

IT WORKSHOP (20A05202)

COURSE OUTCOMES

1. **Disassemble and Assemble a Personal Computer and prepare the computer ready to use.**
2. **Prepare the Documents using Word processors and Prepare spread sheets for calculations .using excel and also the documents using LAtex.**
3. **Prepare Slide presentations using the presentation tool.**
4. **Interconnect two or more computers for information sharing.**
5. **Access the Internet and Browse it to obtain the required information**

IT WORKSHOP (20A05202)

LIST OF PROGRAMS:

1. LEARN ABOUT COMPUTER
2. ASSEMBLING AND DISASSEMBLING OF A SYSTEM
3. INSTALLATION OF OPERATING SYSTEM
4. OPERATING SYSTEM FEATURES
5. NETWORKING CONCEPTS
6. BROWSING THE INTERNET
7. INSTALLATION OF ANTIVIRUS
8. MICROSOFT WORD PROCESSOR
9. MICROSOFT POWERPOINT
10. MICROSOFT EXCEL (SPREAD SHEET)
11. LATEX

IT WORKSHOP (20A05202)

1. LEARN ABOUT COMPUTER

Computer:-

Computer is an electronic device for storing and processing data, typically in binary form.

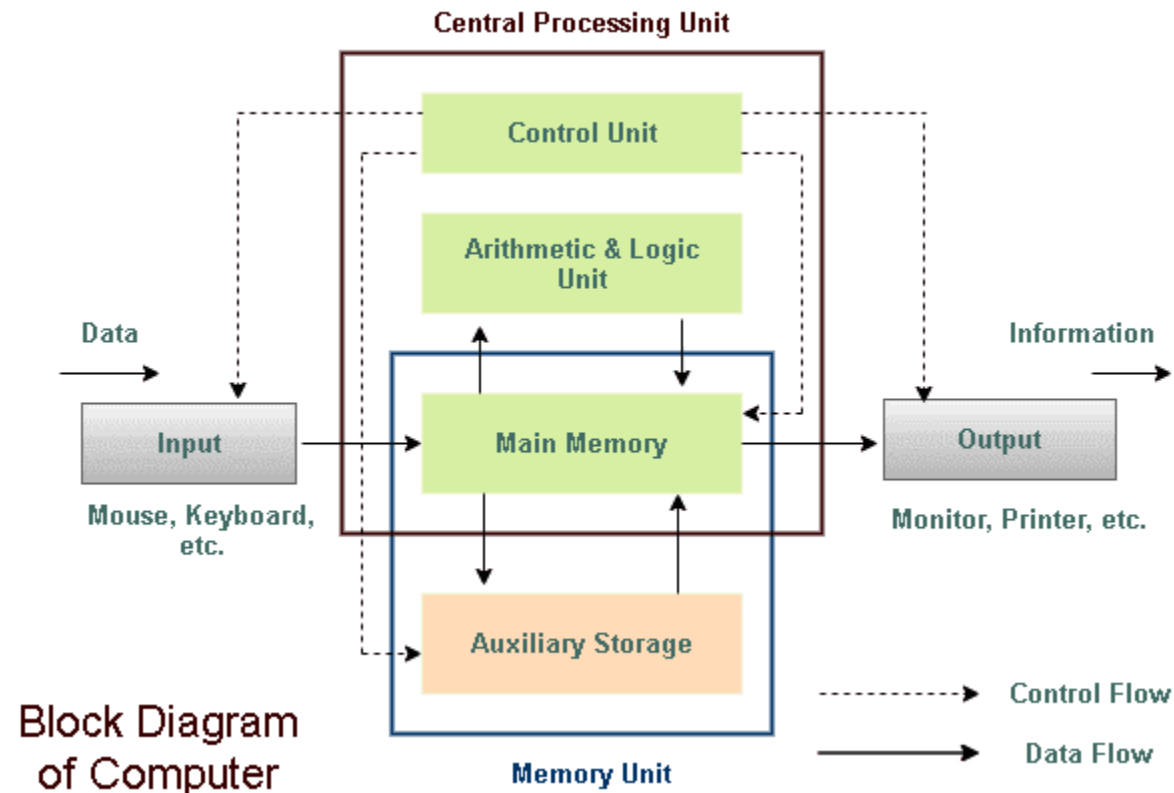
A computer can

- ❖ Accept data
- ❖ Store data
- ❖ Process data as desired
- ❖ Retrieve the stored data as and when required
- ❖ Print the result in desired format.

IT WORKSHOP (20A05202)

4

Block Diagram of Computer:-



IT WORKSHOP (20A05202)

5

Input Devices:

Input devices accept data and instructions from the user.



Keyboard



Mouse



Light Pen



Optical Scanner

Output Devices:

Output devices return processed data that is information, back to the user.



Monitor



Printer



Speaker



Plotter

IT WORKSHOP (20A05202)

6

Motherboard:



Processor/CPU



Hard disk



RAM



SMPS



IT WORKSHOP (20A05202)

2.ASSEMBLING AND DISSEMBLING OF A SYSTEM

Safety Precautions:

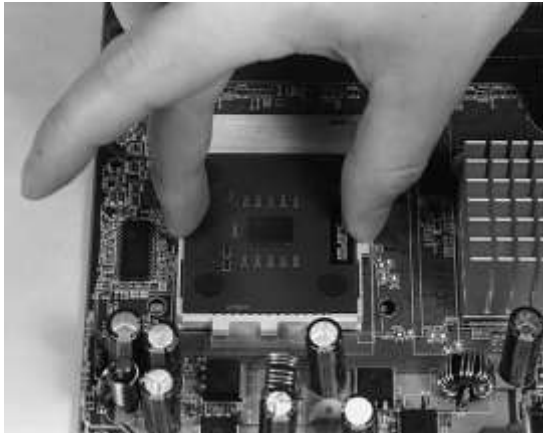
- ❖ Beware of electrostatic discharge (ESO)
- ❖ Build computer on a hard surface, away from concepts.
- ❖ Wear shoes and the short sleeved cotton wear.
- ❖ Use Phillips, head screw driver.
- ❖ Keep the components away from moisture.
- ❖ Avoid using pressure while installing.

Steps for Assembling:

- ❖ Setting the cabinet ready.
- ❖ Preparing to fit the components.
- ❖ Fitting the mother board.
- ❖ Fitting the RAM, processor and cooler.
- ❖ Installing PCI cards.

