web browsers to use the internet. A Web Browser is free client software that helps us to view web pages, graphics,

and most online content.

WWW, World Wide Web or Web – World Wide Web as the name suggests is the interactive collection of hypertext pages linked to one another. They may include text, graphics and/or links to other spots in the Web.

Homepage – This is the default setting, or the page that opens up when we start the browser.

Links – This is the hypertext which, when clicked, connects us to another site or another page within the same site. In most cases, for better visibility the links are highlighted in blue or underlined.

Web page – This is the context that is on our screen at any given time. The information on the page can be viewed by scrolling up and down.

Search Engines – One of the most common uses of internet is to find information. This is done by using search engines. It is a type of software that helps us to search the Web by typing the topic name, which we are interested in. One of the most common examples of search engines is Google.



CHECK YOUR PROGRESS

Q1: Choose the correct answer

a) In a peer-to-peer communication model a group of computers use

i) Different network program

ii) Same network program

iii) None of the above

b) Internet is

i) Complex system ii) Decentralized system

iii) Dynamic system iv) All of the above

c) Which is not an example of search engine?

i) Google ii) KKHSOU website

iii) Bing iv) Yahoo

d) Give examples of two web browsers.

Q2. What do you understand by client-server architecture?

12.6 GETTING CONNECTED TO INTERNET

In order to connect to the Internet, one requires the following:

- A client computer with necessary hardware and client software
- The connectivity through Internet Service Provider (ISP) for flow of data
- Host computer(s) which is also called Web server hosting the desired data.

The necessary hardware devices that must be had on the client computer are:

- Processor of Pentium (Intel based) or AMD or Macintosh
- Network Interface Card (NIC)
- Modem, it can be an external or internal (fitted inside the computer)

The necessary software's that must be found on the client computer are:

- Operating system like Windows, UNIX, LINUX or OS/2 etc.
- Web browser like Netscape, Internet explorer, Firefox etc. (it must be compatible with the operating system)
- Common methods of Internet access in homes include **dial-up, landline broadband (ADSL)** (over coaxial cable, fibre optic or copper wires), **Wi-Fi, satellite and 3G technology cell phones**.

We will concentrate basically on the following methods

- dial-up connections
- ADSL connections and
- Cable Connections

12.6.1 Dial-Up Connections

Dial-up connections is a type of Internet connectivity that operates through a standard telephone line. Before a person can subscribe to a dial-up service, he or she must have a computer and dial-up modem. A telephone line feeds into the modem. The modem is controlled by software in the computer; for example, the Network Connections utility that comes with Microsoft Windows operating systems. Here you can setup a profile for the ISP (Internet Service

Provider, like BSNL), which will tell the modem what phone number to call and how to communicate with the dial-up service. The ISP itself provides this information.

Upon joining a dial-up service, the subscriber chooses a username and password. Once the modem calls the phone number and makes a connection, a "*handshake*" takes place in which upon joining a dial-up service, the subscriber chooses a username and password. Once the modem calls the phone number and makes a connection, a "*handshake*" takes place in which information is exchanged between the computer modem and the remote server. The username and password are supplied by the modem. This grants the user an access through the dial-up gateway to the Internet. Dial-up connections can be very economic and are widely available; the cost per minute is comparable to that of a local phone call, or priced as a monthly plan which will include a certain amount of time. As these connections use a standard modem the hardware costs are minimal. Dial-up connections are very slow compared to other connection types. When connected to the internet the same phone line cannot be used for phone calls, so if anyone calls you when you are connected, they will get the busy signal.

Dial-up connections transfer data over an analogue line, so before the data is sent it has to be converted from digital to analogue, Likewise, when data is received it has to be converted from analogue to digital (this is what the modem does), This adds a performance overhead which affects the speed of the connection.

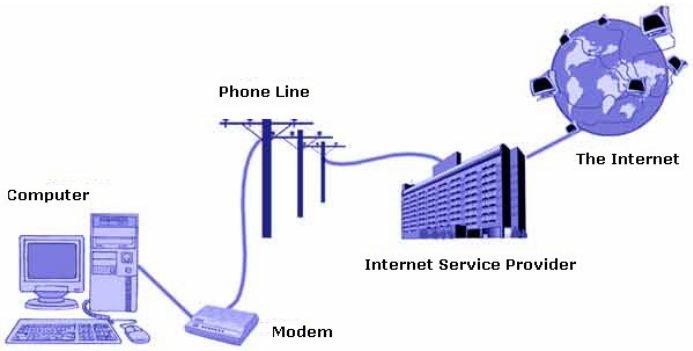


Fig. 12.2: Dial-up Connection

12.6.2 ADSL Connections

ADSL (Asymmetric Digital Subscribers Line) connections are becoming more and more widely available and can provide an excellent Internet connection. The connections work by splitting your phone line into two separate channels, one for data (Internet) and other voice (phone calls), which means you can talk on the phone and be connected to the Internet at the same time.

You will often see ADSL connection services advertised as having different speed specifications. Given below are some common configurations:

256Kbps/128Kbps or 512Kbps/128Kbps

1Mbps/256Kbps or 2Mbps/512Kbps

8Mbps/1024Kbps

Notice that there are two values to each configuration. The first figure states the download speed and the second figure is the maximum upload speed. As an example let us take the second configuration 512Kbps/128Kbps. This means that you can potentially download data at a speed of 512Kbps and upload data at 128Kbps.

Advantage of ADSL connections: ADSL technology eliminates the need for a second phone line by allowing voice and data transfer at the same time (you can use the phone as normal while connected to the Internet). Because ADSL transfers data digitally, it eliminates the usual performance overhead associated with standard dial-up connections. In other words, ADSL doesn't need to convert the data from digital to analogue and back again.

Disadvantage of ADSL connections: ADSL connections are not available to everyone. You should always ensure that you have ADSL coverage in your area. The hardware costs can be quite significant as you will need a special ADSL modem and ADSL filters to use the service. Most ISPs allow you to hire these items which can reduce the initial cost. Because ADSL connections are always on you will need a firewall to protect your PC.

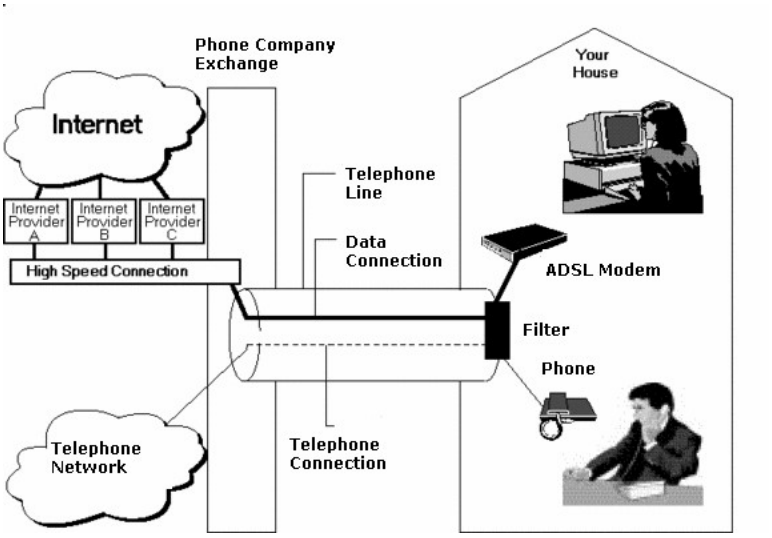


Fig. 12.3: ADSL Connection

12.6.3 Cable Connections

Cable connections are considered one of the best types of Internet connection available to the home user because they offer very fast and reliable connections with a fixed monthly fee. Cable companies usually offer different packages to suit different Internet subscribers.

