



Assam e-District Project

Basic Computer Training

Participant Reference Guide



AMTRON

IT DEPARTMENT
Government of Assam



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MEDHASSU

PREFACE

Considering today's networked world, it is essential for any human being to understand the fundamental areas of computing. Awareness of basic knowledge of computers such as the block diagram, input and output devices, operating systems and other software etc. are mandatory to work with a computer. Apart from the knowledge of fundamentals of computer, one should also familiar with basics of documentation such as writing a letter, creating spreadsheets and presentations which is the need of the time. Network and Internet are making the world as a home; hence once should be familiar with this world of networking to connect to the outside world of information.

This reference material titled “**Basic Computer Training**” is designed to familiarize with the participants with fundamental of computer science and to build on their knowledge on computer basic terminologies. It also provides a platform to understand Ubuntu operating system environment and then leads overview of LibreOffice, which is an open-source office productivity tool. This reference material also helps the participants about the Network and Internet concepts and makes them aware about the basic Internet concepts such as search engines, e-mails etc. which will help them to connect to the outside world using the latest technical enhancements.

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An Introduction to Personal Computer

In the new era of technical world, personal computers have become an integral part of human lives. Take any example of life; most of our communication with the world around us takes place with the help of these personal computers. Personal computers are based on the microprocessor technology which works on microchip technology. We can use personal computers for word processing, accounting, desktop publishing, and spreadsheet and database management applications.

What is a Computer?

Computer can be defined as an electronic device made up of electronic and electro-mechanical components. The computer itself cannot perform any task and consists of majorly three elements.

- **Hardware:** The physical components which are visible physically, touch and feel in the computer system are called hardware E.g. monitor, keyboard, mouse etc.
- **Software:** Software is used to describe the instructions that instruct the computer how to perform a task. Software can be categorized as 1) System software (e.g. Operating Systems, Compilers, Editors etc.) 2) Application Software (MS Word, Excel, Accounting packages LibreOffice etc.)
- **Users:** People who operate or use the computer and also create computer software instructions.

Types of Computers

1. **Desktop:** Usually includes a tower-style system unit with an external keyboard, a monitor, and a mouse. A desktop is the most powerful of all the types of personal computers because it can be easily upgraded by adding or replacing components.
2. **Laptop:** A type of personal computer that integrates the system unit, monitor, keyboard, and mouse available with a desktop computer into one portable package with either be plugged into an electrical outlet or battery operated.

3. **Handheld:** This is the smallest type of personal computer making it easy to carry anywhere. Handhelds are battery-operated with targeted but limited capabilities. Usually, a small keyboard or a pen-like stylus is used to operate a handheld.

Major Characteristics of Computers

The latest technology and computers are used in nearly every face of modern day life. They are designed for individual use and provide a wide range of functions and services applicable to varied environments such as businesses, offices, hospitals, schools, and homes. Following are the characteristics of computers:

- **Speed:** A computer is a very fast device. It can carry out instructions at a very high speed. The speed of computer is calculated in MHz that is one million instructions per second.
- **Accuracy:** Accuracy of a computer is consistently high and the degree of accuracy of a particular computer depends on the instructions and the type of processor.
- **Versatility:** Multi-processing features of computer makes it quite versatile in nature. It means that it can perform different types of tasks with same ease.
- **Reliability:** Computer provides very high speed accompanied by an equally high level for reliability. Thus computers never make mistakes of their own accord.
- **Memory:** A computer can store and recall any amount of information because of its secondary storage capability. Every piece of information can be retained as long as desired by the user and it can be recalled information almost instantaneously.
- **No Brain:** Computer does not possess any intelligence of its own. It can only perform tasks that a human being can. The difference is that it performs these tasks with speed and accuracy.
- **Diligence:** The computer is a machine, does not suffer from the human traits of tiredness. Nor does it lose concentration even after working continuously for a long time.
- **Storage:** Data storage is essential function of the computer. The computers have a lot of storage devices such as CD/DVD/External Hard Disk Drives etc. which can store a tremendous amount of data permanently.

The latest communication and technology increased the use of computers in the areas like touching up digital photos, shopping on the Internet, buying and selling items online, voice transfer through the internet and many more such kind of advanced activities, where a normal human being cannot even think of. Some of the most common tasks computers can help the users with:

- Communicating by using chat/e-mail/voice mail etc.
- Online Banking
- Searching information using the Internet
- Budgeting and performing accounting tasks
- Analyzing numeric information
- Searching through lists or reports for specific information
- Scheduling and planning projects
- Creating illustrations / Gaming

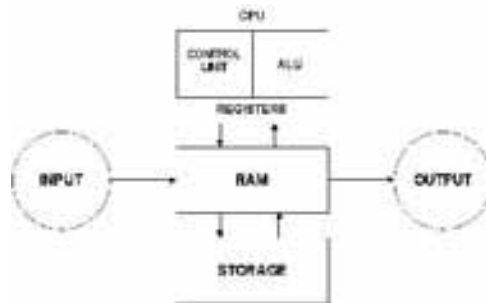
Computer Organization and Hardware

Basic components in a computer system are Central Processing Unit (CPU), Memory, the Input and Output devices. CPU is said to be the brain of a computer where most calculations or processing takes place. Memory is a part of the system where the data stores temporarily or permanently. The Input and Output system of a computer system helps the user to interact with a computer.

Organization of Computer

A computer can majorly performs five major operations irrespective of their type. It accepts data or instructions by way of input, it stores data in the temporary storage space called “Primary Memory” such as RAM, it process data as required by the user, it produce results in the form of output or it permanently stores the information in a space called “Storage” or “Hard Disk” (“Secondary Memory”), and it controls all operations inside a computer.

All these functions are illustrated in the basic block diagram of a computer shown below:



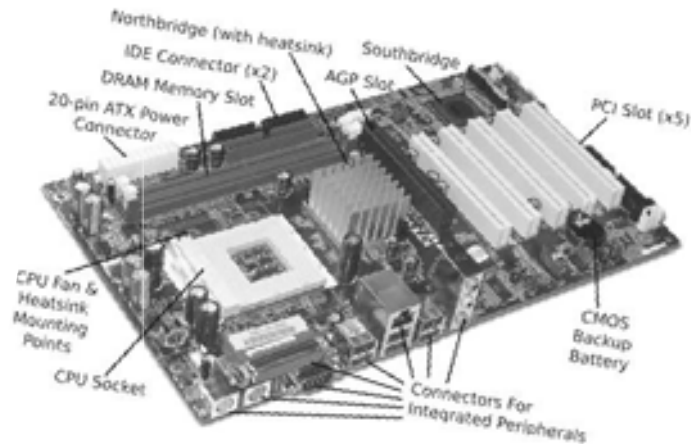


Fig. 1.2: Motherboard

Processor (CPU):

- The processor (CPU) is called as the brain of the computer.
- It reads the commands from the (primary) memory and then executes them as per the instructions by the control unit.
- All work that you do on your computer is performed directly or indirectly by the processor.
- Advanced Micro Devices (AMD) and Intel are two primary manufacturers of computer microprocessors.
- AMD's desktop processors include Sempron, Athlon and Phenom. Intel's desktop CPUs include Celeron, Pentium and Core.
- Intel makes Celeron M, Pentium M and Core mobile processors for notebooks. Both companies make both single-core and multi-core processors.



Fig. 1.3: Different type of processors

- Each processor has a clock speed which is measured in gigahertz (GHz).

- A processor has a front side bus which connects it with the system's random access memory (RAM).
- Cache is a type of fast memory which serves as a buffer between RAM and the processor. The processor's socket type determines the motherboard type where it can be installed.

Memory (Primary):

- Is used to hold programs and data during execution.
- This type of memory is called as primary memory because it is accessed directly by the processor for fetching data.
- Primary memory is often called as Random Access Memory.
- RAM holds all data and programs the processor is using at a given point of time.
- Contents of RAM are erased when power is switched off. This nature of RAM is volatile.
- The other type of system memory is ROM (Read only Memory) which is permanent because its contents are not erased even when power is switched off. It is usually used to load an operating system.
- The more RAM your computer has the more programs and documents you can open without slowing the system down.
- Today's computers have RAM anywhere from 1 GB to 192 GB depending on the hardware and the operating system you are using.

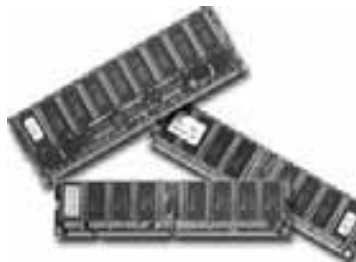


Fig. 1.4: Random Access Memory (RAM)

Hard disk drive (Secondary memory):

- A hard drive consists of spinning platters made up of aluminum or ceramic that is coated with magnetic media.
- Hard drive is also called as Secondary Memory.
- There can be several programs in the system, which cannot be stored in RAM, so we need a very huge non-volatile memory, which can be used for storing all the programs, and data when the system is not in use are called as Hard disks.
- The capacity of the HDD is measured in GBs/TBs.



Fig. 1.5: Hard Disk Drive (HDD)

CD-ROM/DVD drive:

- CD-ROM stands for compact disk read only memory and DVD stands for Digital Versatile/Video Disc.
- It consists of small disks similar to the gramophone records to hold digital information. As the name applies they are read only medium.



Fig. 1.6: Digital Versatile Disc (DVD) Player

Note:

- Each hard disk/CD drive is identified by different letters such as C:, D: etc.
- The hard drive is always the C: drive because it is the first available drive letter for hard drives.
- The computer assigns the A: and B: drives to floppy disks and sometimes other removable media such as tape drives.
- As you install other hard drives, create new partitions, and add other drives such as CD-ROM or DVD drives, they will be assigned to other drive letters after C, such as D, E, F, G, etc.