IT WORKSHOP (20A05202)

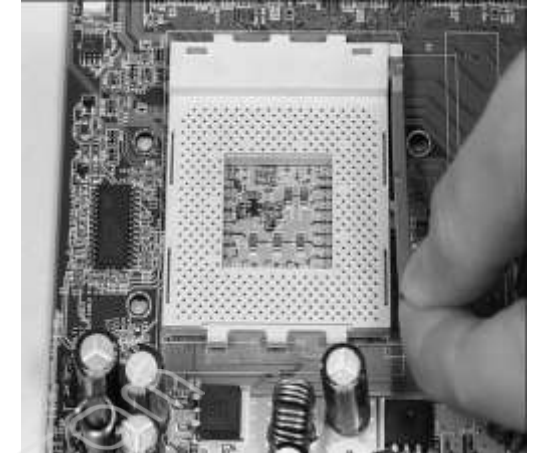
- ❖ Connecting the ribbon cables.
- ❖ Powering the drives and mother board.
- ❖ Connecting the cables for the case front panel.
- ❖ Final check.



Placing the CPU in to the Socket



Placing the mother board in the Cabine.



Raising lift lever on the CPU Socket



Placing the Heat Sink



Inserting the RAM (Memory Chip) into the RAM Slots

IT WORKSHOP (20A05202)

3 INSTALLATION OF OPERATING SYSTEM - LINUX

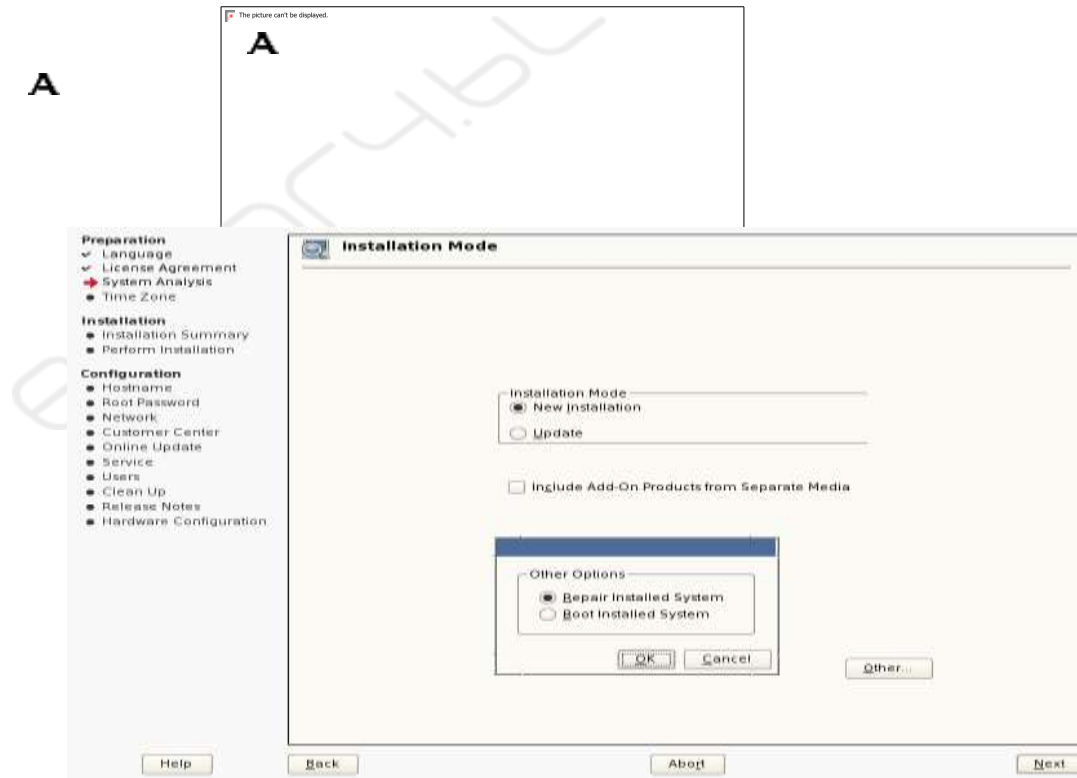
1. Insert the SUSE Linux Enterprise Server 10 Product CD/DVD and then reboot the system to start installation program
2. Now it will display the Boot options window to select one option using the arrow keys. Now select the "Installation" option



IT WORKSHOP (20A05202)

10

3. Accept the license agreement. There you have to select the option “Yes, I agree to the License agreement”.

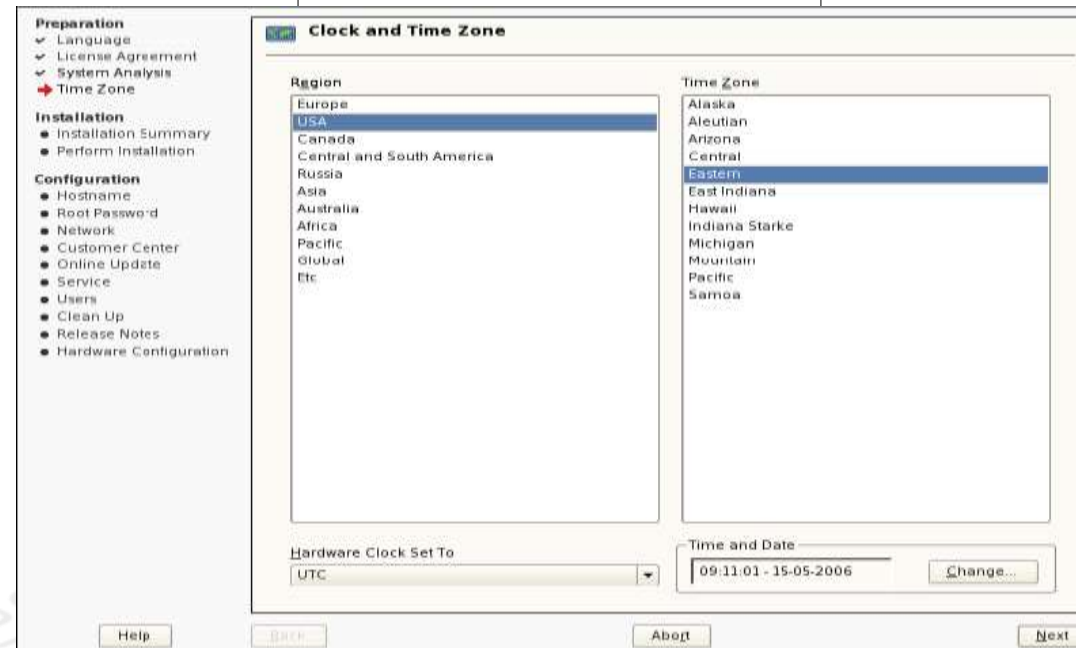


IT WORKSHOP (20A05202)

11

4. After selecting the New Installation option from the installation mode now set/change clock and time zone.

5. Next is to click on accept button to understand & change the installation settings



IT WORKSHOP (20A05202)