The different packages will offer different speed specifications and bandwidth limits. Because a cable connection uses a totally separate medium to transfer data it doesn't affect your ability to make/ receive phone calls.

Advantage of Cable connection: Speed is a major reason for having a cable connection. Like ADSL connections, cable connections transfer data digitally, eliminating any digital/analogue conversion overhead. Cable connections are always on, eliminating long waits to make a connection.

Disadvantage of Cable connection: Cable connections are not available in every area. You will need to contact the cable company of your choice to ensure that you have coverage.

12.7 APPLICATIONS OF INTERNET

Internet is an interconnection of large number of heterogeneous computer networks all over the world that can share information back and forth. These interconnected network exchange information by using same standards and protocols. Now-a-days the application of Internet touches the every field of modern society. Let us briefly focus some of them.

Email: Email is now an essential communication tool in business. It is also excellent for keeping in touch with family and friends. The advantages to email is that it is free (no charge per use) when compared to telephone, fax and postal services.

Information: There is a huge amount of information available on the Internet for just about every subject known to man, ranging from government law and services, trade fairs and conferences, market information, new ideas and technical support.

Services: Many services are now provided on the Internet such as online banking, job seeking and applications, and hotel reservations. Often these services are not available off-line or cost more.

E-Commerce: The Internet is a very effective way to buy and sell products all over the world. Business houses use the Internet to provide product information, online support service, etc. Companies carry out online trading including advertising, selling, buying, distributing products, and providing after-sales services through the Internet.

Communities: Communities of all types have sprung up on the Internet. Institutions use the Internet for voice and video conferencing and other forms of communication that allow people to telecommute, or work from a distance. It is a great way to meet up with people of similar interest and discuss common issues. Scientists and scholars use the Internet to communicate with colleagues, to perform research, to distribute lecture notes and course materials to students, and to publish papers and articles.

Entertainment: Entertainment is another popular reason why many people prefer to surf the Internet. In fact, media of Internet has become quite successful in trapping multifaceted entertainment factor. Downloading games, visiting chat rooms, online gaming or just surfing the Web are some of the uses people have discovered. There are numerous games that may be downloaded from the Internet for free.



CHECK YOUR PROGRESS

Q3: Choose the correct answer

a) Dial-up connections are

i) Very fast ii) Fast

iii) Very slow iv) None of the above

b) Dial-up connections transfer data over

i) Analog line ii) Digital line

iii) Both analog and digitaliv) None of the above

c) In ADSL connection data and voice

i) Can be sent at the same time

ii) Can send one at a time

iii) Cannot be sent

iv) All of the above

d) Give examples of two web browsers.

Q4: Give an example of an application of internet.



12.8 LET US SUM UP

In this unit we have discussed the following :

- The Internet can be defined as a network of globally connected computers that is decentralized by design.
- There are two commonly used architectures in Internet technology and they are: peer-to-peer and client server architecture.
- The APRANET had many computers connected to each other through modems or leased lines and was aimed for exchange of data between computers using the technique of packet switching.
- Dial-up connections is a type of Internet connectivity that operates through a standard telephone line.
- ADSL (Asymmetric Digital Subscribers Line) connections work by splitting your phone line into two separate channels, one for data (Internet) and other voice (phone calls), which means you can talk on the phone and be connected to the Internet at the same time.

- Cable companies usually offer different packages to suit different Internet subscribers.



12.9 FURTHER READING

1) Jain, V.; *MS Excel 2002–Training Guide*, BPB Publication, New Delhi.

2) Lotia, M.; *World 2000–An Introduction*, BPB Publication, New Delhi.

3) Rajaraman, V. (2004); *Fundamentals of Computers*, 4th Edition, Pentice-Hall of India, New Delhi.

4) Syganski; *Introduction to Information Technology*, Pearson Education, Delhi-110092.

5) Witherspoon; *PowerPoint 2000 Fast & Easy*, BPB Publication, New Delhi.



12.10 ANSWERS TO CHECK YOUR PROGRESS

Answer to Q1:

a) ii) same network program,

b) ii) decentralized system,

c) ii) KKHSOU website,

d) Firefox and Internet Explorer

Answer to Q2: The Client-Server Architecture is based on the principle where the client computer requests for some data and the data are sent by the server computer through the network. The concept of *client/server* computing has particular importance on the Internet because most of the programmes are built using this design. Servers are powerful computers or processes dedicated to managing disk drives (file servers), printers (print servers), or network traffic (network servers). Clients are PCs or workstations on which users run applications. Clients rely on servers for resources, such as files, devices, and even processing power.

Answer to Q3: a) iii) very slow,

b) i) analogue line,

c) i) can be sent at the same time,

d) Gmail from Google and Yahoo Mail from Yahoo

Answer to Q4: An important application of internet is **Email:** It is an essential communication tool in business. The advantages of email are that it is free when compared to telephone, fax and postal services.



12.11 MODEL QUESTIONS

Q1. What is Internet? Explain why Internet has a decentralized design?

Q2. What do you mean by the Internet architecture? Describe the most commonly used Internet architecture.

Q3. Describe in brief the evolution of internet.

Q4. Define the terms Web page, Web browser, URL and Home page.

Q5. Differentiate between the dial-up and ADSL Internet connection.

Q6. Differentiate between the ADSL Internet connection and cable Internet connection.

Q7. There are many application areas of Internet. Identify four of them and describe two of them.

Q8. What is an Electronic mail? Describe the common header fields associated with an email.

Q9. Write short notes on the following:

a) Dial-up connections

b) ADSL connections

c) Uniform resource locator

d) WWW

e) Web browsers

*** ***** ***

UNIT 13: INTERNET TOOLS

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Web Browsers

13.4 Web Server

13.5 Electronic Mail

13.6 Search Engines

13.7 World Wide Web

13.7.1 Web Pages

13.8 Internet Security

13.8.1 Types of Attack

13.8.2 Malicious Software

13.9 Let Us Sum Up

13.10 Further Reading

13.11 Answers to Check Your Progress

13.12 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- discuss about web-browsers and web servers
- learn to use e-mail
- define search engine
- learn the basics of the World Wide Web
- describe different issues of internet security

13.2 INTRODUCTION

Internet is a kind of network that is built using wires or other wireless medium. It is not limited to a few places but is a network that is used worldwide, and hence can be called an international network or network of networks.

We browse through the Internet using a Web browser which is an application software used on the computer which we use to access the Internet.

