

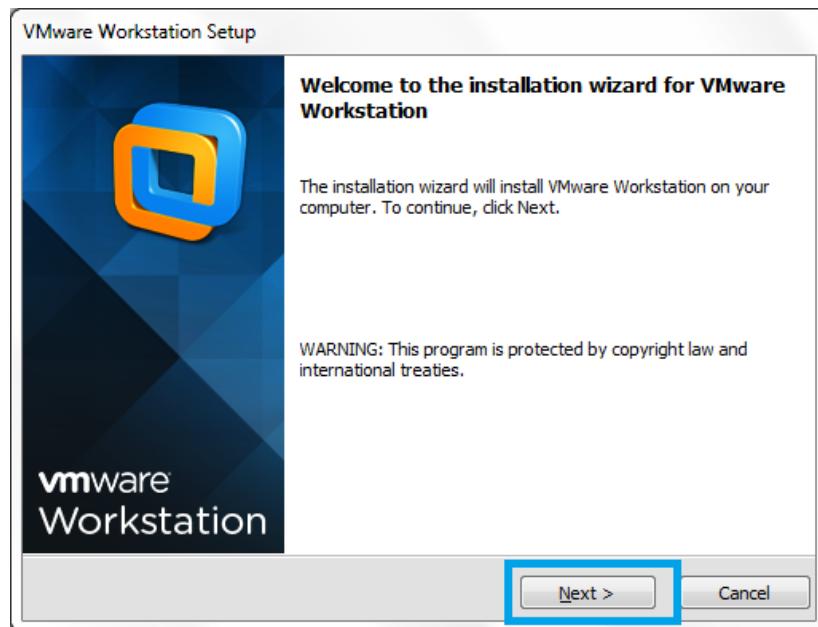
Practical 1:

Aim: Installation of virtual machine software.

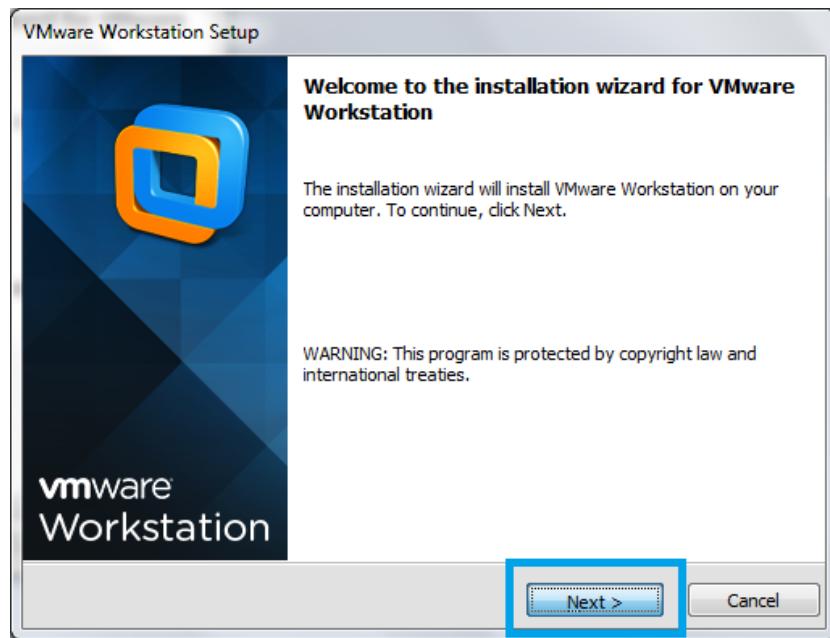
Definition - What does *VMware Workstation* mean?

VMware Workstation is a virtual machine software that is used for x86 and x86-64 computers to run multiple operating systems over a single physical host computer. Each virtual machine can run a single instance of any operating system (Microsoft, Linux, etc.) simultaneously. VMware Workstation strongly supports hardware compatibility and works as a bridge between the host and virtual machine for all kinds of hardware resources including hard disks, USB devices and CD-ROMs. All device drivers are installed via the host machine.

