UNIT 1   OPERATING SYSTEM

1.0   INTRODUCTION

In this unit, we are going to learn basics of computer. Computer is a machine that performs tasks or calculations according to a set of instructions, or programs. Compared to those early machines, today's computers are amazing. Not only are they thousands of times faster, they can fit on your desk, in your lap, or even in your pocket. Computers work through an interaction of hardware and software.

Hardware is physical component of a computer system. It is a tiny rectangular chip inside the computer called the central processing unit (CPU), or microprocessor. It is the "brain" of computer—the part that translate instructions and performs calculations. Hardware items such as monitor, keyboard, mouse, printer, and other items are often called hardware devices. Software refers to the instructions or programs that tell the hardware what to do.

The operating system (OS) is system software that manages computer and the devices connected to it. OS is responsible for management and coordination of activities and the sharing of the limited resources of computer. The OS acts as a host for other application software.

We will be discussing about two well known operating systems:

(a)   Windows operating system, and

(b)   Linux operating system.

1.1   OBJECTIVES

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

- understand about computer and it's components;
- features of Windows XP;
- know the installation procedure of Windows XP;
- features of Linux (Fedora);
- know the installation procedure of Fedora; and
- know the utilities and basic commands of Fedora.

1.2   FAMILIARIZATION WITH I/O PORT, KEYBOARD, MEMORY

Computer plays a key role in how individuals work and how they live. Even the smallest organizations have computers to help them operate more efficiently, and many individuals use computers at home for educational, entertainment, and business purposes. Thus you must be familiar with computers and its components.

In the following sub-sections, we will discuss the same and there is practice session also at the end of this section. Hope you will enjoy this practice session.

1.2.1   Computer and Motherboard

Computer : A computer is programmable machine that receives input, stores, manipulate data, and provides output in a useful format.

Computer takes input from input devices and then compute in CPU and stores in memory and sends output to output devices. The most common device for input is the keyboard. When you type, you are putting information into the computer, which is known as input. The most common device for output is the monitor. These input output devices are connected through I/O Ports.
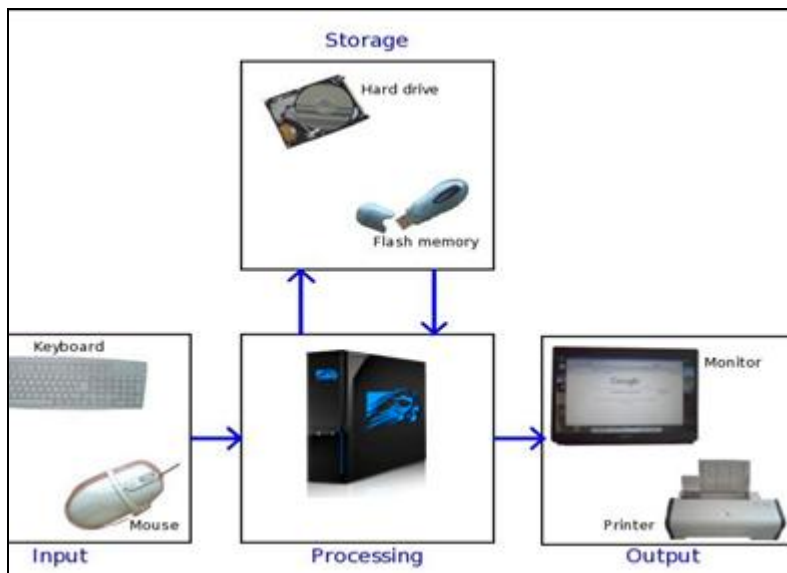
Figure 1.1 : Working of Computer

A computer system unit contains many parts. As shown in Figure 1.2(a) and Figure 1.2 (b).

Motherboard : The motherboard is the main circuit board of a computer. It is also known as the main board or system board. Typically, the motherboard contains the **CPU, BIOS, memory, mass storage** interfaces, **serial and parallel ports, expansion slots**, and all the **controllers** required to control standard **peripheral devices**, such as the **display screen, keyboard,** and **disk drive.** Collectively, all these chips that reside on the motherboard are known as the motherboard's **chipset.** The motherboard can be thought of as the "back bone" of the computer.
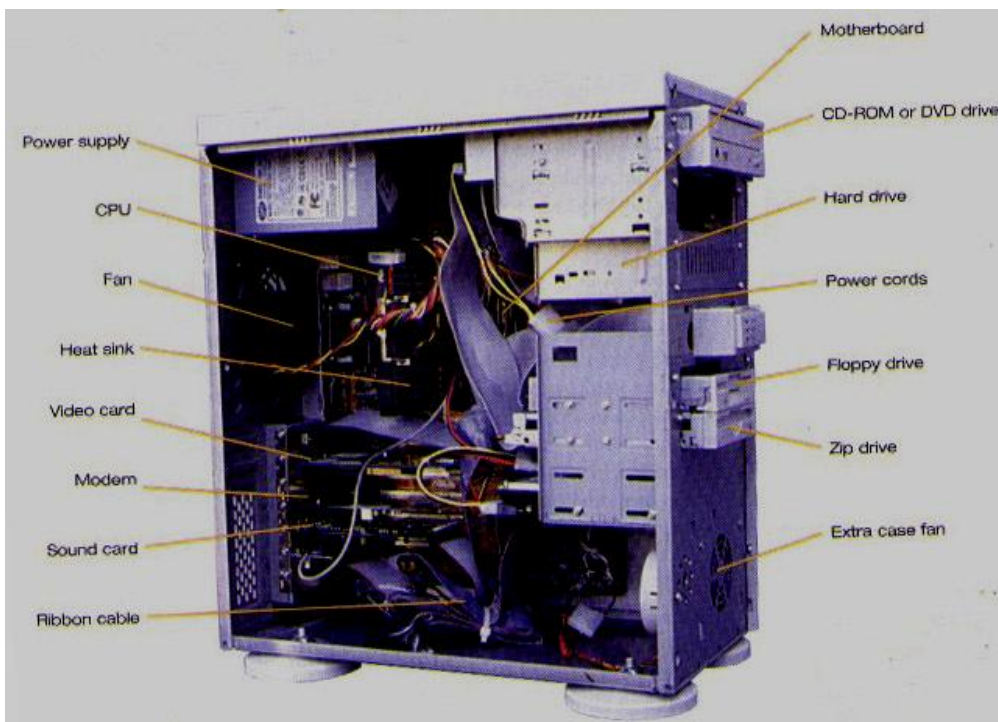

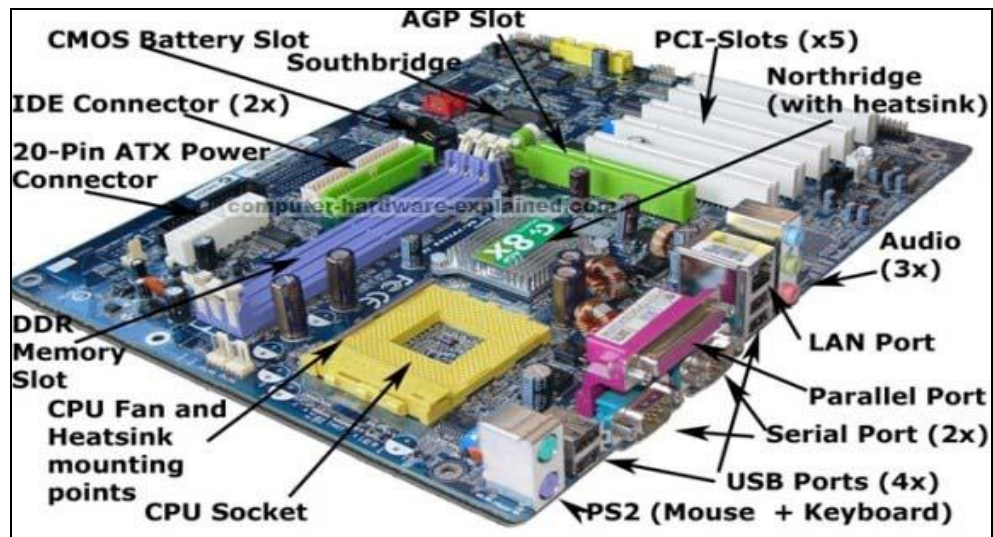**Figure 1.2(a) : Overview of Motherboard**

Figure 1.2 (b) : Detailed Overview of Motherboard

CPU : The CPU is the central electronic chip that contains the processing power of the computer. Today, all CPUs are microprocessors.

1. A microprocessor is a complete computer on a silicon chip.
2. A microprocessor does all of the functions of a computer.
    *   stores data and instructions waiting to be used.
    *   follows changeable instructions.
    *   does input, processing, and output.

Memory : Memory is the part of the computer that temporarily stores applications, documents, and system operating information.

1.2.2   I/0 Ports

In this sub-section, we will study about I/O ports.

Ports and Connectors : A port is a connector located on the motherboard or on a separate adapter. This we will discuss in following sub section.

As shown in figure 1.2 an internal view of some of the I/O ports. On the back of computers are several I/O (or Input/output) ports. Above, on the very top are two PS/2 ports, normally used for mouse and keyboard connections. Below that are the USB, (or Universal Serial Bus), ports. Below those are two serial ports beside a long parallel port that is often used to connect to a printer. On the bottom right is a game port for joysticks or other game controllers. On the bottom left is a microphone hook up, a speaker hook up, and an additional hook up for another sound input device like a musical keyboard.
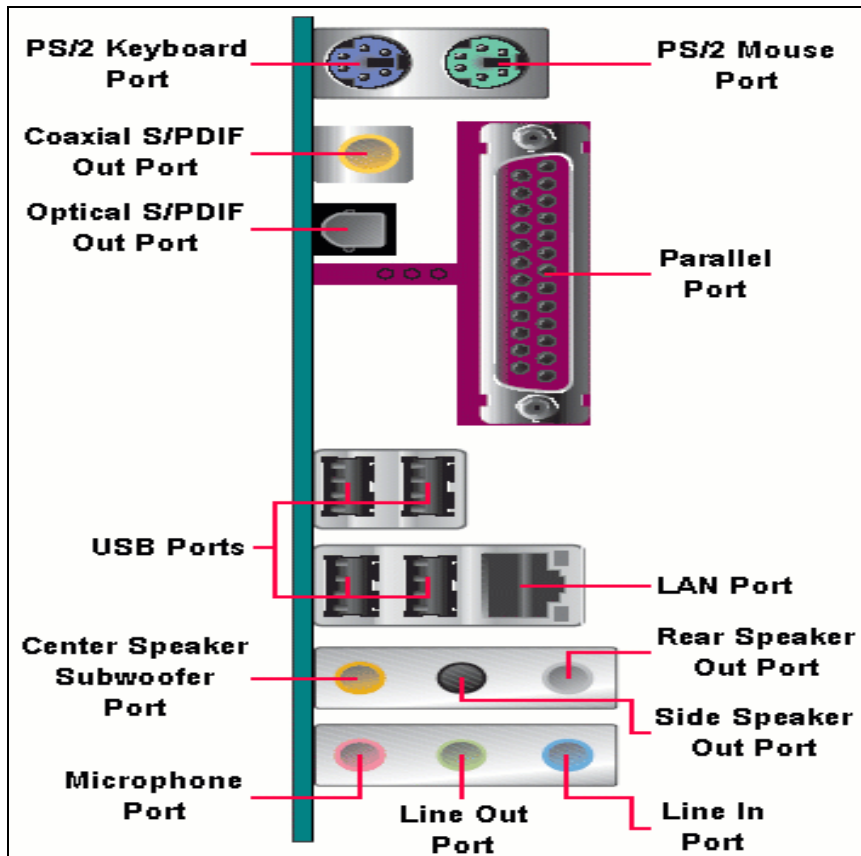
Figure 1. 3. I/O Port

I/O ports are there to connect to I/O devices. There are various I/O devices which are discussed in the next subsection:

1.2.3   I/O Devices

Few I/O devices are given Table 1.1.