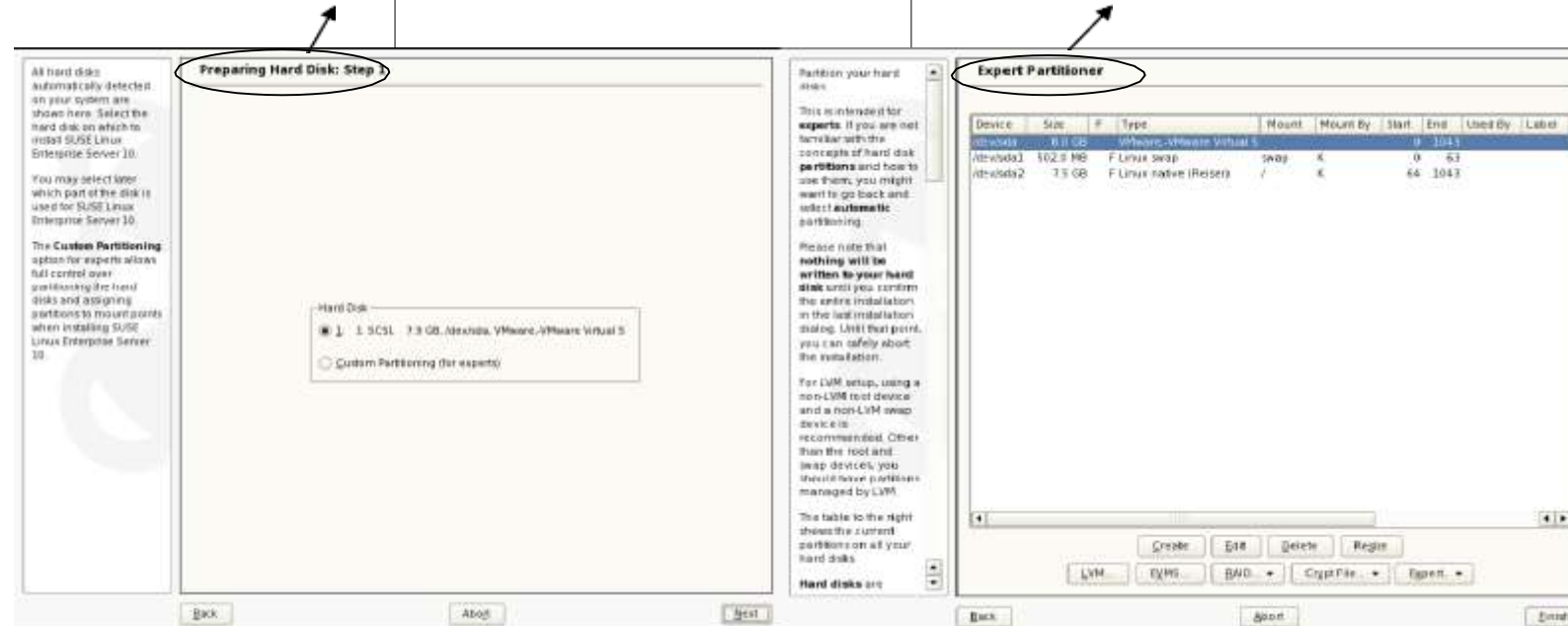
12

Installation needs at least two partitions:

Swap partition: This partition is used by Linux to move unused data from the main memory to the hard drive, thus freeing main memory which then can be used by other processes.

Root partition: This is the partition that holds the top (/) of the file system hierarchy, called as root directory.

After selecting Create Custom partition setup option it will display a dialog of Hard disk containing two options. Select the option. “Custom. Partition (for experts)”. And and click on Next Button



IT WORKSHOP (20A05202)

13

First, choose the type of the partition and whether this partition should be formatted.

Then, enter the mount point (/, /boot, /usr, /var, etc.)

Now, enter the location of the new partition on your hard disk.

Please enter the starting cylinder number of the partition.

After that, either specify an ending cylinder number or an offset from the first cylinder (e.g., +66).

It is also possible to

Create a Logical Partition on /dev/sda

Format

☐ Do not format

File system ID:
0x83 Linux

☒ **Format**

File system:
Reiser

Options

☐ Encrypt file system

Size

Cylinder size: 7.84 M

Start cylinder:
717

End: (9 or +9M or +3.2GB)
1043

Fstab Options

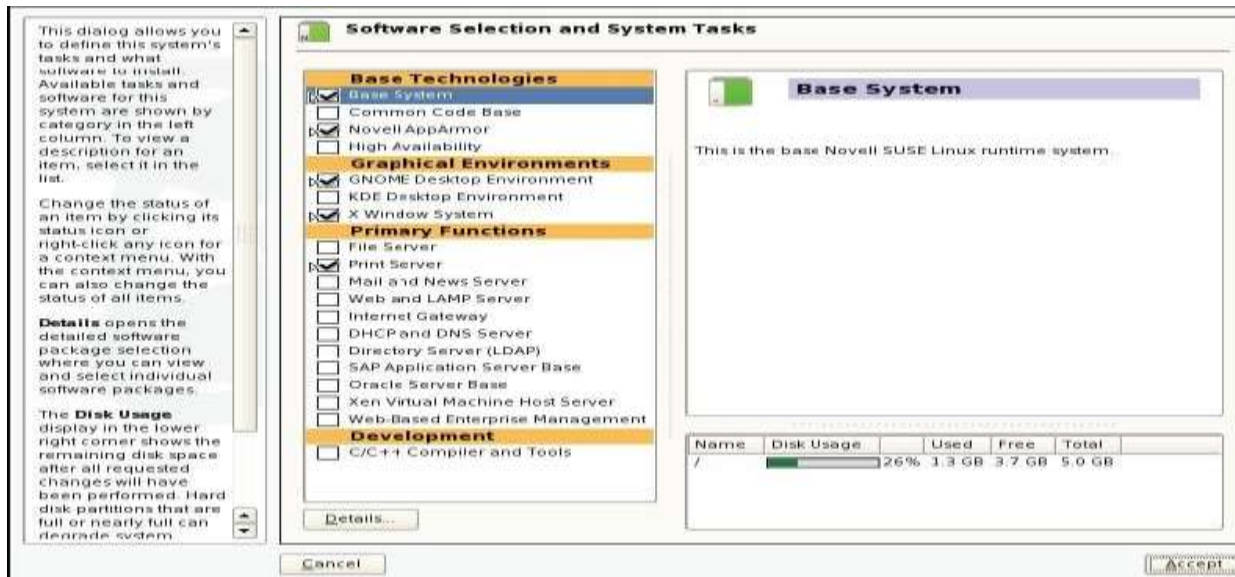
Mount Point:
/usr

OK Cancel

Next you will be asked to select the software depending on the disk space available

IT WORKSHOP (20A05202)