SMPS (Switch Mode Power Supply):

- The power supply supplies power to every single part in the PC.
- The main function of the power supply is to convert the 230 V AC into 3.3 V, 5 V and 12 V DC power that the system requires for the operations.
- In addition to supplying power to run the system, the power supply also ensures that the system does not run unless the power supplied is sufficient to operate the system properly.



Fig. 1.7: Switch Mode Power Supply (SMPS)

Cabinet:

- The box or outer shell that houses most of the computers is called the cabinet.
- The cabinet actually performs several important functions for your PC including protection to the system components, directing cooling airflow, and allowing installation of and access to the system components.







Fig. 1.11: Scanners

Universal Serial Bus (USB):

- USB can be defined as a standard, compact removable storage device that can be connected to any computer, which has a USB port and USB driver.
- Examples are portable flash memory devices, digital cameras, webcams, handheld computers, and optical mice etc.
- The USB device can quickly plug it in and out of a computer without restarting the system.

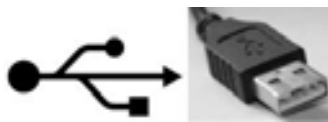


Fig. 1.12: Universal Serial Bus (USB)

Other Types of Input Devices

Following are the list of other types of input devices which are majorly used:

- **Joystick:** A lever that moves in all directions and controls the movement of a pointer or some other display symbol; commonly used with computer games.
- **Trackball:** A device that is often used with laptops to move the pointer by rolling it in place.
- **Touch screen:** A type of input devices, which is also a display system that can detect the location of touches within the display area.



- Varieties of printers are available in the market such with special features, such as color and large page formats, such as Laser printers, Inkjet printers, Dot-matrix printers etc.



Fig. 1.14: HP LaserJet Printers

Speakers

- Speaker is a kind of output device which produce audio output when an audio file is played on computer.
- Speakers are usually equipped with a low-power internal amplifier, which take the electrical signal on a file and translate it back into physical vibrations to create sound waves.



Fig. 1.15: Speaker

Other Peripheral Devices

- Any external device, which is not necessary to perform the basic operation of computer, is called as peripherals. They provide additional computing capabilities.





Tips for the Maintenance of UPS System

There are preventive as well as corrective steps in the maintenance needs. Preventive involves tips to avoid any sort of issues with the UPS system; while the corrective measures include all the steps undertaken to rectify a problem.

- Connect the right size of the UPS system according to the power supply requirements of the device.
- Do not place the UPS system near any water source or from where water may gain access to the device.
- It is not advised to place the UPS near a source of heat or fire. Do not allow smoke or fire to be in the vicinity of the UPS system or its battery.
- Place it in a well-ventilated spot where there is easy accessibility in case of any issues.
- An ambient temperature of 20-25° C is ideal for the working of the UPS and its battery.
- A clean, dry and dust-free environment is highly recommended for the extended life of the UPS system.
- The UPS system must be kept away from contact with any corrosive materials.
- The output and the input of the UPS system must never be connected.
- The battery discharge and mains failure test has to be carried on at regular intervals for the assessment of its functionality.
- Strike a service contract deal with a reliable provider of UPS maintenance. They will take care of the annual maintenance and repair in case of technical faults.

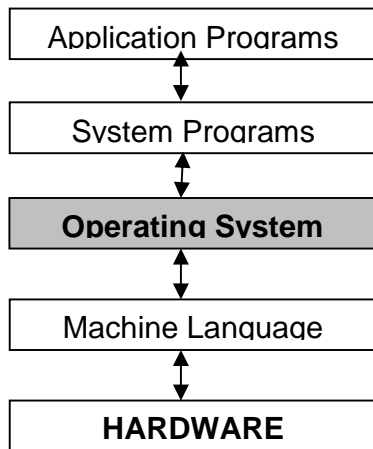
Summary

- Personal computers are based on the microprocessor technology which works on microchip technology.
- We can use personal computers for word processing, accounting, desktop publishing, and spreadsheet and database management applications.
- Computer is as an electronic device made up of electronic and electro-mechanical components.
- The main computer system contains components like processor, memory, controllers, etc. connected together with a bus (consists of many parallel wires, usually printed (in copper) on the main circuit board (Motherboard) of the computer).
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Exercises

1. What do you understand by Personal Computer?
2. Define the block diagram of Computer.
3. What all are the system components of a personal computer?
4. What do understand by peripheral devices?
5. What do you understand by UPS?











Indicator Name	Purpose
Keyboard indicator	allows you to select the keyboard layout you would like and change your keyboard preferences.
Messaging indicator	incorporates all your social applications. From here, you can access your instant messenger, your email client, your micro blogging application, and Ubuntu One (an application to use as a personal cloud)
Network indicator	allows you to manage your network connections and connect quickly and easily to a wired or wireless network.
Sound indicator	provides an easy way to adjust the sound volume as well as access your music player and sound settings.
Clock	displays the current time and provides an easy way to access your calendar and Time and Date settings.
User menu	allows you to easily switch between different users and access your online and user accounts.
Session indicator	provides an easy way to access System Settings, Updates, Printers, and session options for locking your computer



Below the **Home Folder** icon, you will see the **Firefox** icon. Notice the triangle on the right side indicating it is the application in the foreground (on top of all other applications), and here the triangle on the left side indicating there's only one window associated with Firefox at this time.

The Dash

Dash is a tool to help you access and find applications and files on your computer quickly.

To explore the Dash:

1. Click on the top-most icon on the Launcher; the icon has the Ubuntu logo on it.
2. After selecting the Dash icon, another window will appear with a search bar on the top as well as grouping of recently accessed applications, files, and downloads.

Note: The search bar provides dynamic results as you enter your search terms.

You can also see the Lenses, which act as specialized search categories in the Dash.

The five lenses at the bottom are links to your *Home* lens, *Applications* lens, *Files* lens, and *Music* and *Videos* lenses.

Search for Files and Applications with the Dash

Using the **Dash**, you can help you find the names of files or folders.

- Type in what you remember of the name of the file or folder and the Dash will show results it finds as you type.

Note: The **Files lens** can also assist you in finding files or folders, which shows you the most recent files accessed, as well as recent downloads.







Moving and Resizing Windows

- To move a window around the workspace, place the mouse pointer over the window's title bar, then click and drag the window while continuing to hold down the left mouse button.
- To resize a window, place the pointer on an edge or corner of the window so that the pointer turns into a larger, two-sided arrow, (known as the resize icon). You can then click and drag to resize the window.

Switching Between Open Windows

In Ubuntu there are many ways to switch between open windows.

1. If the window is visible on your screen, you can click any portion of it to raise it above all other windows.
2. Use **Alt+Tab** to select the window you wish to work with. Hold down the **Alt** key, and keep pressing Tab until the window you're looking for appears in the popup.
3. Click on the corresponding icon on the Launcher. Move your mouse to the left side of your screen to show the Launcher, and right-click on the application icon. If the application has multiple windows open, double click on the icon in order to select the window you want.

Moving a Window to Different Workspace

To move a window to a different workspace, make sure the window isn't maximized. If it is maximized, click on the right-most button on the left side of the title bar to restore it to its original size. Then right-click on the window's title bar and select:

- Move to Workspace Left, to move the window to the left workspace
- Move to Workspace Right, to move the window to the right workspace

- Move to Another Workspace, and then choose the workspace you wish to move the window to.

Browsing Files on your Computer

There are two ways to locate files on your computer:

- Search for files
- Access them directly from their folder.

Note: You can search for a file via the **Dash or Files & Folders** in the **Launcher**. You can also use the **Files & Folders** tool to access commonly used folders (such as Documents, Music, Downloads), as well as most recently accessed files.

Places

To access **Places**, move your mouse over the top bar and select Places. The **Places** menu holds a list of commonly used folders (such as Documents, Music, Downloads, and the Home Folder). You can also browse the files on your computer by clicking **Computer** in this menu. If you set up a home network, you will find a menu item to access shared files or folders. You can also access the **Search forFiles** tool from the **Places** menu, or **browse** a list of recently opened folders.

Home Folder

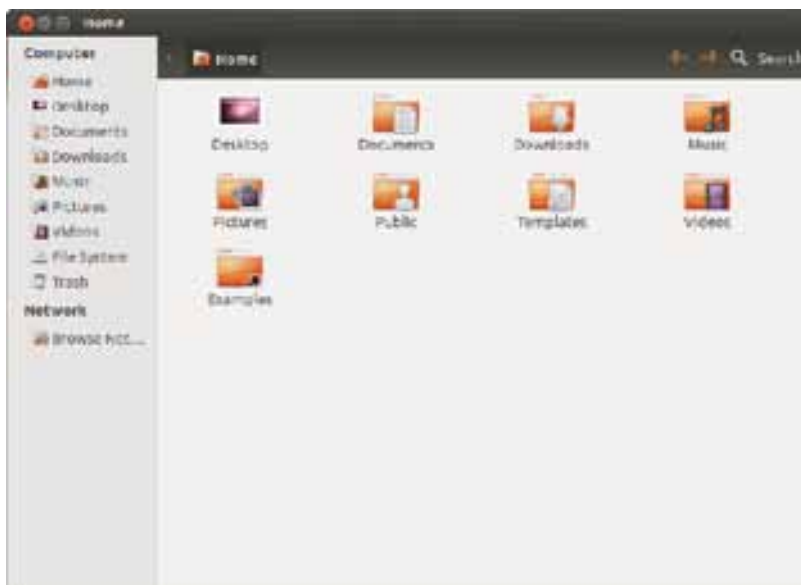
The home folder is used to store your personal files. Your home folder matches your login name. When you open your personal folder, you will see there are several more folders inside, including: Desktop (which contains any files that are visible on the desktop), Documents, Downloads, Music, Pictures, Public, Templates, and Videos. These are created automatically the installation process. You can add more files and folders as needed.

