ଓଡ଼ିଶା ରାଜ୍ୟ ମୁକ୍ତ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ସମ୍ବଲପୁର, ଓଡ଼ିଶା

Odisha State Open University, Sambalpur, Odisha

Established by an Act of Government of Odisha.

DIPLOMA IN COMPUTER APPLICATION

DCA-01

Computer Fundamentals

Block

2

Unit -3

Windows Operating System

Unit -4

Linux Operating System

ଓଡ଼ିଶା ରାଜ୍ୟ ମୁକ୍ତ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ସମ୍ବଲପୁର, ଓଡ଼ିଶା
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DIPLOMA IN COMPUTER APPLICATION

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Unit - 3
Windows

Learning objectives

After the Completion of this unit you should be able to know

1. What is an operating system
2. Classification of operating system.
3. Benefits of operating system.
4. What is windows ?
5. Windows as single user multitasking
   operating system and multiuser multitasking operating system.
6. Windows 7 operating system, installation and use.

Structure

3.1 Introduction

An operating system (OS) is the software component of a computer system that is responsible for the management and coordination of activities and the sharing of the resources of the computer. The OS acts as a host for application programs that are run on the machine. As a host, one of the purposes of an OS is to handle the details of the operation of the hardware. This relieves application programs from having to manage these details and makes it easier to write applications. Almost all computers use an OS of some type.

Operating systems offer a number of services to application programs and users. Applications access these services through application programming interfaces (APIs) or system calls. By using these interfaces, the application can request a service from the OS, pass parameters, and receive the results of the operation. Users may also interact with the OS by typing commands or using a graphical user interface (GUI).

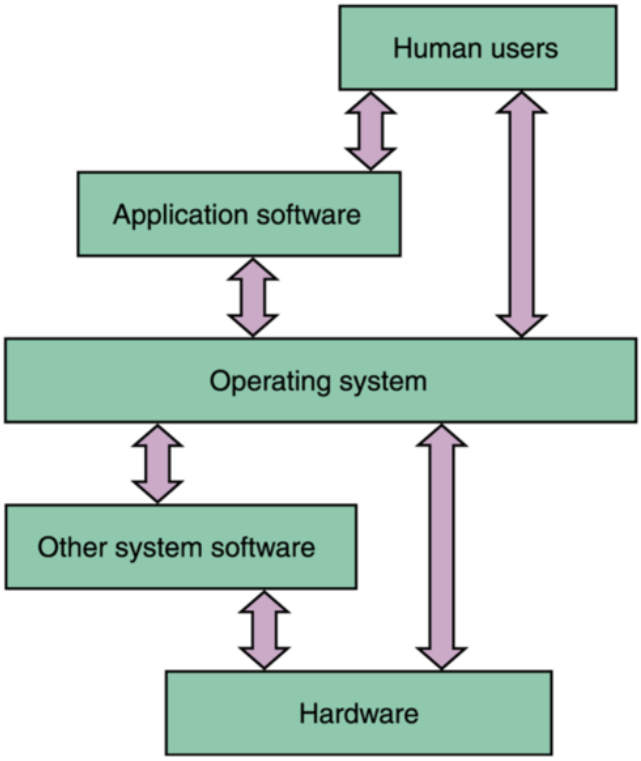
3.2 Definition

An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs. The operating system is a component of the system software in a computer system. Application programs usually require an operating system to function.

3.3 Operating system concepts

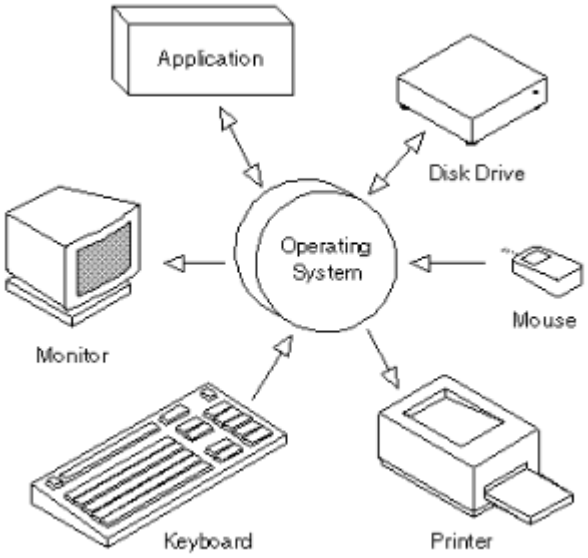
An **Operating system** is basically an intermediary agent between the user and the computer hardware.

- Manages the computer's resources (hardware, abstract resources, software)
- It's a resource allocator.
- It is also used to control programs to prevent errors and improper computer use.
- It is interrupt driven.



Application software :-An application software is a computer program designed to perform a group of coordinated functions, tasks, or activities for the benefit of the user. Examples of an application software include MS Word, MS Excel.

Operating System :- The operating system is the most important program that runs on a computer. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers. Every general-purpose computer must have an operating system to run other programs and applications. For large systems, the operating system has even greater responsibilities and powers such as making sure that different programs and users running at the same time do not interfere with each other. The operating system is also responsible for security, ensuring that unauthorized users do not access the system.



Other System software:- The other system soft wares are the software that are used to run devises of a particular company which the operating system may not include. These soft wares are loaded into the system by CD /DVD so that the operating system recognizes the hardware. These include software of printers, scanners etc.

3.4 Classification of Operating System

- **Multi user:** Allows two or more users to run programs at the same time. Some operating systems permit hundreds or even thousands of concurrent users.
- **Multi-processing :** Supports running a program on more than one CPU.
- **Multi-tasking :** Allows more than one program to run concurrently.
- **Multi-threading :** Allows different parts of a single program to run concurrently.
- **Real time:** Responds to input instantly. General-purpose operating systems, such as DOS and UNIX, are not real-time.

3.5 Operating System benefits

- Simplifies hardware control for applications
- Enforcer of sharing, fairness and security with the goal of better overall performance of the system
- Provides abstract resources such as
    - Sockets
    - Inter-process communication

Check your progress 1

Q. What is an Operating System?

A._____

_____

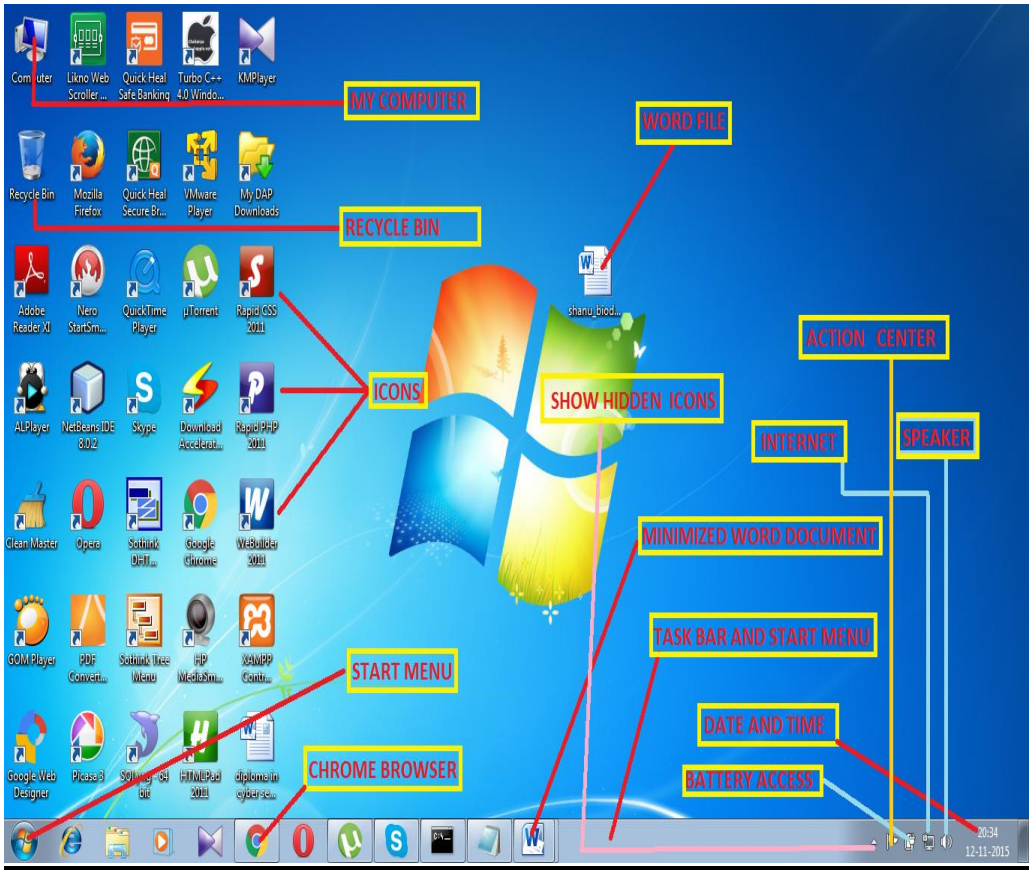
3.6 Windows

Windows :- Windows is an operating system that has been developed by Microsoft. It comes in 2 forms

- **Single user Multi-Tasking Operating System: -** A single-user multi-tasking operating system is a type of operating system (OS) that is developed to do multiple tasks at the same time. An example of single user multi-tasking includes printing a page of a different word document at the same time allowing the user to edit other word documents. Examples of this are Windows Xp, Windows 7, and Windows 8.
- **Multi user Multi-tasking Operating system** :-A multi user multi-tasking operating system is the operating system developed to do multiple tasks of multiple users at the same time. Examples of these operating systems are Windows NT, Windows 2000, Windows 2016.

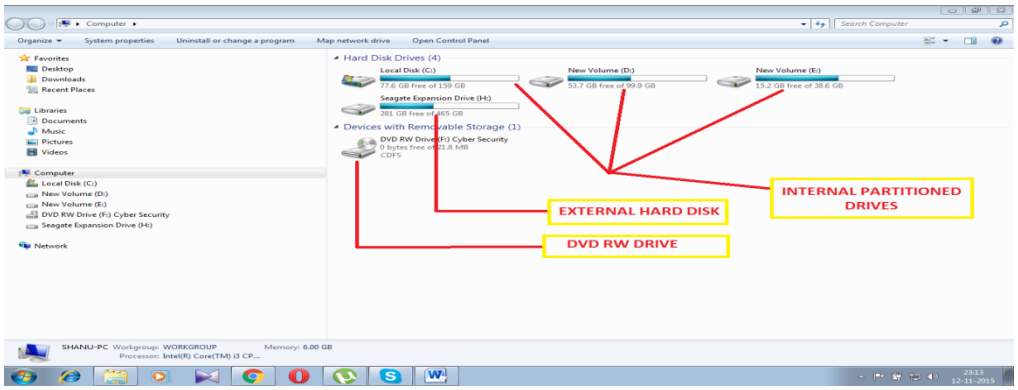
3.6.1 Windows 7

Windows -7 is a single user multiprocessing Operating System.



3.6.1.1 My Computer

My Computer is the source of all resources in the computer including drives, control panels and data. Upon double clicking on My Computer allows the user open the drives.

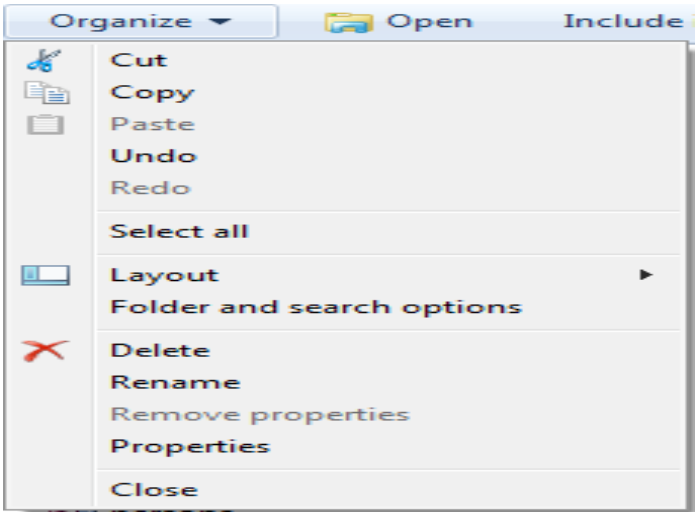


Upon double clicking we come across the following

1. Organize
2. System properties
3. Uninstall of change a program
4. Map Network drive
5. Open control panel
6. Drives

3.6.1.1.1 Organize

Organize: - Upon clicking on the organize option guides the user to the following options as shown below.



Cut: - This option is used to cut a file or folder from a particular drive or folder and place it elsewhere using the Paste option.

Copy: - This option is used to copy a file or folder from a particular drive

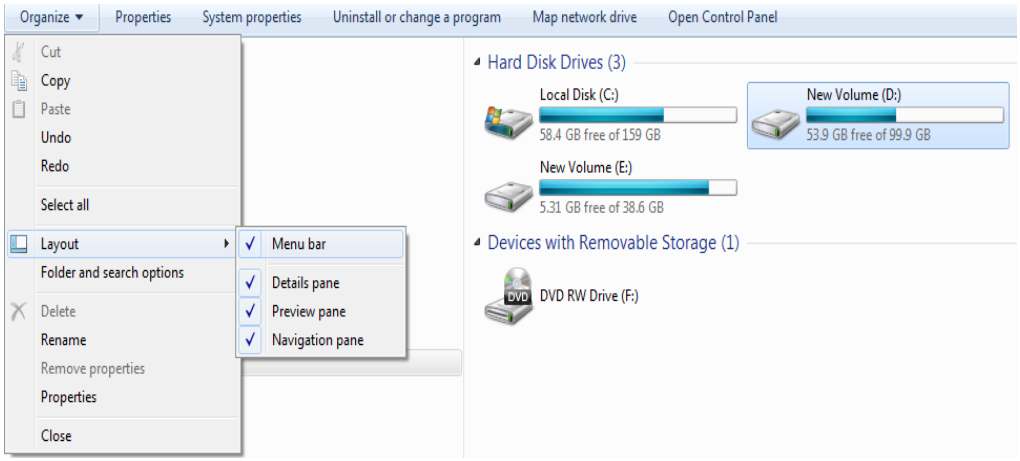
and place it elsewhere using the paste option.

Rename: - This option is used to rename a file/folder.

Select All :- This option is used to select all

- The drives
- The folders in a particular drive
- The files in a particular folder.

Layout: - This option is used to change the layout of the organize screen.



Clicking on layout .This option shows or hides the

- Menu bar: - Checking it shows the menu bar.
- Details pane: - Checking it shows the detail Pane.

- Preview Pane: - Checking it shows the preview pane.
- Navigation Pane: - Checking it shows the navigation pane.

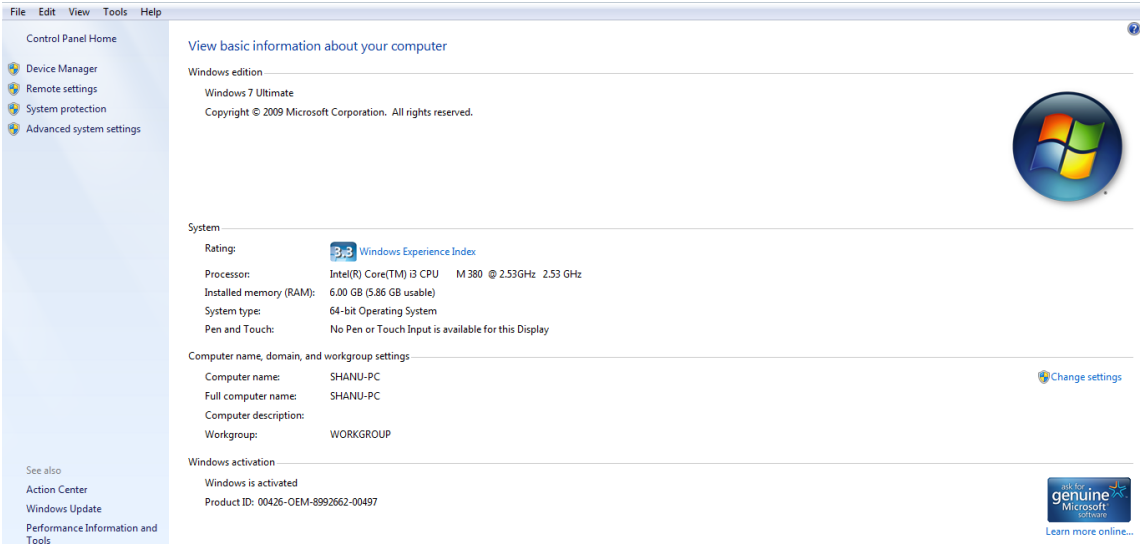
  Delete :- Delete a Folder or a file

  Rename :- This option is used to rename a folder or a file

  Close :- This option is used to close the My computer

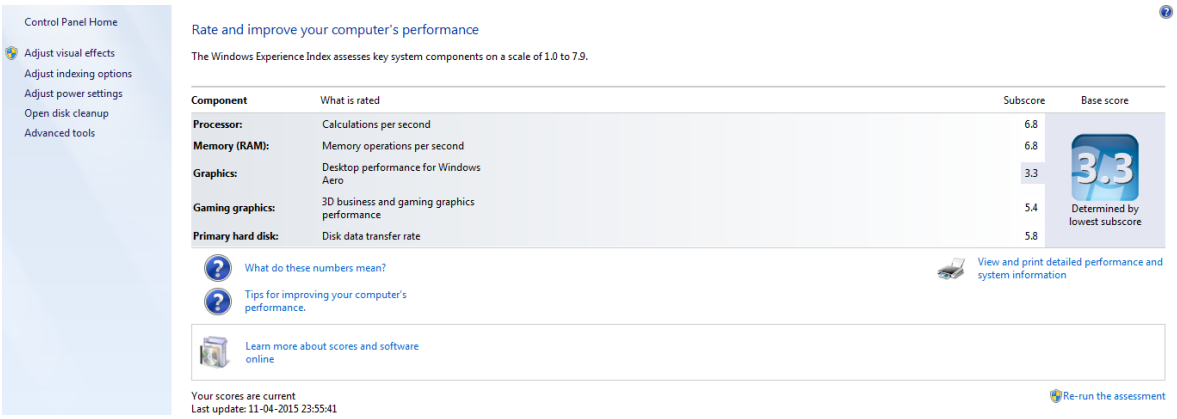
3.6.1.1.2 System properties

A feature found in Windows that displays basic overview of your computer, System Properties allows the user to customize many system settings and access Device Manager