Table 1.1 : I/O Devices

Input Devices	Output Devices
Mouse	Monitor
Joystick	LCD
Scanner	Printer
Light Pen	Plotter

Here, we are discussing about Keyboard and mouse. Rest is kept for you to explore.

Keyboard Basics

Keyboard

- is used to type data into the computer.
- is most common input device.
- has special keys for giving the computer commands.
    - Commands tell the computer to do something, like save the file.
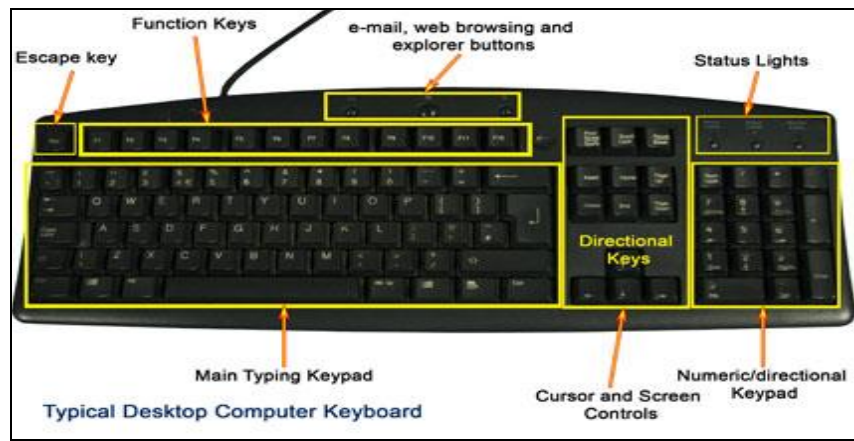   - These special keys are called command or function keys.

Figure 1.4: Overview of Keyboard

Types of Keys

Typing Keys / Main Typing Keypad: It holds alphabetic character such as letter, special characters and numbers for typing.

Numeric Keypad: It can be used as numeric and directional keys, pressing the Num Lock key above the numeric keypad will tell whether the keys are on numeric or directional mode. If it is on, it is on numeric mode and can enter numbers. If it is off, it is on directional mode and only used for moving a cursor on screen UP, Down, Left or Right.

Function Keys: There are 12 functions keys starting from F1 through F12. These keys are used for special purposes.

Control Keys: It has two groups of keys, arranged from top to bottom.

The top keys holds Insert, Home, Page Up, Page Down, Delete, and End keys. Insert key switches between insert and overtype modes. Home key brings you back at the beginning of a page. Page Up and Page Down keys help you to move one page or screen up or down. Delete key erases a text or page. The End key takes you at the end of a page.

The bottom keys are independent directional keys, which let you to move the cursor Left, Right, Up and Down. Status lights, Escape key, Print Screen/SysRq, Scroll Lock, and Pause/Break are user for frequent functions.

Status Lights : These light indicate whether Num Lock, Caps Lock or scroll Lock light is on /off.

There are several short cut keys to make our work convenient when mouse is not working or if we do not want to do several manouvres with the mouse. It makes our work convenient while working with MS-Word.

Shortcut Keys	Description

Ctrl + A	Select all contents of the page.
Ctrl + B	Bold highlighted selection.
Ctrl + C	Copy selected text.
Ctrl + E	Aligns the line or selected text to the center of the screen.
Ctrl + F	Open find box.
Ctrl + I	Italic highlighted selection.
Ctrl + J	Aligns the selected text or line to justify the screen.
Ctrl + K	Insert link.
Ctrl + L	Aligns the line or selected text to the left of the screen.
Ctrl + M	Indent the paragraph.
Ctrl + P	Open the print window.
Ctrl + Spacebar	Reset highlighted text to the default font.
Ctrl + 1	Single-space lines.
Ctrl + 2	Double-space lines.
Ctrl + 5	1.5-line spacing.
Ctrl + Alt + 1	Changes text to heading 1.
Ctrl + Alt + 2	Changes text to heading 2.
Ctrl + Alt + 3	Changes text to heading 3.
Alt + Ctrl + F2	Open new document.
Ctrl + F1	Open the Task Pane.
Ctrl + F2	Display the print preview.
Ctrl + Shift >	Increases the highlighted text size by one.
Ctrl +]	Increase selected font +1pts.
Ctrl + Shift + <	Decrease selected font -1pts if 12pt or lower, if above 12 decreases font by +2pt.
Ctrl + [	Decrease selected font -1pts.
Ctrl + / + c	Insert a cent sign (¢).

Ctrl + R	Aligns the line or selected text to the right of the screen.
Ctrl + T	Create a hanging indent.
Ctrl + U	Underline highlighted selection.
Ctrl + V	Paste.
Ctrl + X	Cut selected text.
Ctrl + Y	Redo the last action performed.
Ctrl + Z	Undo last action.
Ctrl + Shift + F	Change the font.
Ctrl + Shift + >	Increase selected font +1pts up to 12pt and then increases font +2pts.
Ctrl + ' + <char>	Insert a character with an accent (grave) mark, where <char> is the character you want. For example, if you wanted an accented è you would use Ctrl + ' + e as your shortcut key. To reverse the accent mark use the opposite accent mark, often on the tilde key.
Ctrl + Shift + *	View or hide non printing characters.
Ctrl + <left arrow>	Moves one word to the left.
Ctrl + <right arrow>	Moves one word to the right.
Ctrl + <up arrow>	Moves to the beginning of the line or paragraph.
Ctrl + <down arrow>	Moves to the end of the paragraph.
Ctrl + Del	Deletes word to right of cursor.
Ctrl + Backspace	Deletes word to left of cursor.
Ctrl + End	Moves the cursor to the end of the document.
Ctrl + Home	Moves the cursor to the beginning of the document.

How keyboard connects to a computer?

Computer Keyboard can connect with a computer through a cable or signal (wireless connection). Until recently, a keyboard used to connect with the standard PS/2 type or Serial.

Now, this trend has changed and the connection is replaced by USB (universal serial bus) and wireless connectors. Most modern PCs (motherboards) even don't have PS/2 connectors, only USB.

Since, there is no cable connection with main PC, wireless keyboard gets power from battery or a/c power connection. This is the side effect of wireless keyboards; you often have to change battery.

Mouse

The mouse is a small device used to point to a particular place on the screen and select in order to perform one or more actions. It can be used to select menu commands, size windows, start programs etc. The most conventional kind of mouse has two buttons on top: the left one being used most frequently.
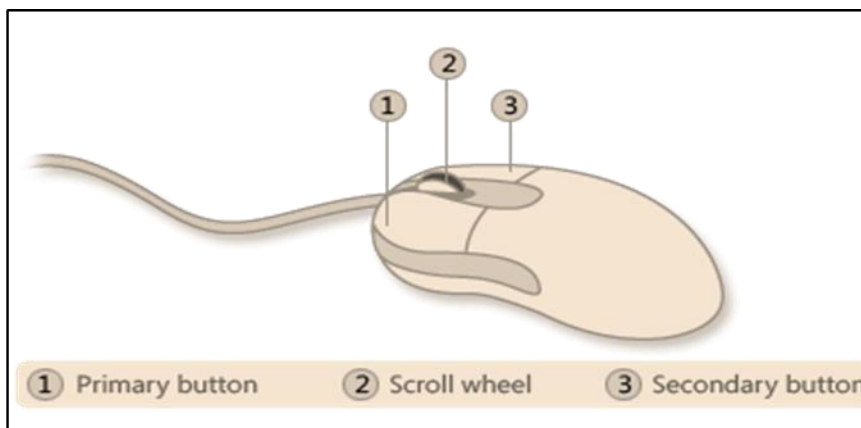

Figure 1.5 : Mouse and its buttons

Mouse buttons

Primary button / left button for left click

Secondary button / right button for right click

Scroll wheel for moving page up or down

Mouse Actions

Pointing : Point the object

Left Click: Used to select an item.

Double Click: Used to start a program or open a file.

Right Click: Usually used to display a set of commands.

Drag and Drop: It allows you to select and move an item from one location to another. To achieve this place the cursor over an item on the screen, click the left mouse button and while holding the button down move the cursor to where you want to place the item, and then release it.

How Mouse is connected to PC

Mouse is connected to pc similarly as keyboard. It can be connected with either PS/2 connectors or USB. The connections can be through a cable or wirelessly as well.

1.2.4 Memory

Now we discuss about one of the most important parts of computers i.e memory. Computers generally possess several distinct types of memory, each of which "holds" or stores information for subsequent use. The vast majority of computer memory can be placed into one of two categories: primary memory and secondary memory.
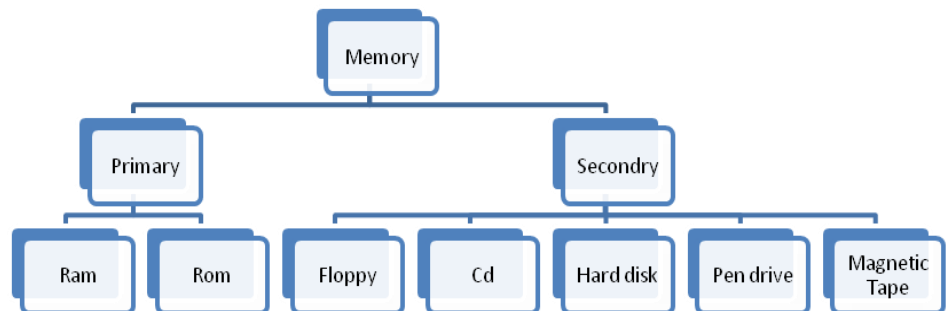

Figure 1.6 : Hierarchy of memory

Primary memory, often called main memory, constitutes that device, or group of devices, that holds instructions and data for rapid and direct access by the computer's central processing unit (CPU). Primary memory is synonymous with random-access memory (RAM).

Figure 1.7 : RAM

Modern RAM is made of semiconductor circuitry. RAM is a volatile form of information storage, meaning that when electrical power is terminated any data that it contains is lost. There are other semiconductor memory devices accessed by the CPU that are generally considered as being distinct from primary memory (i.e., different from RAM). These memory units include cache memory, read-only memory (ROM), and Programmable Read Only Memory (PROM) and EPROM (erasable programmable read-only memory

Secondary memory, also called auxiliary memory or mass storage, consists of devices not directly accessible by the CPU. Hard drives, floppy disks, tapes, and optical disks are widely used for secondary storage. First, most secondary storage devices are capable of containing much more information than is feasible for primary memory (hence the use of the term "mass storage" as a synonym for secondary memory). A second, and essential, feature of secondary memory is that it is non-volatile. This means that data is stored with or without electrical power being supplied to the device, as opposed to RAM, which can retain its data only so long as electrical power is present.

Like primary memory, many secondary memory devices are capable of storing information, as well as retrieving it. Magnetic technology devices (such as hard drives, floppy disks, and tape) have this read-write capability, as do magneto-optical drives. However, some mass storage devices can only read data, as in the case of CD-ROM (Compact Disk-Read Only Memory) drives. CD-ROMs utilize

optical technology; however, newer optical technologies, such as CD-RW (compact disk-rewriteable), can both read and write information like magnetic storage devices.
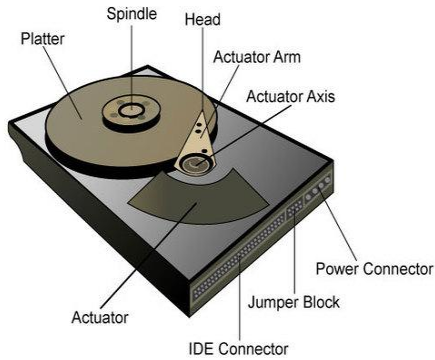
Hard Disk

Spindle   Head

Platter

Actuator Arm

Actuator Axis

Power Connector

Jumper Block

Actuator

IDE Connector

Figure 1.8(a) : Internal view

Figure 1.8(b) : External view

The hard disk is the main, and usually largest, data storage device in a computer. The operating system, software titles and most other files are stored in the hard disk.