Nautilus File Manager

- Nautilus file manager is the type of explorer to browse files and folders in your system.
- When you select the **Home Folder** shortcut in the Launcher or click on a folder in the **Dash**, or **double-click on a folder** on the desktop, the Nautilus file manager window opens.
- The default window contains the following features:

Menu bar	<ul style="list-style-type: none">• The menu bar is located at the top of the screen.• These menus allow you to modify the layout of the browser, navigate, bookmark commonly used folders and files, and view hidden folders and files.• If you bookmark a folder, it will appear in the Bookmarks menu and in the left pane.
Toolbar	<ul style="list-style-type: none">• The toolbar contains tools for navigation as well as resizing the window.• A drop-down list gives you the option of switching the view from Icon View to List View or Compact View.• The search icon (which looks like a magnifying glass) opens a field so you can search for a file by name.• Just below the toolbar, you will see a representation of your current browsing. This is similar to the history function in most browsers; it keeps track of where you are and allows you to backtrack if necessary.• You can click on the locations to navigate back through the file browser.

-
- | | |
|--------------|---|
| Left page | <ul style="list-style-type: none">• The left pane of the file browser has shortcuts to commonly used folders.• When a folder is bookmarked, it appears in the left pane. No matter what folder is open, the left pane will always contain the same folders.• This left pane can be changed to display different features (such as Information, Tree, History, etc.) by clicking the down arrow beside Places” near the top. |
| Central pane | <ul style="list-style-type: none">• The largest pane shows the files and folders in the directory that you are currently browsing. |
-



Creating New Folders

To create a new folder from within Nautilus:

- Click **File→Create Folder**. The folder will appear in your Nautilus manager.
- Name the folder that appears by replacing the default “Untitled Folder” with your desired label (e. g., “Attendance Register”).

Note:You can also create a new folder by pressing **Ctrl+Shift+N**, or by right-clicking in the file browser window and selecting **Create Folder** from the popup menu.

Copying and Moving Files and Folders

- You can copy files or folders in Nautilus by clicking **Edit →Copy**, or by right clicking on the item and selecting **Copy** from the popup menu.

Note:When using the **Edit** menu in **Nautilus**, make sure you’ve selected the file or folder you want to copy first (by left-clicking on it once).

- Multiple files can be selected by left clicking in an empty space (i. e., not on a file or folder), holding the mouse button down, and dragging the cursor across the desired files or folders.
- To select multiple files or folders that are not positioned next to each other, hold down the **Ctrl** key while clicking on each item individually.
- Once multiple files and/or folders are selected, you can use the **Edit** menu to perform actions just like you would for a single item.
- When one or more items have been “copied,” navigate to the desired location then click **Edit→Paste** (or right-click in an empty area of the window and select Paste) to copy

them to the new location. While the copy command can be used to make a duplicate of a file or folder in a new location, the cut command can be used to move files and folders around.

Note: You can also use the keyboard shortcuts **Ctrl+X**, **Ctrl+C** and **Ctrl+V** to cut, copy, and paste (respectively) files and folders.

To move a file or folder:

- Select the item you want to move then click **Edit→Cut**.
- Navigate to the desired location, and then click **Edit →Paste**.

Note:As with the copy command above, you can also perform this action using the right-click menu, and it will work for multiple files or folders at once. An alternative way to move a file or folder is to click on the item, and then drag it to the new location.

Using Multiple Tabs and Multiple Nautilus Windows

Opening multiple Nautilus windows can be useful for dragging files and folders between locations. The option of tabs (as well as panes) is also available in Nautilus.

To open second window when browsing a folder in Nautilus:

- Select **File→New Window** or press **Ctrl+N**. This will open a new window, allowing you to drag files and/or folders between two locations.

To open a new tab:

- Click **File→New Tab** or press **Ctrl+T**. A new row will appear above the space used for browsing your files containing two tabs—both will display the directory you were originally browsing.

A dark gray rectangular menu box with a list of system actions. The first item, 'Lock Screen', is followed by the keyboard shortcut 'Ctrl+Alt+L'. The other items are 'Log Out...', 'Suspend', 'Hibernate', and 'Shut Down...'.

Lock Screen Ctrl+Alt+L
Log Out...
Suspend
Hibernate
Shut Down...

Introduction to Network

Network is a physical connection of computers from one computer to another, using which one can access to all the resources, including storage, security, printers, and applications. It is similar to having a television that is not connected to cable, where you get basic channels. However, if you connect to a cable operator, there are hundreds of channels providing all kinds of choices you did not have. A network presents the same variety and volume of choices to a computer user.

A network can be considered as a group of two or more computer systems which are connected with each other by special network hardware and software in order to share resources such as files, folders, printers, and applications.



Fig. 2.12: Computer Network

Introduction to Internet

- Internet is often can said to be the world's largest Wide Area Network (WAN).
- It is the network of networks which connects millions of computers all over the world through a system of smaller networks. Anyone in the world can access the Internet.
- To access the Internet, you should connect to a network like an Internet Service Provider (ISP).
- The Internet shares verity of information starting from sending an e-mail to your loved ones to online shopping, finding information and a lot more.

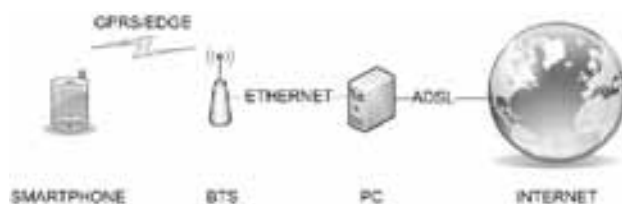


Fig.2:13: Working of Internet

The World Wide Web (WWW)

WWW is a network of servers on the Internet that use specially formatted documents called Web pages. These Web pages are written in a language named Hypertext Markup Language (HTML) that can display text, graphics, animation, and sound.

Browsing the Web

Once you have connected to the Internet, you should be able to browse the web. A web browser is used to connect your system to the internet. Mozilla Firefox is the default application for this in Ubuntu.



Fig. 2.14: Firefox Browser in Ubuntu



Note: You can also enter your query directly into the Location Bar.

Most web pages contain links that you can select. These are known as “hyperlinks”. Using the hyperlink you can move to another page, download a document, change the content of the page, and more. To work with hyperlinks:

- Move the mouse pointer until it changes to a pointing finger. This happens whenever the pointer is over a link.

Note: Most links are underlined text, however, buttons and pictures on a web page can also be links. Click the link once. While Firefox locates the link’s page, status messages will appear at the bottom of the window.

- If you want to visit a page you have viewed before, there are several ways to do so. To go back or forward one page, press the **Back** or **Forward** button by the left side of the Location Bar.
- To go back or forward more than one page, click-and-hold on the respective button. You will see a list of pages you have recently visited. To return to a page, select it from the list.
- To see a list of any URLs you have entered into the Location Bar, press the down arrow at the right end of the Location Bar. Choose a page from the list.
- To choose from pages you have visited during the current session, open the History menu and choose from the list in the lower section of the menu.
- To choose from pages you have visited over the past few months, open the **History→Show All History** (or press **Ctrl+Shift+H**). Firefox opens a “Library” window showing a list of folders, the first of which is “**History**.” Select a suitable sub-

folder, or enter a search term in the search bar (at the top right), to find pages you have viewed before. Double-click a result to open the page.

If a page is loading too slowly or you no longer wish to view a page, press **Esc** to cancel it. To reload the current page if it might have changed since you loaded it, press on the **Reload** button or press **Ctrl+R**.

To search the web in Firefox:

- Type a few words into the Firefox search Bar.
- For example, if you want to find information about the Ubuntu: Move your cursor to the **Search Bar** using your mouse or press **Ctrl+K**.
- Type the phrase *Ubuntu*. Your typing replaces any text currently in the Search Bar.
- Press the magnifying glass or Enter to search. Search results from Google for “Ubuntu” will appear in the Firefox window.

Introduction to eMail

Email is a communications tool that allows individuals to send, receive, and save messages on their computer. There are different e-mail programs available in the market which helps the users to send and receive mails easily. Each email program is slightly different, but they all do basically the same thing: send and receive mail and attachments. There are two basic variations of email programs:

1. A Web interface (or Internet email), such as Yahoo Mail or Gmail:
 - The email software is a special Web interface on the Web mail server. It requires a separate username and password required to access the email. The mail can be accessed from any computer with Internet access.
2. Client software (or network email), such as Microsoft Outlook or Lotus Notes etc.:
 - The email client software resides on each individual's network computer. The email server is located in the same network where the individual computers are on. It requires a separate username and password required to access the email.

In some network setup, the username password may not be required. The mail can be accessed from any computer which has the client with Internet access.

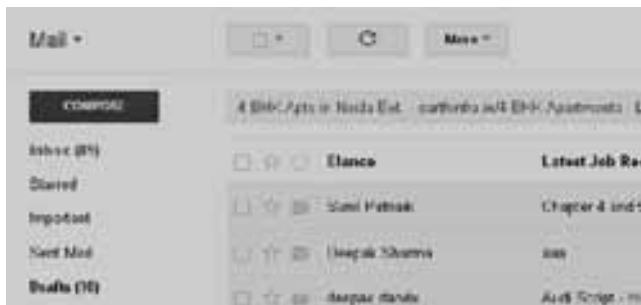


Fig. 2.16: Google Gmail Account

E-Mail Views

The email application screen is divided into different panes so that users can access the mails easily. These include:

- **Preview pane:** Another way of looking at a message. Instead of double-clicking a message to open it, you can read the message appear in the preview pane.
- **Folder pane:** Various folders, including Sent Items, Trash, and Drafts folders, contain messages that you have sent to other individuals, deleted, or messages you started to write but decided to send later.