This gives the information about

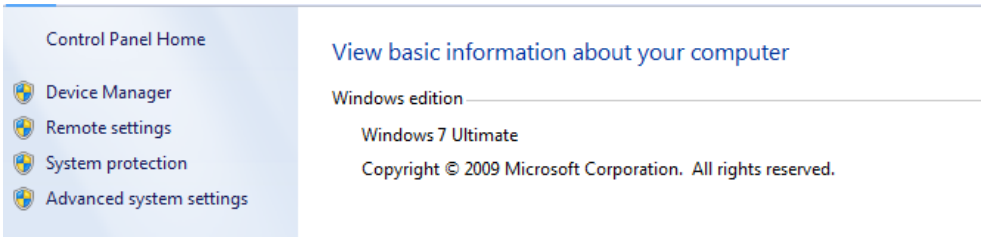
1. Which Operating System is being used .Here it is Windows 7 ultimate
2. Rating :- windows assessment about the system that is being used



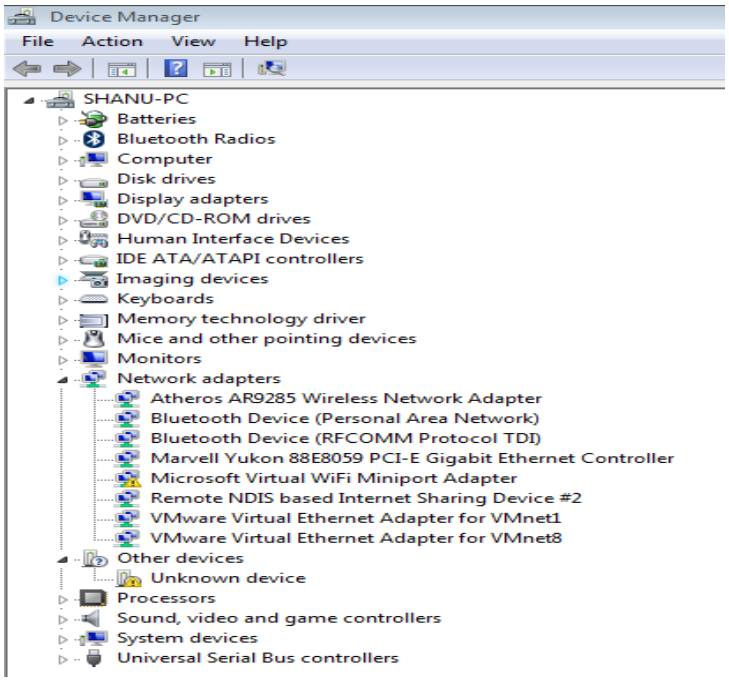
It is in terms of

- Processor :- Calculations per second
- Memory(RAM) :- Memory operations per second
- Desktop performance for Windows
- 3D Business and gaming graphics performance
- Disk data transfer rate
- Which processor is being used :- Here it is core I3
- Installed memory: - Which means how much RAM is the system. Here is 6GB
- Pen and touch: - Shows if a light pen is installed or touch pad is installed.
- Computer name :- Shows the computer name
- Workgroup :- Member of Domain/workgroup
- Product Id: - Product Id of the installed windows system.

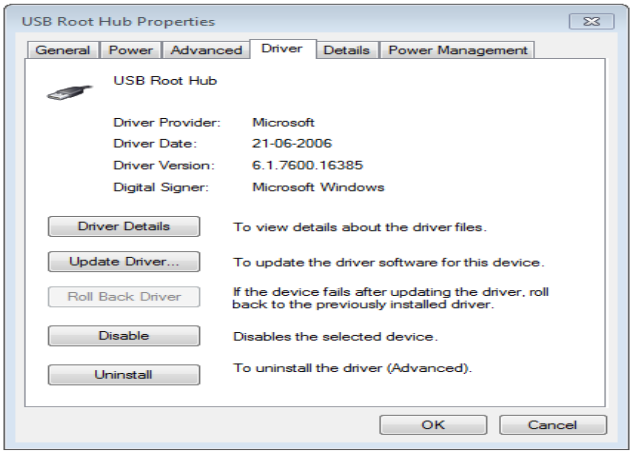
3.6.1.1.2.1 Device Manager



Device manager is an OS feature that lets us to view and change the properties of the devices attached to the computer



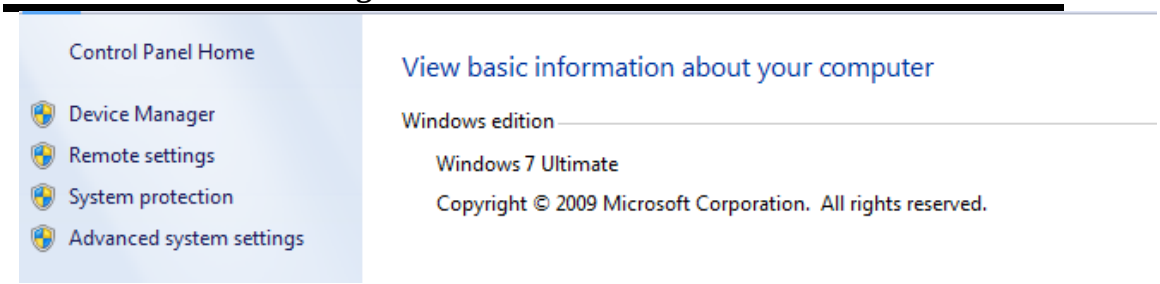
Right click on the device Universal Serial Bus controller and click on properties.



This option is used to

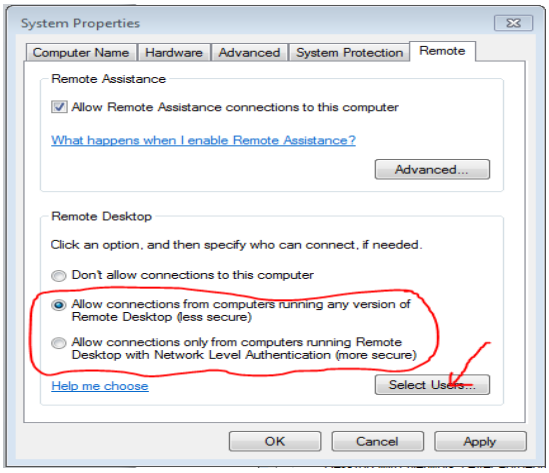
1. Enable and disable the devices
2. View Driver details of the devices
3. Update driver details of the devices

3.6.1.1.2.2 Remote Settings

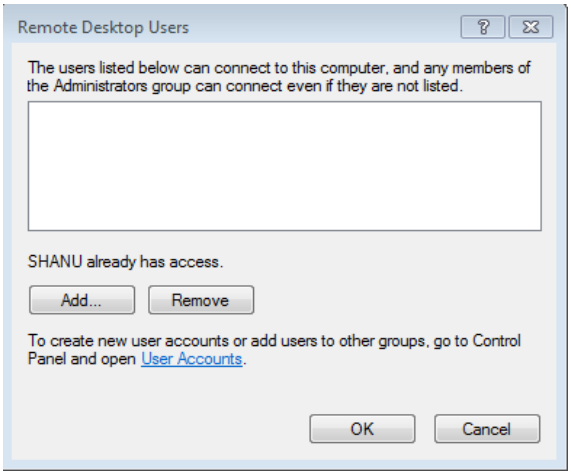


Remote settings: - To allow someone to connect to your computer using Remote Desktop.

Step-1

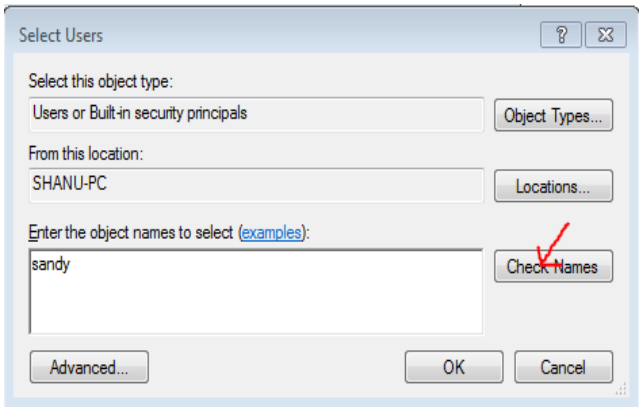


Step-2



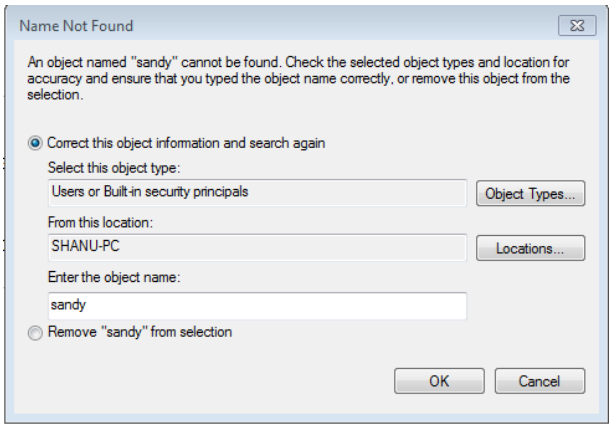
Step-3

Click on Add to add users



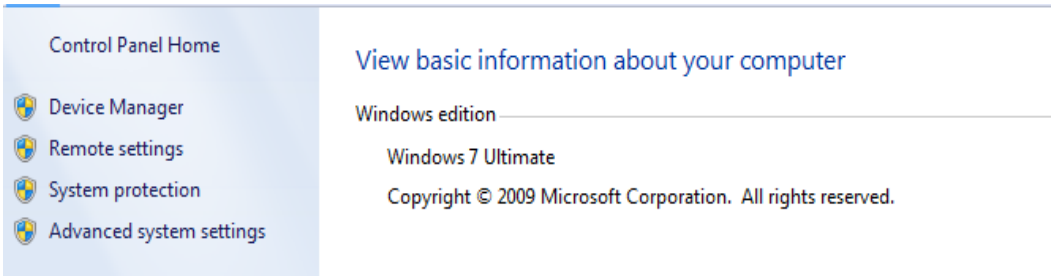
Step-4

Click on check names

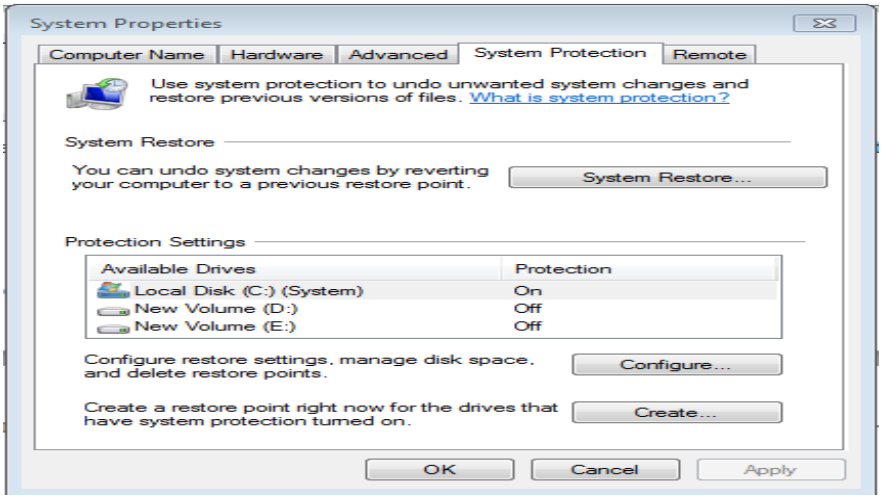


Had the remote name was found clicking on the OK button connects to the remote user?

3.6.1.1.2.3 System protection

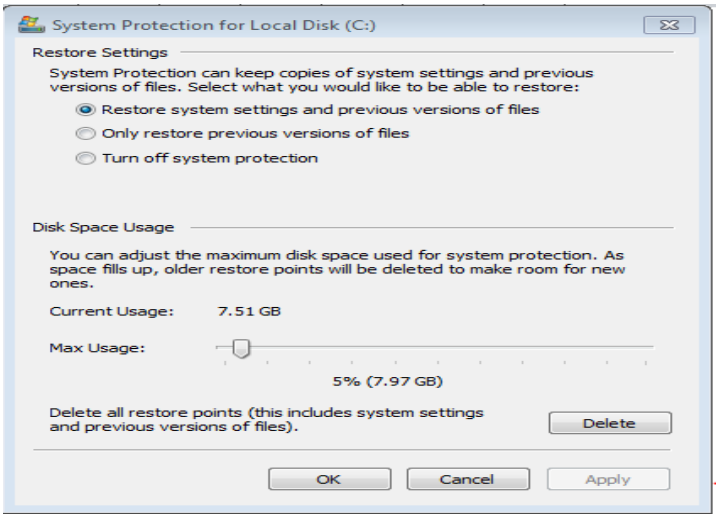


This involves creating a system restore point so that any point of time data can be restored from the restore point.

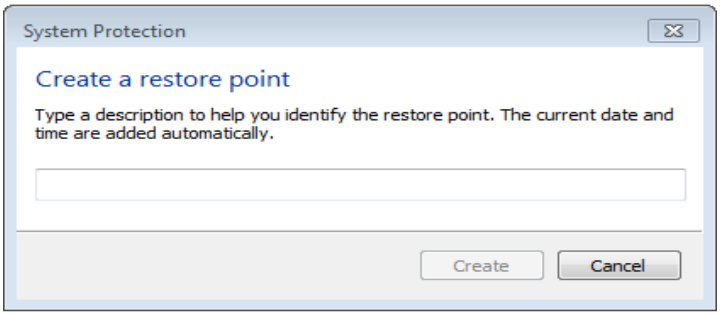


This involves 2 options

1. Configure :-

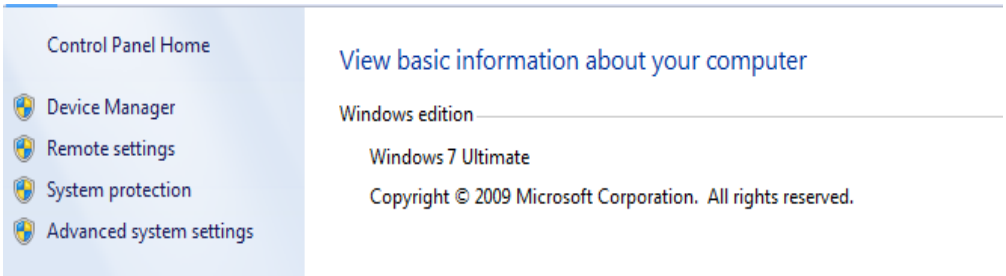


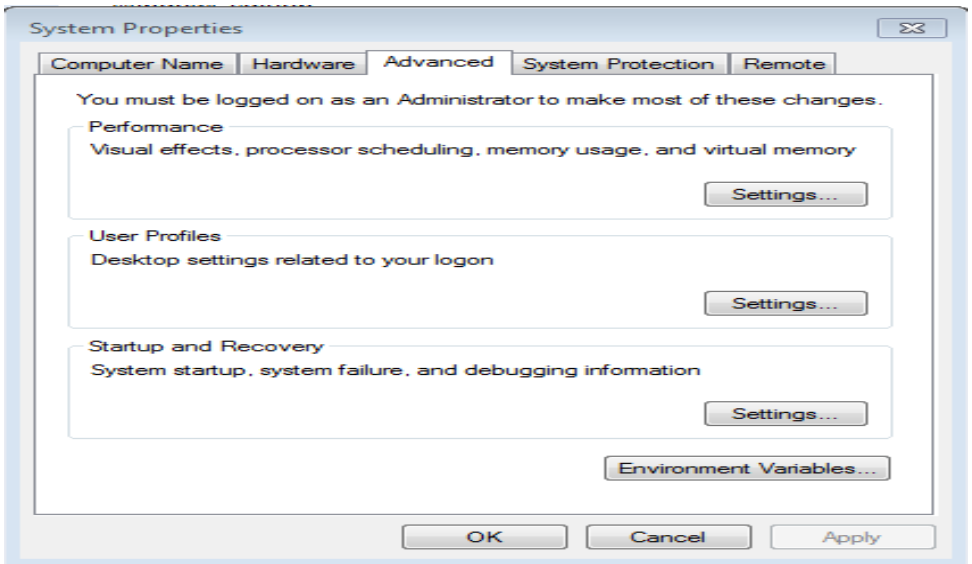
2. Create :-



Type in the name of the restore point and click on Create to create the restore point.