Now let's have a Practice Session

Check Your Progress 1

1. Find shortcut keys for the following:

   a) To Open Help.

   b) To repeat the last action performed.

   c) To save document

   d) To Bold the selected text

   e) Change the text in Microsoft Word from uppercase to lowercase or capital letter at the beginning of every word.

2. List use of following function keys:

      F1, F2, F3, F4, F5, F7, F8, F12

3. Type the following passage in MS-WORD

   over the past few years the growth of the computer industry has been quiet remarkable and today it is the fastest growing industry in our economy. Nowadays, many schools are equipped with computers for educating their students. Thereby making computers an integral part of education system. Teachers and profesors use computers for teaching, giving presentations, assessing various data banks, maintaining database of students, communication in the form of e mails or chat, browsng the Internet and

Preparing students to have a competitive edge in the global job market. Computers have revolutionized the learning for students in a big way. They can watch various films on wild life, history, geography, science and encyclopedias with loud sound and excellent picture quality on CompactDisc'sorDVD's.

(a)   In this paragraph, there are few spelling errors. Try spelling check for this. Try to find and replace 'loud' by ''excellent''.

(b)   Now save this paragraph with the name 'computer' on your desktop.

1.3   WINDOWS OPERATING SYSTEM

The main operating systems involved in networking now days are Windows and Linux. Both are having their own advantages and disadvantages. Linux works better on older, less powerful computer hardware because it requires less resource (memory or processing) as compared to Windows. Compared to Windows, Linux is virus-free and bugs free. Windows provides the user a mature, familiar and interactive interface that is easy to learn and understandable. But we think that a network administrator should have an expertise on both of these leading network operating systems. Even most of the network administrators are running both Linux and Windows on the server for the best networking.

This section provides you the:

(1)   Discussions, demonstrations, and lab exercises to sharpen your skills and knowledge necessary to admin and support Windows XP/Linux networking.

(2)   It contains an overview of Windows XP and Linux/Unix in the beginning to develop your understanding of these operating systems.

(3)   Further in this course you have an example to introduce you in the lab. Then you have different lab exercises on Linux/Unix and on Windows XP.

1.3.1   Overview of Windows

Background to Windows

Windows XP is an **operating system** that was produced by **Microsoft** for use on personal, including home and business desktops, **laptops**, and **media centers.** It was first released to computer manufacturers on August 24, 2001, and is the most popular version of **Windows,** based on installed user base. The name "XP" is short for "experience."

Windows XP was the successor to both **Windows 2000** and **Windows Me**, and was the first consumer-oriented operating system produced by Microsoft
System Requirement for windows XP.

- Pentium 233-megahertz (MHz) processor or faster (300 MHz is recommended).

- At least 64 megabytes (MB) of RAM (128 MB is recommended).

- At least 1.5 gigabytes (GB) of available space on the hard disk.

- CD-ROM or DVD-ROM drive.

- Keyboard and a Microsoft Mouse or some other compatible pointing device.

- Video adapter and monitor with Super VGA (800 x 600) or higher resolution.

- Sound card.

- Speakers or headphones.

1.3.2 Windows Installing Procedure

This procedure demonstrates how to install Windows XP Professional. The procedure to install Windows XP home edition is very similar to the professional edition. Since Windows XP Pro is more advanced operating system, it will be used to demonstrate the installation procedure.

The best way install Windows XP is to do a clean install. It is not difficult to perform a clean installation. Before you perform the installation I recommend that you check **Windows XP Compatibility List** to ensure that your hardware is supported by XP. If your hardware is not on the compatibility list you can check your hardware manufactures website to download the drivers for Windows XP. Save all the necessary drivers onto floppy disks or CD before you start the installation.

Step 1 : Start your PC and place your Windows XP CD in your CD/DVD-ROM drive. Your PC should automatically detect the CD and you will get a message saying "Press any key to boot from CD". Soon as computer starts booting from the CD your will get the following screen:

Step 2 :   At this stage it will ask you to press F6

Step 3 Press S to specify that you want to install additional device.

Step 4 : You will be asked to insert the floppy disk with drivers. Press enter after you have inserted the disk.

Step 5 : You will see a list of drivers for your HDD. Select the correct driver for your device and press enter.

Step 6 : You will then get a Windows XP Professional Setup screen. You have the option to do a new Windows install, Repair previous install or quit. Since we are doing a new install we just press Enter to continue.

Step 7 : You will be presented with the End User Licensing Agreement. Press F8 to accept and continue

Step 8 : This step is very important. Here we will create the partition where Windows will be installed. If you have a brand new unformatted drive you will get a screen similar to below. In our case the drive size is 8190MB. We can choose to install Windows in this drive without creating a partition, hence use the entire size of the drive. If you wish to do this you can just press enter and Windows will automatically partition and format the drive as one large drive.

Step 9: Windows will show the total size of the hard drive and ask you how much you want to allocate for the partition you are about to create. I will choose 6000MB. You will then get the screen below. Notice it shows C: Partition 1 followed by the size 6000 MB. This indicates the partition has been created. We still have an unpartitioned space of 2189MB. Next highlight the unpartitioned space by pressing down the arrow key. Then press C to create another partition. You will see the total space available for the new partition. Just choose all the space left over, in our case 2180MB.

Step 10 : Choose format the partition using NTFS file system.This is the recommended file system. If the hard drive has been formatted before then you can choose quick NTFS format. We chose NTFS because it offers many security features, supports larger drive size, and bigger size files.

Windows will now start formatting drive C: and start copying setup files as shown on the two images below :

Step 11 : After the setup has completed copying the files the computer will restart. Leave the XP CD in the drive but this time DO NOT press any key when the message "Press any key to boot from CD" is displayed. In few seconds setup will continue. Windows XP Setup wizard will guide you through the setup process of gathering information about your computer.

Step 12 : Choose your region and language.

Step 13 : Type in your name and organization.

Step 14 : Enter your product key.

Step 15: Name the computer, and enter an Administrator password. Don't forget to write down your Administrator password.

Step 16: Enter the correct date, time and choose your time zone.

Step 17: For the network setting choose typical and press next.

Step 18 : Choose workgroup or domain name. If you are not a member of a domain then leave the default settings and press next. Windows will restart again and adjust the display.

Step 19: Finally, Windows will start and present you with a Welcome screen. Click next to continue.

Step 20 : *Choose* 'help protect my PC by turning on automatic updates now' *and press next.*

Step 21 : Will this computer connect to the internet directly, or through a network? If you are connected to a router or LAN then choose: *'Yes, this computer will connect through a local area network or home network'*. If you have dial up modem choose: *'No, this computer will connect directly to the internet'.* Then click Next.

Step 22 : Ready to activate Windows? Choose yes if you wish to active Windows over the internet now. Choose no if you want to activate Windows at a later stage.
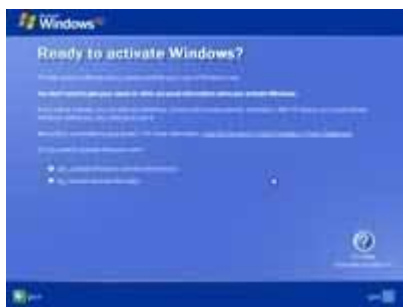
Step 23: Add users that will sign on to this computer and click next.

Step 24 : You will get a Thank you screen to confirm setup is complete. Click finish.

Step 25 : Log in, to your PC for the first time.

Step 26 : You now need to check the device manager to confirm that all the drivers has been loaded or if there are any conflicts. From the start menu select Start -> Settings -> Control Panel. Click on the System icon and then from the System Properties window select the Hardware tab, then click on Device Manager.
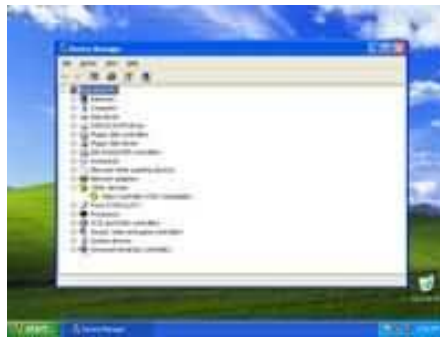
If there are any yellow exclamation mark "!" next to any of the listed device, it means that no drivers or incorrect drivers has been loaded for that device. In our case we have a Video Controller (VGA card) which has no drivers installed.

Your hardware should come with manufacturer supplied drivers. You need to install these drivers using the automatic setup program provided by the manufacturer or you need to manually install these drivers. If you do not have the drivers, check the manufacturer's website to download them.

To install a driver manually use the following procedure:

(a)   From the device manager double click on the device containing the exclamation mark.

(b)   This would open a device properties window.

(c)   Click on the Driver tab.

(d)   Click Update Driver button. The Wizard for updating device driver pops up as shown below:

You now get two options. The first option provides an automatic search for the required driver. The second option allows you to specify the location of the driver. If you don't know the location of the driver choose the automatic search which would find the required driver from the manufacturer supplied CD or Floppy disk. Windows would install the required driver and may ask you to restart the system for the changes to take affect. Use this procedure to install drivers for all the devices that contain an exclamation mark.

1.3.3   Working with XP

i)   Desktop

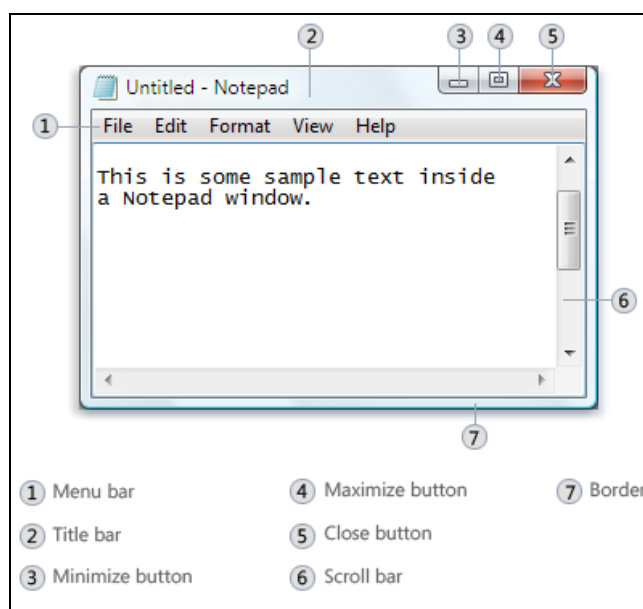The typical Windows XP desktop includes following desktop icons

Icons are small pictures that represent files, folders, programs, and other items. Double-clicking a desktop icon starts or opens the item it represents. For e.g. Internet Explorer. It is used to quickly access Internet.

The Taskbar is usually located on the bottom of the screen. It houses the Start button, clock, and a task button for each active program currently running and each open folder.

ii) Parts of a window

Most windows have the same basic parts:

① Menu bar	④ Maximize button	⑦ Border
② Title bar	⑤ Close button	
③ Minimize button	⑥ Scroll bar	

- Title bar. Displays the name of the document and program (or the folder name if you're working in a folder).

- Minimize, Maximize, and Close buttons. These buttons hide the window, enlarge it to fill the whole screen, and close it, respectively (more details on these shortly).