Read New Email

To read email:

1. Locate the Inbox and look for the new mails in the Inbox.
2. Click on the hyperlink of the new mail to open it.

Send Email

To create a new mail, click on the **Compose Button** on the e-mail website or New option in any of the e-mail client application. A new page will open as shown in the figure below:



Fig. 2.17: Compose a message

The user needs to provide certain information to send a mail:

1. **Email Addresses:** An email address is made up of three parts, the user name, @ sign and the domain name. For example, an email address ["john.joe@gmail.com"](mailto:john.joe@gmail.com) contains few elements, such as "john.joe" as the user name, @ is to differentiate the username and the domain name, and "gmail.com" is the e-mail provider's name. The e-mail ID needs to be added in the To text box provided in the application
2. **CC text box:** CC means "Carbon Copy". The e-mail address listed in the CC field of a message gets a copy of that the message sent by the user. Other recipients of the e-mail message can see that the e-mail ID you designated as a Cc: received a copy of the message sent.
3. **BCC text box:** BCC means "blind carbon copy." Almost similar to the CC, except that Bcc: recipients are invisible to all the other recipients of the message.
4. **Attachments:** Email programs allow the user to send files as a link with the mails to other recipients. Email program helps the user to add more than one file with a single message as attachments.
5. **Subject:** The user should write a Subject in this text field to signify the summary of the mail which is been sent.
6. **Message filed:** Here, the user will type the message for the recipient.

Once the message is completed, the user can click on the **Send** button to send a message to the recipient. Once the message is sent, it is automatically moved to **Sentmail** folder.

User can view the message by clicking on the **Sentmail** folder listed at the left side of the screen.

Summary

- Operating System is used as a predefined library for hardware – software interaction.
- Ubuntu operating system conceived to address the weakness of Linux and create a system that was easy to use, completely free and could compete with other mainstream operating systems. Ubuntu spread quickly.
- You need to login to the Ubuntu in order to work with the operating system.
- Ubuntu's desktop top bar incorporates common functions used in Ubuntu.
- The Launcher provides easy access to applications, mounted devices, and the Trash.
- **Dash** is a tool to help you access and find applications and files on your computer quickly.
- Workspaces are also known as virtual desktops.
- When opening a program in Ubuntu (such as a web browser or a text editor) a window will appear on your desktop.
- Nautilus file manager is the type of explorer to browse files and folders in your system.
- You can choose to log out, suspend, restart, or shut down through the **Session Indicator** on the far right side of the top panel.
- Internet is often can said to be the world's largest Wide Area Network (WAN).
- A web browser is used to connect your system to the internet.
- Ubuntu has the Firefox icon within the Launcher (the vertical bar down the left side of the screen).
- Email is a communications tool that allows individuals to send, receive, and save messages on their computer.

Exercise

1. Define Operating System.
2. What do you understand by Ubuntu operating system?
3. How to login to the Ubuntu operating system?
4. Explain how to move a file from one folder to another.
5. What do you understand by e-Mail? Explain how to send an email to your Sr. Officer



Overview of LibreOffice

LibreOffice is a free and open source office suite, developed by The Document Foundation. It was forked from OpenOffice.org in 2010, which was an open-sourced version of the earlier StarOffice. The LibreOffice suite comprises programs to do word processing, spreadsheets, slideshows, diagrams and drawings, maintain databases, and compose math formulae.

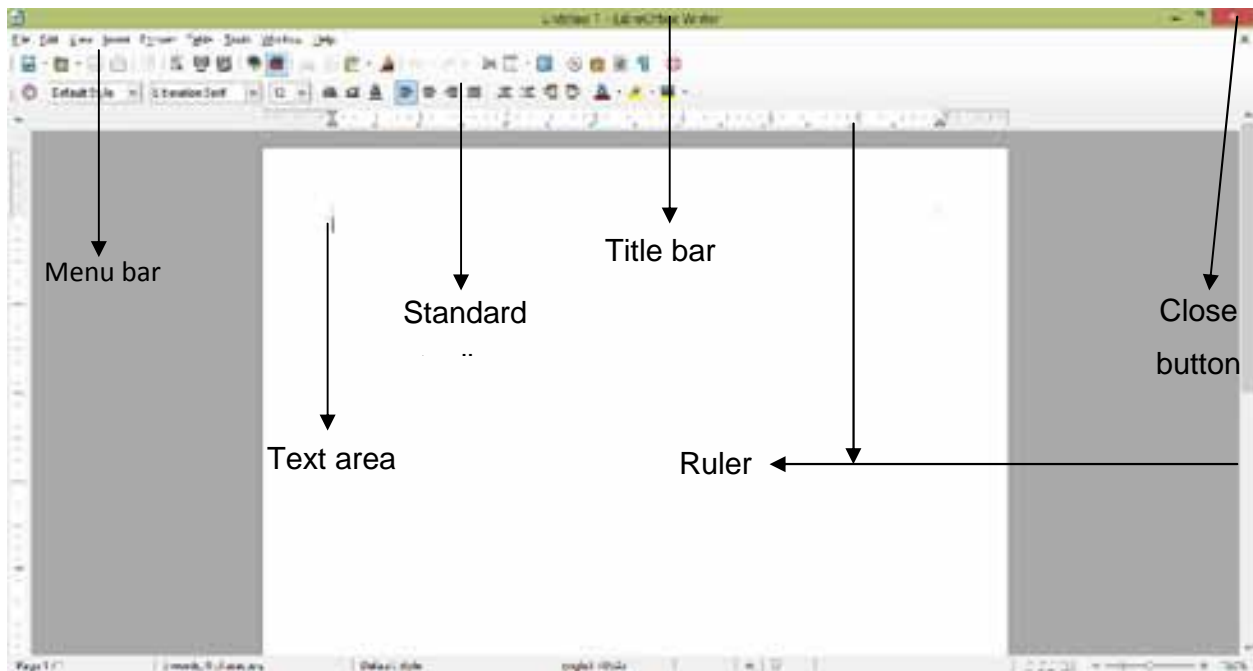
Apache LibreOffice consists of the following components:

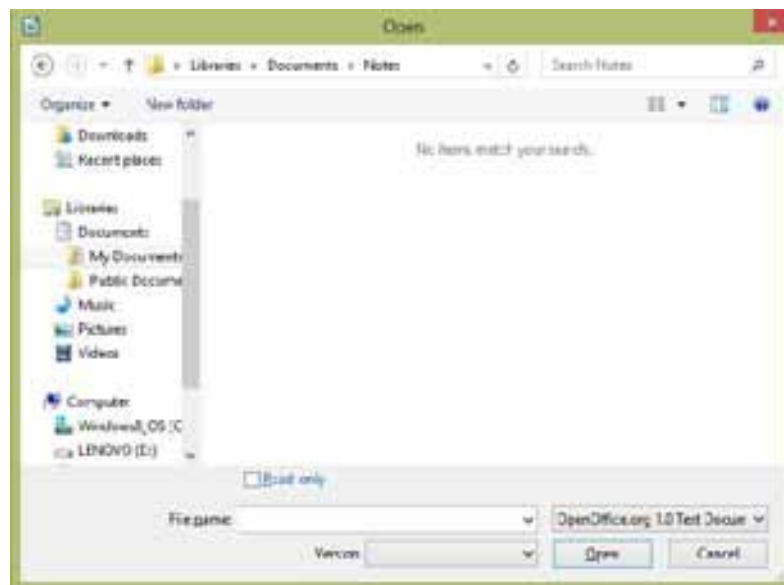
LibreOffice Writer	A word processor with similar functionality and file support to Microsoft Word or WordPerfect. It has extensive WYSIWYG word processing capabilities, but can also be used as a basic text editor.
LibreOffice Calc	A spreadsheet program, similar to Microsoft Excel or Lotus 1-2-3. It has a number of unique features, including a system which automatically defines series of graphs, based on information available to the user.
LibreOffice Impress	A presentation program resembling Microsoft PowerPoint. Presentations can be exported as SWF files, allowing them to be viewed on any computer with Adobe Flash installed.
LibreOffice Draw	A vector graphics editor and diagramming tool. It provides connectors between shapes, which are available in a range of line styles and facilitate building drawings such as flowcharts.
LibreOffice Math	An application designed for creating and editing mathematical formulae.
LibreOffice Base	A database management program, similar to Microsoft Access. LibreOffice Base allows the creation and management of databases, preparation of forms and reports that provide end users easy access to data.

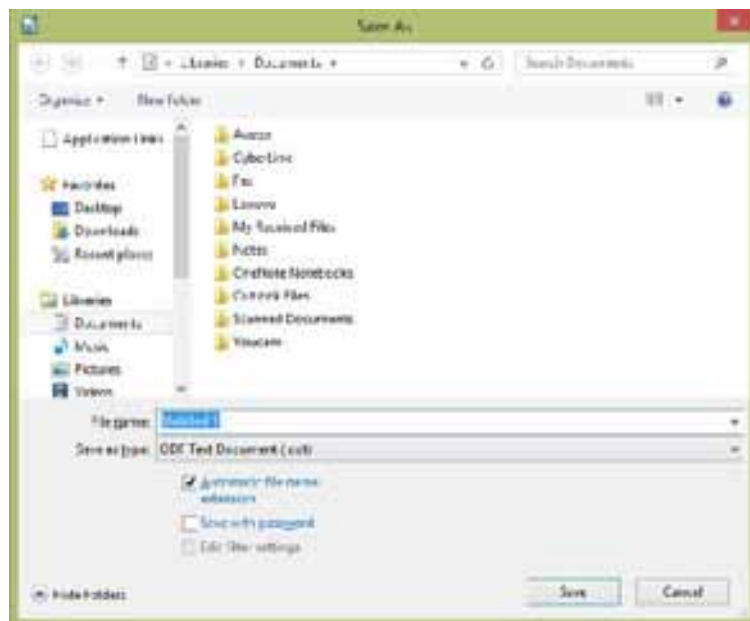
Window Elements

Description

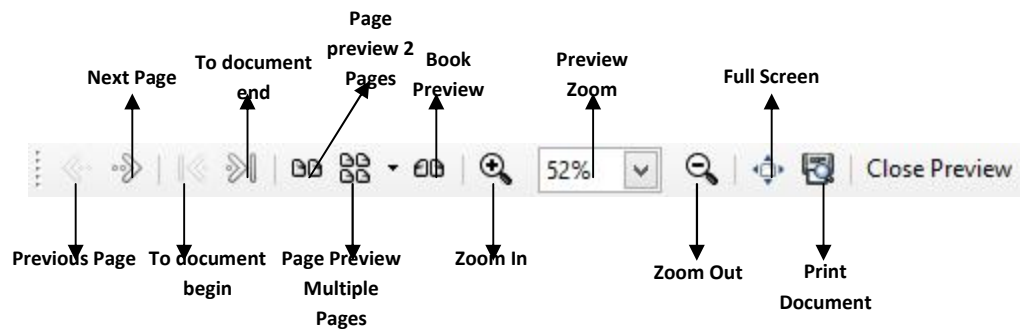
Title bar	Provides the name of application and active document.
Menu bar	Provides several menus including File, Edit, View, and Insert.
Standard toolbar	Provides buttons to perform actions, such as opening document, saving document, and closing document.
Close button	Allows you to close the active document
Text area	Provides an area to enter and edit text
Ruler	Provides horizontal and vertical page measurement