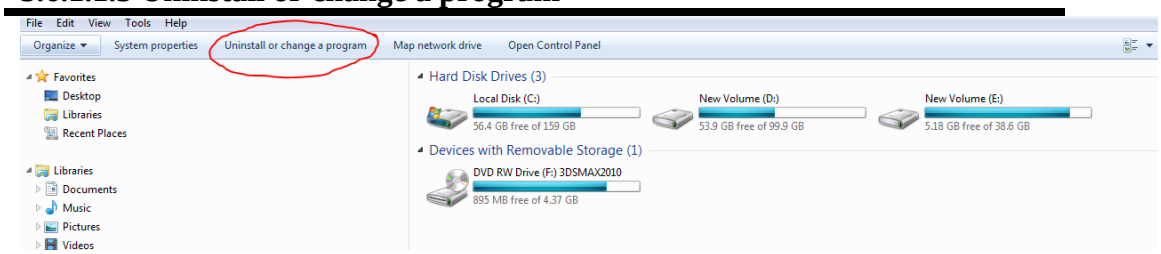
3.6.1.1.2.4 Advanced system setting





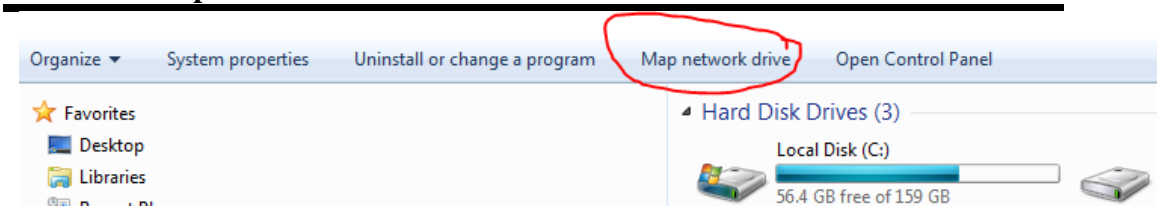
This option is used to set the Performance, user profiles, Startup and Recovery and environment variables.

3.6.1.1.3 Uninstall or change a program



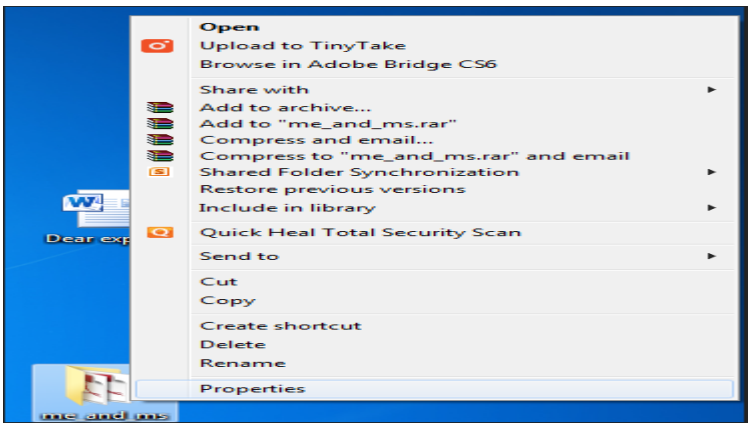
This option is used to uninstall program

3.6.1.1.4 Map network drive



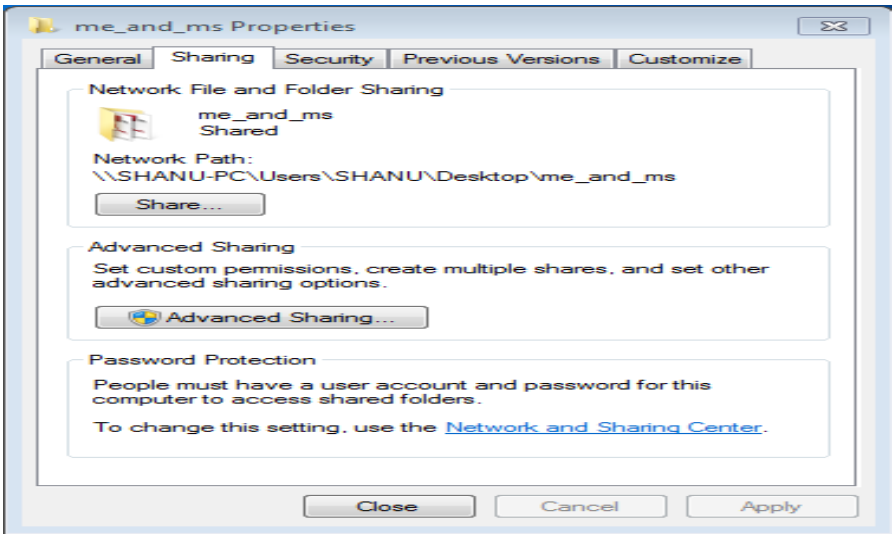
This option is used to map a networked shared folder on the server with client pc.

<u>Step-1</u>

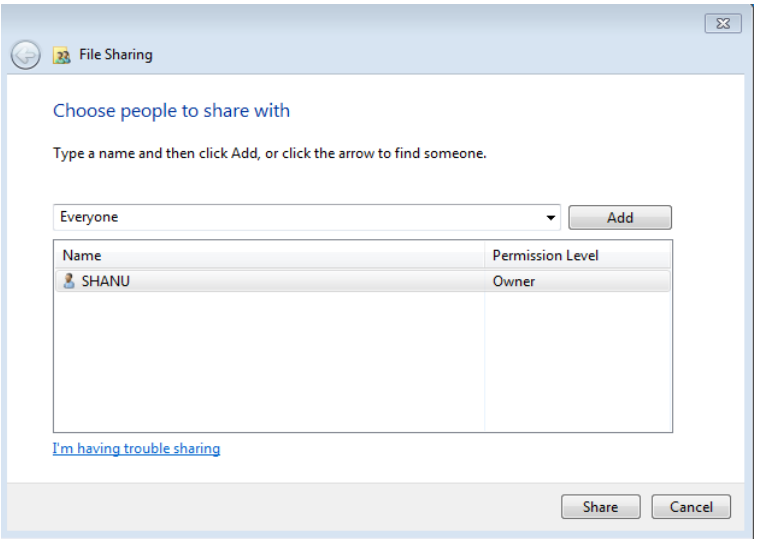


<u>Step-2</u>

Click on the properties



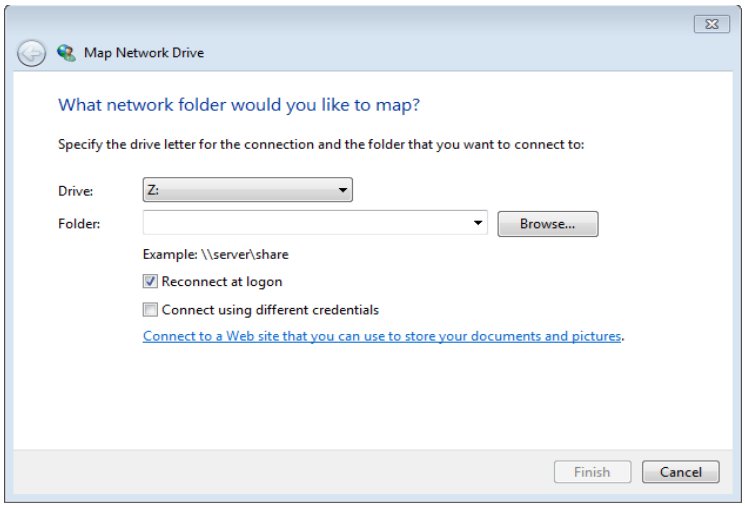
Step-3 Click on the share button



Click on share at the server

Step-4

Click on map network drive as shown below

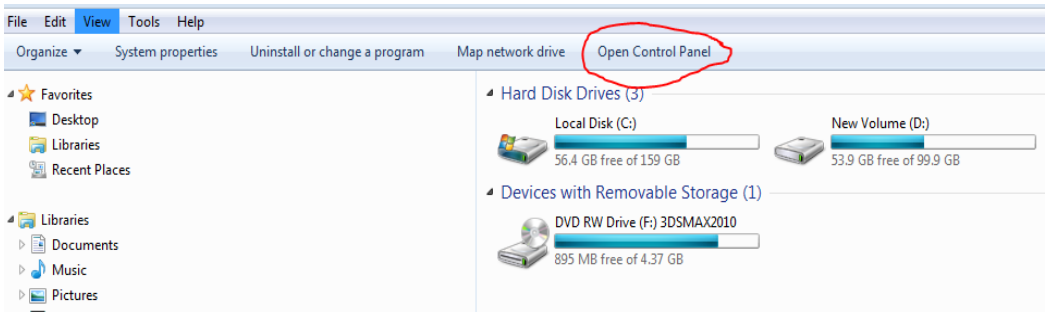


Enter the folder name located at the server as

\\server name\share name

Or you can browse the shared folder click finish

3.6.1.1.5 Control Panel

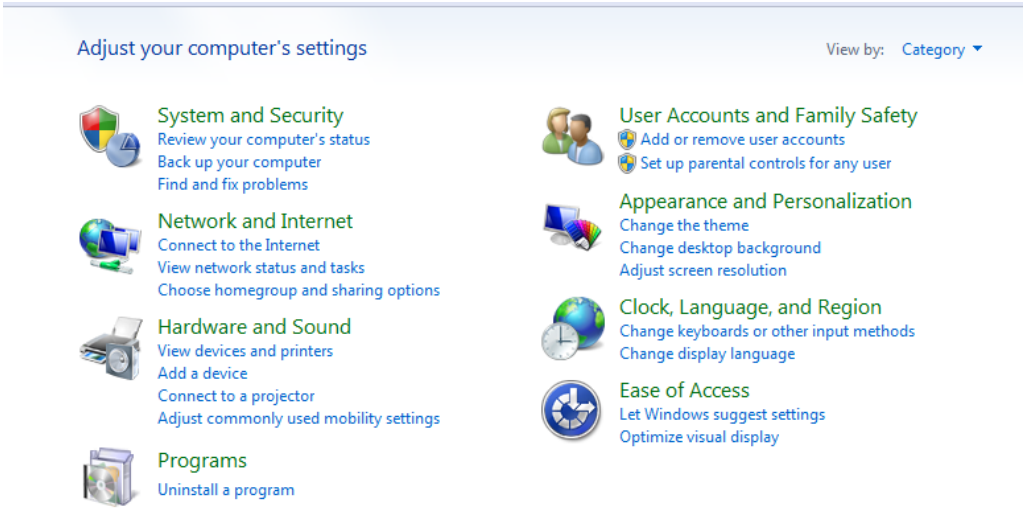


The Control Panel in Windows 7 is the place to go when you need to make changes to various settings of your computer system. You can control most Windows commands and features using the various options and sliders in the Control Panel.

To open the Control Panel, click the Start button on the taskbar and then click Control Panel on the Start menu. Windows 7 gives you three different views for looking at your computer's Control Panel: To switch views, click the View By drop-down button (labeled Category by default) in the upper-right corner of the Control Panel and then choose one of the views from the button's drop-down menu.

Category view

By default, the Control Panel is displayed in Category view, which is separated into eight categories, ranging from System and Security to Ease of Access. To open a window with the Control Panel options for any one of these categories, simply click the category's hyperlink.



The following table gives you a description of all the Control Panel categories, including the various programs you can find by clicking each category's hyperlink.

Click This Category Link	**To Display These Groups of Links**
System and Security	Action Center, Windows Firewall, System, Windows Update, Power Options, Backup and Restore, BitLocker Drive Encryption, and Administrative Tools
User Accounts	User Accounts, Windows Card space, Credential Manager, and Mail (32-bit)
Network and Internet	Network and Sharing Center, Home group, and Internet Options
Appearance and Personalization	Personalization, Display, Desktop Gadgets, Taskbar and Start Menu, Ease of Access Center, Folder Options, and Fonts
Hardware and Sound	Devices and Printers, AutoPlay, Sound, Power Options, Display, and Windows Mobility Center
Clock, Language, and Region	Date and Time, and Region and Language
Programs	Programs and Features, Default Programs, and Desktop Gadgets
Ease of Access	Ease of Access Center and Speech Recognition
Programs	Used to uninstall a program

You'll notice that some Control Panel windows and dialog boxes can be accessed in more than one way. You can also find most Control Panel programs by doing a Start Menu search.

Check your progress 2

Q 1. What are the items that one comes across upon double clicking my computer

A._____

_____

_____

Q 2. What is meant by system properties?

A._____

_____

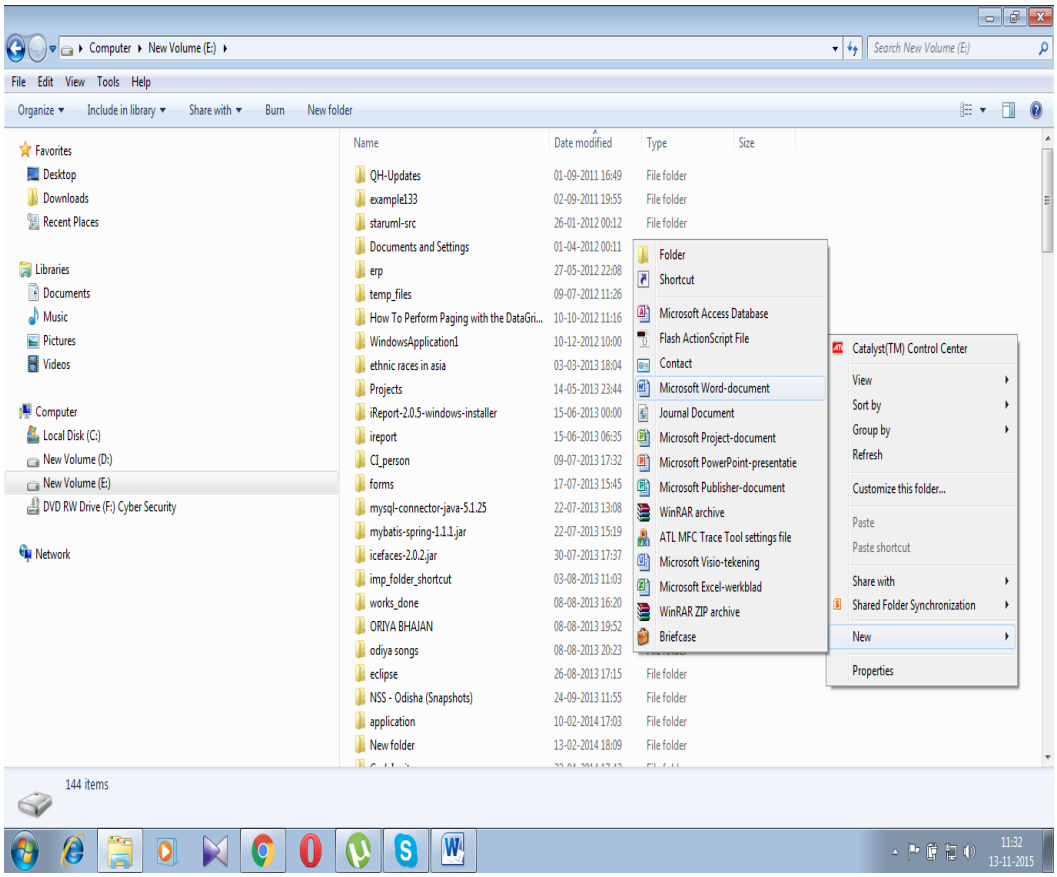
_____

3.6.1.1.6 Drive

Drive :- An electromechanical device that contains and reads and writes magnetic disks, optical discs or magnetic tapes.

List of drives on computer are C:/D:/E and double clicking open drives.

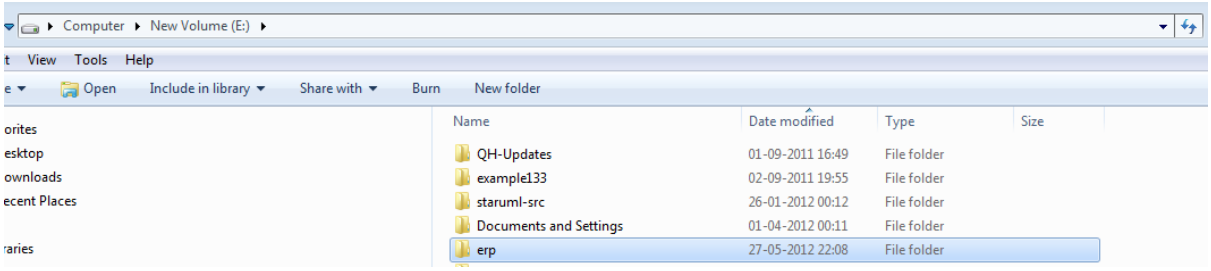
Now right click on the drive to get the menu as defined below

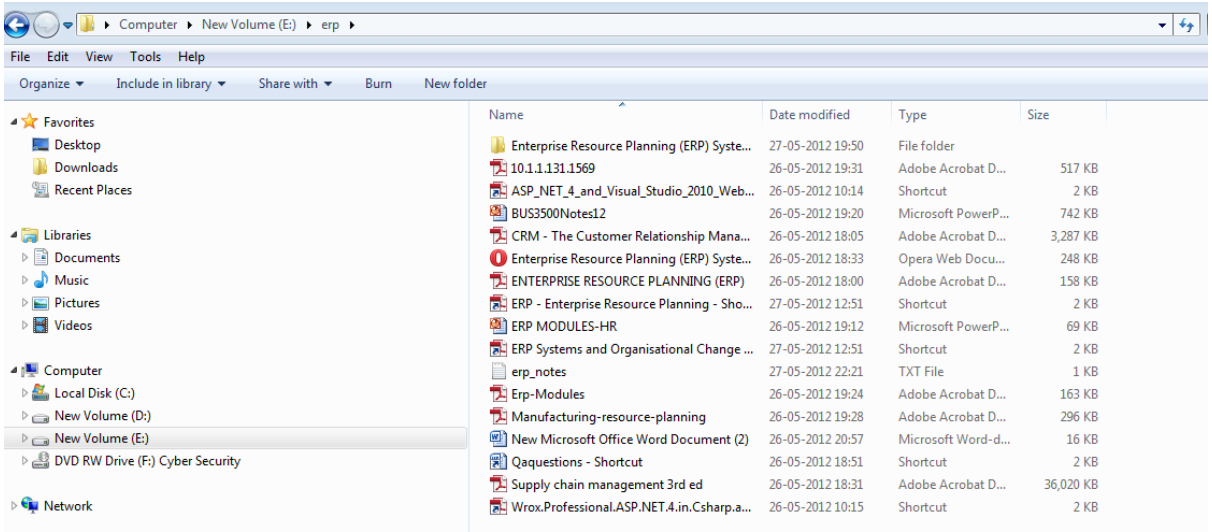


3.7 File and folder management in Windows 7

- **File** :- A file is a resource for storing information, which is available to a computer program and is usually based on some kind of durable storage.
- **Folder :-** A folder is a virtual location where programs, files, and other folders can be located.