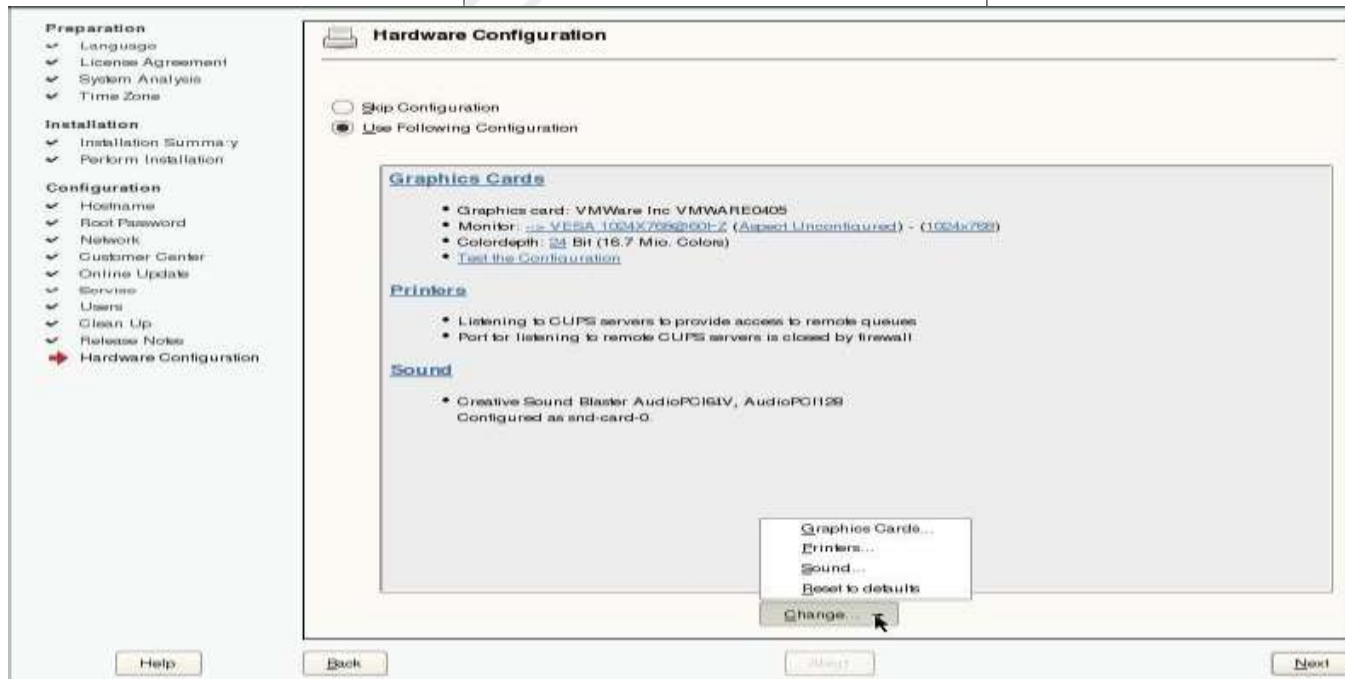
Next we can start the installation process by clicking the accept button



IT WORKSHOP (20A05202)

15

- Set the host name of the system to “Linux”, root password.
- Next is to either skip configuration or use the following configuration.
- Next you will be asked to configure the hardware. The configuration proposal contains the Graphic card printer, and sound option to configure.



IT WORKSHOP (20A05202)

- Confirm your hardware settings by selecting next, and then select Finish.
- The system starts the graphical login screen, where you can login with your previously created user account. SLES 10 is now installed on your system.

IT WORKSHOP (20A05202)

4. OPERATING SYSTEM FEATURES

Overview:

- LINUX is an open-source operating system used extensively worldwide. It is free and its source code is available for everyone under GNU(General Public Licence).
- Linux as an Operating System provides a wide range of features that can be used by a wide range of systems such as servers and computers.
- Android OS is also based on the Linux kernel that extends its usage for building embedded systems and automation systems.

IT WORKSHOP (20A05202)

Features of Linux Operating Systems

1. Free and Open-Source
2. Extremely Flexible
3. Lightweight Infrastructure
4. Graphical User Interface (GUI)
5. End-to-end encryption
6. Portable Environment
7. Shell/ Command-line Interface
8. Customized keyboard
9. Frequent New Updates
10. Hierarchical File System
11. Multi-user and Multi-programming

IT WORKSHOP (20A05202)

Conclusion

- Linux is one of the best and most widely operating systems that support all kinds of programming languages.
- Multiple functions can be performed at a time.
- Linux supports multithreading and high-volume applications to be used for a system.
- Linux operating system is free and open-sourced, facilitates a customized keyboard, has a command line interface but also supports GUI on Linux environment and gives easy access to newer updates frequently.
- It is secure and end-to-end encrypted which leads to user authentication while working.
- In a nutshell, Linux operating system is portable, easy to use and the most flexible operating system.

IT WORKSHOP (20A05202)

5. NETWORKING

Networking is the practice of linking computing devices together with hardware and software that supports data communications across these devices.

A computer network or data network is a [telecommunications network](#) that allows [computers](#) to exchange [data](#). In computer networks, networked computing devices ([network nodes](#)) pass data to each other along data connections. The connections ([network links](#)) between nodes are established using either [cable media](#) or [wireless media](#). The best-known computer network is the [Internet](#).

IT WORKSHOP (20A05202)

1. To connect two computers with a cable:

1. Plug each end of the crossover cable into a network port on the back of each computer.
2. On one of the computers that is running this version of Windows, do the following:
Open Network and Sharing Center by clicking the Start button
3. In the network map at the top of Network and Sharing Center, double-click the Unidentified network icon.
4. In the Network discovery and file sharing dialog box, select one of the following options
 - No, make the network that I am connected to a private network
 - Yes, turn on network discovery and file sharing for all public networks

IT WORKSHOP (20A05202)

22

Crimping tool: A crimping tool is a tool designed to crimp or connect a connector to the end of a cable. For example, network cables and phone cables are created using a crimping tool to connect the [RJ-45](#) and [RJ-11](#) connectors to the end of the cable.



<http://www.computerhope.com>

IT WORKSHOP (20A05202)

6.BROWSING THE INTERNET

What is an Internet Browser?

An internet browser, also known as a web browser or simply a browser, is a software program that lets you view web pages on your computer.