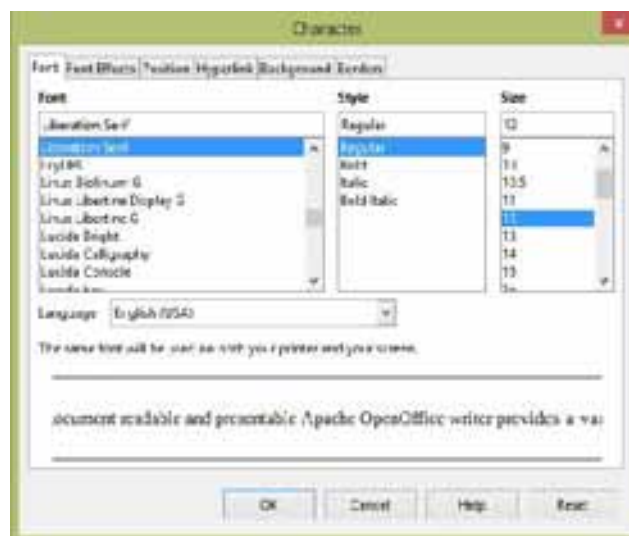












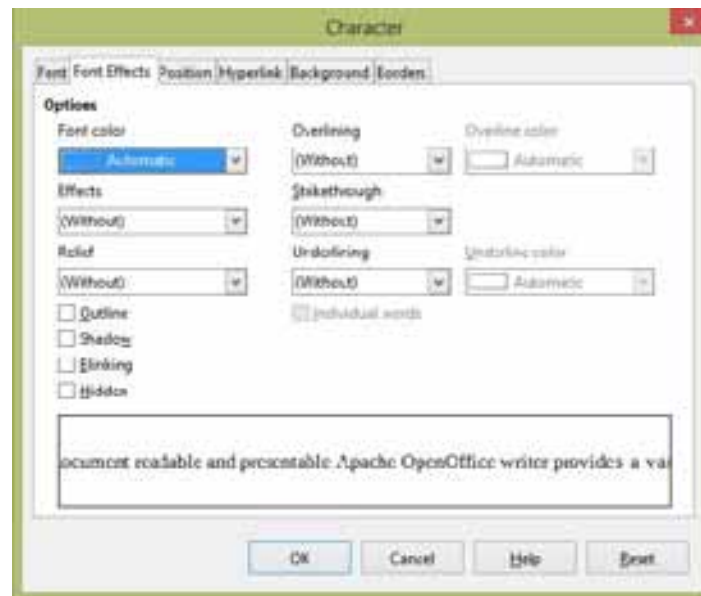
3. Select the **Arial** font style from the **Font** list.
4. Select **Regular** from the **Typeface** list.
5. The different available typefaces are:
 - Regular Exp: *Simplexity*
 - Italic Exp: *Simplexity*
 - Bold Exp: **Simplexity**
 - Bold Italic Exp: ***Simplexity***
 - Underline Exp: Simplexity
6. Select the available font size, for example **12** from the **Size** list to apply in the document.
7. Click the **OK** button to apply the font formatting in the document.

Applying Font Effects

LibreOffice Writer allows you to apply various font effects, such as Underline, Strikethrough, and Font color. Adding color to your text is another effective method for making text stand out. By coloring, you can point out significant information to the reader.

To apply font effects, perform the following steps:

1. Select the text in the document where you want to apply font effect.
2. Select **Format→Character** option to open the **Character** dialog box.
3. Click the **Font Effects** tab to open the **Font Effects** tab page, as shown in the following figure:



To make your **document readable and presentable** writer provides





Formatting a Document

In some cases, when you create a document, the typed text may not fit on the page. LibreOffice Writer provides a variety of options to set the alignment, margins, and orientation of text in a document.

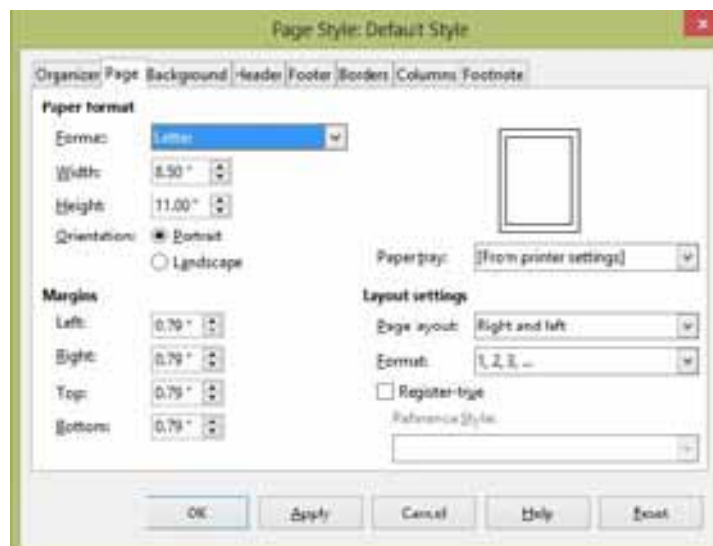
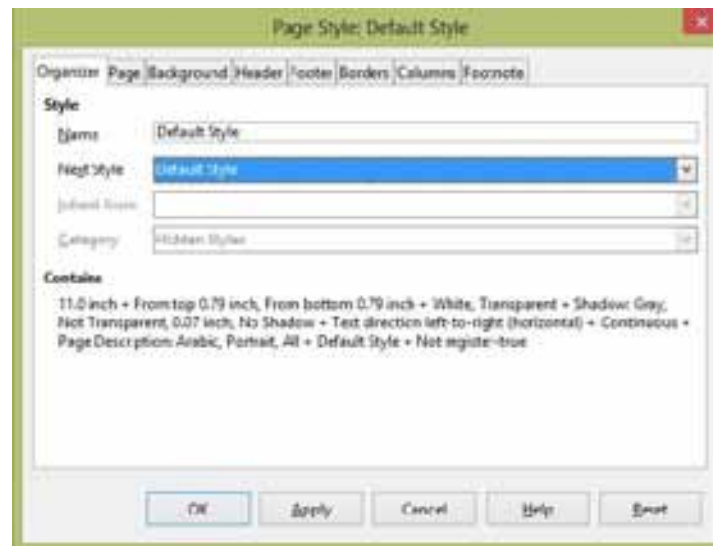
Setting Page Margins

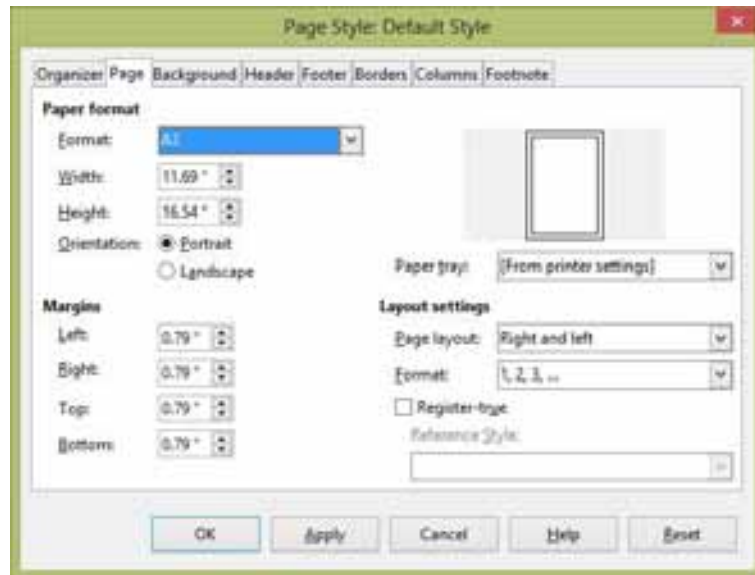
Distance between page boundary and text is known as a page margin. For example, if you print some text on an office letter head without checking and adjusting the page margins. How you notice that the text has printed over the letter head text? How will you resolve this problem?

LibreOffice Writer solves this problem by setting the page margins. It provides four basic types of page margins, which are: Top, Bottom, Right, and Left. In this topic, you will learn how to set the page margins.

Setting margins enable you to specify how much white space should display for the top, bottom, left, and right areas on each printed page. To change a page margin, perform the following steps:

1. Click the **Format→Page** menuoption to display **Page Style: Default** dialog box. In this dialog box various tabs are available, for example: **Organizer**, **Page**, **Background**, **Header**, **Footer**, **Borders**, **Columns**, **Footnote**, as shown on the following figure:







For example, you have to present monthly selling figures of a book publication company. There are two ways to present data, one is to present in the text format and the other is to present the data in the tabular form. Consider that the monthly book selling of Amazon Company are:

- The selling of book no. 901 is 200 in January, 300 in February, and 400 in March.
- The selling of book no. 905 is 800 in January, 900 in February, and 950 in March.
- The selling of book no 909 is 600 in January, 700 in February, and 750 in March.