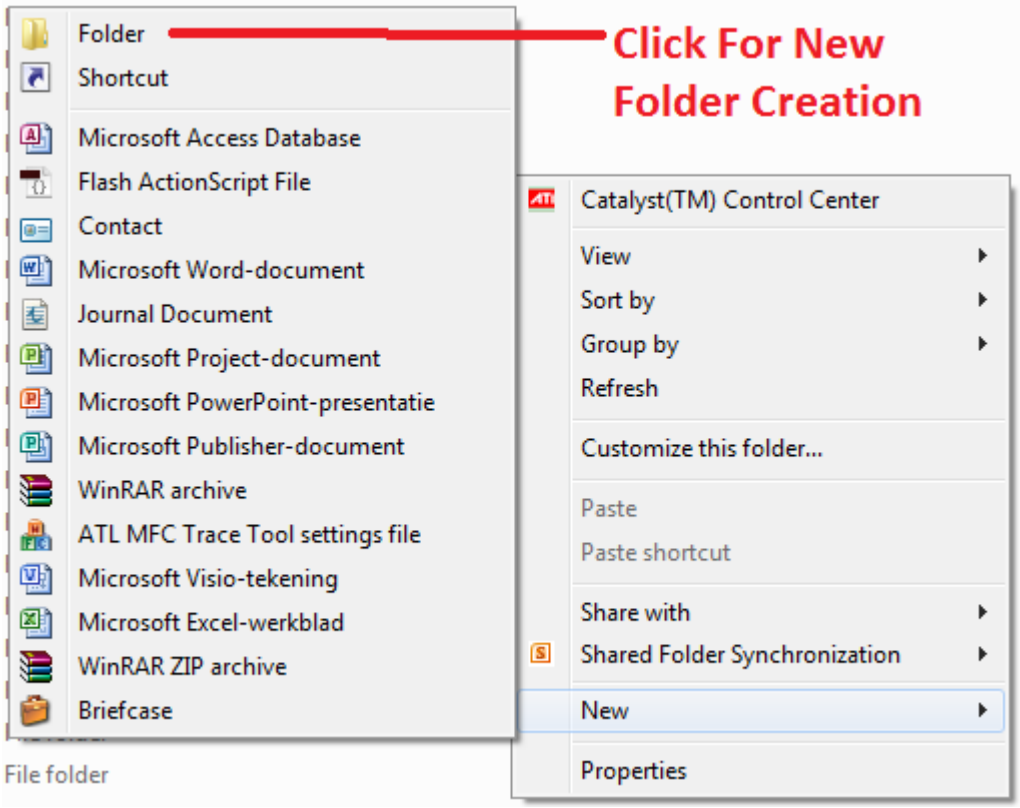
Double click the folder and you can see the contents of the folder as shown below.





3.7.1 How to create a folder under a drive

Right click on the drive and you get the option as shown below.

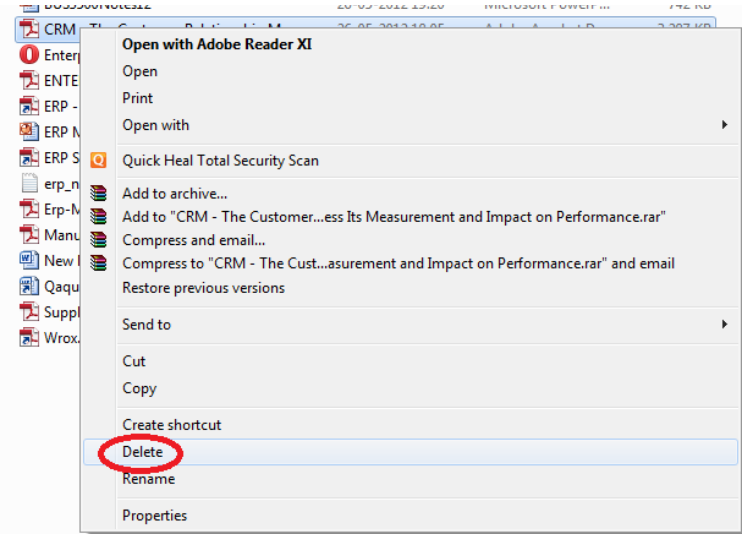


Follow the earlier steps to create a file under a folder

3.7.2 How to delete a file under a folder

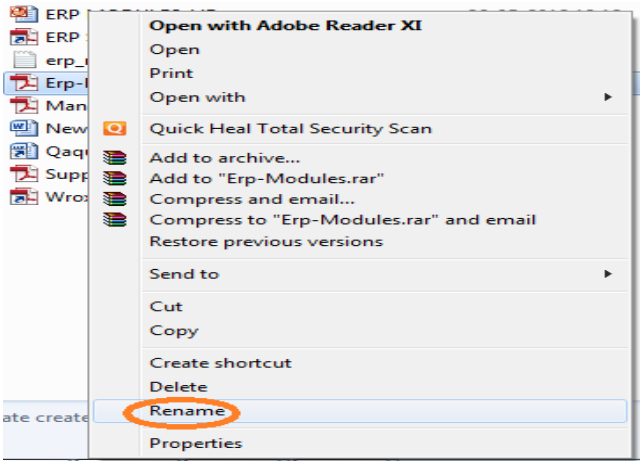
Double Click The Folder

Right click the file and choose the option Delete



3.7.3 How to rename a file under a folder

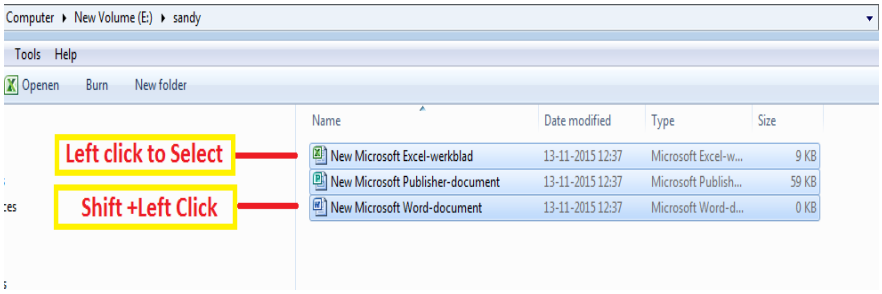
To Rename A File In The Folder



To Delete /Rename a folder right click on the folder and follow the same steps as that you did on a file.

3.7.4 Deleting all files under a folder

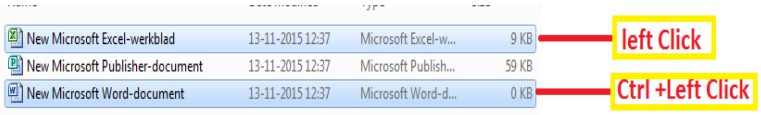
Let us consider a folder say sandy



1. Left Click the first file
2. Shift and left click the last file in the folder
3. Press del key to delete files. These files go to the recycle bin
4. Press shift + del key to permanently delete files.

3.7.5 Deleting specific files under a folder

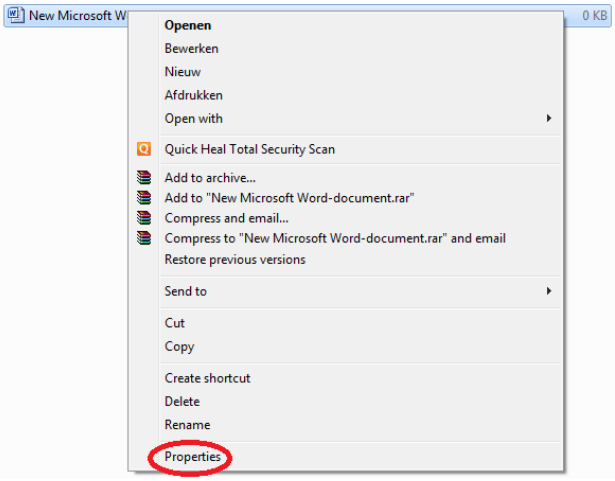
Deleting Specific Files From A folder **:- Let us consider the folder say sandy**

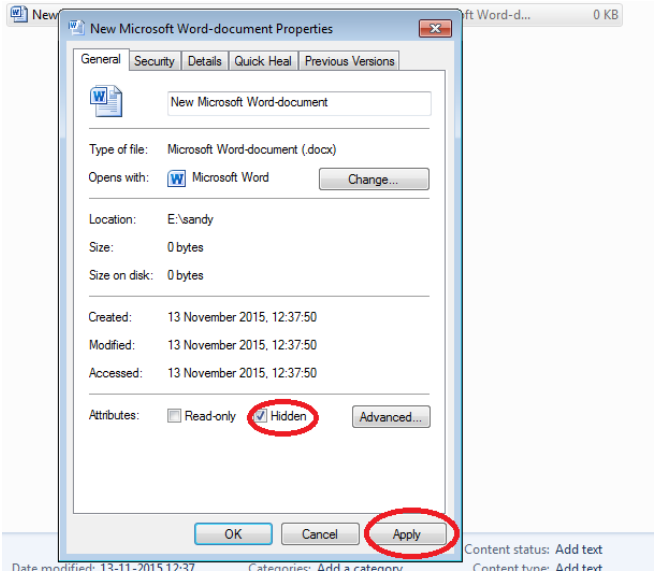


Press the del key to delete the selected files.

3.7.6 Hiding a file under a folder

To hide a file :- Right Click on the file and you get the menu

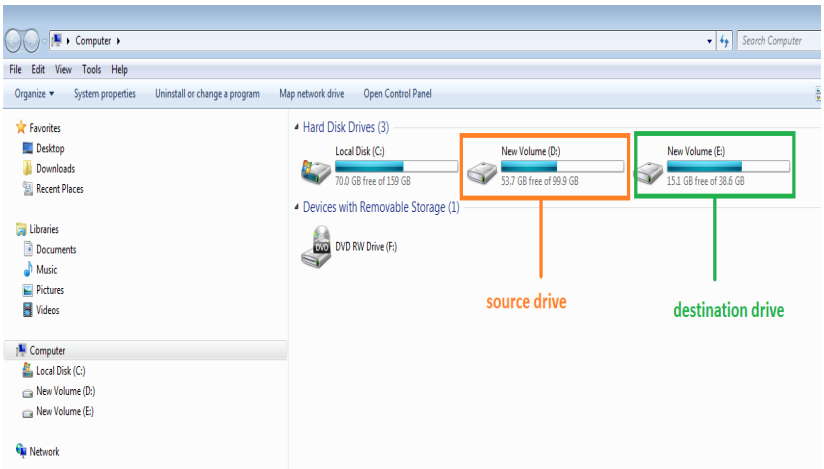




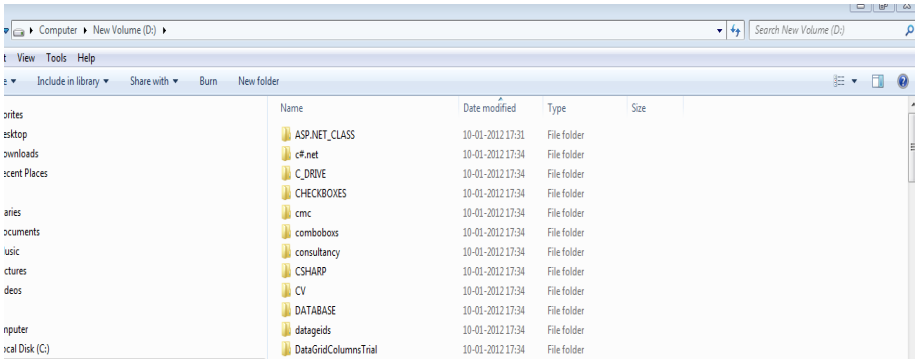
3.7.7 Copying a file from one folder to another folder