- Menu bar. Contains items that you can click to make choices in a program. See **Using menus, buttons, bars, and boxes.**

- Scroll bar. Lets you scroll the contents of the window to see information that is currently out of view.

- Borders and corners. You can drag these with your mouse pointer to change the size of the window.

a) Moving a window

To move a window, point to its title bar with the mouse pointer ⬉ . Then drag the window to the location that you want. (*Dragging* means pointing to an item, holding down the mouse button, moving the item with the pointer, and then releasing the mouse button.)

Changing the size of a window

- To make a window fill the entire screen, click its Maximize button 🔲 or double-click the window's title bar.

- To return a maximized window to its former size, click its Restore button 🔲 (this appears in place of the Maximize button). Or, double-click the window's title bar.

- To resize a window (make it smaller or bigger), point to any of the window's borders or corners. When the mouse pointer changes to a two-headed arrow (see picture below), drag the border or corner to shrink or enlarge the window.
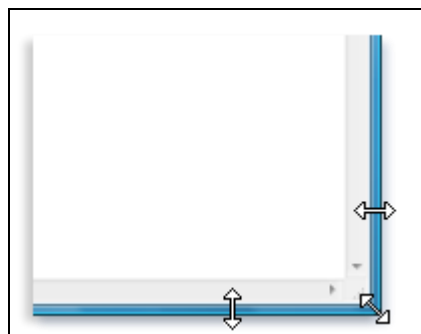
A window that is maximized cannot be resized. You must restore it to its previous size first.

b) Hiding a window

Hiding a window is called *minimizing* it. If you want to get a window out of the way temporarily without closing it, minimize it.

To minimize a window, click its Minimize button . The window disappears from the desktop and is visible only as a button on the taskbar, the long horizontal bar at the bottom of your screen.

To make a minimized window appear again on the desktop, click its taskbar button. The window appears exactly as it did before you minimized it.

Closing a window

Closing a window removes it from the desktop and taskbar. If you're done with a program or document and don't need to return to it right away, close it.

To close a window, click its Close button .

c) **Switching between windows**

- If you open more than one program or document, your desktop can quickly become cluttered with windows. Keeping track of which windows you have open isn't always easy, because some windows might partially or completely cover others.

- Using ALT+TAB. You can switch to the previous window by pressing ALT+TAB, or cycle through all open windows and the desktop by holding down ALT and repeatedly pressing TAB. Release ALT to show the selected window.

Arranging windows automatically

Now that you know how to move and resize windows, you can arrange them however you like on your desktop. You can also have Windows automatically arrange them in one of three ways: cascading, vertically stacked, or side by side.

To choose one of these options, right-click an empty area of the taskbar, then click Cascade Windows, Show Windows Stacked, or Show Windows Side by Side.

iii) **Program Management**

You can launch most of your applications via the Start button and Start Menu. Most of your applications can be launched by selecting Start, All Programs, then any program name, e.g. Microsoft Word. If an application is saved within a folder, you would launch it by selecting Start, Programs, folder name (e.g., Accessories), then program name (e.g., WordPad).

You can switch between running applications by clicking on them in the Taskbar or holding down the Alt key, then depressing and releasing the Tab key. If you inadvertently launch multiple copies of the same program, you will find that all the of copies will be grouped on to one particular Tab button. The Tab will display the name of the program and the number of copies of the program that are open. To choose a specific copy, click the Tab button and all of the copies of the program names will pop up. Click the one you want to view and it will be displayed

Similarly you can open other search engine like Google chrome & Fire fox explore whole world .

iv) **File Management**

Step by step illustration for Creating and deleting Folder :
- Click on the Start button.
- Place the pointer on *My documents.*
- Select New from the menu File.
- Select Folder.
- Once the folder option has been selected you will see that on the right window a new folder will appear that has the name *New Folder* and that it is selected. Rename it *My folder.or any other name you want.*
- Then select the folder, right click and then select option   delete   by clicking.
- When it asks you if you want to send the folder to the Recycle Bin click Yes.

Copy or Move a Folder or file

- Select the folder to be copied.
- Once the folder has been selected, click on Copy.
- Select the folder where you want to copy then open that folder , right click and select paste option.

In the case of not having the folder created to which we want to copy to,
click Make new folder, rename new folder with name you want and Click OK.

Copy or Move Multiple Files or Folders

1. Double-click on the folder *My documents and create folder 1 and folder 2* .

2. Select the folder 'folder 1'

3. Press CTRL , Select another folder 'folder 2'

4. Select from right panel under 'file and folder task 'heading 'Copy the selected items' or 'Move the selected items'

5) The following window will be open
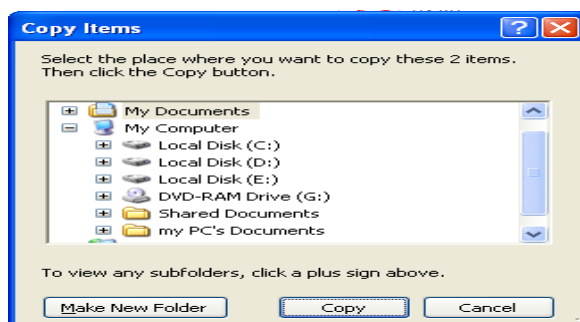
6) Then double-click the folder you want to move the selected items

7) if you want to copy in new folder then select ' make new folder ' and new folder is created then select copy

This can also be done to move or copy Files.

Some Windows XP Tips

Check the Taskbar for the programs that are currently running on your computer. You should close (click on the X at the upper right) all duplicate instances of the same program to free up memory.

If your application should "hang" (keyboard or mouse does not respond), hold down the CONTROL and ALT keys, then depress and release the DELETE key. You will get a menu of the tasks currently loaded in memory. Highlight the application that hung (usually the one that is marked "not responding"), and click on End Task. You can usually unload the application gracefully without having to reboot your computer.

Files deleted from your local hard drive will be saved in the Recycle Bin until you empty the Recycle Bin. To empty the Recycle Bin, right click on Recycle Bin, and select Empty Recycle Bin. If you need to recover deleted files from the Recycle Bin, right click on Recycle Bin, and select Explore. You should move the file from the Recycle Bin to another folder on the hard drive (for example, click and drag the file in Recycle Bin, Explore to the desktop).
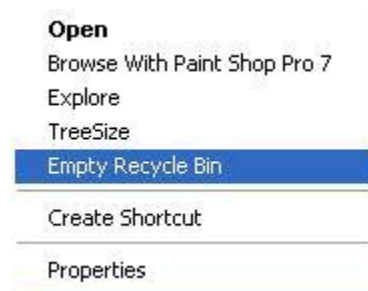
It's best to empty the Recycle Bin from time to time as deleted files saved in the Recycle Bin actually take up more hard disk space than if they were in a regular folder. But remember, once the Recycle Bin is emptied, you can NOT recover the deleted files. Also, files deleted from diskettes are not saved in the Recycle Bin.

Finding a "Missing" Document

If the document was created recently on your computer, launch the application you used to create it, and select File. Windows remembers the last nine documents you opened by default.

If you remember the file name or part of the file name but not its location, click on the START button, Search, and Files or Folders. On the menu on the left side, select All Files and Folders. In the Look In box, select (C:). In the All or Part of Name: box, enter the file name, and click Search. Windows will list all instances of the file if it finds any matches. If you know part of the file name, you can enter it in A Word or Phrase In the File: box.

Saving Documents

In Microsoft Word, the default location to save your document is the My Documents folder. To save your document in a different folder, click on the yellow folder with the up-arrow to browse one level up, on the left side click on the yellow folder with the * to get to your Favorites folders, or click the yellow folder with a yellow * on it (on the toolbar) to create a new folder. The Save In: box shows the current folder.
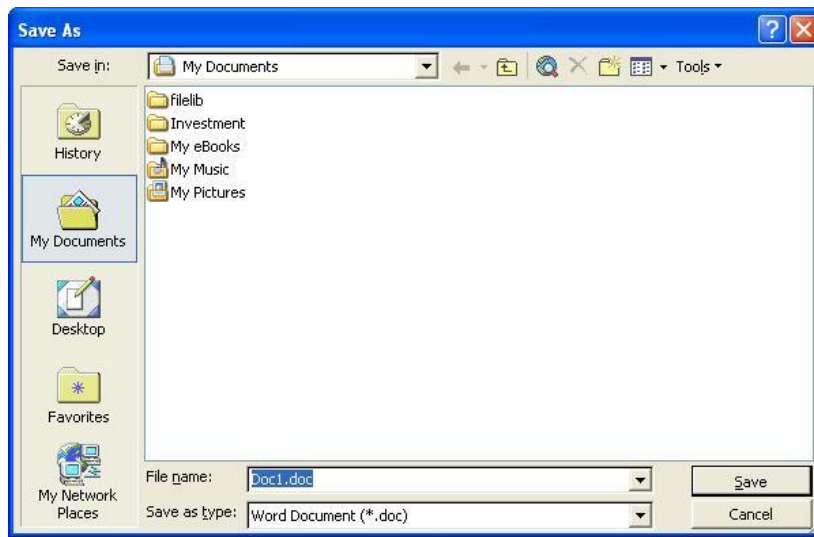
Note: if you use Corel WordPerfect, your default folder for saving documents is My Files. You may use either folder but it's best to create a folder for each project and save your documents in their corresponding project folder.

Check Your Progress 2

1. Find out whether your PC has compatibility to install windows XP.
2. Practice and install Windows XP in your PC.

Check Your Progress 3

1. Organize your Desktop icons by name then change the Desktop theme also
2. Your desktop is showing date "Wednesday, may 22, 2011" and time "11:48 AM" now change it to present date and time.
3. Create shortcuts for MS-Word.
4. i) Create new folder rename it as "Lab1".
   ii) Create new ms-word document. Type a paragraph on "computer operating system "and save it as "session 3"
   iii) Ask your friend to search document "session 3"
5. How can you remove an item from the Start menu or from a Program menu?
6. Search Calculator, notepad, paint.
7. Where the pen drive is connected?
8. How will you install extra ram in your computer.

1.4   LINUX OPERATING SYSTEM

1.4.1   Overview of UNIX/ LINUX Operating System

Even after thirty years of its creation UNIX is still regarded as one of the most versatile, flexible and powerful operating systems in the computer world. It was created at Bell Labs in 1970 written in the C programming language, which was developed at the same time. It supports large numbers of simultaneous users, runs

with few alterations on many hardware platforms (provides some platform independence) and of course it was and is a simple, elegant, and easy to use (at least compared to its predecessors) Linux is a relatively new UNIX flavor derived from the work of Linus Torvalds, who was interested to develop a UNIX for academic use. Linux is one of the many versions of the UNIX operating system. Working on Linux means working on one of the flavors of UNIX. The main advantage that Linux is absolutely free, you need not spend even the cost CD it can be entirely free downloadable from the Internet. (No registration fees, no costs per user, free updates, and freely available Operating System and Networking Lab source code). It is portable (means can be configured on any processor like Intel, Solaris, etc), dual-bootable, fast, reliable, secure and versatile. These properties make it popular among the System Administrators. While working on it you may realize many more important features and advantages of Linux. Most of the exercises are command line based but similar exercises you can try on your GUI based Linux.

Fedora 10, also known as Cambridge, was released on November 25th, 2008, and it brings faster boot experience with Plymouth, better printing, better webcam support, improved wireless network connection sharing, better software maintenance and update. We will learn how to install the DVD edition of the Fedora 10 operating system on your PC. Why the DVD edition? Because we believe it offers most of the applications you'll need. However, this guide will make things very simple for you, but if you get stuck somewhere in the middle of the installation and you need help, do not hesitate to use our commenting system at the end of the article.