13.3 WEB BROWSERS

A web browser (commonly referred to as a browser) is a software application for presenting and retrieving the information resources and traversing through the resources on the World Wide Web. The common web browsers are *Google Chrome*, *Firefox*, *Internet Explorer*, *Opera*, and *Safari*.

The first web browser was invented in 1990 by Sir Tim Berners-Lee. It was called World Wide Web and was later renamed Nexus.

Homepage is the webpage that your browser uses when it starts the webpage that appears every time you open your browser.



Fig 13.1 Web browsers

The different parts of a Mozilla Firefox browser window are shown below:



Fig. 13.2 Browser Window

- Each webpage has an address or URL. This is indicated in the *Address Bar*. If you want to open a webpage then you have to type its address on the Address Bar.
- Most web pages will have titles. You can check the title of the page by looking at the *webpage title*, it is also called title bar.
- The actual webpage itself is displayed in the *Main Webpage Window*. It is cut off in the picture above, but would normally fill most of the screen.
- You can reload a page by hitting the "Refresh" button. This will update it to the latest version of the page.
- If a webpage takes a long time to load you can stop loading it by hitting the "Stop" button.
- Through the "Search Box" you can search any term on the Internet.

In a network such as the World Wide Web, all the computers are divided into two categories: *client* and *server*. These web browsers are used while communicating with the web server in a network such as World Wide Web. A *web client* is software that accesses a web server by sending requests and processing the resulting response. The Fig. 7.3 shows how a web server and a web client is connected to a network and what components are actually held by them for communicating each other.

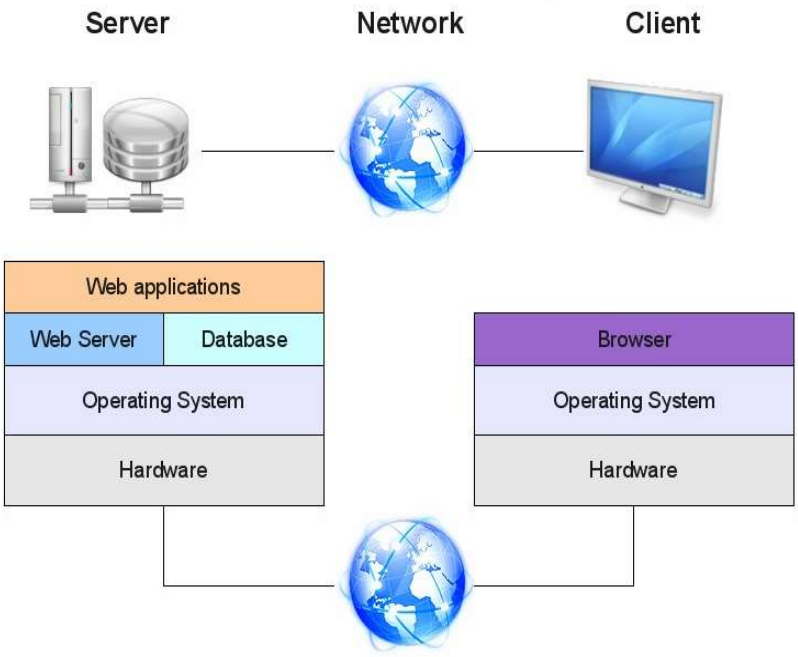


Fig. 13.3: A Web Server and a Client

The web server is the computer on the Internet that stores the web pages, images and other web resources. When we click a hyperlink or type a URL into the web browser, a request for the web page is made by the web client to the web server. The server then receives the request and responds by sending the HTML page to the browser. The browser then interprets and displays the page.

The client-side processing is carried out by the **Web browser**. The browser consists of an interface and processing software. ***Web browsers*** are programs running on the client. They are called browsers because they allow the users to browse the resources available on the servers. We can search for and view different kinds of information on the Web with browsers. The main purpose of a web browser is to make the information resources in the Web available to the users. A browser allows you to view the documents written in HTML (Hyper Text Markup Language). These documents are called *web pages*.

13.4 WEB SERVERS

Server software runs exclusively on server machines, handling the storage and transmission of documents. In contrast, client software such as Netscape, Internet Explorer, etc. runs on client computer that access, translates and displays documents.

A web server is a software package that processes HTML documents for viewing by Web browsers that runs on client computers. Web servers can be run from any hardware platform. There are servers that are specifically designed for Macintosh computers, PCs, Silicon Graphics, and various other platforms, including the Amiga. It can also run under several operating systems, including MS Windows, Windows NT, Unix, Linux etc.

The web server is responsible for document storage and retrieval. It sends the document requested (or an error message) back to the requesting client. The client interprets and presents the document. The client is responsible for document presentation. The language that web clients and servers use to communicate with each other is called the Hypertext Transfer Protocol (HTTP). All web clients and servers must be able to speak HTTP

in order to send and receive hypermedia documents. For this reason, web servers are often called HTTP servers, or HTTP Daemons (HTTPD).



CHECK YOUR PROGRESS

Q1. Distinguish between web server and web browser.

.....

Q2. Explain the contents of web browser window.

.....

13.5 ELECTRONIC MAIL

Electronic mail, most commonly referred to as ***email*** or ***e-mail*** is a method of exchanging digital messages from a sender to one or more recipients. Modern email operates across the Internet or other computer networks.

Internet email messages consist of two major sections:

1. **Header** - Structured into fields such as From, To, CC, Subject, Date, and other information about the email.
2. **Body** - The basic content, as unstructured text; sometimes contains a signature block at the end. This is exactly the same as the body of a regular letter.

Common header fields for email include:

- **To:** This contains the email address or addresses and optionally names of the message's recipients.
- **Subject:** This contains a brief summary of the topic of the message.
- **Bcc** (Blind Carbon Copy): This contains the addresses added to the delivery list but not (usually) listed in the message data, remaining invisible to other recipients.
- **Cc** (Carbon Copy): This contains the addresses added to the delivery list listed in the message data.

Message body–

Most modern graphic email clients allow the use of either plain text or HTML for the message body at the option of the user. HTML email

messages often include an automatically generated plain text copy as well, for compatibility reasons.

A typical e-mail window is shown below:

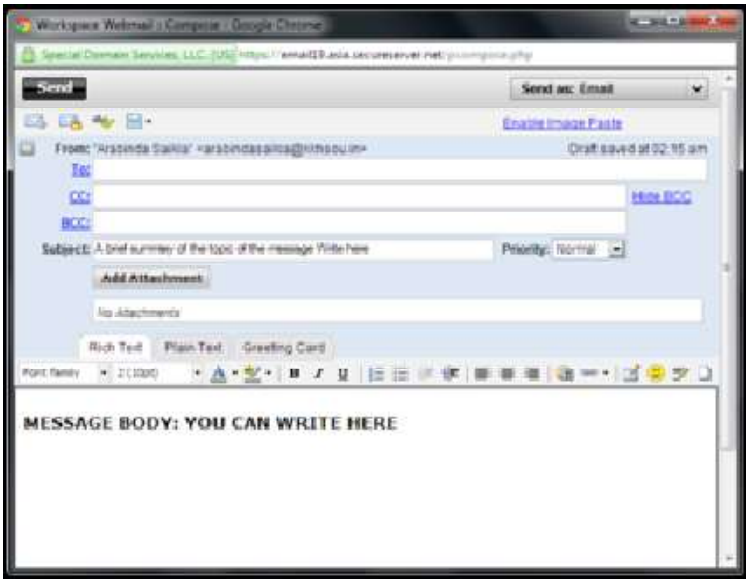


Fig. 13.4 Email Window

The text written in the message body part can be formatted; it means you can change the font size (text size), font type, make change the alignment of the text, can be converted to bold text or italic text etc. You can also attach another document along with the email written by you by clicking the button *"Add Attachment"*. After composing the email click on the **"Send"** button to finally send it to destination and within a second it will be delivered to the recipient's mailbox.