By analyzing this table you can conclude that the production in March is better than the other months. However, if we create a table as shown below, it makes it clear to the reader to understand the facts much better and beautiful way. The following table shows the same data in a table format:

Book No.	January	February	March
901	200	300	400
905	800	900	950
909	600	700	750

Table is the format provided by LibreOffice to manage data in a meaningful way. To create a new table, perform the following steps:

1. Click **Table→Insert→Table** menuoption to display the **Insert Table** dialog box, as shown in the following figure:



The image shows a dialog box titled "Insert Table" with a close button (X) in the top right corner. The dialog is divided into two sections: "General" and "Options".

General

- Name:** A text field containing "Table2".
- Columns:** A spinner box set to "2".
- Rows:** A spinner box set to "2".

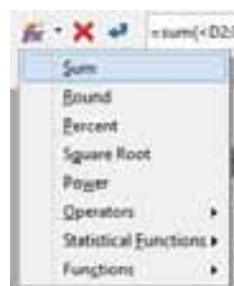
Options

- ☐ **Heading**
 - ☒ **Repeat Heading Rows on new pages**
 - Heading Rows:** A spinner box set to "1".
- ☐ **Don't split table over pages**
- ☒ **Border**

At the bottom right of the "Options" section is an **AutoFormat** button. At the very bottom of the dialog are three buttons: **Insert**, **Cancel**, and **Help**.







Setting up Headers and Footers

By using headers and footers, you can add titles, dates, and page numbers or any other information in your document, and it will appear on each page of your document automatically. So the common information which we want to specify on each page can be put through headers and footers. Generally, headers are used to display company names, phone numbers, and addresses. Whereas, footers are used to display page numbers, company names, and titles. In this topic, you learn how to use headers and footers.

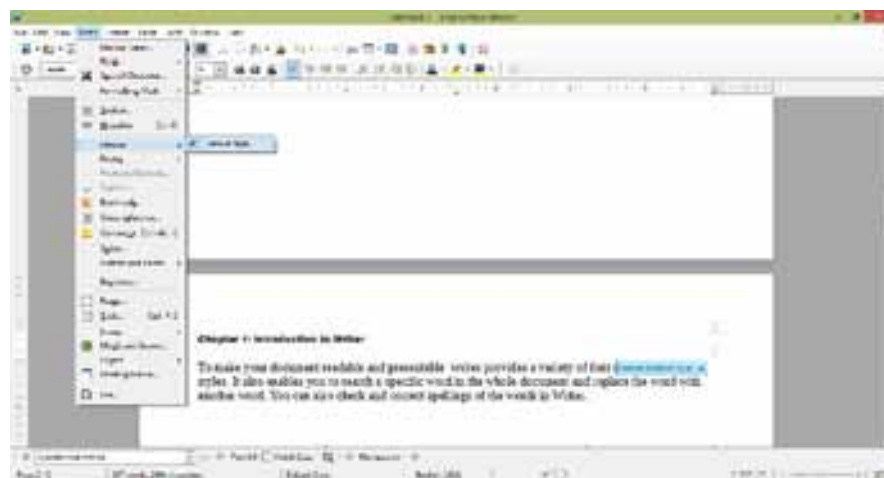
A header is the blank area at the top margin of any page and footer is the blank area at the bottom margin. Headers and footers can contain textual or graphical information to provide context for the reader. Any page that uses the same style, automatically receives the header or footer that you add. You can insert Fields, such as page number and chapter heading, in a text document. In Writer, you can add default header and footer or can also customize it.

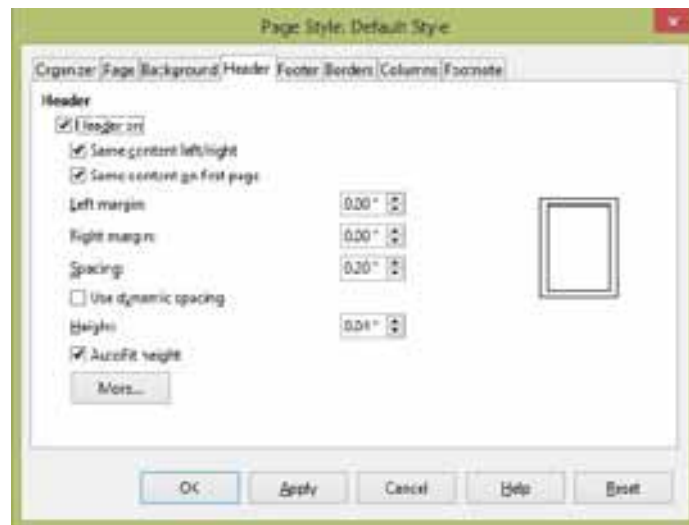
To add default headers and footers in a document, perform the following steps:

1. Click the **Insert → Header → Default** menu option, to insert header on the document and automatically place the cursor on the header. Specify the text that you want to display on header.
2. To add footer, click the **Insert → Footer → Default** menu option, and automatically place the cursor on the footer. Specify the text, such as ©**Copyright** that you want to display on footer.

Inserting Fields in a Header / Footer

Writer enables you to insert various fields, such as date, time, page number, and page count, in a document. This information improves the text quality of your document. You can also insert reference in your document. The advantage of entering a cross-reference as a field is that you do not have to adjust the references manually every time you change the document.





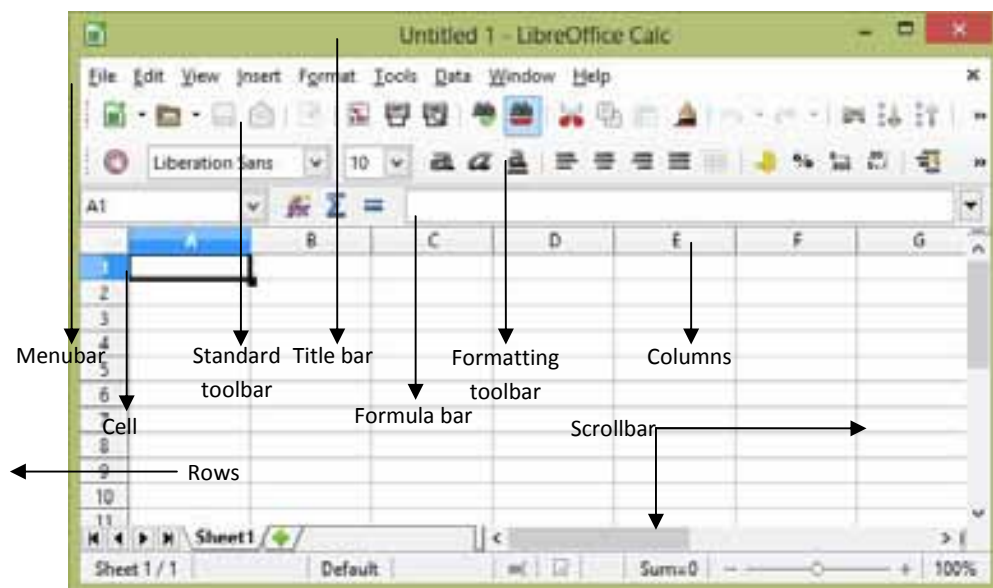


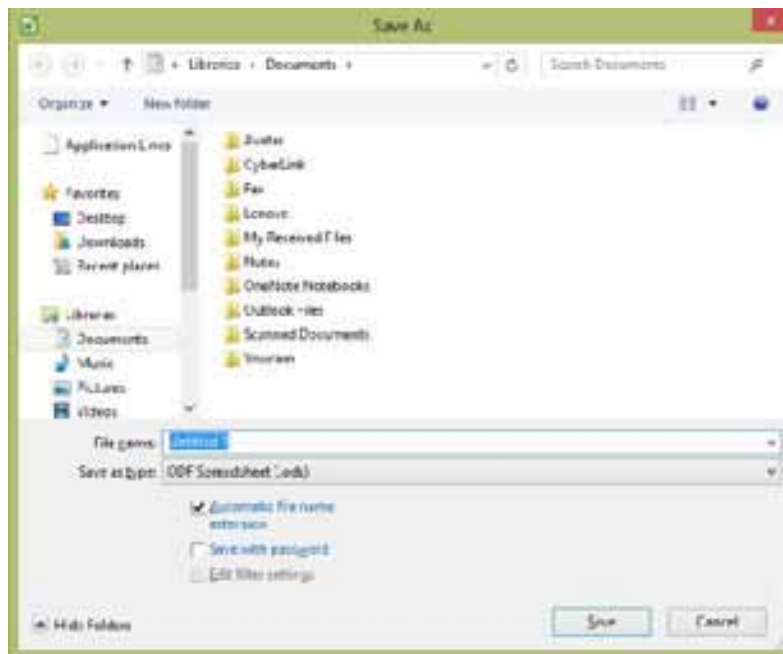
- LibreOffice Writer enables to write spelling-error free document by using the **Spell Checker** facility which will automatically checks and informs you about misspells with a red wavy line.
- LibreOffice Writer enables to search specific text in the document and replace a text with the other text.
- A table is a group of rows and columns. It consists of boxes, called cells. A cell is basically an intersection of rows and columns.
- A header is the blank area at the top margin of any page and footer is the blank area at the bottom margin.

Exercises

1. What do you understand by Word Processing applications and how does LibreOffice Writer came introduced?
2. Explain how to open a document in LibreOffice Writer.
3. What is the use of previewing a document before printing? Explain the process of preview the document.
4. What is Table in LibreOffice Writer. Explain how to insert a table in your document.
5. Explain how to insert Header/Footer in your document.







To save an existing file at a different location, perform the following steps:

1. Open an existing file.
2. Click **File → Save As** to display the **Save As** dialog box.
3. Choose the location where you want to save your file from the list.
4. Type a different name in the **File name** box, if you want to create or save another copy of the same document at the same location.
5. Click the **Save** button to create or save another copy of the same file at desired location.