<u>To copy a file from one folder to the Other Follow The Following Steps</u>

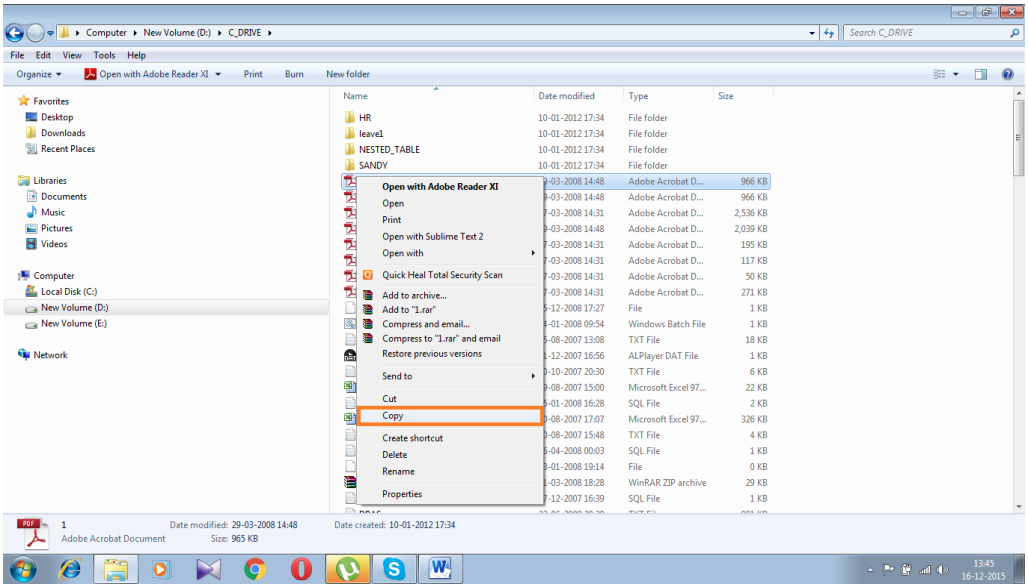
1. Double Click on My Computer



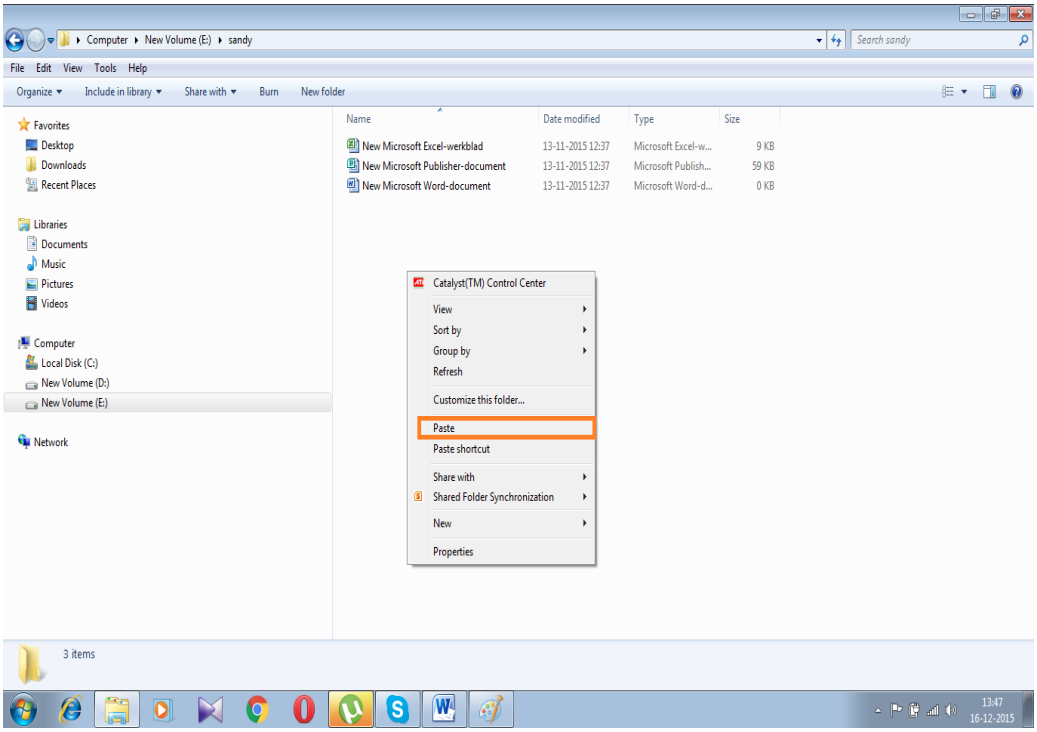
2. Open the source drive

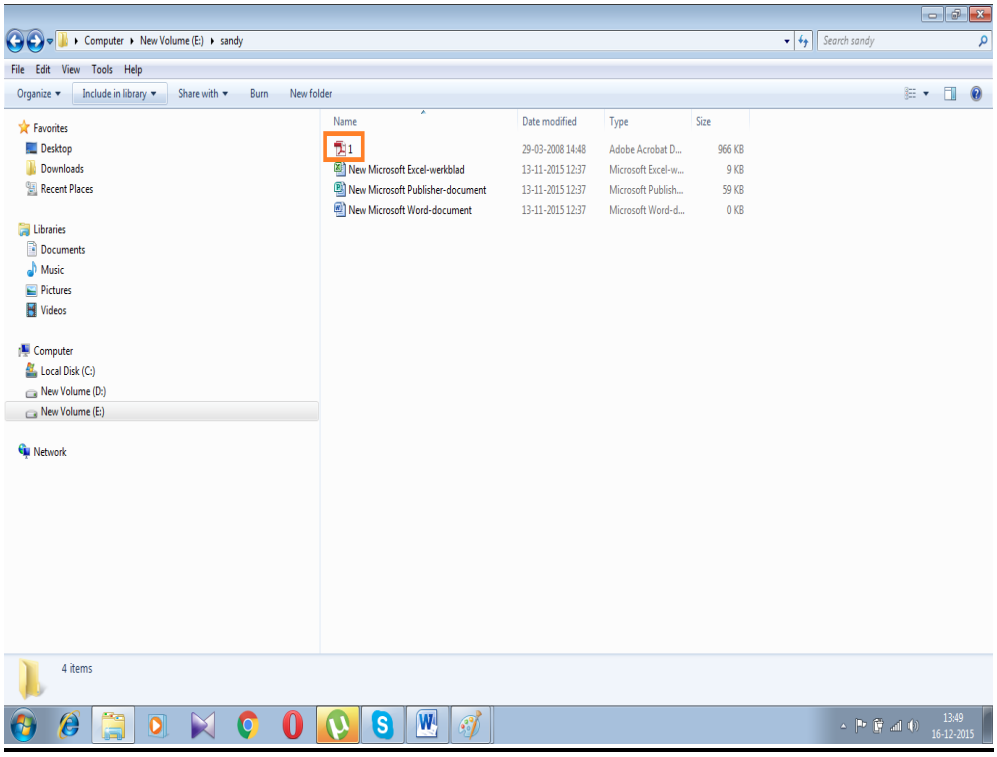


3. Open the source folder
4. Right click on the desired file to be copied



5. Open the Destination drive
6. Open the Destination folder
7. Right click and paste

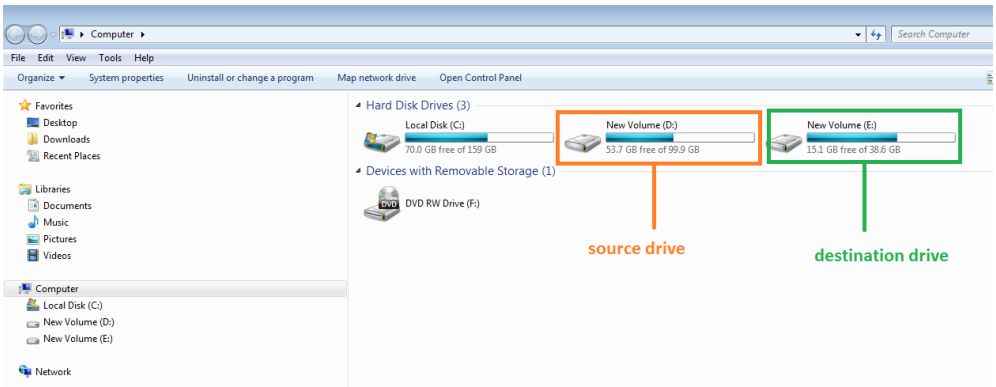

Computer ▸ New Volume (E:) ▸ sandy
Search sandy
File Edit View Tools Help
Organize ▾ Include in library ▾ Share with ▾ Burn New folder
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
New Volume (D:)
New Volume (E:)
Network
Name
Date modified
Type
Size
New Microsoft Excel-werkblad 13-11-2015 12:37 Microsoft Excel-w... 9 KB
New Microsoft Publisher-document 13-11-2015 12:37 Microsoft Publish... 59 KB
New Microsoft Word-document 13-11-2015 12:37 Microsoft Word-d... 0 KB
Catalyst(TM) Control Center
View
Sort by
Group by
Refresh
Customize this folder...
Paste
Paste shortcut
Share with
Shared Folder Synchronization
New
Properties
3 items
13:47
16-12-2015


Computer ▸ New Volume (E:) ▸ sandy
Search sandy
File Edit View Tools Help
Organize ▾ Include in library ▾ Share with ▾ Burn New folder
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
New Volume (D:)
New Volume (E:)
Network
Name
Date modified
Type
Size
1 29-03-2008 14:48 Adobe Acrobat D... 966 KB
New Microsoft Excel-werkblad 13-11-2015 12:37 Microsoft Excel-w... 9 KB
New Microsoft Publisher-document 13-11-2015 12:37 Microsoft Publish... 59 KB
New Microsoft Word-document 13-11-2015 12:37 Microsoft Word-d... 0 KB
4 items
13:49
16-12-2015

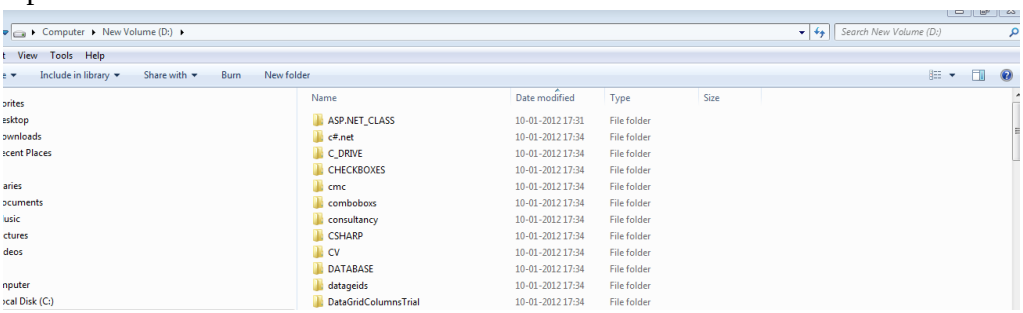
3.7.8 Cut a file from one folder and paste it into another folder

To cut a file from one folder and paste it to the Other Follow The Following Steps

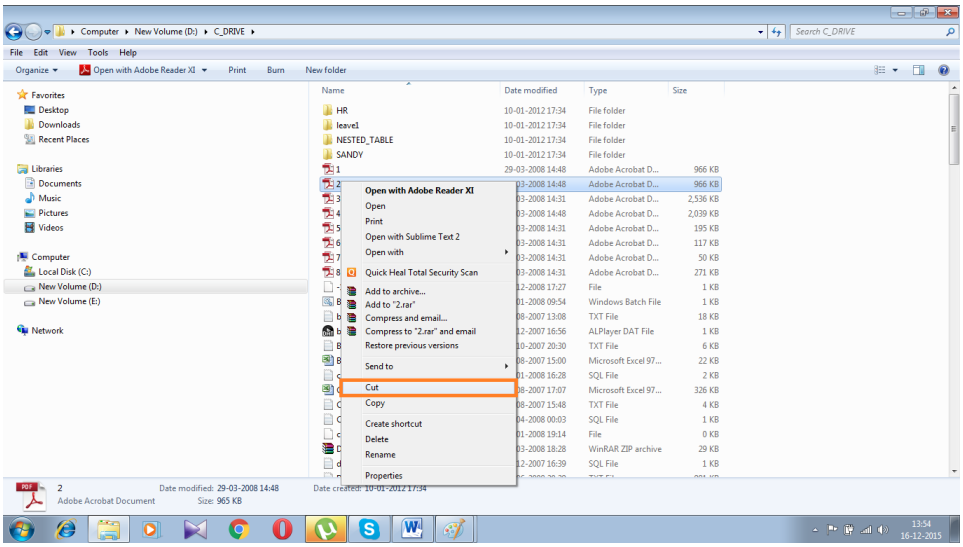
1. Double Click on My Computer



2. Open the source drive



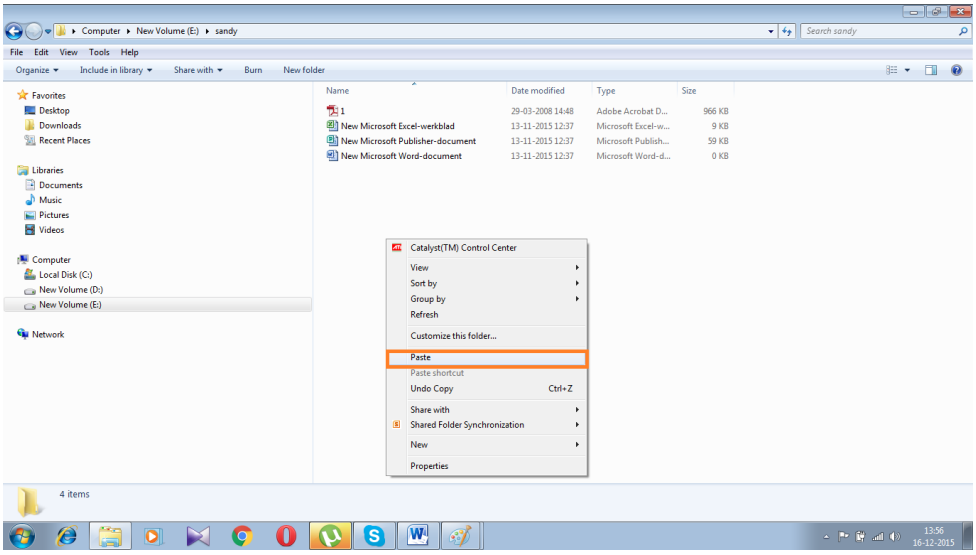
3. Open the source folder
4. Right click on the desired file to be cut

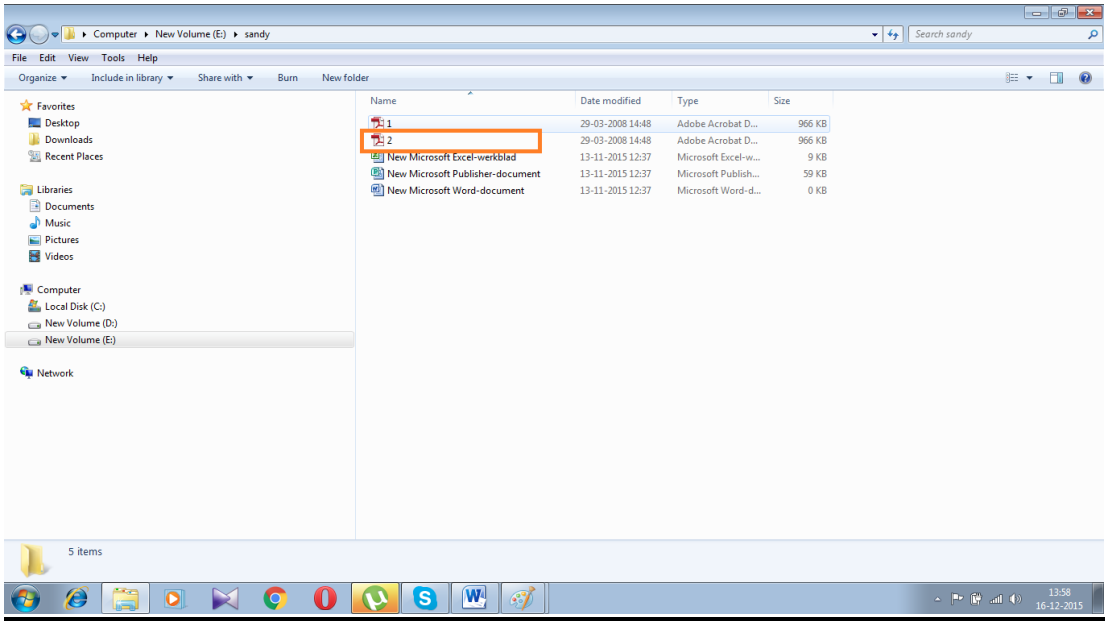


5. Open the Destination drive

6. Open the Destination folder

7. Right click and paste





Check your progress 3

Q1. What is a file and what is a folder ?

A._____

_____

_____

Q2. What are the operations that are performed on a file and folder

A._____

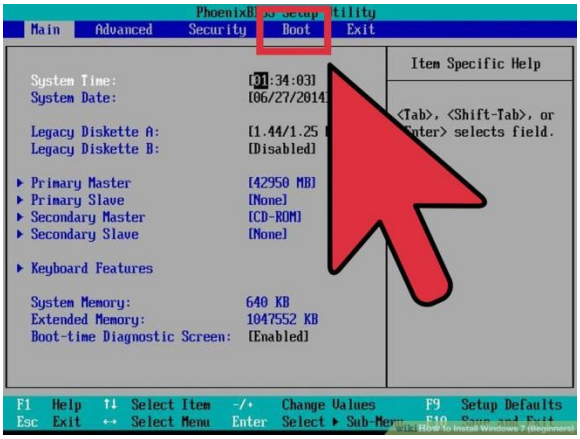
_____

_____

3.8 Windows 7 installation

Step-1

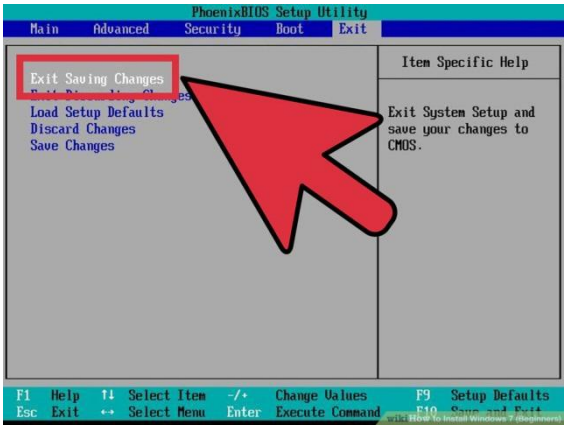
Enter your computer's BIOS. Turn off the computer that you want to install Windows on then turn it back on. When the BIOS screen appears or you are prompted to do so, press Del, Esc, F2, F10, or F9 (depending on your computer's motherboard) to enter the system BIOS. The key to enter the BIOS is usually shown on the screen.



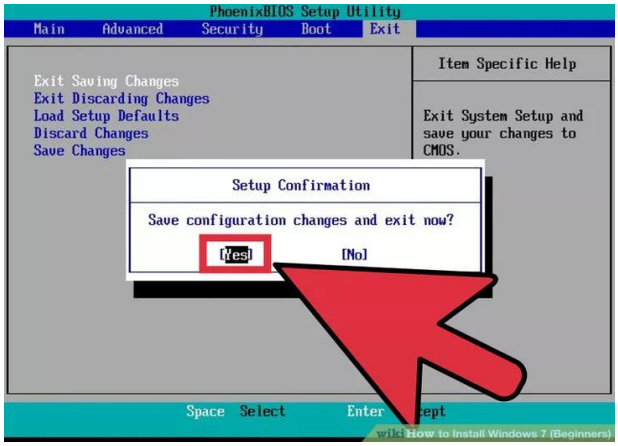
Step-2

Select the CD-ROM drive as the first boot device of your computer**.**

Step-3



Step-4



Step-5

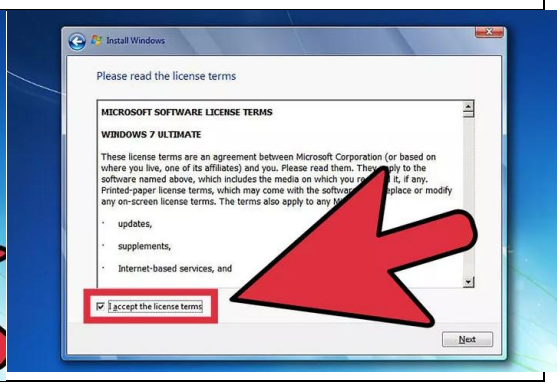
Shut off your computer. Either turn off the computer by choosing the shut-down option in your current operating system, or hold the power button until the computer powers off.

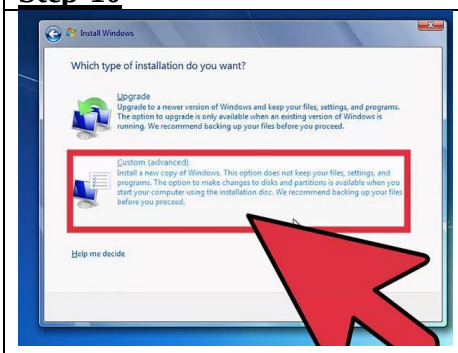
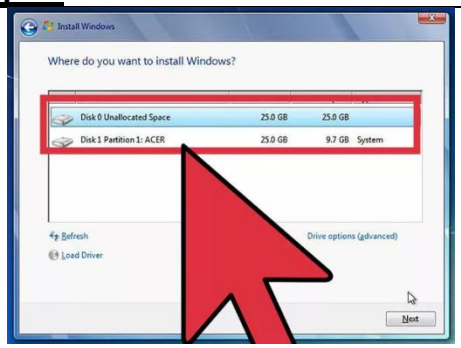
Step-6

Step-7

Step-8

Step-9



Step-10	Step-11
	
Step-12	**Step-13**
	

3.9 Let us sum up

The operating system is the most important program that runs on a computer. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers. Computers cannot function without an operating system. Computers are classified into multi-user, multi-processing, multi-tasking, and multi-threading and real time. The operating system acts as an interface between the user and hardware. We learn about windows 7 and its use, how files and folders are managed in windows 7.We learnt about system protection, remote settings, device manager, advanced settings, uninstall a program, map network drive, control panel, drives, folder and file management, windows 7 installation.