Major Browsers:

1. Opera
2. Firefox
3. Google Chrome
4. Internet Explorer
- 5 .UC Browser

IT WORKSHOP (20A05202)

Steps for creating a GMAIL account

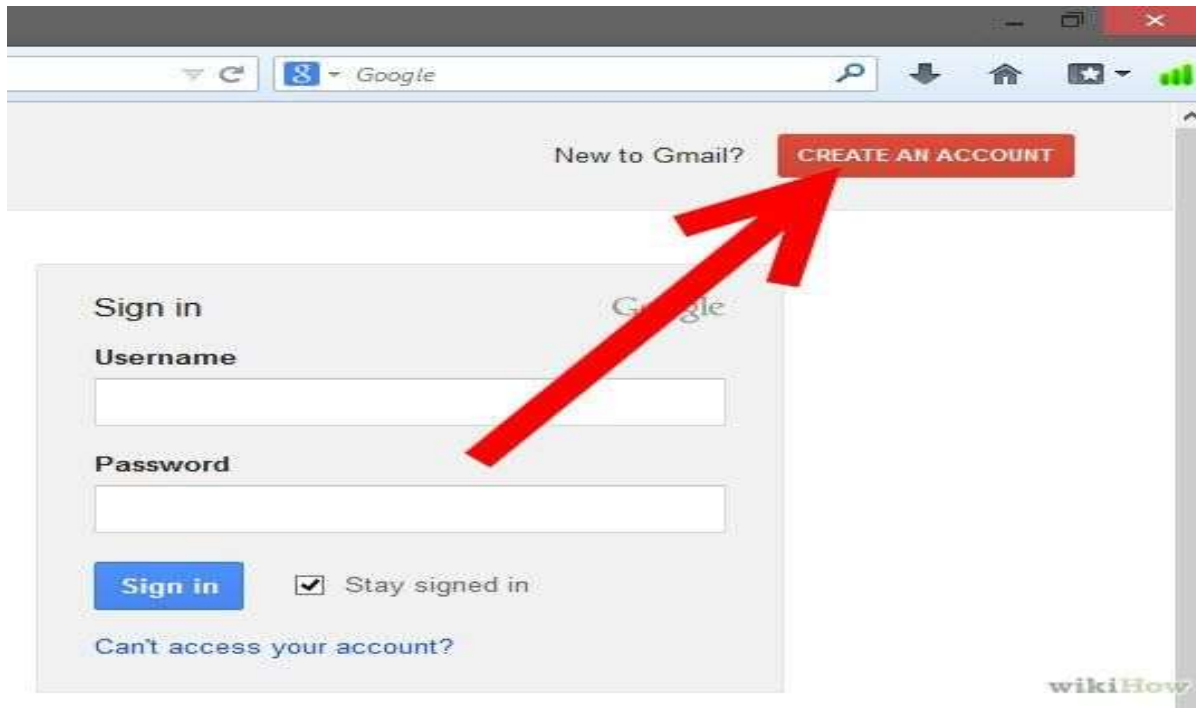
Open the Gmail website: Click the red “CREATE AN ACCOUNT” button in the top-right corner.

This will take you to the “Create a new Google Account” page.

Creating a Gmail account creates an entire Google account that you can use to access other Google products and services

IT WORKSHOP (20A05202)

25



New to Gmail? **CREATE AN ACCOUNT**

Sign in

Username

Password

Sign in ☒ Stay signed in

[Can't access your account?](#)



Name

First Last

Choose your username

emailaddress1234 @gmail.com

Someone already has that username. Try another?

Available: **emailaddress709**

Create a password

You can't leave this empty.

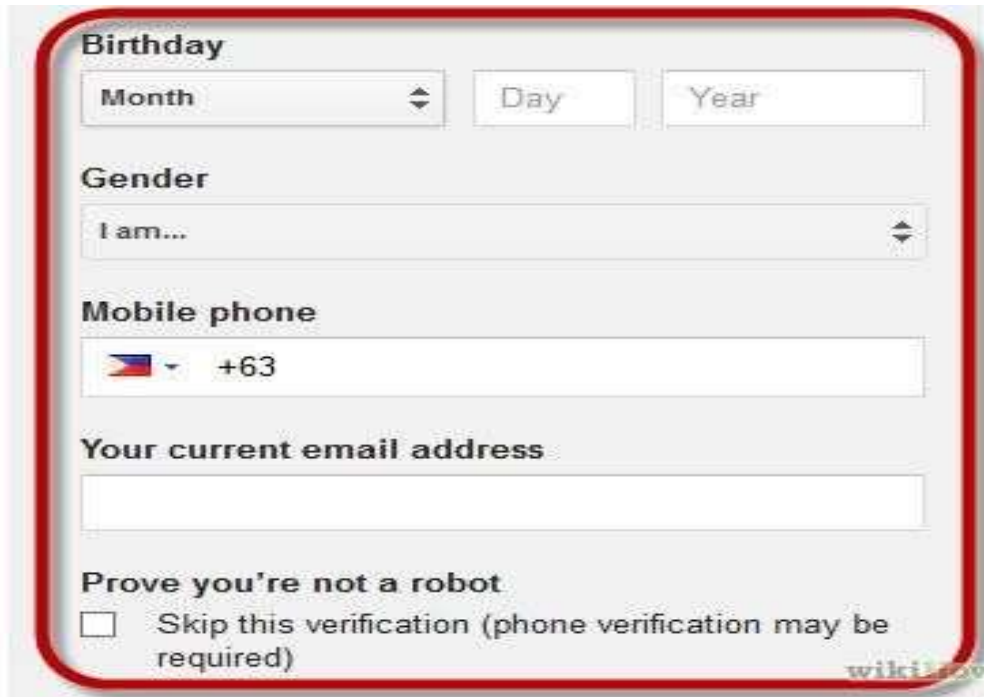
Confirm your password

CREATE AN ACCOUNT

Your username will become your new Gmail email address

IT WORKSHOP (20A05202)