Some examples of Email services are Gmail, Yahoo Mail, Rediff Mail, Hotmail etc among many others.

13.6 SEARCH ENGINES

The Web is quickly becoming a vast information space that needs search tools to find information efficiently. The search engines can be defined as the tool created for finding, classifying and storing information about various Websites on the Internet. These can help in locating information of relevance on a particular subject by using various search methods.

A search engine is a service that indexes, organizes, and often rates

and reviews Web sites. Search engines are online utilities that quickly search thousands of Web documents for an entered word or phrase. Search engines are usually accessed through Web browser software. Each search engine provides different searching options and has its own look.

A web search engine can also be defined as a software system that is designed to search for information on the World Wide Web. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). The most commonly used search engines are shown below:



Fig: 13.5 Examples of Search Engines

You may wonder as to how the search engines find the answers to a query so quickly. Actually it is a four-step process and the steps are:

- ***Crawling:*** the Web, following links to find pages.
- ***Indexing:*** the pages to create an index from every word to every place it occurs.
- ***Ranking:*** the pages so that the best ones show up first.
- ***Displaying:*** the results in a way that is easy for the user to understand.

Given below is a list of important search engines which you can use for searching the web.

Name	URL
Google	http://www.google.com
Yahoo	http://www.yahoo.com
Altavista	http://www.altavista.com

Excite	http://www.excite.com
Hotbot	http://www.hotbot.com
Infoseek	http://www.infoseek.com
Lycos	http://www.lycos.com
Northern Light	http://www.northernlight.com
Webcrawler	http://www.webcrawler.com

13.7 WORLD WIDE WEB

The **World Wide Web-** known as **WWW** or **W3** or simply, the **Web** - is one of several Internet resource discovery tools developed to help people publish, organize and provide access to information on the Internet. The Web was first developed by Berners Lec in 1989 while working at CERN, European Particle Physics Laboratory in Switzerland, and has now become the most powerful, and popular, resource discovery tool on the Internet. The WWW can be defined as a hypertext, multimedia, distributed information system that provides links to hypertext documents, as well as to many other Internet tools and databases.

The most important things required to understand the underlying mechanism of the Web are the client-server architecture, the Hypertext Transfer protocol (HTTP), Universal Resource Locators (URLs) which we have already seen very briefly and the another important resource is Hypertext Markup Language (HTML). The most common method of creating a web document is through the use of Markup Languages. Most of these are created by adding a set of formatting code to ASCII text to show fonts, justifications, links, etc. on the web. A Markup language is a language that uses tags to indicate a change in presentation style or a change in content type.

By now, you can imagine that the web ***documents*** are referring to each other by ***links***. This simple view is known as the ***hypertext*** paradigm. The reader sees on the screen a document with sensitive parts of text representing the links. A link is followed by mere pointing and clicking.

13.7.1 Web Pages

A web page is nothing but a hypertext document which is suitable for the World Wide Web and can be accessed through a web browser and displayed on a monitor or mobile device. Web pages are usually written in HTML or XHTML and may contain static contents or dynamic contents. Web pages provide navigation to other web pages via ***hypertext links***. Hypertext is a system of organizing, navigating, distributing and publishing information electronically. A web page of the website of Krishna Kanta Handiqui State Open University is shown below:

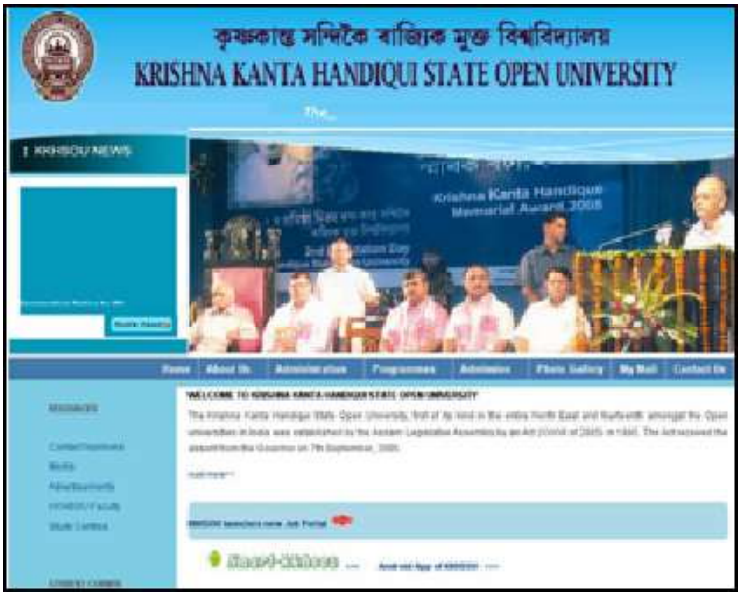


Fig 13.6 Webpage of KKHSOU

Contents of a Web Page:

A web page may contain various types of information, which can be divided into two main groups - *perceived information* (visible to the website visitor) and *hidden information* (hidden from the visitor's eye).

Depending on the purpose and target audience of a website, its perceived information could be textual, non-textual and interactive.

The non-textual information includes static images (e.g. GIF, JPEG, PNG or TIFF), animated images (e.g. animated GIF, Flash,

Shockwave, Java Applet), vector formats (e.g. Flash, SVG), audio file formats (MIDI, WAV, MP3, Java Applets), video files (WMV, RM , FLV, MPG, MOV) etc. Interactive content on web pages could be displayed via DHTML, interactive illustrations, DHTML based buttons. *Hyperlink* or *link* is a navigational element in a web page through which navigation between the content on separate pages is possible.

The hidden information on web pages includes comments, metadata, charset details, CSS visual specifications, scripts (e.g. the interactivity focused JavaScript) etc.

Depending on the type of information contained in a web page, web pages can be divided into three categories:

- ***dynamic web page***
- ***static web page***
- ***active web page***

A ***dynamic web page*** is a kind of web page that has been prepared with fresh information (content and/or layout), for each individual viewing. It is not static because it changes with the time (ex. a news content), the user (ex. preferences in a login session), the user interaction (ex. web page game), the context (parametric customization), or any combination of the foregoing.

A web page is **static**, if it does not change its behaviour in response to external actions. A static web page remains the same, i.e. static, for all its life, unless and until someone manually changes its contents. Examples of some static web pages are some home pages, page specifying the contact details, etc., which do not change that often.

An **active web page** is a web page that executes a program on the client machine, i.e. web browser. It means the web page shown by a web browser is the program currently executed by the client and hence that page is called an active web page.