1.4.2   How to install Linux Operating System

- You will need the Fedora 10 DVD image that corresponds to your hardware architecture (i386 or amd64), and which can be downloaded from here. When the download is over, burn the ISO image with your favorite CD/DVD burning application (Brasero on Linux or Nero, CDBurnerXP, Roxio on Windows) on a blank DVD at 4x speed.
- It is always recommend having an empty hard drive for a Linux installation (that means no other operating system on it, no Windows), and you must have a minimum of 10 GB free space for the Fedora installation.

Great, now let's begin. Insert or leave the DVD in your CD/DVD-ROM device, and reboot the computer in order to boot from the DVD. Hit the F8 or F12 key (depending on your BIOS) to select the CD/DVD-ROM as the boot device.

You'll be presented with a very nice Fedora artwork GRUB splash and some options...

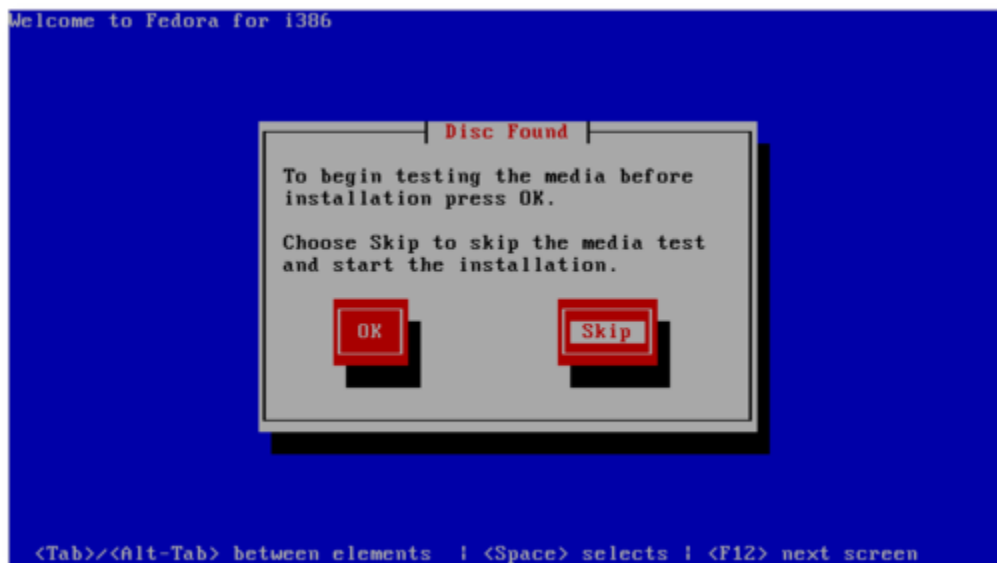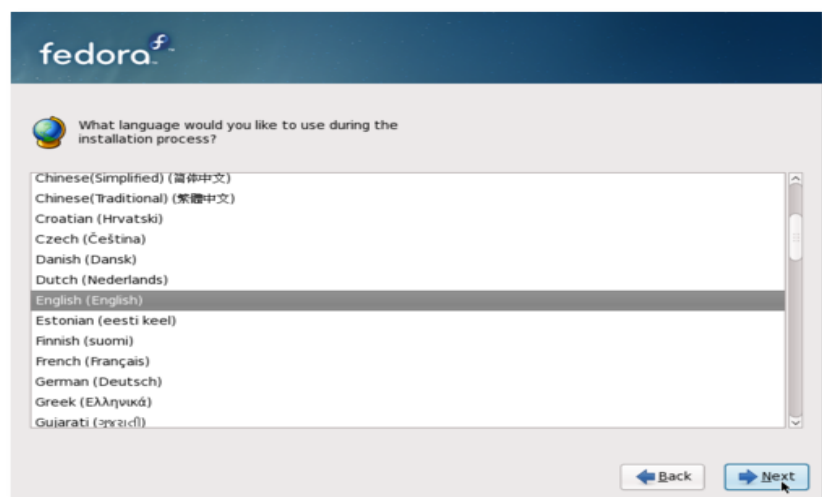At this stage, we simply suggest you press Enter, and wait for the system to load...

Select the "Skip" option when you're asked if you want to check the media before installation, and press "Enter"...
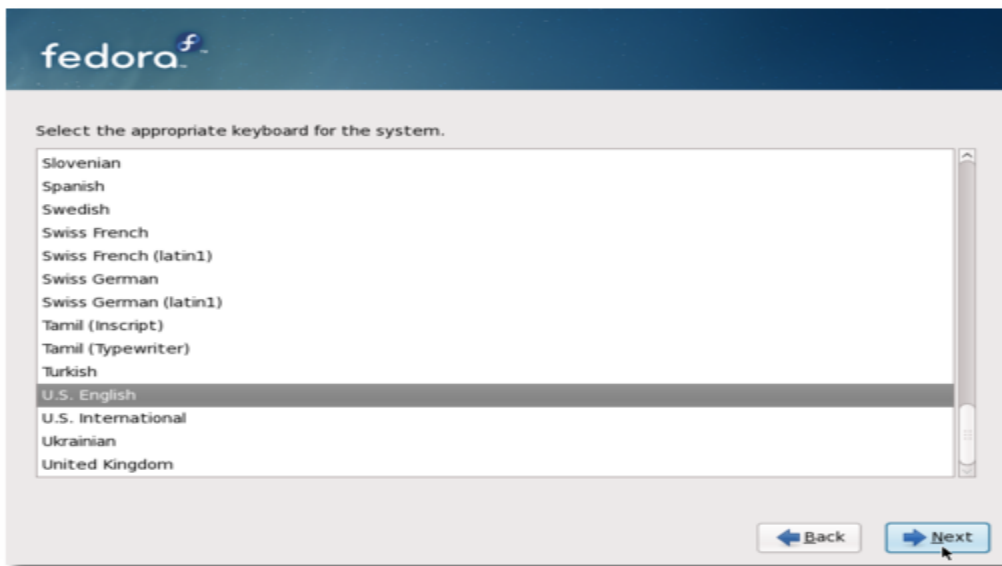

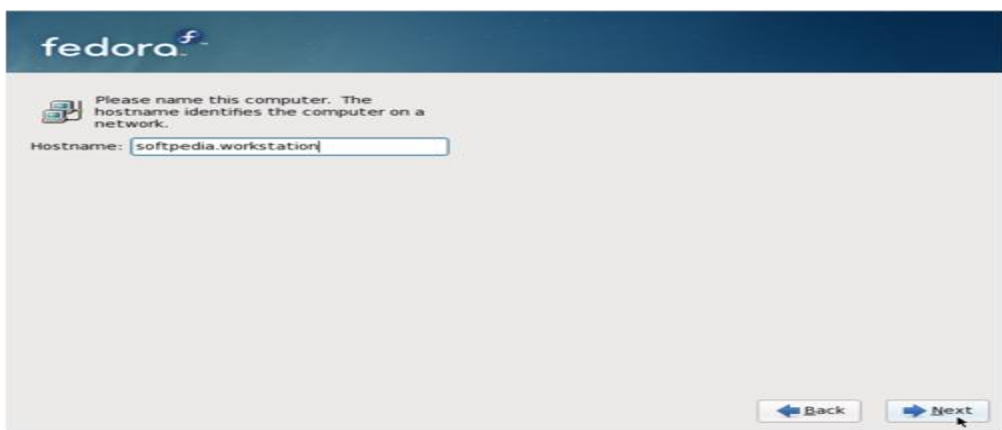Anaconda (the Fedora installer) will load and you'll see the welcome screen. Click "Next"...
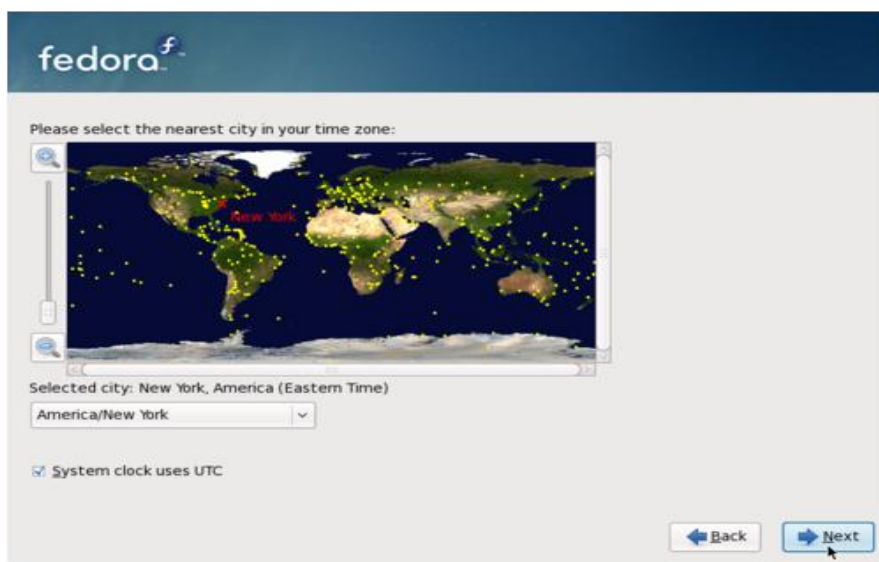
Choose your language...
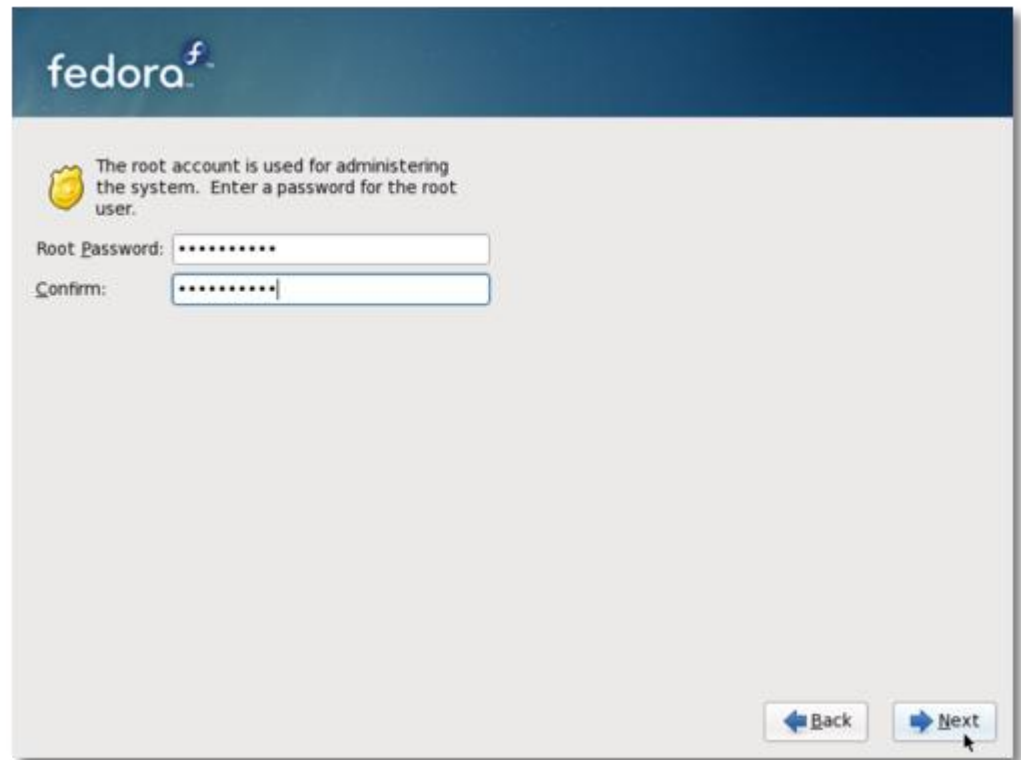

Choose your keyboard layout...