Saving a File in Other Formats

To save a file in other formats, perform the following steps:

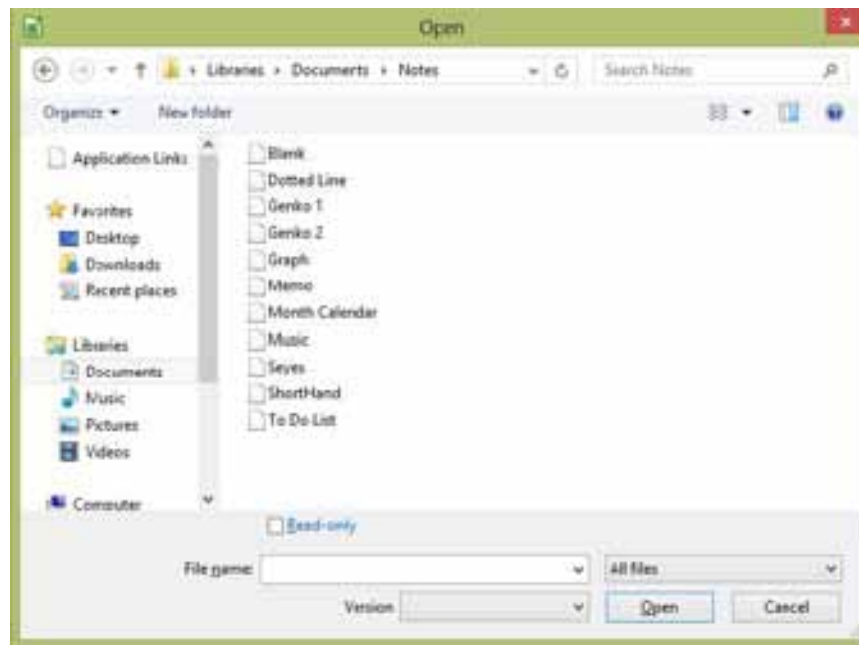
- Click **File → Save As** to display the **Save As** dialog box.
- Select the location, such as **E:\LibreOffice** where you want to save your file.
- Type the name for the file, such as **My Spreadsheet** in the **File name** text box.
- Select the desired file format from the **Save as type** list box.
- Click on the **Save** button to save the file with the defined name and format.

Notes: You can export your spreadsheet in different format by clicking **File → Export** to display the **Export** dialog box and selecting the options according to your requirement.

Opening a File

To open a file, such as **Document** that you created in LibreOffice Calc, perform the following steps:

1. Click **File → Open** menu option, to display the **Open** dialog box, as shown in the following figure:

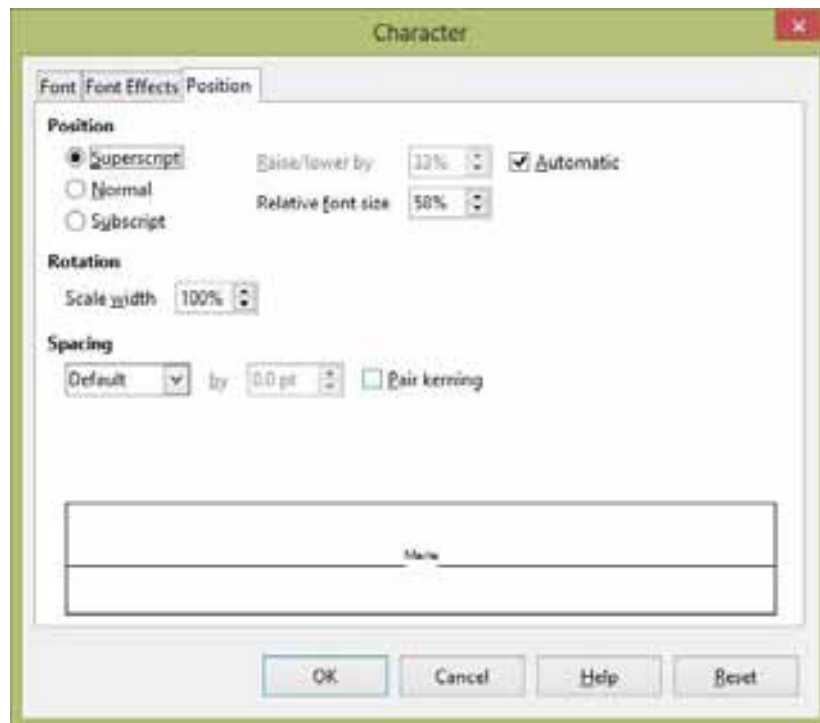


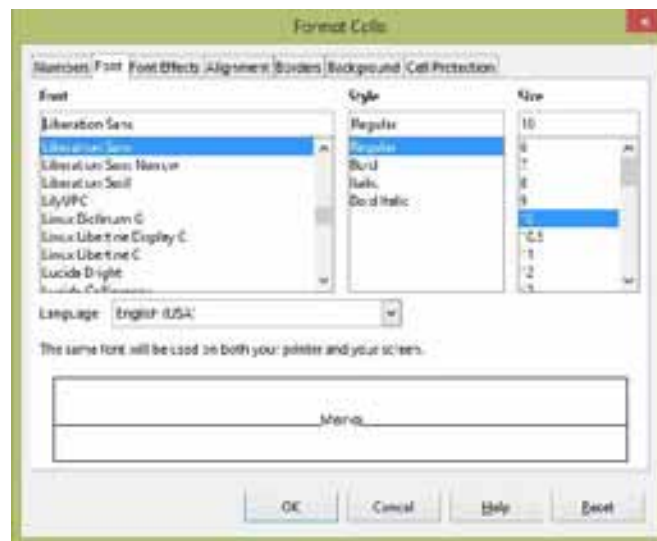
Student	Marks Obtained
Steen	67
Ram	89
Santosh	78
Abhis	98



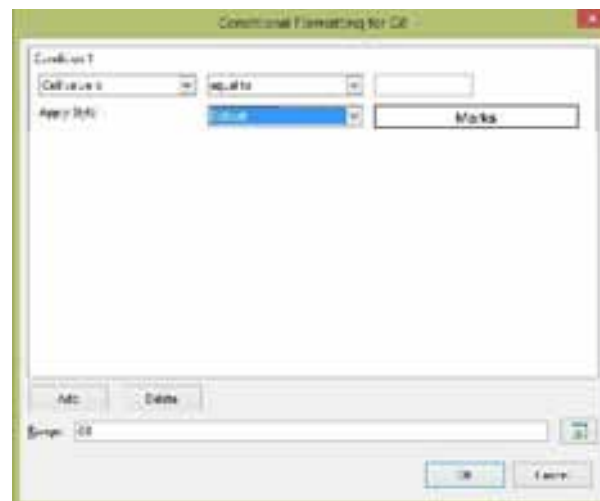


	Month	Sales in Rs.	Sales Person
1	Oct	100000	Rajesh
2		200000	Mukesh
3		111112	Mohit
4		142323	Rajesh
5	Nov	232321	Rajesh
6		121211	Mukesh
7		456343	Mohit
8		523223	Rajesh

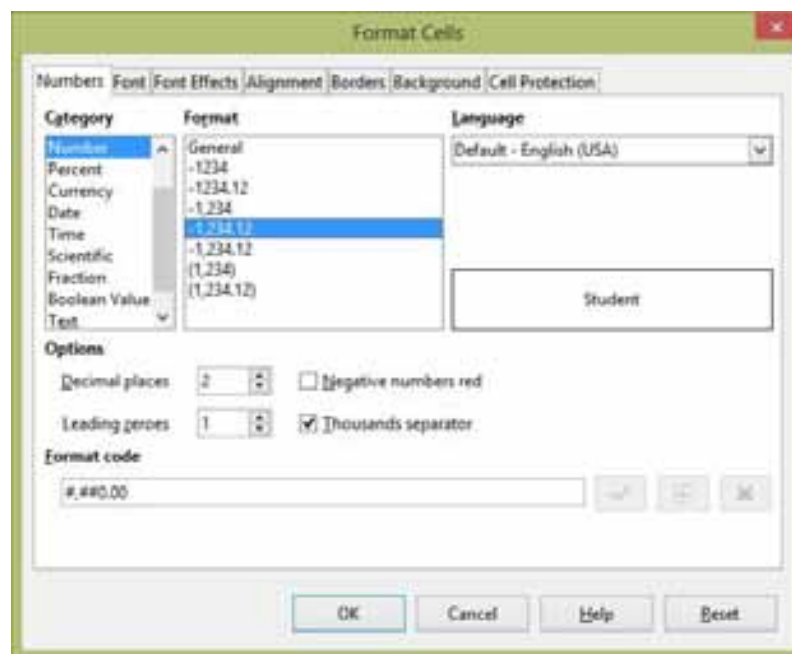












Entering Fractions

To work with fractions for your calculations, **Calc** allows you to convert a number into a fraction. To enter a fraction, perform the following steps:

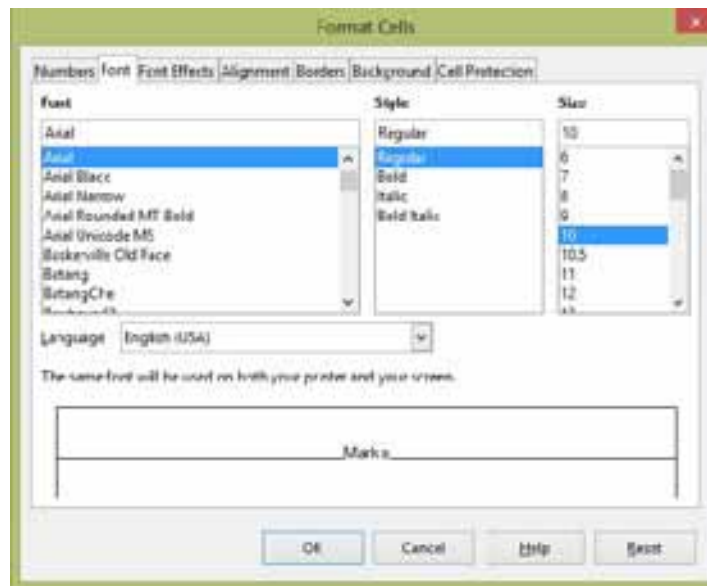
1. Type a value, such as **0 1/2** in a cell and press the **Enter** key.
2. The **AutoCorrect** setting causes the three characters **1, / and 2** to be changed as **0 ½**
3. To enter multi-digit fractions, such as **28.5686478**, open the **Numbers** tabbed page in the **Format Cells** dialog box.
4. Select the **Fraction** option from the **Category** list. Click the **OK** button to display the value that you entered in fractions, as **28 4/7**.