26

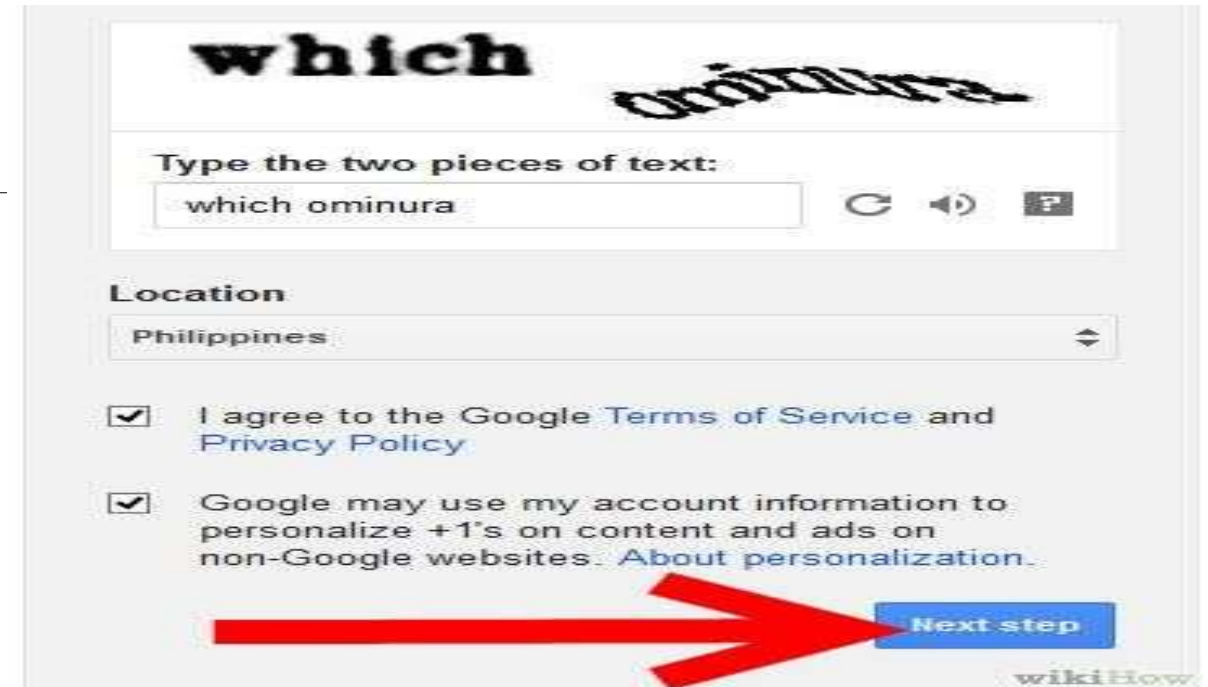


The screenshot shows a registration form with the following fields:

- Birthday:** Month (dropdown), Day (text), Year (text).
- Gender:** I am... (dropdown).
- Mobile phone:** Country code (+63) and phone number (text).
- Your current email address:** (text).
- Prove you're not a robot:** A checkbox labeled "Skip this verification (phone verification may be required)".

A red border highlights the entire form area. A "wikiHow" watermark is visible in the bottom right corner.

Fill out the rest of the required information



The screenshot shows a CAPTCHA and privacy policy agreement screen. The CAPTCHA text is "which ominura". Below it, there is a text input field containing "which ominura". To the right of the input field are icons for refresh, volume, and help. Below the CAPTCHA is a "Location" dropdown menu set to "Philippines". There are two checkboxes, both checked:

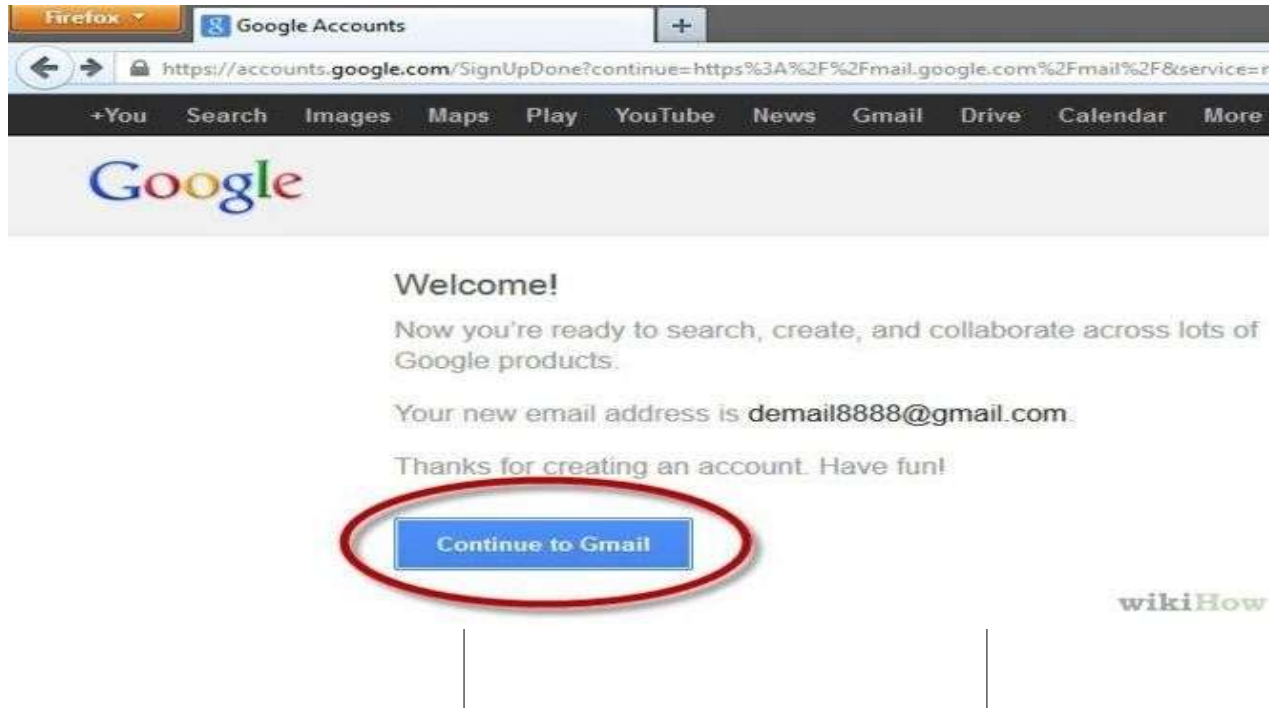
- ☒ I agree to the [Google Terms of Service](#) and [Privacy Policy](#)
- ☒ Google may use my account information to personalize +1's on content and ads on non-Google websites. [About personalization.](#)

A large red arrow points to a blue button labeled "Next step". A "wikiHow" watermark is visible in the bottom right corner.

Complete the CAPTCHA and Agree to the privacy policy

IT WORKSHOP (20A05202)

27



Your Gmail account has been created

7. INSTALLATION OF ANTIVIRUS

ANTIVIRUS

An antivirus product is a program designed to detect and remove viruses and other kinds of malicious software from your computer or laptop. Malicious software - known as malware - is code that can harm your computers and laptops, and the data on them.

Steps to Installing Antivirus

1. Install the software on each server or PC that has access to the internet. It may not be necessary to install the software on other PCs if they access the internet via your main server.
2. You need to consider remote or mobile workers or workers that use laptop computers. They will need the antivirus software installed on their systems too.
3. Once the above has been achieved, check for updates via the internet. Go to the main menu for your software and select updates. If there are any, then it will simply and automatically download on to your PC.

IT WORKSHOP (20A05202)

4.The next step is to run the antivirus in order to make sure that there aren't any viruses or other malware on the PCs.

5.In most packages is it possible to set a time for your software to automatically check for updates and then check for viruses. You may wish to set this to weekends or evenings as this activity, while working in background and allowing users to continue to work, can still effect the performance of your PC or server.

6.It is important to have a plan in place that helps your organization to react to a virus and recover

Administration training – plan for half a day. You will need to choose an individual to learn how to add extra users, download updates and check for viruses.