Type a name for the computer. It can be anything you want...
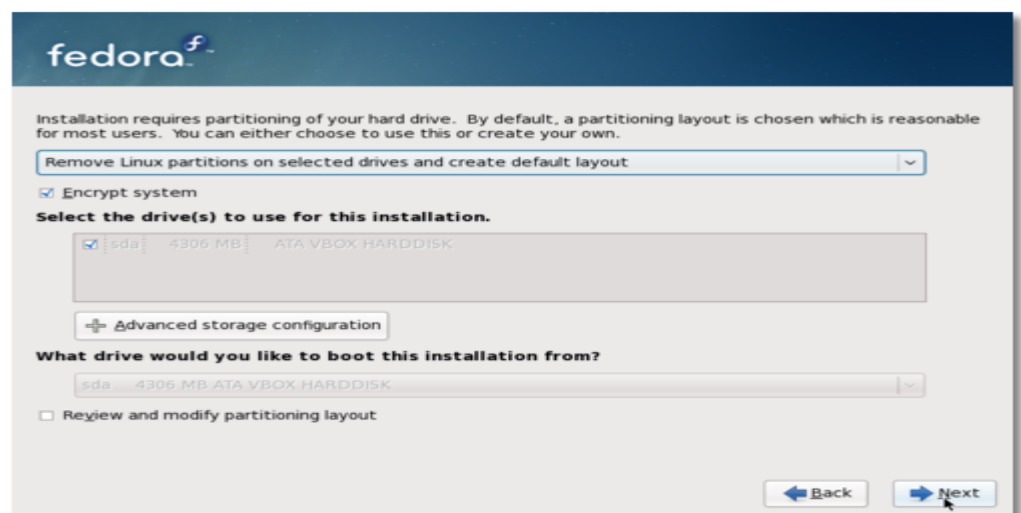

Select your location (country/city)...

Enter the root (System Administrator) password. The longer, the better (WRITE IT SOMEWHERE)...

Here, comes the partitioning part! If you have an empty hard drive, all you have to do is click "Next," but make sure the"Remove all partitions on selected drives and create default layout" option is selected. If you don't have an empty hard drive and you still want to install Fedora 10 on your machine, then make sure you select the "Use free space on the selected drives and create default layout" option (10 GB minimum of free space is required). Click "Next"...

We also recommend to select the "Encrypt system" option. Enter a password (the longer, the better) for the encrypted partition...
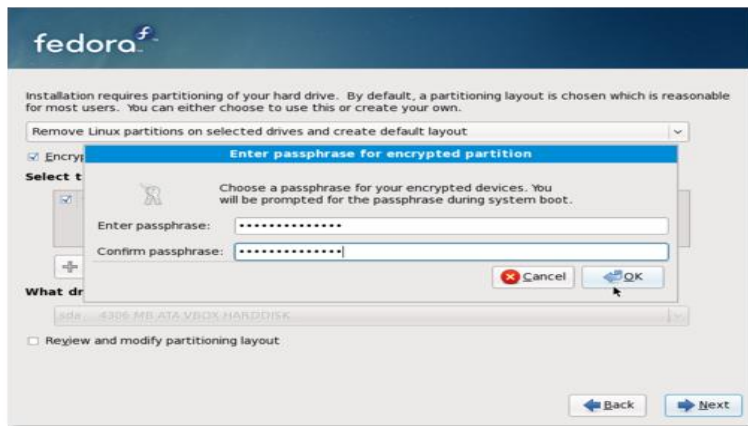
Click the "Write changes to disk" button when asked...
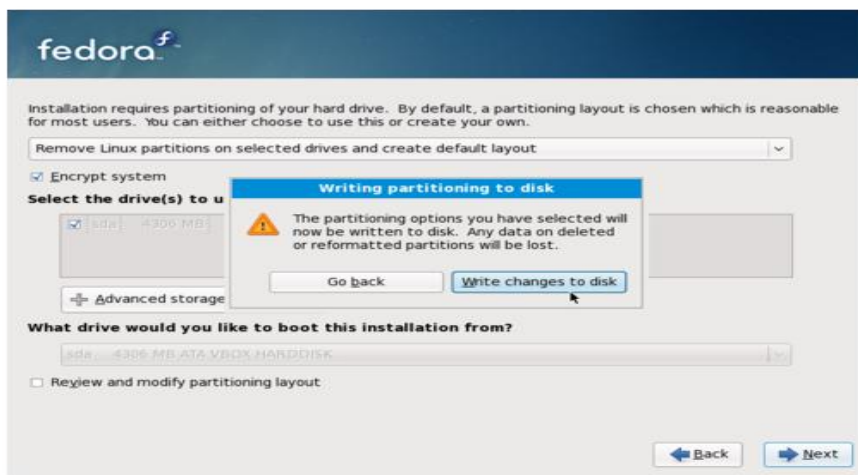
The hard drive will be formatted and the partitions will be created...
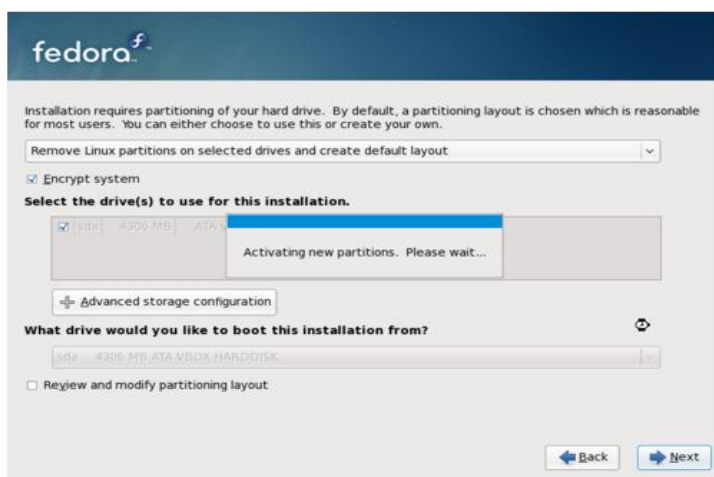
Now, you can select the desired packages...
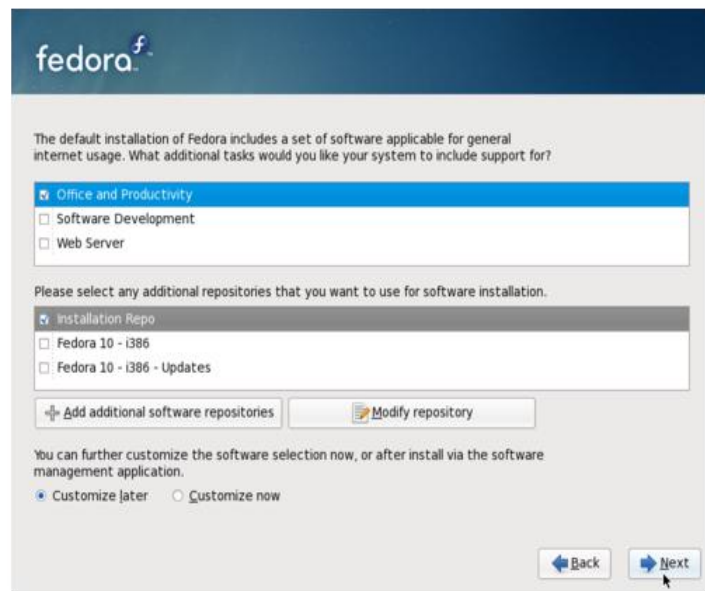
Hit the "Next" button and everything will be done automatically from now on, just sit back and watch how the packages are copied to your hard drive.The installation process will take about 8-10 minutes (depending on your computer specs and the selected packages).
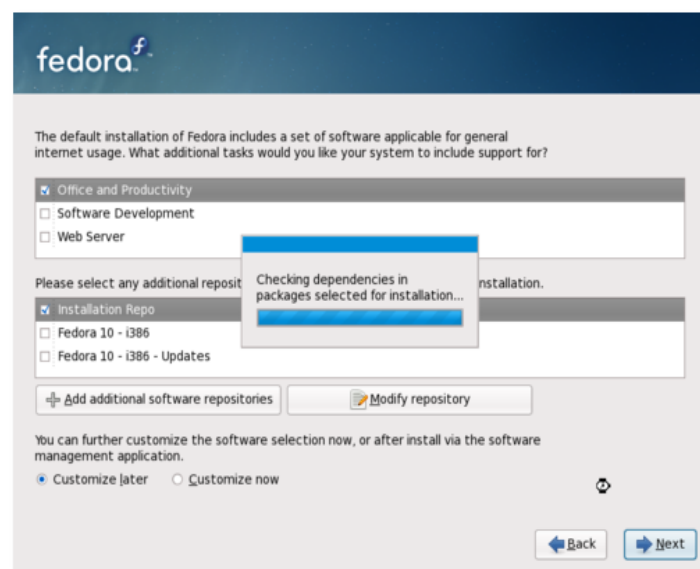
It starts installing, wait for sometime
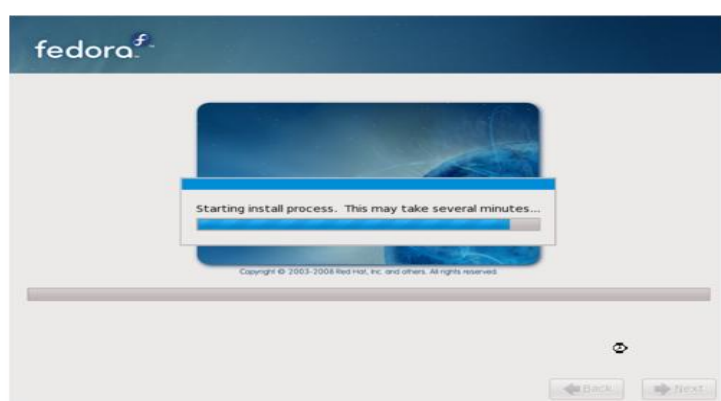
When the installation is over, you will get a "Congratulations, the installation is complete" screen. Click the "Reboot" button and your computer will automatically restart...
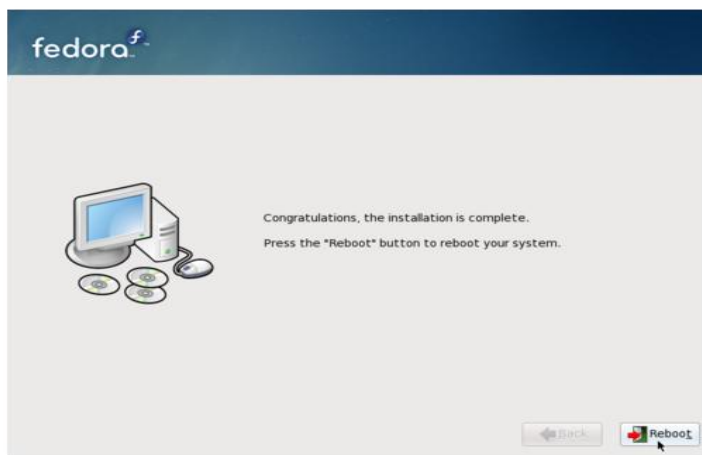
Remove the DVD from your optical drive. Your brand new Fedora 10 operating system will boot for the first time...
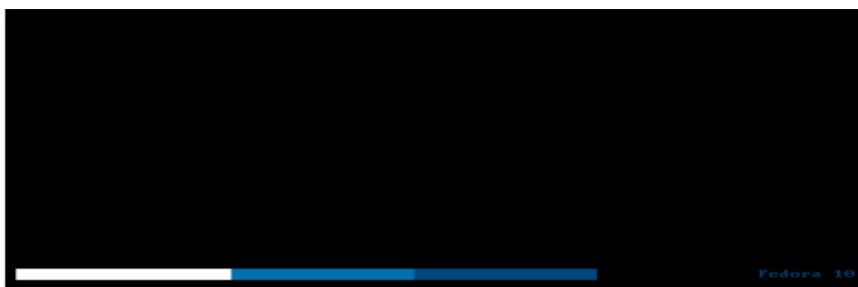
If you've chosen to encrypt your partition, then you'll be prompted for the password ...