Creating a Web Page:

A web page can be created in many different ways. There are a lot of web pages created by simply using HTML code which are simple and not very interactive. Advanced web pages can be

created by using a programming language which is also known as scripting languages, such as ***JSP, PHP, Python*** or ***Perl***.

How do web pages work?

The information on a web page is displayed online with the help of a web browser, which connects with the server where the website's contents are hosted through the Hypertext Transfer Protocol (HTTP). For instance, if you look at the URL of the web page you are on at the moment, you could notice the prefix 'http://', which tells the browser what protocol to use to execute the particular URL request.

Each web page's contents are usually presented in HTML or XHTML format, which allows for the information to be easily structured and then quickly read by the client's web browser. With the help of CSS (Cascading Style Sheets), designers can precisely control the web page's look and feel as far as the layout typographic elements, colour scheme and navigation are concerned. CSS instructions can be either embedded within the HTML web page (valid for that particular page) or can be included in a separate external file (valid for the whole site).



CHECK YOUR PROGRESS

Q3. Give the common header fields for email.

.....

.....

Q4. Explain in brief the working of a search engine. Also give an example.

.....

13.8 INTERNET SECURITY

Internet security concerns with security to individual or computer from attacks related to the internet. Internet security is one of the biggest concerns of today's internet world. Internet allows us to exchange information through unsecure channels and this may cause attacks like identity theft,

data theft among many other attacks. These attacks are present even though different data protection methods are being used like data encryption, digital signatures.

13.8.1 Types of attack:

There are many different types of attacks. Let us look at the most common groups of attacks like passive attacks, active attacks, distributed attacks, close-in attacks and exploitation attacks by insiders.

Passive Attack: A passive attack includes monitoring traffic in the computer system to get important data or personal information like passwords. Passive attack results in disclosure of information to the attacker without the consent of the user.

Active Attack: In an active attack, the attacker tries to break into the defences of the computer systems. This type of attack can be implemented by using viruses, worms or Trojan horse and result in modification of data or denial-of-service attacks.

Distributed Attack: In this type of attack the attacker uses software like Trojan horse to get inside the computer and then this software is later distributed to other computer systems.

Close-in Attack: In close-in attack someone attempts to get physically close to network components, data, and systems in order to learn more about a network.

Insider Attack: In insider attacks someone from the inside intentionally steal or manipulate information, pass sensitive information to outsiders and deny access to authorised users.

13.8.2 Malicious Software:

Some of the malicious software used in performing some of the above attacks to the computer system is listed below:

Malware: Malware is short for malicious software and are designed to damage a system. Examples are viruses and Trojan horses.

Viruses: One of the most well known Internet security problem, viruses is software program written to disrupt computer systems and steal or disrupt data.

Worms: Worms are more dangerous than viruses as they cannot be detected by anti-virus software. Worms replicate themselves and can spread themselves through the network to perform malicious tasks.

Spyware: Spyware refers to software that collects information about the user of a computer by monitoring its activities and sending the information to others without the users consent.

Trojan horse: Trojan horse is a kind of software that pretends as harmless software but in reality steals data and damages the computer system.

Anti-virus software:

Viruses are the most common way to harm a computers security. Anti-virus software is a type of software that is used to protect the computer systems from any computer virus attacks from the internet world. Some of the most well-known anti-viruse software are:

- Norton Anti-virus
- Avast Anti-virus



CHECK YOUR PROGRESS

Q5. What are the different types of internet attacks?

.....

Q6. Give two examples of anti-virus software.

.....



13.9 LET US SUM UP

In this unit we have discussed the following :

- A **web browser** is a software application for presenting and retrieving the information resources and traversing through the resources on the World Wide Web.

- **Homepage** is the webpage that your browser uses when it starts the webpage that appears every time you open your browser.
- A **web server** is a software package that processes HTML documents for viewing by Web browsers that runs on client computers. Web servers can be run from any hardware platform.
- **Electronic mail**, most commonly referred to as email or e-mail is a method of exchanging digital messages from a sender to one or more recipients.
- A web search **engine** can also be defined as a software system that is designed to search for information on the World Wide Web.
- The World **Wide Web- known as WWW or W3** or simply, the Web - is one of several Internet resource discovery tools developed to help people publish, organize and provide access to information on the Internet.
- In a network such as the **World Wide Web**, all the computers are divided into two categories: client and server. The client-side processing is carried out by the Web browser.
- A **web page** is nothing but a hypertext document which is suitable for the World Wide Web and can be accessed through a web browser and displayed on a monitor or mobile device. **Web pages** can be divided into three categories: dynamic web page, static web page, and active web page.
- Internet security concerns with security to individual or computer from attacks related to the internet. There are many different types of attacks like passive attacks, active attacks, distributed attacks, close-in attacks and exploitation attacks by insiders.



13.10 FURTHER READING

1) Jain, V.; *MS Excel 2002–Training Guide*, BPB Publication, New Delhi.

2) Lotia, M.; *World 2000–An Introduction*, BPB Publication, New Delhi.

3) Rajaraman, V. (2004); *Fundamentals of Computers*, 4th Edition, Pentice-Hall of India, New Delhi.

4) Syganski; *Introduction to Information Technology*, Pearson Education, Delhi-110092.

5)Witherspoon; *PowerPoint 2000 Fast & Easy*, BPB Publication, New Delhi.



13.11 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1: A Web server is a computer that delivers (serves up) Web pages. Every Web server has an IP address and possibly a domain name. For example, if you enter the http:/ www.pcwebopedia.com/index.html in your browser, this sends a request to the server whose domain name is pcwebopedia.com. The server then fetches the page named index.html and sends it to your browser. Web browser, a software application used to locate and display Web pages which is found on a client computer. The main function of the Web browser is to make the information resource available to the users. The two most popular browsers are Netscape Navigator and Microsoft Internet Explorer. Both of these are graphical browsers, which mean that they can display graphics as well as text.

Ans. to Q. No. 2: The different parts of a Mozilla Firefox browser window are: Each webpage as an address or URL. This is indicated in the *Address Bar*. If you want to open a webpage then you have to type its address on the Address Bar. Most web pages will have titles. You can check the title of the page by looking at the *webpage title*, it is also called title bar. The actual webpage itself is displayed in the *Main Webpage Window*. It is cut off in the picture above, but would normally fill most of the screen. You can reload a page by hitting the "Refresh" button. This will update it to the latest version. If a webpage takes a long time to load, you can stop loading it by hitting the "Stop" button. Through the "Search Box" you can search any term on the Internet.

Ans. to Q. No. 3: The common header fields for email include: **To:** This contains the email address or addresses and optionally names of the message's recipients. **Subject:** This contains a brief summary of the topic of the message. **Bcc** (Blind Carbon Copy): This contains the addresses added to the delivery list but not (usually) listed in the message data, remaining invisible to other recipients. **Cc** (Carbon Copy): This contains the addresses added to the delivery list listed in the message data.