3.10 Key words

Configure :- Change the settings of the windows.

3.11 References

1. **Google.com**
2. **https://www.bgsu.edu/content/dam/BGSU/libraries/documents/windows-7-tutorial.pdf**

3.12 Check your progress –Possible answers

Answers to check your progress 1

A.1 : An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs. The operating system is a component of the system software in a computer system.

Answers to check your progress 2

A. 1 :

1. Organize
2. System properties
3. Uninstall of change a Program
4. Map Network drive
5. Open Control Panel
6. Drives

A. 2 :

A feature found in Windows that displays basic overview of your computer, System Properties allows the user to customize many system settings and access Device Manager.

3.12.3 Answers to check your progress 3

A. 1. : A file is a resource for storing information, which is available to a computer program and is usually based on some kind of durable storage.

A folder is a virtual location where programs, files and other folders can be located

A. 2. : The operations that are performed on a file are open ,save, close ,update, rename, Delete.

Unit – 4
Linux

Objectives

After the Completion of this unit you should be able to know

1. The various flavors of Linux.
2. Advantages of Linux.
3. Linux installation steps.
4. Linux directory structure
5. Other important Linux files , their use
6. Using Linux in Graphical User Interface
7. Using Linux commands in command line

Structure

4.1 Introduction

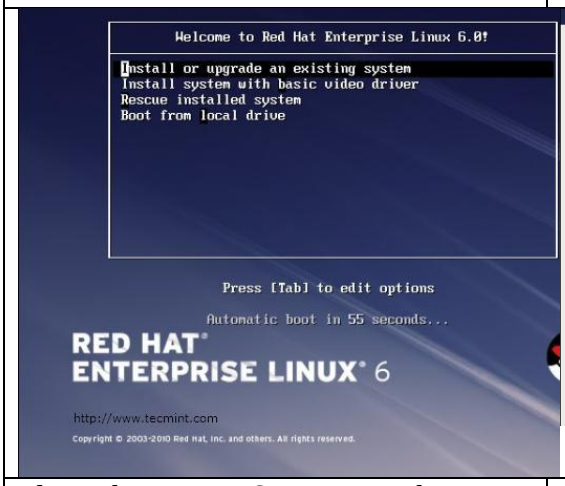
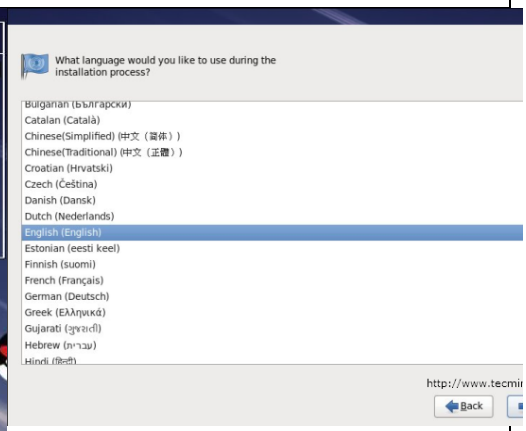
Linux is a multiuser operating system . It comes in various distribution flavors. These are

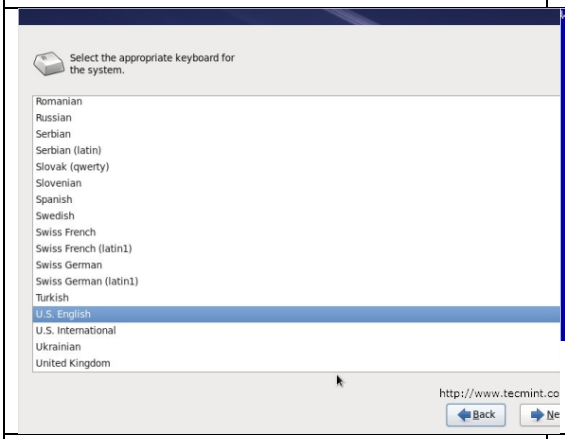
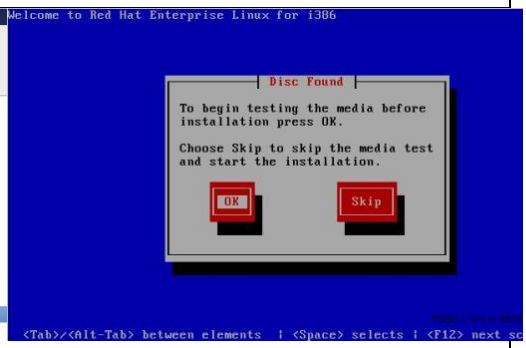
1. Ubuntu Linux
2. Linux Mint
3. Arch Linux
4. Deepin
5. Fedora
6. Debian
7. Open Suse
8. Red Hat Linux

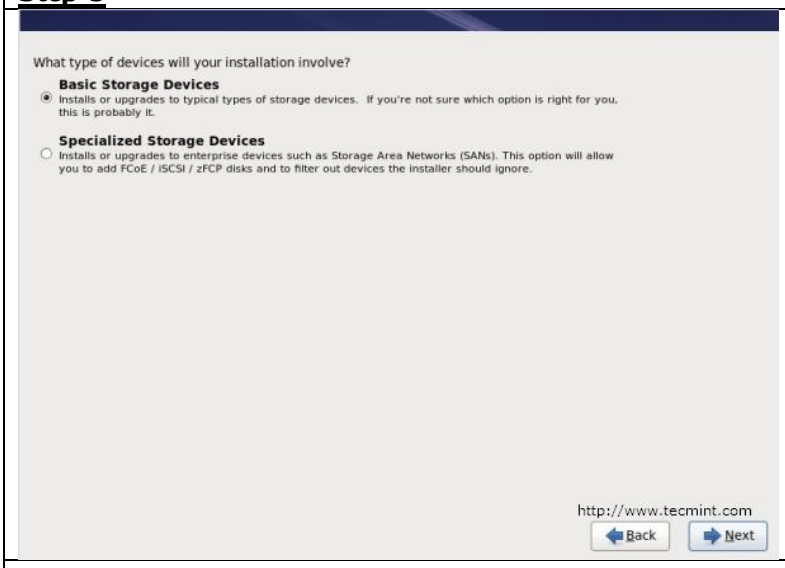
Advantages Of Linux

1. It is free
2. It is portable to any hardware platform.
3. It is secure and versatile
4. It is scalable

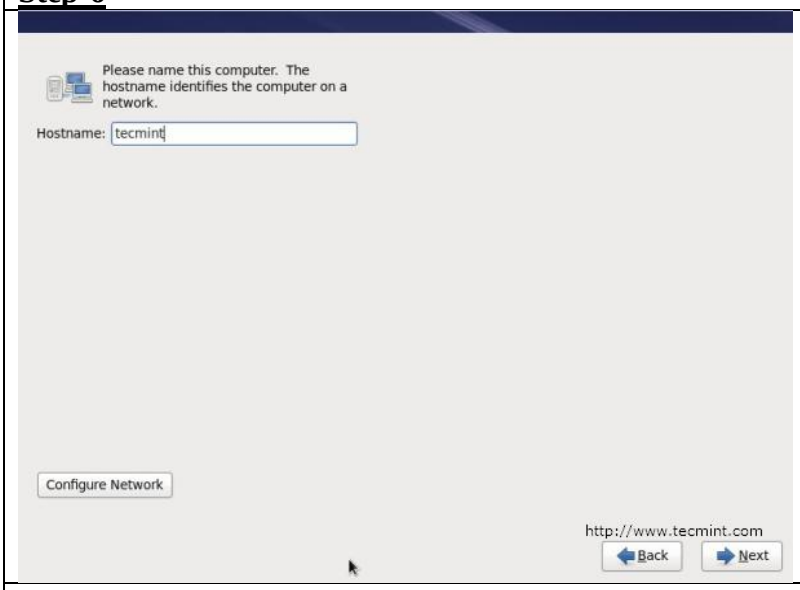
4.2 Linux Installation

Step -1	**Step-2**
	
Place the Linux 6 DVD in the DVD drive	Select Language.

Step-3	**Step-4**
	
Select keyboard type	Choose skip media test below

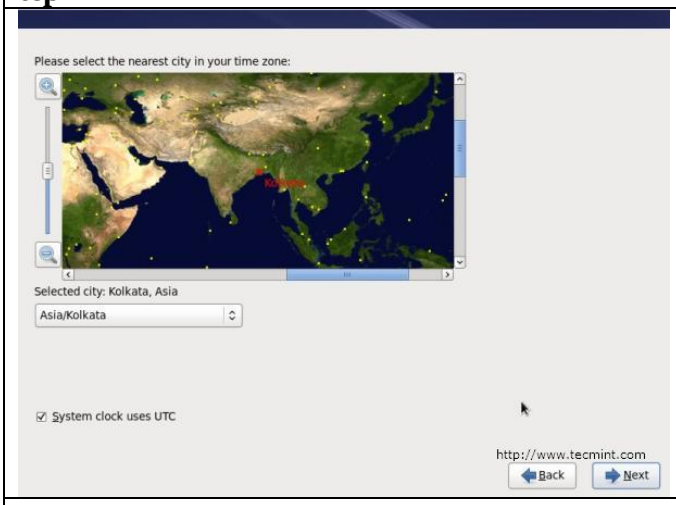
Step-5

Select storage device

Step-6



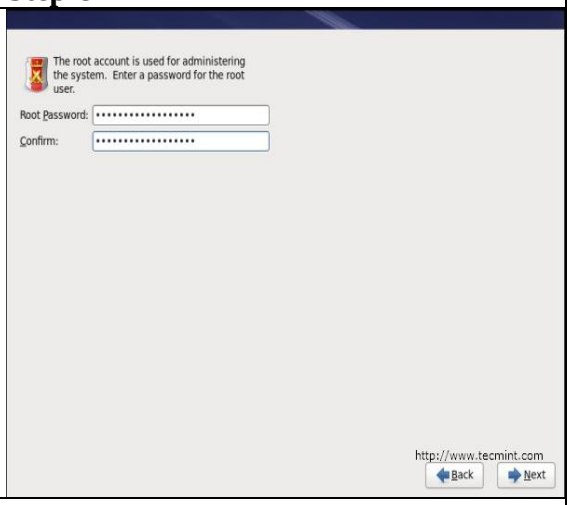
Please enter the name of the computer

tep-7



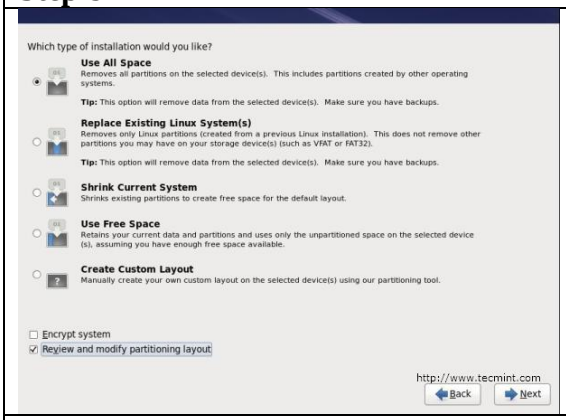
Set the time zone and location

Step-8



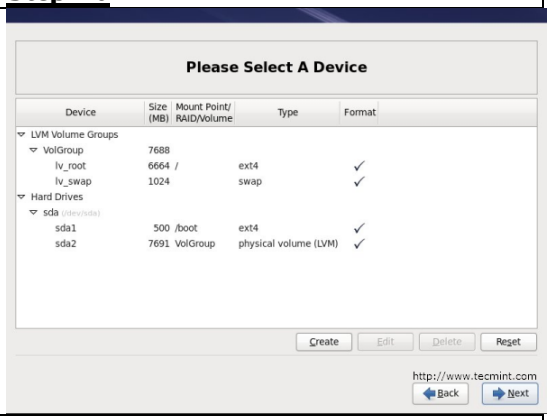
Enter root user password

Step-9

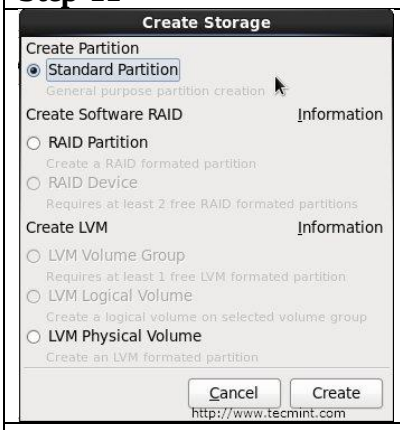
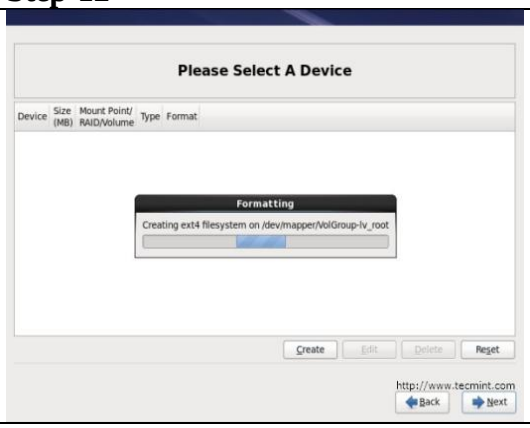
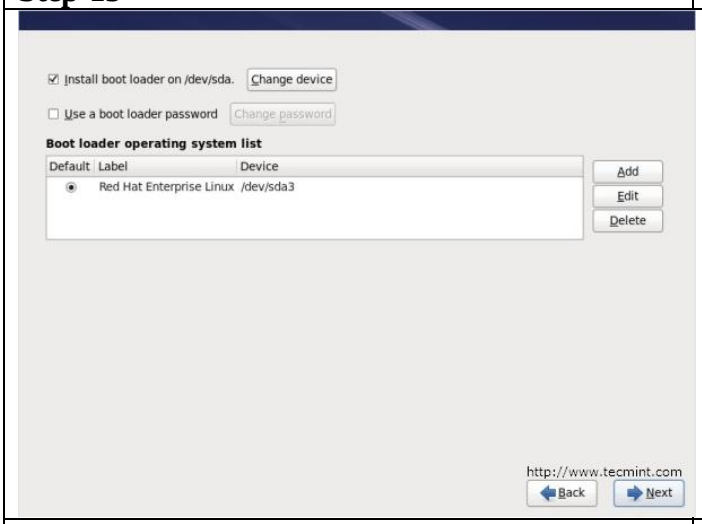
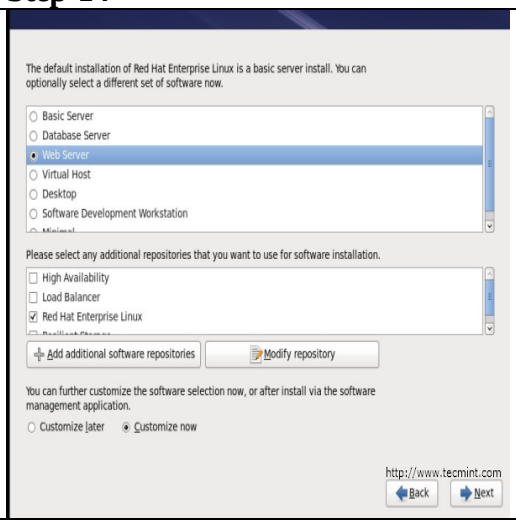


Select the type of installation

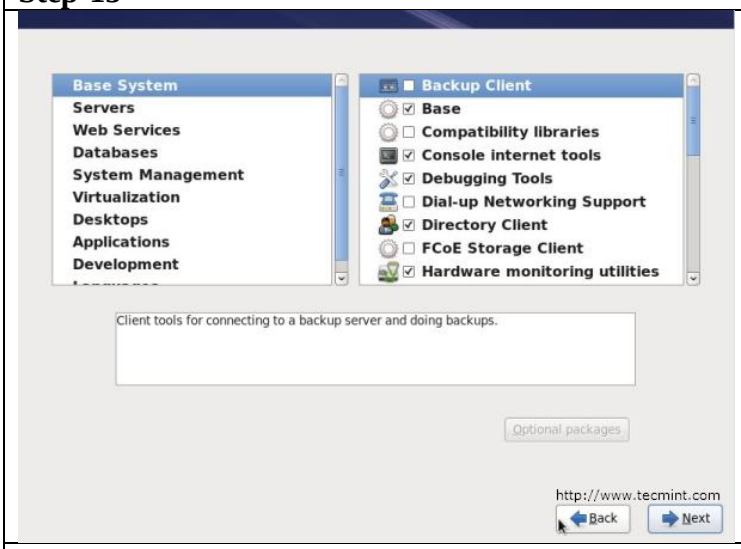
Step-10



Select the device

Step-11	**Step-12**
	
Click on the next button as shown above and select standard partition	Create partition and formatting file systems
Step-13	**Step-14**
	
Configuring boot loader options, also can give boot loader password for security reason	Select applications to install and select customize now

Step-15



copy packaged selection

Step-16 :- Installation

4.3 Linux directory structure

Linux directory structure(/* For Reference Only */)

Sl.No	Folder Name	Description
1	/bin	All the executable binary programs(file) required during booting, repairing, files required to run into single user mode and other basic important commands such as cat, du, df,tar, rpm, wc, history.
2	./boot	Holds important files during boot up process including Linux Kernel.
3	/dev	Contains device files for all the hardware devices on the machine e.g., cdrom, cpu, etc.
4	**/etc**	Contains Application's configuration files, **startup**, **shutdown**, **start**, **stop** script for every individual program.
5	**/home**	Home directory of the users. Every time a new user is created, a directory in the name of user is created within home directory which contains other directories like **Desktop**, **Downloads**, **Documents**, etc.
6	**/lib**	The Lib directory contains **kernel modules** and **shared library** images required to boot the system and run commands in root file system.
7	**/media**	Temporary mount directory is created for removable devices viz., **media/cdrom**
8	**/mnt**	Temporary mount directory for mounting file system
9	**/opt**	Optional is abbreviated as opt. Contains third party application software. Viz., Java, etc.
10	**/sbin**	Contains binary executable programs, required by **System Administrator**,for **Maintenance**. Viz.,iptables, fdisk, ifconfig, swapon, reboot, etc.
11	**/srv**	Service is abbreviated as '**srv**'. This directory contains server specific and service related files.