The system will continue to boot and in a few seconds you will see the First Boot Configuration Wizard. Click "Forward" on the Welcome screen...

Click "Forward" on the License screen...

Set the date and time...
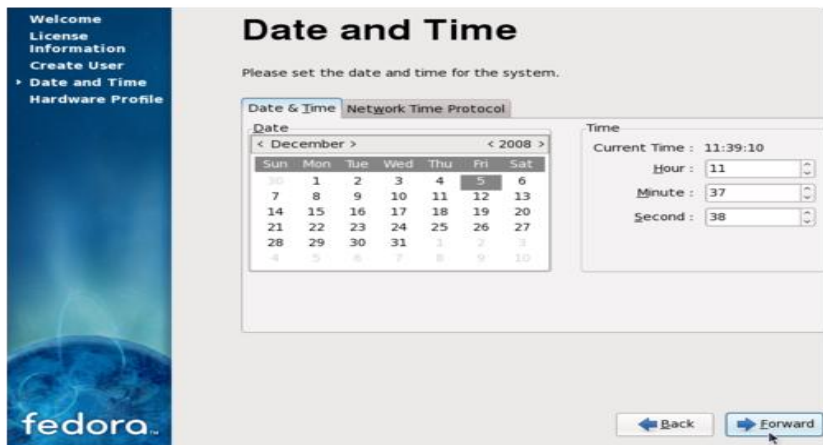
Click "Finish" and you will see the login screen. Enter the password for the regular user you've just created...
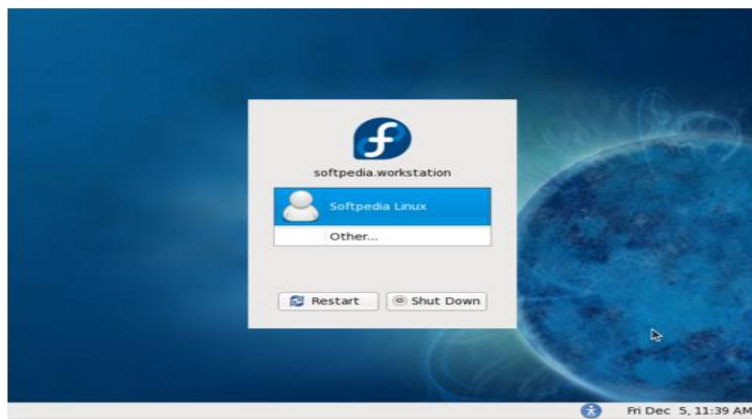
That's it!

1.4.3   Linux utilities and Basic Commands

The following is a list of commonly used commands which are organized under different categories for understanding and ease of use. Keys proceeded by a ^ character are CONTROL key combinations.

Terminal Control Characters

^h   backspace erase previously typed character
^u   erase entire line of input so far typed
^d   end-of-input for programs reading from terminal
^s   stop printing on terminal
^q   continues printing on terminal
^z   currently running job; restart with bg or fg
DEL, ^c   kill currently running program and allow clean-up before exiting
^\   emergency kill of currently running program with no chance of cleanup

Login and Authentication

Login   access computer; start interactive session
Logout   disconnect terminal session
Passwd   change local login password; you MUST set a non-trivial password
               Information
- date   show date and time
- history   list of previously executed commands
- pine   send or receive mail messages
- msgs   display system messages
- man   show on-line documentation by program name
- info   on-line documentation for GNU programs
- w, who   who is on the system and what are they doing
- who am i   who is logged onto this terminal
- top   show system status and top CPU-using processes
- uptime   show one line summary of system status
- finger   find out info about a user@system

File Management

- cat   combine files
- cp   copy files
- ls   list files in a directory and their attributes
- mv   change file name or directory location
- rm   remove files
- ln   create another link (name) to a file
- chmod   set file permissions
- des   encrypt a data file with a private key
- find   find files that match specified criteria

Display Contents of Files

- cat   copy file to display device
- vi   screen editor for modifying text files
- more   show text file on display terminal with paging control
- head   show first few lines of a file(s)

- tail   show last few lines of a file; or reverse line order
- grep   display lines that match a pattern
- lpr   send file to line printer
- pr   format file with page headers, multiple columns etc.
- diff   compare two files and show differences
- cmp   compare two binary files and report if different
- od   display binary file as equivalent octal/hex codes
- file   examine file(s) and tell you whether text, data, etc.
- wc   count characters, words, and lines in a file

Directories

- cd   change to new directory
- mkdir   create new directory
- rmdir   remove empty directory (remove files first)
- mv   change name of directory
- pwd   show current directory

Devices

- df   summarize free space on disk device
- du   show disk space used by files or directories

Special Character Handling for C-shell

*   match any characters in a file name
~user   shorthand for home directory of "user"
$name   substitute value of variable "name"
\\   turn off special meaning of character that follows
'   In pairs, quote string with special chars, except !
"   In pairs, quote string with special chars, except !, $
`   In pairs, substitute output from enclosed command

Controlling Program Execution for C-shell

&   run job in background
DEL, ^c   kill job in foreground
^z   suspend job in foreground
fg   restart suspended job in foreground
bg   run suspended job in background
;   delimit commands on same line
( )   group commands on same line
!   re-run earlier command from history list
ps   print process status
kill   kill background job or previous process
nice   run program at lower priority
at   run program at a later time

crontab	run program at specified intervals
limit	see or set resource limits for programs
alias	create alias name for program (in .login)
sh, csh	execute command file

Description of Commonly Used UNIX Commands

The description for the most commonly used UNIX commands is given below in an alphabetic order.

a) cat

cat allows you to read multiple files and then print them out. You can combine files by using the > operator and append files by using >>.
Syntax: cat [argument] [specific file]
Example:
cat abc.txt
 If you want to append three files (abc.txt, def.txt, xyz.txt), give the command as,
 cat abc.txt def.txt xyz.txt > all

b) cd, chdir

cd (or chdir) stands for "change directory". This command is the key command to move around your file structure.
Syntax: cd [name of directory you want to move to]
When changing directories, start with / and then type the complete file path, like
cd /vvs/abc/def
in this eg. You are moving from vvs directory to abc directory then move to def directory .
You can also move relative to the current directory by typing
cd vvs/abc/def
To move relative to the parent directory of your current directory, use
Cd ../vvs/abc/def

c) chmod

chmod (which stands for "change mode") changes who can access a particular file. A "mode" is created by combining the various options from who, opcode, and permission.
Syntax: chmod [option] mode file

If you look at a list of files using the long list command ls –l, you'll see the permissions, owner, file size, modification time, and filename. The first column of the list shows who can read, write, and execute the files or directories, in other words, the permissions. It basically shows who has permission to do what to a given file or directory. r stands for "read" and means that you're allowed to read the file or directory. w stands for "write" and gives permission to edit or change the file as well as create, move, rename, or remove a directory. x stands for "execute" which gives permission

to run a file or search a directory. Every file or directory has four sets of rwx permissions. The first set represents the user (u), the second set represents the group (g), the third set represents other (o), and the fourth set represents all (a). The column will look like this: rwxrwxrwx

Each set of rwx represents user, group, and other respectively. Only the owner of a file or a privileged user may change the permissions on a file. There are two ways to change permissions on a file or directory, either numerically or by using lettered commands. Both ways use the command chmod. To add permissions to a file, you use +, to remove permissions you use-.

For example, take a file:

-rw-r--r-- 1 yash mony 476 Apr 14 17:13 vvs.txt

To allow a group (mony, in this case) "write" access, you would type:

chmod g+w vvs.txt

  If you wanted to remove "read" ability from "other" you would type:

chmod o-r vvs.txt

It is also possible to specify permissions using a three-digit sequence. This is a more efficient way to change permissions (or at least it requires less typing), so use this method if it doesn't confuse you. Each type of permission is given an octal value. Read is given the value of 4, write is given the value of 2, and execute is given the value of 1. These values are added together for each user category. The permissions are changed by using a three-digit sequence with the first digit representing owner permission, the second digit representing group permission, and the third digit representing other permission. For example, if you wanted to make vvs.txt readable, writable, and executable for the user, readable and writable for the group, and readable for other, you would type: chmod 764 vvs.txt

 The first digit means readable and writable for the user (4+2+1), the second digit means readable and writable for the group (4+2+0), and the third digit means readable for other (4+0+0). if you want to change the permissions on a directory tree use the -R option. chmod –R will recursively change the permissions of directories and their contents.

d) cp

The cp command copies files or directories from one place to another. You can copy a set of files to another file, or copy one or more files under the same name in a directory. If the destination of the file you want to copy is an existing file, then the existing file is overwritten. If the destination is an existing directory, then the file is copied into that directory.

Syntax: cp [options] file1 file2 If you want to copy the file favourites.html into the directory called laksh, you give

the command as:

cp favourites.html /vvs/laksh/

A handy option to use with cp is -r. This recursively copies a particular directory and all of its contents to the specified directory, so you won't have to copy one file at a time.

e) date

The date command can be used to display the date or to set a date. In unix the term date includes the time as well.

Syntax: date [option] [+format]

       date [options] [string]

The first structure shows how date can be used to display the current date. A certain format can be specified in which the date should be displayed. Check the Unix manual for specific formats and options. The second structure allows you to set the date by supplying a numeric string. Only privileged users will be able to use this second command structure.

f) diff

 diff displays the lines that differ between two given files.

 Syntax: diff [options] [directory options] file1 file2

diff can be an extremely valuable tool for both checking errors and building new pages. If you run a diff between two files, you'll be shown what differences the files have line by line. The lines referring to file1 are marked with the < symbol. The lines referring to file2 are marked by the > symbol. If the file is a directory, diff will list .the file in the directory that has the same name as file2. If both of the files are directories, diff will list all the lines differing between all files that have the same name. If you have a file that is not working properly, it can be a great help to check it against a similar file that is working. It will often quickly alert you to a line of code that's missing. A handy option to use if you want to generally compare two files without noting the complex differences between them is the -h option (h stands for half-hearted). Using -i as an option will ignore differences in uppercase and lowercase characters between files, and -b will ignore repeating blanks and line breaks.

g) exit

The exit command allows you to terminate a process that is currently occurring. For example, if you wanted to leave a remote host that you were logged onto (see rlogin also), you should type exit. This would return you to your home host.

h) find

find searches through directory trees beginning with each pathname and finds the files that match the specified condition(s). You must specify at least one pathname and one condition.

Syntax: find pathname(s) condition(s)

There are several handy conditions you can use to find exactly what you want. The -name condition will find files whose names match a specified pattern. The structure for the name condition is: find pathname -name pattern

The condition -print will print the matching files to the pathname specified. -printcan also be used in conjunction with other conditions to print the output. If you wanted to find all the files named favorites.html in the directory Ram, then

you'd do this:

find /Ram -name favorites.html –print

This looks through the directory Ram and finds all the files in that directory that contain favorites.html, then prints them to the screen. Your output would look like this:

 /Ram/sixteen_candles/favorites.html

/Ram/favorites.html

/Ram/breakfast_club/favorites.html

All meta-characters (!, *, ., etc.) used with -name should be escaped (place a \ before the character) or quoted. Meta-characters come in handy when you are searching for a pattern and only know part of the pattern or need to find several similar patterns.