Ans. to Q. No. 4: The working of a search engine is a four-step process and the steps are as follows: **Crawling:** the Web, following links to find pages; **Indexing:** the pages to create an index from every word every place it occurs; **Ranking:** the pages so that the best ones show up first; **Displaying:** the results in a way that is easy for the user to understand.

Ans. to Q. No. 5: The different types of attacks are: **Passive Attack:** A passive attack includes monitoring traffic in the computer system to get important data or personal information like passwords. **Active Attack:** In an active attack, the attacker tries to break into the defences of the computer systems. **Distributed Attack:** In this type of attack the attacker uses software like Trojan horse to get inside the computer and then this software is later distributed to other computer systems. **Close-in Attack:** In close-in attack someone attempts to get physically close to network components, data, and systems in order to learn more about a network. **Insider Attack:** In insider attacks someone from the inside intentionally steals or manipulates information, pass sensitive information to outsiders and deny access to authorised users.

Ans. to Q. No. 6: Two example of anti-virus software are: Avast Antivirus and Norton Antivirus.



13.12 MODEL QUESTIONS

Q1. Describe World Wide Web and its functions.

Q2. Describe Web browser along with their features.

Q3. What is a Search Engine and how does it work?

Q4. What is an Electronic mail? Describe the common header fields associated with an email.

Q5. What is Web server application? How is it different from a Web browser?

Q6. Describe how the Web browser communicates with the web server.

Q7. Explain internet security in brief

Q8. Write short notes on the following:

a) World Wide Web b) Email

c) Search Engines d) Malicious Software

*** ***** ***

UNIT 14: MANAGEMENT ISSUES IN MANAGEMENT INFORMATION SYSTEM (MIS)

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Concept of MIS

14.4 Information Security and Control

14.5 Quality Assurance

14.6 Ethical and Social Dimensions

14.7 Intellectual property rights as related to IT services/IT products

14.8 Managing global Information systems

14.9 Let Us Sum Up

14.10 Further Reading

14.11 Answers to Check Your Progress

14.12 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit you will b able to :

- discuss information security and control
- learn quality assurance
- describe ethical and social dimensions
- discuss Intellectual property rights as related to IT services/IT products
- discuss managing global information systems

14.2 INTRODUCTION

In the previous unit we have learnt about managing IT functions in an organization. In this unit, we will learn about how information security and control is important in an organization, the meaning quality assurance, social and ethical dimensions needs to be considered in an organization,

discuss the intellectual property rights as related to IT products and how does it help the organizations, the different challenges that businesses have to face while managing global information system.

Information Technology and computers have changed business processes and the way businesses operate. Thus in this Information Age, "Information" has emerged as one of the most valuable and sought after resource conferring competitive advantage on the organizations using it. Information systems has helped the organizations to have a competitive edge over their competitors in terms of cost savings, increased productivity and revenue gains. This has raised certain issues in the areas of security, privacy, confidentiality, destruction and theft of information and information systems. These security threats can be from both internal and external sources. Thus industries need to keep their information secure. It is interesting to know that according to various studies as much as 80-95% of the security threats come from internal networks. Thus, in other words in today's business information security and control is very important.

14.3 CONCEPT OF MIS

Management Information Systems (MIS) is the study of people, technology, organizations, and the relationships among them.MIS is a people-oriented field with an emphasis on service through technology.

Let us discuss MIS in the following ways:

To the managers, MIS is an implementation of the organizational systems and procedures.

To a programmer it is the dealing with file structures and file processing.

As MIS stands for Mangement Information System , we discusses the three terms in this way that **System** suggests integration and holistic view, **Information** stands for processed data, and **Management** is the ultimate user, the decision makers.

Management information system can thus be analyzed as follows:

- Management covers the planning, control, and administration of the operations of a concern. The top management handles planning; the middle management concentrates on controlling; and the lower

management is concerned with actual administration.

Information

- Information, in MIS, means the processed data that helps the management in planning, controlling and operations. Data means all the facts arising out of the operations of the concern. Data is processed i.e. recorded, summarized, compared and finally presented to the management in the form of MIS report.

System

- A system is made up of inputs, processing, output and feedback or control.

Thus MIS means a system for processing data in order to give proper information to the management for performing its functions.

14.4 INFORMATION SECURITY AND CONTROL

The term ***Information Security*** refers to the policies and procedures that are used to protect the data and information systems from unauthorized access, use, disclosure, modification and destruction of data. ***Control*** refers to the methods and procedures that are used to ensure the safety of the organization's assets, the accuracy and reliability of the data and operational adherence to the organizational standards.

Businesses deal with large amounts of data and when such data and information are stored in electronic form and are accessible over networks they become vulnerable to different kinds of threats. The figure below shows some of the most common threats to information systems.

In a client-server environment, as illustrated in the above figure, security challenges and vulnerabilities can occur at each of the client, server and the corporate database access points and also in the communication between these layers. On the client side the system may be used without authorization, or the user may introduce some errors. The system may be hacked and vital information may be stolen or altered. Some crackers also attack the systems of the organizations to bring them down and make them ineffective. Both hacker and a cracker intends to gain unauthorized access to the computer systems but a cracker is a hacker with a criminal intent.

Cyber vandalism is also another threat to the organizations. It is a type of malicious behavior that causes damage to data and computers and potentially disrupt the services of the organizations.

Even during transmission of data over the networks the data may be destroyed or altered. As the systems nowadays are highly networked, they are constantly at a threat from malicious softwares. These malwares poses a variety of threats such as virus, worms and Trojan horses. Viruses and worms may infect data and programs in the computers and cause heavy damage to organizations. They may enter the system from the downloaded files from Internet, from emails or instant messaging or from infected machines. Spywares and Keyloggers are also posing threats to the organizations. Power failures and natural disasters like flood, fire or others may also disrupt the normal functioning of a computer system. The growing use of smart phones by corporate executives is adding to the problem of information security as these networks are more vulnerable. There is a greater risk of information security if the organization network is a part of the Internet.

14.5 QUALITY ASSURANCE

Information is an organizational resource. Quality of information in an organization is very important for the proper functioning of the organization. The increased information requirement day by day has also increased the responsibilities of the quality assurance departments. Low quality information will adversely affect the performance of the organization as it directly affects the decision making. Therefore the quality assurance of information products is critical. Quality refers to offering the information service in a way that meets the organizational needs.

Quality assurance generally means any systematic process of checking whether the product or service that is developed is meeting the specified requirements or not. There are management as well as users duties to quality control and assurance.

The management information system control and quality assurance duties includes the approval of the information system plan and budget, major software and hardware systems approval and the information systems procedures for quality assurance and control.

Quality assurance duties of the users are as participants in application and database development and maintenance. This requires knowledge of the context data. That is the users should be able to identify the invalid data.

In the present competitive world, customers are the kings and every organization is striving to give better quality products and services to attract the customers. A quality product means that product is better than the other similar products in the market. Companies with better quality products can gain a competitive edge over other companies in the market. However from information point of view quality means focusing on the production and delivery of timely, accurate and reliable information. Japanese companies have emphasized product/service quality in their organizational processes through total quality management (TQM). According to Edward Deming, who coined this term, it is just not a technique of quality control but a philosophy of quality management where every organizational member is involved.