12	**/tmp**	System's Temporary Directory, Accessible by users and root. Stores temporary files for **user** and **system**, till next boot.
13	**/lost+found**	This directory is installed during installation of **Linux**, useful for recovering files which may be broken due to unexpected **shut-down**.
14	/proc	A virtual and pseudo file-system which contains information about **running process** with a particular **Process-id** aka **pid**.
15	**/root**	This is the home directory of root user and should never be confused with '/'
16	**/run**	This directory is the only clean solution for **early-runtime-dir** problem.
17	**/sys**	Modern Linux distributions include a **/sys** directory as a **virtual filesystem**, which stores and allows modification of the devices connected to the system.
18	**/usr**	Contains executable binaries, documentation, source code, libraries for second level program.
19	**/var**	Stands for variable. The contents of this file is expected to grow. This directory contains **log**, **lock**,**spool**, **mail** and **temp** files.

4.4 Other important files, their location and usability

(/* For Reference Only */)

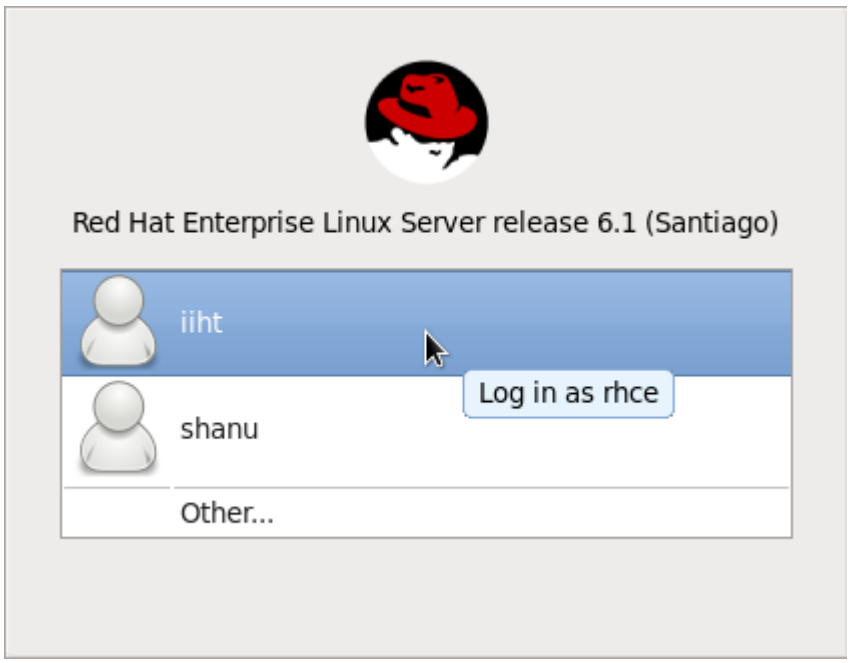
Sl.No	Folder Name	Description
1	/boot/vmlinuz	The Linux Kernel file.
2	/dev/hda	Device file for the first IDE HDD (Hard Disk Drive)
3	/dev/hdc	Device file for the IDE CD ROM, commonly
4	/dev/null	A pseudo device, that don't exist. Sometime garbage output is redirected to /dev/null, so that it gets lost, forever.
5	/etc/bashrc	Contains system defaults and aliases used by bash shell.
6	/etc/crontab	A shell script to run specified commands on a predefined time Interval.
7	/etc/exports	Information of the file system available on network.
8	/etc/fstab	Information of Disk Drive and their mount point.
9	/etc/group	Information of Security Group.
10	/etc/grub.conf	grub bootloader configuration file.
11	/etc/init.d	Service startup Script.
12	/etc/lilo.conf	lilo bootloader configuration file.
13	/etc/hosts	Information of Ip addresses and corresponding host names.
14	/etc/hosts.allow	List of hosts allowed to access services on the local machine.
15	/etc/host.deny	List of hosts denied to access services on the local machine.

16	/etc/inittab	INIT process and their interaction at various run level.
17	/etc/issue	Allows to edit the pre-login message.
18	/etc/modules.conf	Configuration files for system modules
19	/etc/motd	motd stands for Message Of The Day, The Message users gets upon login.
20	/etc/mtab	Currently mounted blocks information
21	/etc/passwd	Contains password of system users in a shadow file, a security implementation.
22	/etc/printcap	Printer Information
23	/etc/profile	Bash shell defaults
24	/etc/profile.d	Application script, executed after login
25	/etc/rc.d	Information about run level specific script.
26	/etc/rc.d/init.d	Run Level Initialization Script.
27	/etc/resolv.conf	Domain Name Servers (DNS) being used by System.
28	/etc/securetty	Terminal List, where root login is possible
29	/etc/skel	Script that populates new user home directory.
30	/etc/termcap	An ASCII file that defines the behavior of Terminal, console and printers.
31	/etc/X11	Configuration files of X-window System
32	/usr/bin	Normal user executable commands.
33	/usr/bin/X11	Binaries of X windows System.
34	/usr/include	Contains include files used by ‘c‘ program.
35	/usr/share	Shared directories of man files, info files, etc.
36	/usr/lib	Library files which are required during program compilation
37	/usr/sbin	Commands for Super User, for System Administration.

38	/usr/lib	Library files which are required during program compilation.
39	/usr/sbin	Commands for Super User, for System Administration.
40	/proc/cpuinfo	CPU Information
41	/proc/filesystems	File-system Information being used currently.
42	/proc/interrupts	Information about the current interrupts being utilized currently.
43	/proc/ioports	Contains all the Input/Output addresses used by devices on the server.
44	/proc/modules	Currently using kernel module.
45	/proc/mount	Mounted File-system Information.
46	/proc/stat	Detailed Statistics of the current System.
47	/proc/swaps	Swap File Information
48	/version	Linux Version Information
49	/var/log/lastlog	log of last boot process
50	/var/log/messages	log of messages produced by syslog daemon at boot.
51	/var/log/wtmp	list login time and duration of each user on the system currently.

4.5 Working with Linux

When we start working with Linux we are prompted with user name and password as shown below.



There are 5 types of users

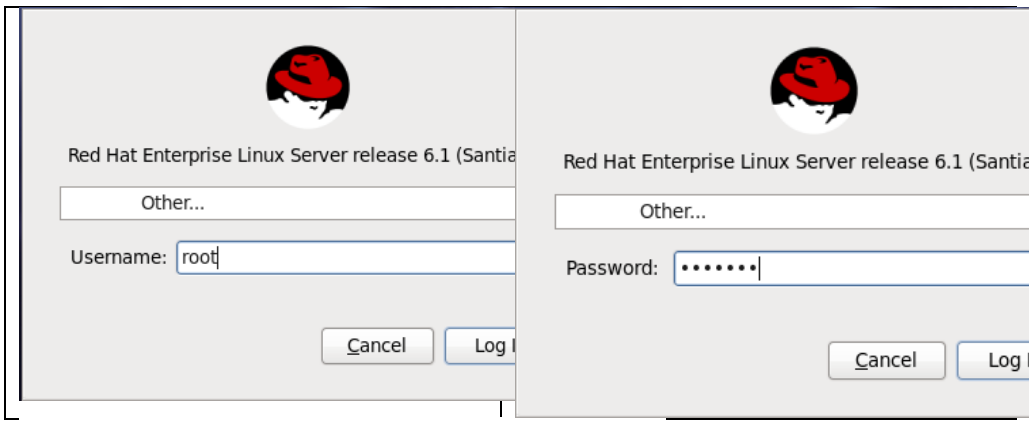
1. Super user :- Also termed as Root user. Has the privileges to Administer the Linux server. Has the control to limit the access of other users.
2. System user: - This user is created by the Linux Operating System. Have more privileges than the normal user.
3. Normal user: - These users are created by the super user. They can access only those privileges given by the Super user
4. Network user: - Users who opt this type of user accounts are network engineers and system administrators who monitor the network activity.
5. Pseudo user: - This is a replica of the Super user which is granted by the super user to user accounts.

In the above screen shows 2 normal users IIHT and shanu.

We will logging as Super user and to do that we click on other.

4.5.1 Working with Linux Graphical User Interface

Step-1 We enters the super user name and password as below and click login.



Step-2:- We come across 3 icons as shown below.

For the moment we take a note that

1. Roots Home :- All file and folders that we create we shall do it here.
2. Computer :- To browse the files and folders and create files and folders. We shall be storing files and folders in the roots home directory.
3. Trash :- Files and folders that we delete will be in the trash. These can be restored from trash.

We shall be learning how to

1. Create files and delete them from root's Home directory
2. Creating folders and delete them root's home directory
3. Creating files in folders under root home directory.
4. Copying files from one folder to the other under root home directory.

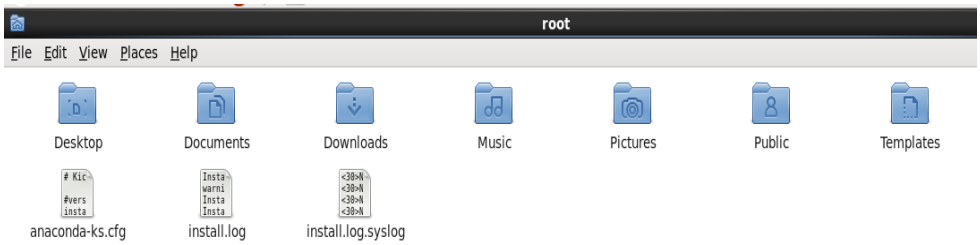
5. Cut and paste files from one folder to the other under root home directory
6. Restore deleted files from the trash

4.5.1.1 Creating a new file

Step-1

Double click on the root home directory

Step-2



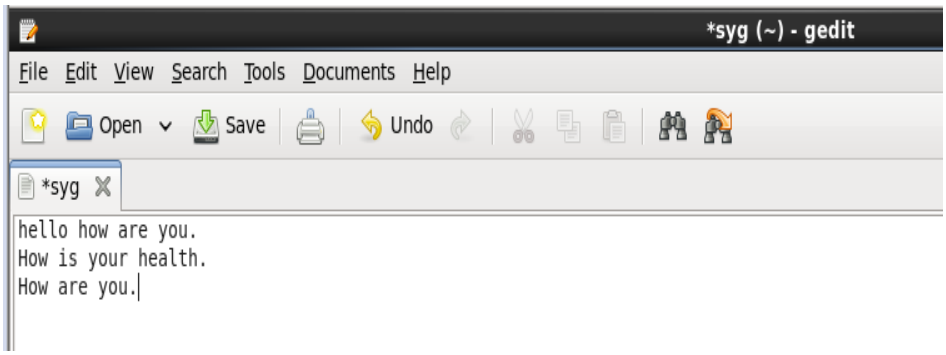
Step-3

Click on File -> Create Document -> Empty File

Step-4

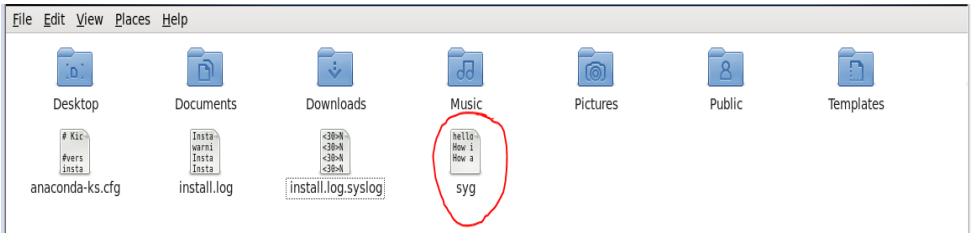
Step-5:- Give it a name as shown

Step-6 :- Double click and enter the contents of the file as shown below



Step-7 :- Click on the save button in green color as shown below.

Go to File ->Close . Go to File -> Quit.



4.5.1.2 Working with files in Root Home directory

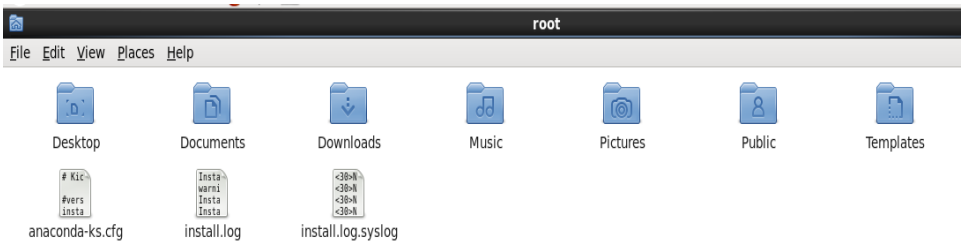
- Double click the file to open the file.
- Right click the file and
  - Click rename to rename the file.
  - Click cut to cut the file and paste it elsewhere.
  - Click move to trash to delete the file and move it to trash.
  - Click send to to send the file to external hard disk /dvd or pen drive.
  - Click properties
    - to find the size of the file.
    - And set permissions to read only to make the File read only
    - Open with to open with another application
- Click file ->create folder to create folder.

4.5.1.3 Working with folders in Root Home directory

Step-1

Double click on the root home directory

Step-2



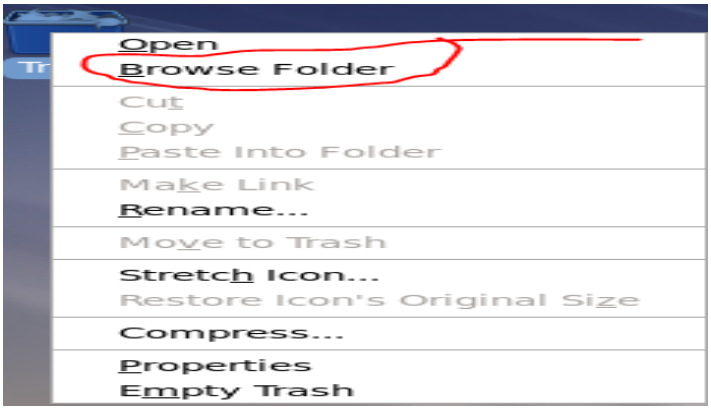
Step-3

- Click on File -> Create Folder to create a folder
- Double click the folder to open the folder.
- Right click the folder and
  - Click rename to rename the folder.
  - Click cut to cut the folder and paste it elsewhere.
  - Click move to trash to delete the folder and move it to trash.
  - Click send to to send the folder to external hard disk /dvd or pen drive.
  - Click properties
    - To find the size of the folder.
    - Set permissions to read only to make the Folder read only
    - Open with to open with another application
- Click file ->create folder to create folder.

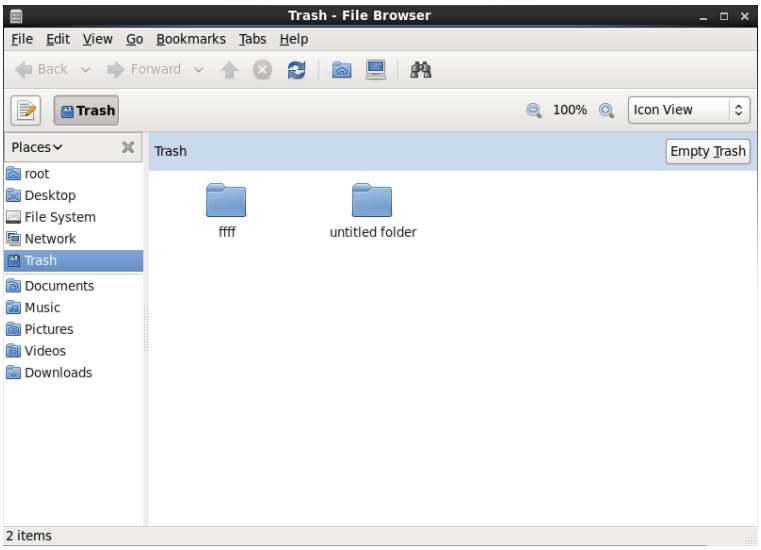
4.5.1.4 Working with trash

To restore the files and folders from the trash double click trash and click restore to restore deleted files.