For example, if you are searching for a file that contains the word "favorite", then use the meta-character * to represent matching zero or more of the preceding characters.

This will show you all files which contain favorite.

find /Ram -name '*favorite*' -print

This looks through the directory Ram and finds all the files in that directory that contain the word "favorite". The output would look like this:

/Ram/sixteen_candles/favorites.html

/Ram/favorites.html

/Ram/least_favorites.html

/Ram/breakfast_club/favorites.html

/Ram/favorite_line.html

The -user condition finds files belonging to a particular user ID or name.

i) grep

The grep command searches a file or files for lines that match a provided regular expression ("grep" comes from a command meaning to globally search for a regular expression and then print the found matches).

Syntax: grep [options] regular expression [files]

To exit this command, type 0 if lines have matched, 1 if no lines match, and 2 for errors. This is very useful if you need to match things in several files. If you wanted to find out which files in our vvs directory contained the word "bca" you could use grep to search the directory and match those files with that word. All that you have to do is give the command as shown:

grep 'bca' /vvs/*

The * used in this example is called a meta-character, and it represents matching zero or more of the preceding characters. In this example, it is used to mean "all files and directories in this directory". So, grep will search all the files and directories in vvsand tell you which files contain "bca".

j) head

Displays the first ten lines of a file, unless otherwise stated.   Syntax: head [-n] [files]

For example, the following command will display the first 15 lines of favourites.html.

head -15 favourites.html

k) kill

kill ends the execution of one or more process ID's. In order to do this you must own the process or be designated a privileged user. To find the process ID of a certain job give the command ps.

Syntax: kill [options] PIDs

There are different levels of intensity to the kill command, and these can be represented either numerically or symbolically. kill -1 or HUP makes a request to the server to terminate the process, while kill -9 or kill KILL forces a process to terminate absolutely. Most politely, UNIX users will attempt to kill a process using-1 first before forcing a process to die.

l)   ls

ls will list all the files in the current directory. If one or more files are given, ls will display the files contained within "name" or list all the files with the same name as "name". The files can be displayed in a variety of formats using various options.

Syntax: ls [options] [names]

ls is a command you'll end up using all the time. It simply stands for list. If you are in a directory and you want to know what files and directories are inside that directory, type ls. Sometimes the list of files is very long and it flies past your screen so quickly .You miss the file you want. To overcome this problem give the command as shown below:

ls | more

The character | (called pipe) is typed by using shift and the \ key. | more will show as many files as will fit on your screen, and then display a highlighted "more" at the bottom. If you want to see the next screen, hit enter (for moving one line at a time) or the spacebar (to move a screen at a time). | more can be used anytime you wish to view the output of a command in this way. A useful option to use with ls command is -l. This will list the files and directories in a long format. This means it will display the permissions (see chmod), owners, group, size, date and time the file was last modified, and the filename.

 drwxrwxr-x vvs   staff 512 Apr 5 09:34 sridhar.txt

 -rwx-rw-r-- vvs   staff 4233 Apr 1 10:20 resume.txt

-rwx-r--r-- vvs   staff 4122 Apr 1 12:01 favourites.html

There are several other options that can be used to modify the ls command, and many of these options can be combined. -a will list all files in a directory, including those files normally hidden. -F will flag filenames by putting / on directories, @ on symbolic links, and * on executable files.

m)   man

The man command can be used to view information in the online Unix manual.

Syntax: man [options] [[section] subjects]

man searches for information about a file, command, or directory and then displays it on your screen. Each command is a subject in the manual. If no subject is specified, you must give either a keyword or a file. You can also search for commands that serve a similar purpose. For example, if you want more information about the chmod command, you should type:

man chmod

A screen will then appear with information about chmod. Type q to quit.

n) mkdir

mkdir creates a new directory.

Syntax: mkdir [options] directory name

For example, to create a directory called parkhyath in the present working directory, give the command as,

mkdir prakhyath

o) more

more displays the contents of files on your screen.

Syntax: more [options] [files]

To have the next line displayed, hit the return key, otherwise press the spacebar to bring up the next screen. Press h for assistance with other commands, n to move to the next file, or q to quit.

p) less

less is similar to more in that it displays the contents of files on your screen. Unlike more, less allows backward and forward movement within the file. It does not read the whole file before displaying its contents, so with large files less displays faster than more. Press h for assistance with other commands or q to quit.

Syntax: less [options] [files]

q) mv

mv moves files and directories. It can also be used to rename files or directories.

Syntax: mv [options] source target

If you wanted to rename vvs.txt to vsv.txt, you should give the command as:

After executing this command, vvs.txt would no longer exist, but a file with name

vsv.txt would now exist with the same contents.

r) passwd

The passwd command creates or changes a user's password. Only the owner of the password or a privileged user can make these changes.

Syntax: passwd [options] files

s) pwd

pwd prints the pathname of the current directory. If you wanted to know the path of the current directory you were in you give the command as pwd. You will get the complete path.

t) rm

rm removes or deletes a link to a file from a directory. If a file has more than one link then removing a link does not delete the file. But when the last link to a file is removed, the file gets deleted.

A link is a name of a file. In unix a file can have many names.

Syntax: rm [options] files

In order to remove a file, you must have write permission to the directory where the file is located. While removing a which does't have write permission on, a prompt will come up asking you whether or not you wish to override the write protection.

The -r option is very handy and very dangerous. -r can be used to remove a directory and all its contents. If you use the -i option, you can possibly catch some disastrous mistakes because it'll ask you to confirm whether you really want to remove a file before going ahead and doing it.

u) rmdir

rmdir allows you to remove or delete directories but not their contents. A directory must be empty in order to remove it using this command.

Syntax: rmdir [options] directories

If you wish to remove a directory and all its contents, you should use rm -r.

Check Your Progress 4

1. Practice to install Fedora 10 in your pc.

2. First try to execute the following commands on your operating system and write down the results and use of each command.
   - man (find manual help)
   - cd
   - ls, ls -a   (try to find out other options of ls using man)
   - cd .
   - pwd
   - cd ..
   - ls -al
   - ls -al | more
   - cat passwd 22
   - cd –
   - chmod

   We hope you will stop here and you will keep digging more and more commands but do it after the session.

Check Your Progress 5

1 Try to explore the file system, write what is there in /bin, /usr/bin, /sbin, /tmp and /boot. Find and list the devices that are available in your system.

2 Make your own subdirectories called rc1 and rc2 in your home directory, mca? Ok, now delete the subdirectory called rc2 .

3 Create a file called ignou.txt that contains the words "hello I am student of IGNOU". Now copy this file and paste to other director. Copied? Can you move the file also from one directory to another?

4 In the previous question you have a file ignou.txt; change its permission to rwxrwxr-x. You can try different possibilities to changes in its permissions. One possibility may be rwxr-xr-x permissions. Find out what are the different commands available that can be used to change the permissions of a file/files.

5 Display the names of all files in the home directory using find .Can you display the names of all files in the home directory that are bigger than 500KB.

6 Display a sorted list of all files in the home directory that contain the Word ignou inside them. Hint: Use find and grep and sort. Can you use locate to find all filenames that contain the word ignou?

7 Use egrep to try to find out which lines in an ignou.txt file are satisfied by the regular expression given: (^ [0-9]{1,5}[a-zA-z]+$)|none and check the result with different combinations of lines.

8 Change your password and write down the restrictions for given password.

1.5   SUMMARY

In this section you have studied a brief introduction of computers, the history, and familiarization with its basic features including the technical description, the advantages and the differences between the two network operating systems: Windows and Linux/Unix. Last but not the least you would have understood the concepts better by undergoing through the interesting exercises

1.6   ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1
1. a) F 1
   b) CTRL+Y
   c) CTRL+S
   d) CTRL+B
   e) Shift +F3
2. Try it yourself

3.   Over the past few years the growth of the computer industry has been quiet remarkable and today it is the fastest growing industry in our economy. Nowadays, many schools are equipped with computers for educating their students. Thereby making computers an integral part of education system. Teachers and professors use computers for teaching, giving presentations, assessing various data banks, maintaining database of students, communication in the form of e mails or chat, browsing the Internet and Preparing students to have a competitive edge in the global job market. Computers have revolutionized the learning for students in a big way. They can watch various films on wild life, history, geography, science and encyclopedias with loud sound and excellent picture quality and commentaries on Compact Discs or DVD's.
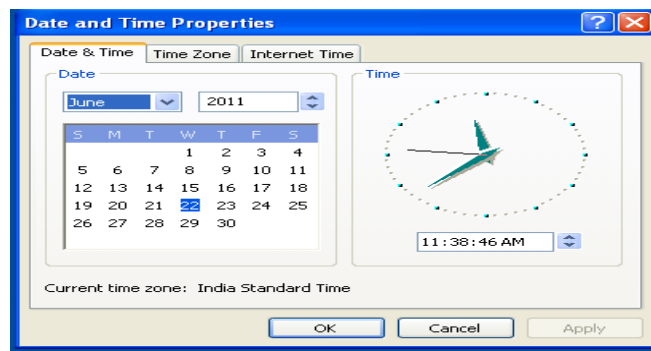
Check Your Progress 2

1. Refer Sec 1.3.2

2. Try it yourself.

Check Your Progress 3

1. The computer has a clock located on the right side of the task bar.

   You can also check and modify the properties of the clock with the dialog box that appears next. It appears as you double-click on the clock on the task bar.

To change the Date follow these steps:

1) Double-click on the clock on the task bar to open the dialog box.

2) To change the month, place the pointer on the month box and click with the mouse on the arrow to the right. A list with the months will be displayed. Select the appropriate month.

3) To change the year, place the pointer on the year box and with the arrows you can change the year.

4) To change the days select it on the calendar that appears.

5) Click Apply and OK

To change the Time do the following:

1) Place the pointer on the clock.

2) To change the time select the time digits with the arrows to the right and adjust to the necessary time.

3) This same process must be done with the minutes and seconds.

2. To create a desktop shortcut for a default folder such as My Computer and My Document:
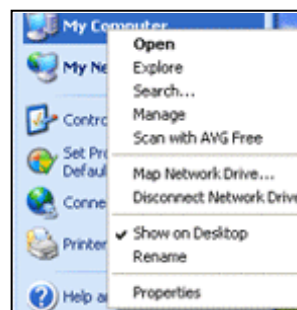
1. Click on the start button

2. Right click on My Computer or My Document on the right panel of the start menu

3. Click on "Show on Desktop" just like it shows on the picture

3: To create a program desktop shortcut:
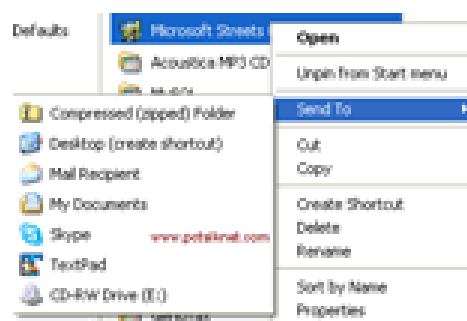
1. Click on the start button
2. Select "All Programs"
3. Select and right click the program you want place on the desktop
4. Select "Send To" from the displayed menu
5. Click on "Desktop (create shortcut)"

4. Try it yourself

5. Click on the Start button and choose Control Panel Click on Add or Remove Programs option, a window will display with the three basic options shown on the left side of the picture as it appears below. Then click on Change or Remove Programs.

6. Click on the Start button and choose Search button and type Calculator /notepad / paint. It will open the respective application.

Check Your Progress 4

1. Refer to the section 1.4.1

2. Try it your self

Check Your Progress 5

Try exercise 1-8 yourself.