User training--This is simply to ensure that everyone is comfortable with the antivirus package and to help them set it up in order to meet their requirements

IT WORKSHOP (20A05202)

30

8. MS WORD

INTRODUCTION:

Microsoft word is a word processor software developed by Microsoft in 1983. It is the most commonly used word processor software. It is used to create professional quality documents, letters, reports, resumes, etc and also allows you to edit or modify your new or existing document. The file saved in Ms Word has .docx extension. It is a component of the Microsoft Office suite, but you can buy it separately and is available for both Windows and macOS. The latest version of Ms Word is 2019. In this article we will learn the features of Ms Word, but first we learn how to open Ms Word?

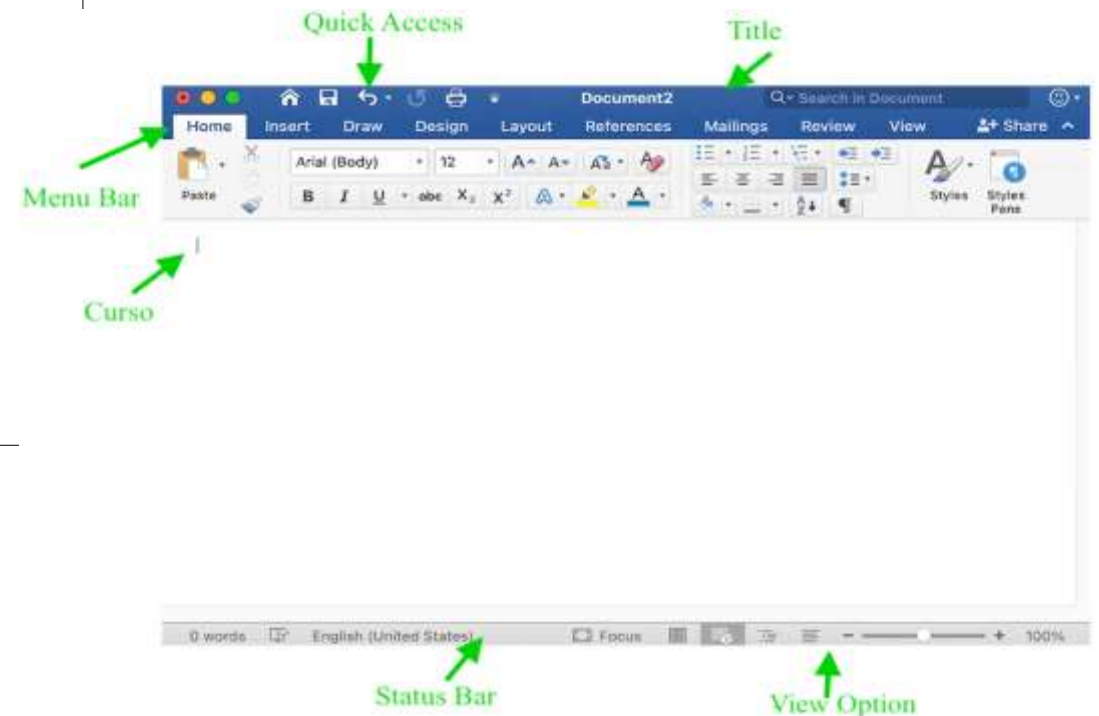
IT WORKSHOP (20A05202)

31

How to open MS Word?

The following step shows how to open MS words:

Step 1: Type Ms Word in the search bar.

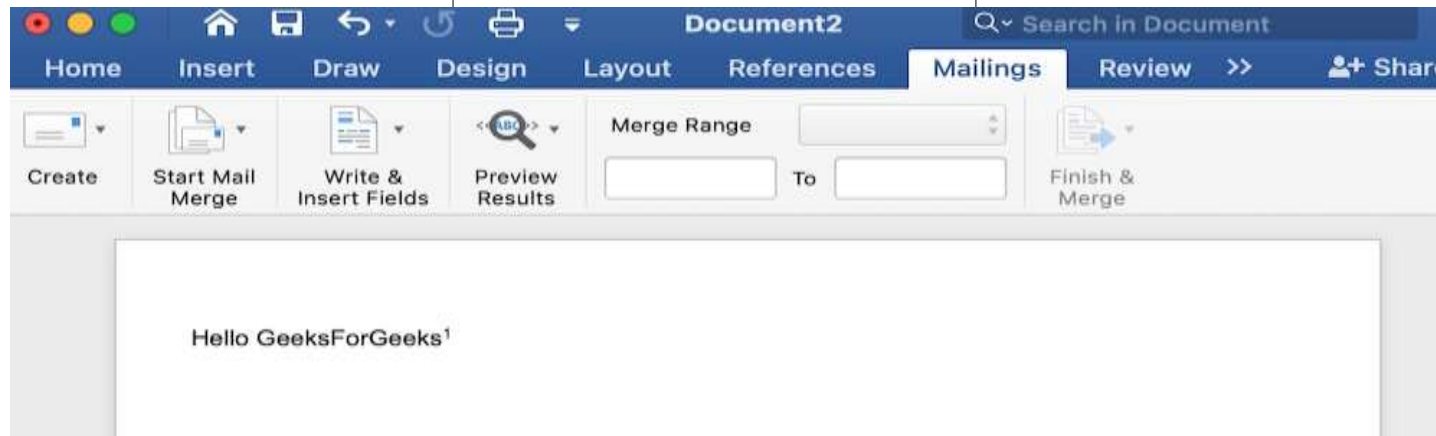


IT WORKSHOP (20A05202)

32

Features of MS Word

Now let us discuss the features or components of the Ms Word. Using these features, you can perform different types of operations on your documents, like you can create, delete, style, modify, or view the content of your document.



10. MS POWERPOINT

Procedure: PowerPoint is a tool you can use to communicate your ideas effectively through visual aids that look professionally designed yet are easy to make. With PowerPoint, you can create slides for your presentation in the output you require: blank and white overheads, color overheads, 35mm slides or on-screen electronic slide shows. In addition, you can prepare speaker's notes, print an outline and print audience hand outs.

Starting PowerPoint: To launch PowerPoint, Click the Start Button on the Windows Taskbar, select Programs and then click on Microsoft PowerPoint. You might also find the PowerPoint icon on your MS Office Toolbar.

Creating Slides: When you create a new presentation using a template (including the Blank Presentation template), you start with first and then continue to build the presentation by inserting new slides.

IT WORKSHOP (20A05202)

34

PRESENTATION ON IT WORKSHOP

Divisions

The following are the divisions in IT Workshop

- Hardware LAB
- CP LAB
- Basic S/w Applications LAB

Hardware LAB

- The Hardware Lab contains all the peripherals of the computer. Every component of the computer is shown and a clear explanation is given on every component. This helps the student to identify various parts of the computer and the functionality of each part.
- System Assembling and Disassembling is explained to the student and every student is urged to assemble and disassemble the system.
- Installation of Operating systems, basic Hardware troubleshooting is taught in this Lab.