The basic beliefs that provides the foundation of TQM are

i. Quality is defined by customers
ii. It is achieved by the management
iii. It's the whole organization's responsibility.

Quality assurance is a significant issue and there are many conditions for quality control: organizational commitment to quality, processing the information according to operations of the organization and quality of the applications that are used in the organizations should be maintained.



CHECK YOUR PROGRESS

Q1. Fill in the blanks:

1. A _____ is a hacker with a criminal intent.
2. Policies and procedures that are used to protect the data and information systems from unauthorized access, use, disclosure, modification and destruction of data is _____.
3. During transmission of data over the networks the _____ may be destroyed.
4. Viruses and _____ may infect data and programs in the computers and cause heavy damage to organizations.
5. _____ generally means any systematic process of checking whether the product or service that is developed is meeting the specified requirements or not.
6. _____ is a philosophy of quality management where every organizational member is involved.

14.6 ETHICAL AND SOCIAL DIMENSIONS

With the changes in the field of Information Technology and greater use of computers in the organizations, there has been a significant change in the nature of the work which has given rise to social and ethical issues. Today's managers are concerned much about the social and ethical dimensions as they emerge from the societal context. Information system is a part of the societal system. Both these dimensions are interrelated. Let's discuss each separately.

1. **Ethical dimension:** Ethics are the principles that govern the behavior of a person or an organization for conducting any activity. It is thus concerned with what is right or wrong in the behavior. Ethics in Management Information Systems seeks to safeguard individuals and society by proper use of technology. Ethical dimension is important to consider for the managers to take any decisions because many things are related to use of information systems in organizations. Ethical dimensions include obligations to management, society, and employer and also the country. New ethical questions are being raised by use of information systems as they have created various opportunities. Improvement in technology has helped the society to progress but at the same time the number of crimes has also increased which in turn has threatened the cherished social values.

Advancement in networking and information technology has given rise to two types of ethical issues which pose challenges to those who are concerned with information systems.

- Privacy rights
- Intellectual property rights

Information technology allows the information to be gathered, stored, combined and shared on a scale never seen before. It has changed the dynamics of organizations.

Mason foresaw two threats to privacy: growth of Information technology and increased value of information in decision making. Privacy rights in case of organizations are concerned with the employees, customers, suppliers, financiers and share holders. It means their privacy should be free from interference and surveillance from other individuals or organizations. Internet cookies monitor the actions of the users in the Internet, and there is the Customer Relationship Management software that allows the companies to keep a track of the detailed behavior of the users. There is a saying the Information is Power. According to Simon, increase in information reduces uncertainty. Thus increase in global competitiveness among the companies has made the value of information increasing day by day. Thus, the information technology has threatened the privacy rights by making the invasions cheap, effective and profitable.

Intellectual property is the creations of human minds or organizations. Such properties are in the form of patents, copyrights and trade secrets. As per the Intellectual property rights, the creator of the intellectual property has the sole right to use that property.

2. **Social Dimension:** Social dimensions involve all those areas which affects the society as a whole. There is tremendous growth in business and the companies such as Facebook, Google and others would not have existed without information technology.Basically there are three social issues that are of concern.
    - Employment challenges
    - Quality of the work life
    - Health issues

Information technology is both a boon and a bane to the society. Society has much progress in different fields due to the introduction of information technology but at the same time it has also created unemployment problems. Computers have replaced man in jobs.

Quality in work life has also been affected. Social isolation and self estrangement has emerged from Information technology. The social bonding between people has loosened and gadgets has found a prime place in family leisure times. Virtual office concepts has created lack of belongingness among the employees. There has also developed a psychological fear amongst the employees of losing their jobs.

Extensive use of computers in work place has caused many health related problems like stress, eyes strain, radiation exposure, blood pressure, blood sugar related problems and others.

14.7 INTELLECTUAL PROPERTY RIGHTS AS RELATED TO IT SERVICES/ IT PRODUCTS

Intellectual property are created using the knowledge gained by people in their areas and Intellectual property rights means those individuals who have created such property has the sole right to use them. Thus, property that is the result of thought, namely intellectual activity, is called Intellectual

property. It stimulates and promotes future creativity. Intellectual property law also attempts to checks that the owner's right to reap the rewards of their efforts are balanced against the public need for a competitive market.

There is no doubt that the extensive use of information technology in the companies and institutions has led to increased competition in the global market which in turn has led to availability of better quality products and services in the market. However, this also has led to invasion of the intellectual property rights. The contemporary software poses severe challenges to such rights and has created social and ethical issues. With digitalization, it has become much easier for things to be altered, replicated and transmitted over the digital mediums. Piracy has become common today because of the ease of doing things with Internet.

Certain rights are granted by Intellectual property rights. For example, authors can prevent others from copying their books, and the owner of a patented invention can prevent others from making, using or selling the product.

After a period of time, these exclusive rights may be lost or taken from the owner and given to the public. Globalization, digital data and Internet have all contributed to a greater need. However, the intellectual property rights do not prevent anyone from stepping on the owners' rights but does give the owner the right to take the trespasser to the court. The owner acquires exclusive rights and can file a lawsuit to stop others who use the property without authorization.

There are different areas of intellectual property protection.

- Copyrights
- Patents
- Trade marks

1. **Copyrights:** Copyright is a statutory grant that protects the expression of literary or artistic works. It is granted to the authors of original work including literary, dramatic, musical, artistic and other works. So books, songs, jewelry, play, movies, sculptors, paintings, choreographic works and even computer software can be protected by copyright. Copyright protection is also available for marketing materials, advertising copy

and cartoons. Nevertheless some works like titles, names, short phrases, ingredients list are not protected by copyright. Also copyrights do not protect ideas or facts; it protects only the unique way in which the ideas or facts are expressed. For example, copyright may protect an author's science fiction novel about the conversation between a human and a space alien but the author cannot stop others from using the underlying idea of such intergalactic conversations.

In case of individuals it protects their works from copying by others for whatsoever reason during their lifetime and also an additional 70 years after their death. For corporate owned works the copyright is for 95 years. The Copyright Act, 1957 which been amended by Copyright Amendment Act, 2012 governs the copyright law in India. The Copyright laws have been made so as to encourage creativity and authorship by ensuring that such creative minds receive the financial benefits from their works. In 1980, the Computer Software Copyright Act was passed. This act provides for protection of the software codes and for copies of the original sold in the market. This act is covered under the Copyright Act 1957.

2. **Patents:** Patents are exclusive rights granted for inventions for a minimum period of 20 years from the date of filing the patent. It gives right to the patent holder to prevent others from selling and making the patented invention for such period. The main intention behind patent provisions is to ensure that the inventors get the full benefit, both financial and others, and also to make use of their inventions by providing details to those who wanted to use their inventions by getting a license from the patent's owner.

Generally, patents are of three types: utility, design and plant patents. Referring to patent commonly refers to the Utility patent, which allows the creator of an invention to stop others from making, using or selling that invention for the patented time.

Design patents include the patents for new and original designs that ornament a manufactured article. For example, new shape of a car or flashlight would qualify for design patents. Plant patents are the

least frequently used type of patent – granted for any new asexually reproducible plants (such as flowers or plants reproducible by grafting or cloning).