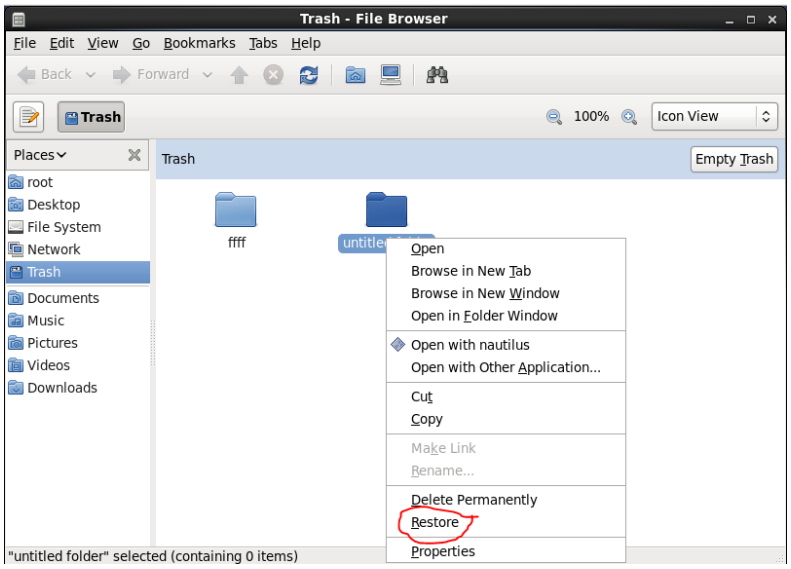
Step-1 :- Right click on the Trash



Step-2



Step-3 : - Click on the restore button to restore the folder from where it was deleted. If delete permanently is clicked then the file is deleted forever.



Check your progress 1

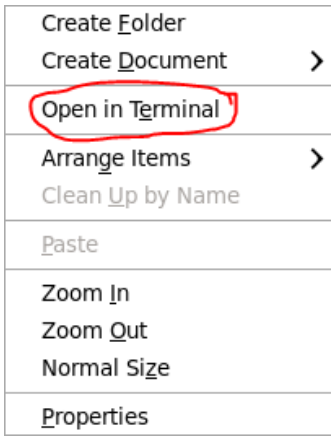
Q. 1 What are the types of users in Linux?

A._____

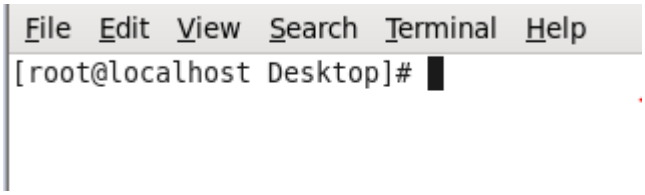
_____

4.5.2 Working with terminal mode

To get into the terminal mode right click being in the graphical user interface



Click on open in terminal mode to open Linux in terminal mode as shown below.



4.5.2.1 Basic Linux commands used in terminal Mode

Basic Linux commands.

Ls	It will display the list contents in a folder
clear	It will clear the screen
mkdir	It creates a new directory
cat >	(new file name) It will create a new file , for saving the file you have to press ctrl + d
cat	(existing file name)It will display the contents of a file
Rm	(file name) It will delete a file
rm –rf	(dir name). It will delete a directory
mv	(old file name) (new file name).It will rename a file (old directory name) (new directory name).It will rename a directory
mv	(source file name)(target directory name).It will move the file from one location to the other.
touch	(new file name) It will create an empty file
date	It will display the current system date
man	(command) it will display the mnuals and syntax of the command.
halt	To shut down the Linux environment

4.5.2.1.1 Steps to create a file in root home folder

1. **Steps to create a file in root home folder.**

Step-1:

```
File  Edit  View  Search  Terminal  Help
[root@localhost Desktop]#
```

#	**means super user**
$	**means normal user**

Step-2:

Click cd /

This takes us to the root directory

The root directory is the top level directory .It is the parent directory of all

the directories.

Step-3

Click cd ~ or cd /root go to root home directory

```
File  Edit  View  Search  Terminal  Help
[root@localhost /]# cd ~
[root@localhost ~]#
```

Step-4

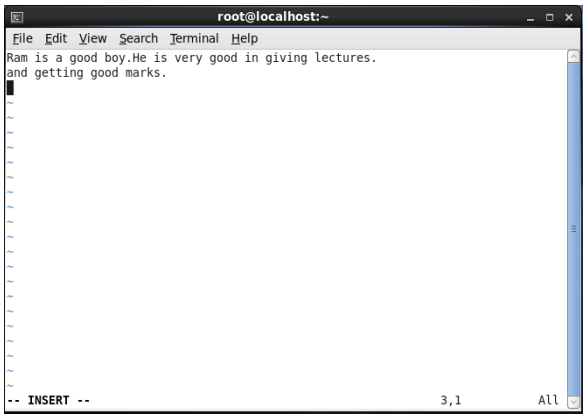
To create a file type the following command

vim filename as shown below

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# vim shanu
```

Step-5

Step-6 :- Press the insert button



Step-7

Now it is time to save the file

Press esc key followed by :wq which means write and quit

Press the enter key

Now the file is written

4.5.2.2 VIM commands

Cursor management in VIM	
H	Left arrow
L	Right arrow
K	Up arrow
J	Down arrow
Escape mode commands	
Esc +:w	To save changes
Esc +:q	To quit
Esc +:wq	To save and quit
Esc +:wq!	To save and quit forcefully
Esc +:w!	To save forcefully
Esc +:x	To save and quit

Step-8 :- To check whether the file exists or not press the ls command which is list files and folders. Below those in blue colour are folders. The one in red is a compressed file . those in black are files.

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# vim shanu
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads          kjui   Pictures  syg      syg.tar.gz
Desktop          install.log        mmm    Public    syg~     Templates
Documents        install.log.syslog Music  shanu     syg (2)  Videos
[root@localhost ~]#
```

4.5.2.3 Checking the contents of a file

Step-9: to check the file contents of shanu type cat shanu

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# cat shanu
Ram is a good boy.He is very good in giving lectures.
and getting good marks.

[root@localhost ~]#
```

4.5.2.4 Using cat command to create a new file

The cat command can also be used to create a new file

Step-1

The syntax is $cat > new filename

```
[root@localhost ~]# cat > sm
hello how are you and how is
your health.Its along time
we havent talked to each other.
```

To save the contents after using the cat command press ctrl +d

Step-2

To save the contents after using the cat command press ctrl +d

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# cat > sm
hello how are you and how is
your health.Its along time
we havent talked to each other.
[root@localhost ~]#
```

4.5.2.5 Delete a file

rm command

The rm command is used to remove or delete a file

Syntax rm filename

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# rm mmm
rm: remove regular file `mmm'? y
[root@localhost ~]#
```

4.5.2.6 Creating a folder /Directory

mkdir command

The mkdir command is used to create a directory.

<u>Syntax</u>

mkdir fish

```
[root@localhost ~]# mkdir fish
[root@localhost ~]# ls
anaconda-ks.cfg  fish                Music     shanu  syg (2)
Desktop          install.log         Pictures  sm     syg.tar.gz
Documents        install.log.syslog  Public    syg    Templates
Downloads        kjui                ram       syg~   Videos
[root@localhost ~]#
```

4.5.2.7 Delete a folder /directory

rm –rf command

The rm –rf command is used to delete a folder

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# rm -rf fish
[root@localhost ~]#
```

4.5.2.8 Rename a folder /directory

```
[root@localhost ~]# rm -rf fish
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads           kjui      Public  sm    syg (2)     Videos
Desktop          install.log         Music     ram     syg   syg.tar.gz
Documents        install.log.syslog  Pictures  shanu   syg~  Templates
[root@localhost ~]#
```

mv command to rename a file.

The mv command is used to rename a file

Syntax mv old filename new filename

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# mv ram shyam
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  install.log         kjui   Pictures  shanu  sm   syg~     syg.tar.gz  Videos
Desktop          Downloads  install.log.syslog  Music  Public    shyam  syg  syg (2)  Templates
[root@localhost ~]#
```

4.5.2.9 Move a file to a folder /directory

mv command to move a file to a directory

```
[root@localhost ~]# cd ~
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads           kjui      Public  sm    syg (2)     Videos
Desktop          install.log         Music     shanu   syg   syg.tar.gz
Documents        install.log.syslog  Pictures  shyam   syg~  Templates
[root@localhost ~]# mkdir fish
[root@localhost ~]# mv shyam fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
shyam
[root@localhost fish]#
```

4.5.2.10 Copy a file to a folder /directory

cp command to copy a file to a directory

```
File  Edit  View  Search  Terminal  Help
[root@localhost Desktop]# cd ..
[root@localhost ~]# cd ~
[root@localhost ~]# ls
anaconda-ks.cfg  fish                Music     sm        syg.tar.gz
Desktop          install.log         Pictures  syg       Templates
Documents        install.log.syslog  Public    syg~      Videos
Downloads        kjui                shanu     syg (2)
[root@localhost ~]# touch hh
[root@localhost ~]# cp hh fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
hh  mmmm  myself  shyam
[root@localhost fish]#
```

Above a file is copied to a folder/directory

4.5.2.11 Copy a folder to a folder /directory

cp –r folder name ~/foldername

~ stands for root home folder

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# ls
anaconda-ks.cfg  fish                kjui      rr      syg~        Videos
Desktop          hh                  Music     shanu   syg (2)
Documents        install.log         Pictures  sm      syg.tar.gz
Downloads        install.log.syslog  Public    syg     Templates
[root@localhost ~]# cp -r  rr  ~/fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
hh  mmmm  myself  rr  shyam
[root@localhost fish]#
```

4.5.2.12 Hide a file or a folder /directory

To hide a File rename the file to “.”+file name

To hide a Folder rename the Folder to “.” +Folder name

```
[root@localhost fish]# mv hh .hh
[root@localhost fish]# ls
mmmm  myself  rr  shyam
[root@localhost fish]#
```

Above the file hh is hidden

4.5.2.13 View hidden files or folders

```
[root@localhost fish]# mv hh .hh
[root@localhost fish]# ls -a
.  ..  .hh  mmmm  myself  rr  shyam
[root@localhost fish]#
```

Above shows the hidden file .hh

```
[root@localhost ~]# mv fish .fish
[root@localhost ~]# ls
anaconda-ks.cfg  hh                  Music     shanu  syg (2)
Desktop          install.log         Pictures  sm     syg.tar.gz
Documents        install.log.syslog  Public    syg    Templates
Downloads        kjui                rr        syg~   Videos
[root@localhost ~]# ls -a
.                Downloads        .ICEauthority        shanu
..               .esd_auth        install.log          sm
anaconda-ks.cfg  .fish            install.log.syslog   .spice-vdagent
.bash_history    .gconf           kjui                 .ssh
.bash_logout     .gconfd          .local               syg
.bash_profile    .gnome2          Music                syg~
.bashrc          .gnome2_private  .nautilus            syg (2)
.cache           .gnote           Pictures             syg.tar.gz
.config          .gnupg           Public               .tcshrc
.cshrc           .gstreamer-0.10  .pulse               Templates
.dbus            .gtk-bookmarks   .pulse-cookie        .thumbnails
Desktop          .gvfs            .recently-used.xbel  Videos
Documents        hh               rr                   .viminfo
[root@localhost ~]#
```

Above example shows the hidden folder .fish

4.5.2.14 Unhide hidden files or folders

To unhide the hidden file/folder rename the .file/.folder name to filename/foldername

```
[root@localhost ~]# mv .fish fish
[root@localhost ~]# ls
anaconda-ks.cfg  fish                kjui      rr     syg~        Videos
Desktop          hh                  Music     shanu  syg (2)
Documents        install.log         Pictures  sm     syg.tar.gz
Downloads        install.log.syslog  Public    syg    Templates
[root@localhost ~]#
```

4.5.2.15 Creating blank files

touch command

The $touch command is used create a blank file.

Syntax touch filename

```
[root@localhost fish]# ls
shyam
[root@localhost fish]# touch myself
[root@localhost fish]# ls
myself  shyam
[root@localhost fish]#
```

4.5.2.16 Finding the current date

date command is used to find todays date

```
File  Edit  View  Search  Terminal  Help
[root@localhost fish]# date
Sun Jun 26 23:49:26 PDT 2016
[root@localhost fish]#
```

4.5.2.17 Finding the command syntax

$man command name

$man command is used to find the syntax of the command.

Syntax :- man ls

Step-1

man ls

Step-2

The output is as shown below

NAME

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILEs (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort.

Mandatory arguments to long options are mandatory for short options too.

-a, --all

do not ignore entries starting with .

-A, --almost-all

do not list implied . and ..

--author

with -l, print the author of each file

-b, --escape

print octal escapes for nongraphic characters

--block-size=SIZE

use SIZE-byte blocks. See SIZE format below

-B, --ignore-backups

do not list implied entries ending with ~

-c with -lt: sort by, and show, ctime (time of last modification of file status information) with -l: show ctime and sort by name

otherwise: sort by ctime

-C list entries by columns

--color[=WHEN]

colorize the output. WHEN defaults to 'always' or can be 'never' or 'auto'. More info below

:

[root@localhost Desktop]#

Check your Progress 2

Q. 1. To go to the root home directory which commands do you use ?

A.1. _____

Q .2. To change a directory which command to you use ?

A.2. _____

Q.3. To create a new file which command do you use ?

A.3. _____

Q.4. To view the contents of a file which command do you use ?

A.4. _____

Q.5. To delete a file which command do you use ?

A.5. _____

Q.6. To Delete a folder which command do you use?

A.6. _____

Q.7. To rename a file which command do you use ?

A.7. _____

Q.8. To move a file which command do you use ?

A.8. _____

Q.9. To copy a file which command do you use ?

A.9. _____

4.5.2.18 Listing the users

Command : cat /etc/passwd

```
rhce:x:500:500:iiht:/home/rhce:/bin/bash
shanu:x:501:501::/home/shanu:/bin/bash
soma:x:502:504::/home/soma:/bin/bash
```

4.5.2.19 Creating a new user

#adduser username

or

#useradd username

```
[root@localhost ~]# adduser ram
[root@localhost ~]# useradd gopal
```

4.5.2.20 Adding a password to a user

passwd username :- this command would ask the user to enter the new password as shown below

#new password

And confirm password as shown below

#confirm password

4.5.2.21 Changing the password of a user

#passwd username

```
[root@localhost Desktop]# passwd gopal
Changing password for user gopal.
New password:

Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost Desktop]#
```

4.5.2.22 Deleting a user

#userdel username

```
[root@localhost Desktop]# userdel ram
```

#userdel-r username

```
[root@localhost Desktop]# userdel -r gopal
```

4.5.2.23 Locking a user

usermod –l username

4.5.2.24 Unlocking a user

usermod –u username

4.5.2.25 Rename a user

usermod –l newusername oldusername

Check your progress 3

Q. 1. To list the users which command do you use?

A.1. _____

Q .2. To create a user which command do you use ?

A.2. _____

Q. 3. To add a password to a user which command do you use ?

A.3. _____

Q.4. Changing the password of the user which command is used?

A.4. _____

Q.5. To Delete a user which command do you use ?

A.5. _____

Q.6. To lock a user which command do you use ?

A.6. _____

Q.7. To unlock a user which command do you use?

A.7. _____

Q.8. To rename a user which command do you use?

A.8. _____

4.5.2.26 Working with permissions

The permission is applied at 3 levels

1) Owner/user level
2) Group level
3) Other users

Reading -4
Writing – 2
Execute- 1
No permission – 0
Making the file read only for the owner

4.5.2.26.1 Permissions to user

Since we are working with a single user

Syntax :- chmod ugo filename

1) chmod 400 filename makes the file read only to the owner.
2) Making the file read and write only for the owner as
   chmod 600 filename as 4 +2 =6
3) Making the file read, write and execute to the owner
   chmod 700 filename as 4+2+1 =7

4.5.2.27 Shut down the linux system

Type halt to shutdown the Linux environment.

Check your progress 4

Q. 1. Command to make a file read only?

A.1. _____

4.6 Let us sum up

Linux is a multiuser operating system which is free . It can be loaded in Laptops, Desktops and servers. Linux comes in many flavours which are Ubuntu , Linux Mint, Arch Linux, Deepin, Fedora .Linux works on Graphical user interface and Terminal mode. Linux provides high data security to all users. The super user of Linux has complete access to all the users. He can create users, delete users, lock users. Linux allows folders to be created and files to be created. For access and use the user creates files and folders under root home folder. Folders and file can be hidden and access to files such as read,write ,execute can be granted by the owner of the file.

4.7 Key words

Administrator :- Also termed as the super user who has all the privileges over all users.

4.8 References

1. Linux Bible by Christopher Negus
2. Red Hat Enterprise Linux 6 developer guide by Jacquelnn East,Don Domingo,Robert Kratky

4.9 Check your progress – possible answers

Answers to check your progress 1

Ans 1 . The types of users under in Linux are

1. Super user :- Also termed as Root user. Has the privileges to Administer the Linux server. Has the control to limit the access of other users.
2. System user: - This user is created by the Linux Operating System. Have more privileges than the normal user.
3. Normal user: - These users are created by the super user. They can access only those privileges given by the Super user
4. Network user: - Users who opt this type of user accounts are network engineers and system administrators who monitor the network activity.
5. Pseudo user: - This is a replica of the Super user which is granted by the super user to user accounts.

Answers to check your progress 2

A.1. To go to the root home directory the command is cd /~
A.2. To change a directory the command is cd
A.3. To create a new file the command is VIM filename
A.4. To view the contents of a file the command is cat filename
A.5 . To delete a file the command is rm filename
A.6. To Delete a folder the command is rm -rf folder name
A.7. To rename a file the command is mv old filename new filename
A.8. To move a file the command is mv
A. 9. To copy a file the command that we use is cp

Answers to check your Progress 3

A. 1. To list the users the command is cat /etc/passwd

A .2. To create a user the command is adduser

A. 3. To add a password to a user the command is passwd username

A.4. To change the password of the user the command is passwd username

A.5. To Delete a user the command is userdel username

A.6. To lock a user the command is usermod –l username

A.7. To unlock a user the command is usermod –u username

A.8. To rename a user the command is usermod –l newusername oldusername

Answers to check your Progress 4

A. 1. Command to make a file read only is chmod 400 filename

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