Formatting Spreadsheets

LibreOfficeCalc allows you to format text, numbers, borders, and backgrounds for cells and pages in a spreadsheet.

You can format your text as per your requirement, such as changing the font of the text from **Times New Roman** to **Arial** or changing the font size from **12** to **14**. To format a text in a spreadsheet, perform the following steps:

1. Select the text that you want to format.
2. Select **Format → Cells...** option to open the **Format Cells** dialog box.
3. Click the **Font** tab and select the text attributes according to your requirement to format your text as shown in the following figure:







The image shows a software dialog box titled "Insert Sheet". It has a standard Windows-style title bar with a close button (X) in the top right corner. The dialog is divided into two main sections: "Position" and "Sheet".

Position Section:

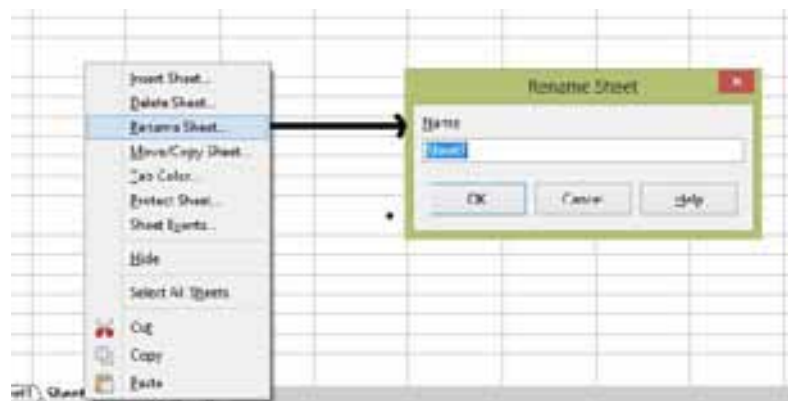
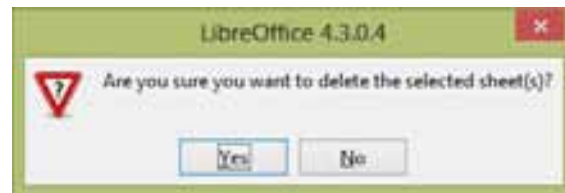
- There are two radio buttons. The first is labeled "Before current sheet" and is selected (indicated by a filled circle).
- The second radio button is labeled "After current sheet" and is not selected.

Sheet Section:

- There are two radio buttons. The first is labeled "New sheet" and is selected.
- Below the "New sheet" option, there is a label "Ng. of sheets:" followed by a small numeric input field containing the value "1".
- Below that, there is a label "Name:" followed by a text input field containing the text "Sheet2".
- The second radio button is labeled "From file".
- Below the "From file" option, there is a large empty rectangular box.
- To the right of this box is a "Browse..." button.
- Below the "Browse..." button is a checkbox labeled "Link", which is currently unchecked.

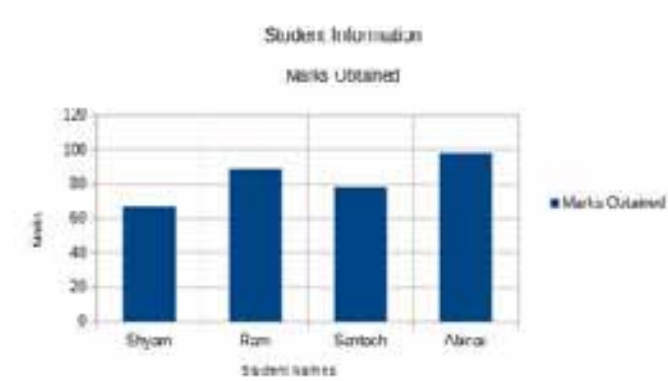
Buttons:

- On the right side of the dialog, there are three buttons stacked vertically: "OK", "Cancel", and "Help".









AutoFilter

AutoFilter feature allows you to restrict the display of identical records quickly. To enable AutoFilter, perform the following steps:

1. Select the column that you want to filter.
2. Click **Data → Filter → AutoFilter** to display a drop-down arrow in the selected column.
3. Click the drop-down arrow to display a shortcut menu, which contains options, such as **All** and **Top 10**.
4. Select an option according to your requirement and run the filter. Now, only the contents that meet the criteria are visible.

Advanced Filters

Advanced filter allows up to eight conditions to be applied for filter. To apply advanced filter to a record, perform the following steps:

1. Create a table containing the following data in LibreOffice Calc:

Name	Marks
Shawn	67
Shawn	45
Harish	34
Harish	45
Tom	90

2. Select the table and click **Data→Filter→Standard Filter** menu option to display the **Standard Filter** page as shown in the following figure:

Standard Filter

Filter criteria

Operator	Field name	Condition	Value
	Student	=	
<input type="checkbox"/>	- none -	=	
<input type="checkbox"/>	+ none +	=	
<input type="checkbox"/>	- none -	=	

☒ Options

OK Cancel Help

Advanced Filter

Read Filter criteria from

undefined

☐ Report

☐ Case sensitive ☐ Regular expressions

☒ Range operators column labels ☐ No duplications

☐ Copy results to

undefined

OK Cancel Help

Managing Rows and Columns

LibreOffice Calc employs functions, such as, applying styles, inserting new rows and columns, deleting and editing rows and columns, and auto formatting tables to manage rows and columns in a table.

Inserting Rows and Columns

To insert a row or a column in an existing table, perform the following steps:

1. Select the cell where you want to insert a row or a column.
2. Click **Insert → Rows** to insert a row. To insert a column, select **Insert → Columns** to insert a column.

Note: You can also press the keys **ALT+I** to open the **Insert** menu and select **Rows or Columns** option.

Formatting Rows and Columns

Calc allows you to change the height or width of a row or a column. To change the height or width of a row or a column, perform the following steps:

1. Click **Format → Row → Height** menu option to display the **Row Height** dialog box, as shown in the following figure:

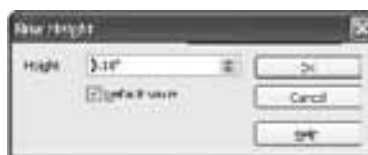


Fig.4.27: The Row Height dialog box

2. Select the height, such as **1.6** or **0.7**, of the column from the **Height** list.
3. Click the **OK** button to accept the changes.

4. Click **Format → Column → Width** menu option to display the **Column Width** page, as shown in the following figure:



Fig.4.28: The Column Width dialog box

5. Select the width, such as **0.78** or **1.4** of the column from the **Width** list.
6. Click the **OK** button to accept the changes.

Formulas and Calculations



LibreOfficeCalc allows you to write formulas and perform complex calculations. Various types of calculations you can perform in Calc are:



1. Calculations using Formulas
2. Automatically Calculating the Series

Calculating using Formulas

A formula consists of arithmetic signs, such as +, -, *, /, logical operators, and functions. They may also contain text and other formatting details. Generally formula begins with equal sign. You can perform calculations using formulas in **Calc**.

For example: The formula = **(B2*B3)** displays the product of the contents of the cell B2 and B3. The following Fig.shows the result of the previous calculation:

B4				  =	=B2*B3
	A	B	C		
1					
2		300			
3		600			
4		180000			
5					

B2:B3				  =	1
	A	B	C		
1					
2		1			
3		2			
4					
5					
6					
7					
8					

Summary

- LibreOffice Calc is used to create and manage spreadsheets. It enables you to perform calculations, view reports, create and modify charts, manage rows and columns, edit and format text, analyze, and share data.
- **LibreOffice Calc** allows you to implement various formatting styles on text and numbers as per your requirement.
- Formatting Cells function allows you to make changes to the cells, such as changing the font style, giving effects to the fonts, alignment of the text in a cell, and giving borders and background.
- The AutoFormat function allows you to change the format of a selected range of cells. To auto format the tables:
- You can copy and paste the cells, which contains the information according to your requirement.
- Text Superscript and Text Subscript style allow your text to appear as a Superscript or Subscript.
- Rotating Text feature enables you to format the text within a cell.
- Conditional formatting is an option that allows you to edit the styles of text, numbers, and pages based on conditions.
- The decimal numbers are rounded off to two decimal places, by default in LibreOffice Calc.
- To work with fractions for your calculations, **Calc** allows you to convert a number into a fraction.
- **LibreOfficeCalc** allows you to format text, numbers, borders, and backgrounds for cells and pages in a spreadsheet.
- Charts are enabled in **Calc** to create and view block diagrams, create spreadsheets using block diagrams, and graphs, to define the growth of an organization.

Exercises

1. What do you understand by Spreadsheet and LibreOffice Calc?
2. Explain how to format text and numbers in LibreOffice Calc.
3. What is conditional formatting? Explain how to perform the conditional formatting for a series of data.
4. Explain how to format the sheet and take print out of the spreadsheet.
5. What is Chart in LibreOffice Calc? Explain how to incorporate a chart in your LibreOffice Calc spreadsheet.

Notes



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