CP LAB

This lab has thirty systems. The students will execute the C - programs on the system which were discussed in the classroom. This gives a better understanding to the student as all the programs are executed by him practically.

IT WORKSHOP (20A05202)

35

11. MS EXCEL

MS-EXCEL is a part of Microsoft Office suite software. It is an electronic spreadsheet with numerous rows and columns, used for organizing data, graphically represent data(s), and performing different calculations. It consists of 1048576 rows and 16384 columns; a row and column together make a cell. Each cell has an address defined by column name and row number example A1, D2, etc. this is also known as a cell reference.

Cell references: The address or name of a cell or a range of cells is known as Cell reference. It helps the software to identify the cell from where the data/value is to be used in the formula. We can reference the cell of other worksheets and also of other programs.

Referencing the cell of other worksheets is known as External referencing.

Referencing the cell of other programs is known as Remote referencing.

There are three types of cell references in Excel:

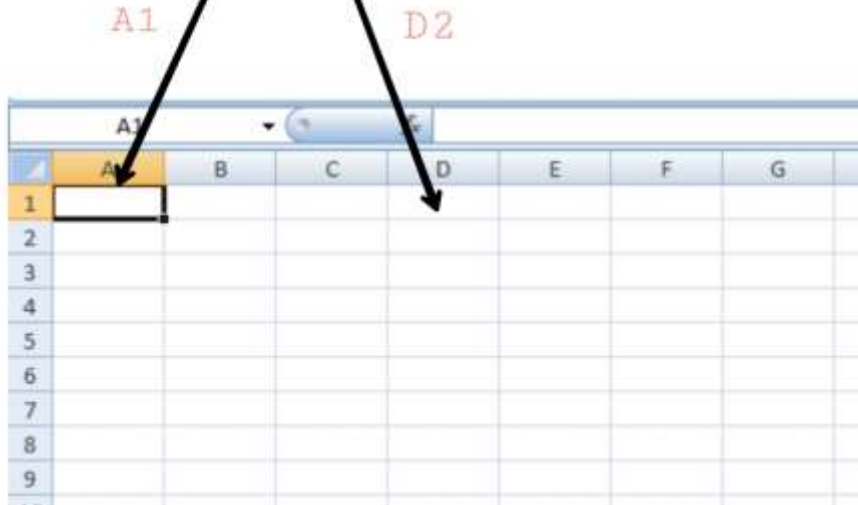
Relative reference.

Absolute reference.

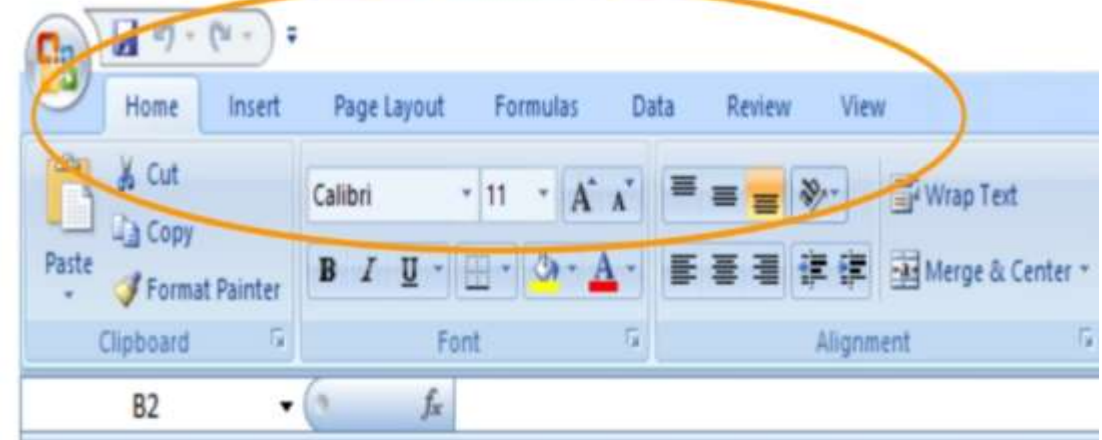
IT WORKSHOP (20A05202)

36

Cell reference



Ribbon



Click to add a new sheet

IT WORKSHOP (20A05202)

37

FEATURES OF SPREADSHEETS:

- ❖ AutoSum - helps you to add the contents of a cluster of adjacent cells.
- ❖ List AutoFill - automatically extends cell formatting when a new item is added to the end of a list.
- ❖ AutoFill - allows you to quickly fill cells with repetitive or sequential data such as chronological dates or numbers, and repeated text. AutoFill can also be used to copy functions. You can also alter text and numbers with this feature.
- ❖ AutoShapes toolbar will allow you to draw a number of geometrical shapes, arrows, flowchart elements, stars and more. With these shapes you can draw your own graphs.
- ❖ Wizard - guides you to work effectively while you work by displaying various helpful tips and techniques based on what you are doing.

11. LATEX

INTRODUCTION:

TeX is a typesetting system written and designed by **Donald Knuth** released in **1978**. It is the most used typographical system.

LaTeX was created by **Leslie Lamport** in **1983**. LaTeX was created as an addition to the TeX typesetting system and to make it easier to produce books and articles within TeX. LaTeX is not a word processor. It is used as a document markup language.

Commands:

LaTeX commands begin with a backslash. Commands may have arguments, given in curly braces and square brackets.

`\command[optional argument]{argument}`

IT WORKSHOP (20A05202)

Syntax:

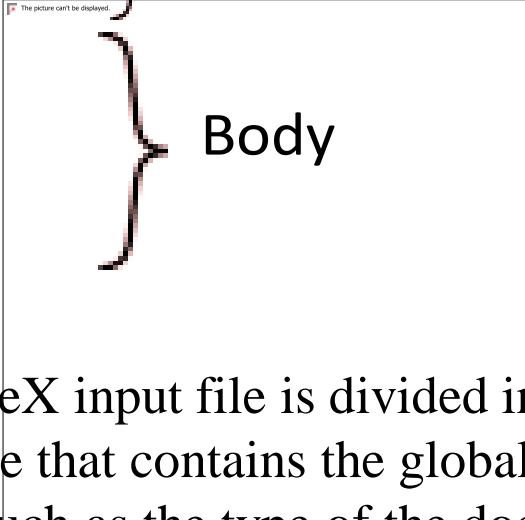
```
\documentclass{documenttype}
```

} Preamble

```
\begin{document}
```

} Body

```
\end{document}
```



The main structure of a LaTeX input file is divided into two parts- preamble and body.

The first part is the preamble that contains the global processing parameters for the entire document to be produced, such as the type of the document, page formatting, header and footer setting, inclusion of LaTeX packages for supporting additional instructions, and definitions of new instructions.

The main body of a LaTeX input file start with `\begin{document}` and ends with `\end{document}`. The entire contents to be printed in the output are inserted within the body. A LaTeX input file is named with .tex extension.