3. **Trademark:** A trademark is any distinctive sign that is used to differentiate the goods and services of one company from others. It may be a word, phrase, logo, graphic symbol or any other sign that identifies a business goods and services from the others. An important goal of trademark is to prevent the customers from being confused in the marketplace. Another goal of trademark law is to prevent a business from trading off another business's goodwill. A trademark is used for the marketing of a product.

   Trademarks provide guarantee of quality and consistency of the product and service that they identify. A great amount of time, effort and money is spent by the companies in gaining the confidence of the consumers on their marks.

   In addition to words, trademarks can also consists of slogans, as shown in the example below for McDonald's.



14.8 MANAGING GLOBAL INFORMATION SYSTEMS

Information technology is playing an important and increasingly significant role in the world wide marketplace. Radical changes have occurred in the organizations due to new technologies. Majority of the world's large organizations are now engaged in international business activities and are earning great profits out of it.

A global information system refers to an information system which collects data, processes, stores and distributes data in a global context. Multinational organization uses global information systems to manage the information requirement of its international businesses. The needs of business survival and the urge to expand to new markets are some of the reasons that the organizations are becoming global. Today the international businesses have adopted the concept of "Think Globally, Act Locally". The strategic planning of such organizations should be global followed by a local flavor. By branching out to doing business in many countries, the businesses can continue growing and at the same time reduce the risks that it might face, even if conditions in one country change drastically.

When implementing information systems globally, the organizations have many objectives and face challenges in doing so. There are many challenges in political, geographical, economic and cultural dimensions that the businesses have to face to grow and sustain in the global marketplace.

Some of the challenges of the global information systems may be indicated as given below:

- Technological barriers
- Regulations and Tariffs
- Electronic payment mechanisms
- Different measurement standards
- Culture and language
- Time and distance
- Currency and legal barriers

Different business strategies are adopted by the organizations to operate global business. Such strategies are basically related to the control and decision-making. Proper strategy is important for a company to function effectively in different countries and thus strategies needs to be developed effectively to manage them effectively.

Although many different strategies can be followed when involving in international businesses, three most important are global strategy, multinational strategy and international strategy.

The multinational strategy is used when the company is involved in a number of markets beyond its home country. For each country the strategy should be different because of the difference in the demands of the customer needs and the competition in that market. In multinational strategy, the company believes in centralized financial powers but decentralization of production, marketing, sales etc. the companies in such strategy take the advantage of the resource availability and the market potential. Examples of companies using such strategy are Hewlett-Packard, Intel, General Motors etc.

The International strategy has been designed for the home market but it is also considered suitable for the international markets. International food companies such as McDonald's, Kentucky Fried Chicken (KFC) and Coca-Cola fits into this type. Such companies develop their products in the mother country and then market, and even produce the goods globally through franchisees or their own production units.

In the global strategy, the companies treat the world as one market and one source of supply with a little variation. These are transnational in approach.



CHECK YOUR PROGRESS

Q2. Fill up the blanks:

a. Principles that govern the behavior of a person or an organization for conducting any activity are ……

b. Ethical dimensions include…… to management, society, and employer and also the country.

c. Two types of ethical issues are …….. and ……

d. Two threats to privacy according to Mason are ……and …….. in decision making.

e. Increase in information for decision making reduces ……..

f. ……is the creations of human minds or organizations.

g. ……is granted to the authors of original work including literary, dramatic, musical, artistic and other works.

h. Computer Software Copyright Act was passed in ……..

i. Three types of patents are……, …….. and ……..

j. A…… is any distinctive sign that is used to differentiate the goods and services of one company from others.



14.9 LET US SUM UP

In this unit we have learned the following :

1. Information Security refers to the policies and procedures that are used to protect the data and information systems from unauthorized access, use, disclosure, modification and destruction of data.
2. Control refers to the methods and procedures that are used to ensure the safety of the organization's assets, the accuracy and reliability of the data and operational adherence to the organizational standards.
3. Hacker and a cracker intend to gain unauthorized access to the computer systems but a cracker is a hacker with a criminal intent.
4. Viruses and worms may infect data and programs in the computers and cause heavy damage to organizations.
5. Quality of information in an organization is very important for the proper functioning of the organization
6. Quality assurance generally means any systematic process of checking whether the product or service that is developed is meeting the specified requirements or not.

7. Japanese companies have emphasized product/service quality in their organizational processes through total quality management (TQM).
8. Edward Deming had coined the term total quality management
9. Ethics are the principles that govern the behavior of a person or an organization for conducting any activity
10. Ethical dimensions include obligations to management, society, and employer and also the country.
11. Two types of ethical issues which pose challenges to those who are concerned with information systems are Privacy rights and Intellectual property rights
12. Mason foresaw two threats to privacy: growth of Information technology and increased value of information in decision making.
13. Intellectual property is the creations of human minds or organizations. Such properties are in the form of patents, copyrights and trade secrets.
14. Intellectual property rights mean those individuals who have created such property has the sole right to use them.
15. Intellectual property law also attempts to checks that the owner's right to reap the rewards of their efforts are balanced against the public need for a competitive market.
16. Copyright is a statutory grant that protects the expression of literary or artistic works. It is granted to the authors of original work including literary, dramatic, musical, artistic and other works.
17. The Copyright Act, 1957 which been amended by Copyright Amendment Act, 2012 governs the copyright law in India.
18. Patents are exclusive rights granted for inventions
19. Patents are of three types: utility, design and plant patents
20. A trademark is any distinctive sign that is used to differentiate the goods and services of one company from others. It may be a word, phrase, logo, graphic symbol or any other sign that identifies a business goods and services from the others.
21. Multinational organization uses global information systems to manage the information requirement of its international businesses

22. There are many challenges in political, geographical, economic and cultural dimensions that the businesses have to face to grow and sustain in the global marketplace.
23. Three most important different strategies when involving in international businesses, are global strategy, multinational strategy and international strategy.



14.10 FURTHER READING

1. 'Management Information systems', Tata McGraw-Hill, Gordon B Davis and Margrethe H Olson
2. 'Management Information system', McGraw Hill, James O'Brien, George M Marakas, ramesh Behl
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4. 'MIS', Wiley India, Rahul De
5. 'Management Information system', Pearson, Sahil Raj



14.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. No. 1:
1. cracker
2. Information Security
3. data
4. worms
5. Quality assurance
6. Total Quality Management

Ans to Q. No. 2:
a. Ethics
b. obligations
c. Privacy rights, Intellectual property rights.
d. growth of Information technology, increased value of information

e. uncertainty
f. Intellectual property.
g. Copyright
h. 1980
i. utility patent, design patent and plant patent
j. trademark



14.12 MODEL QUESTIONS

1. Why information security and control is important in an organization?
2. What do you mean by the quality of information? How can quality assurance help organizations in having a competitive edge over other companies?
3. Explain the Intellectual property rights.
4. Explain why companies expand beyond a country's border.
5. 'Globalization has posed new opportunities as well as challenges.' Explain this statement.

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