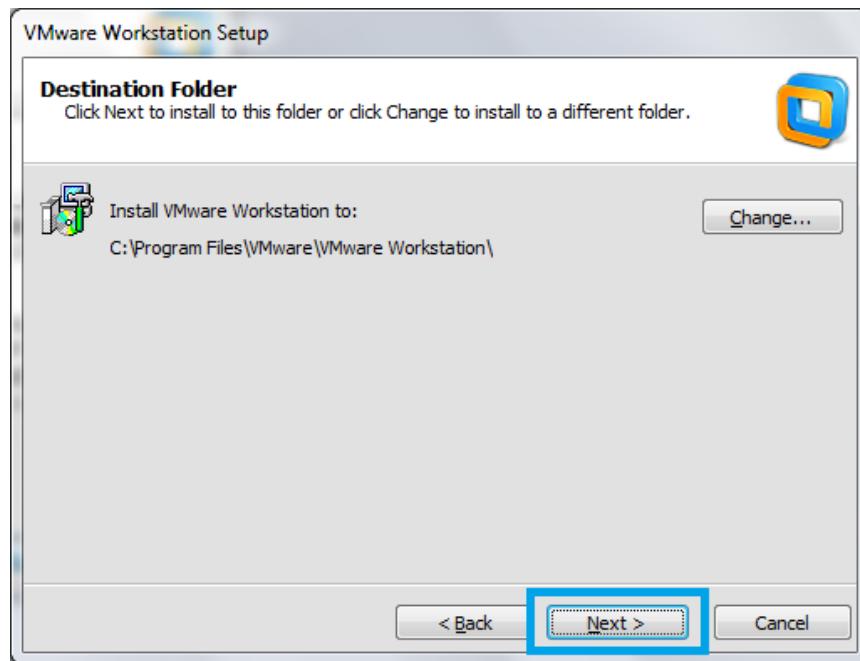
Step 1: Run the installation setup. Click **Next** to continue.



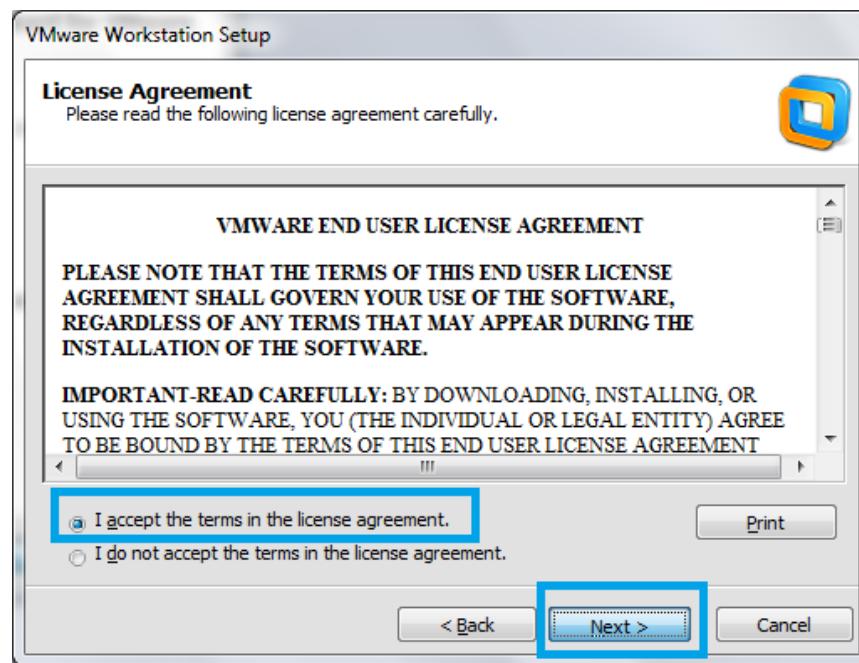
Step 2:



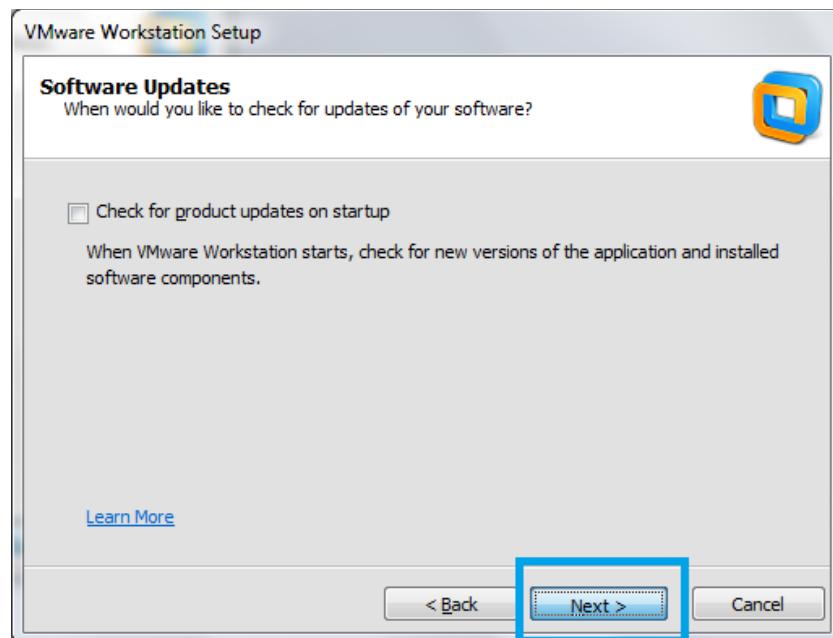
Step 3:



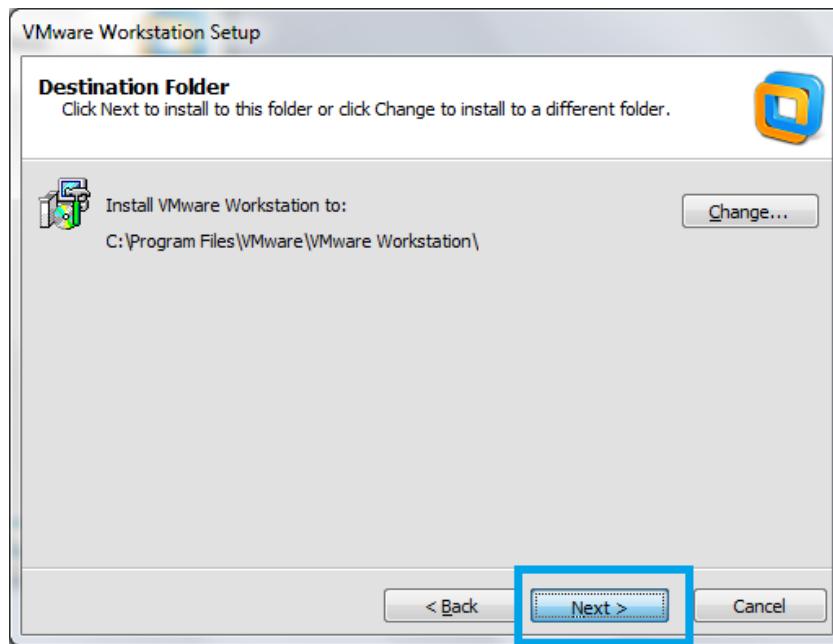
Step 4:



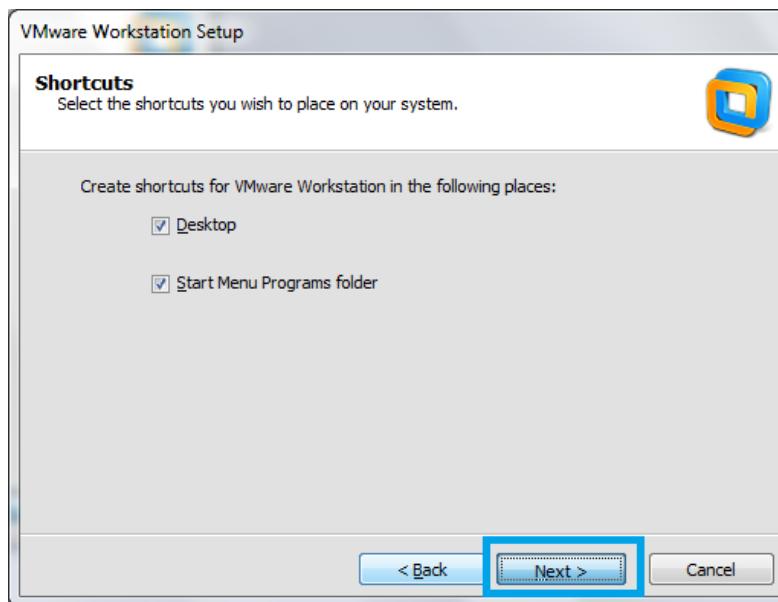
Step 5:



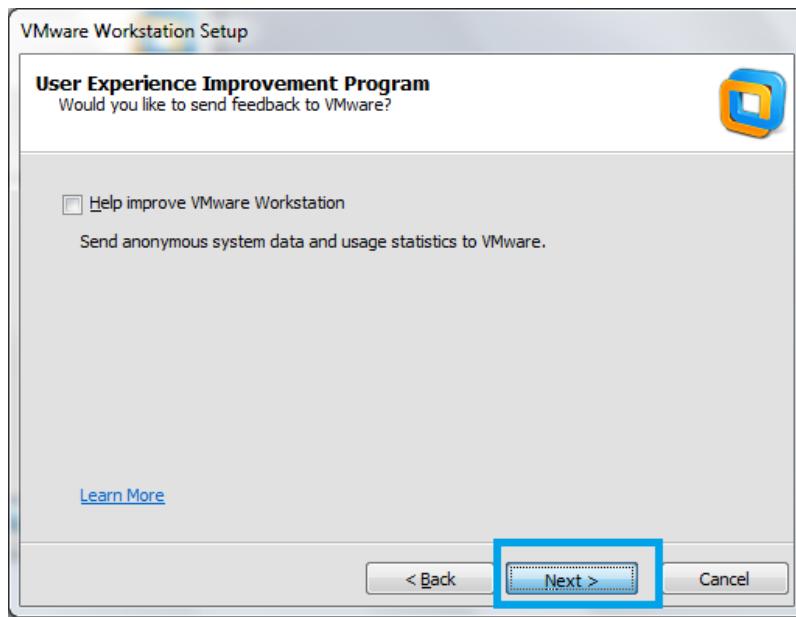
Step 6:



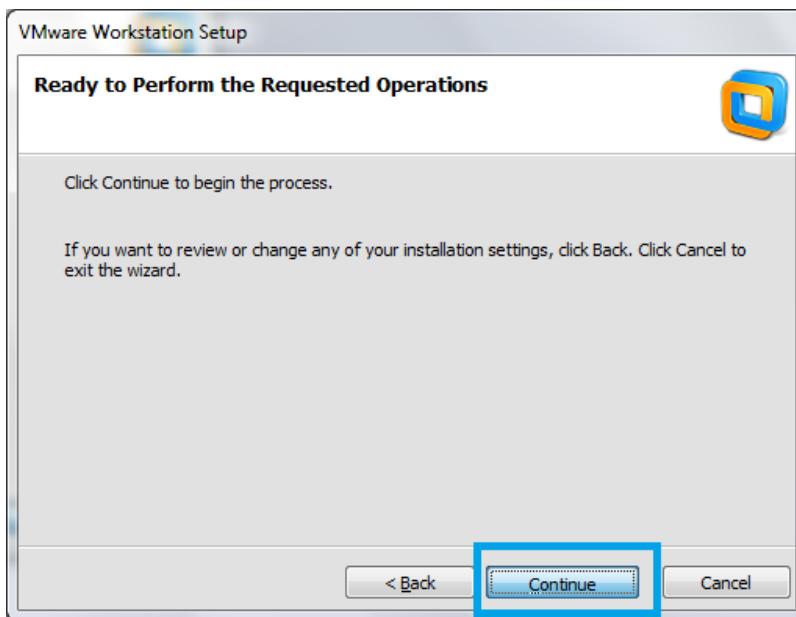
Step 7:



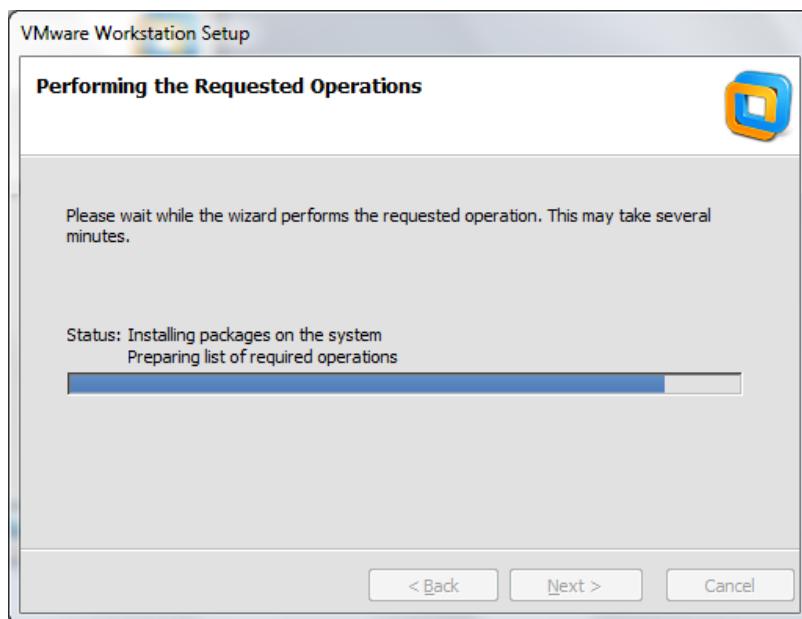
Step 8:



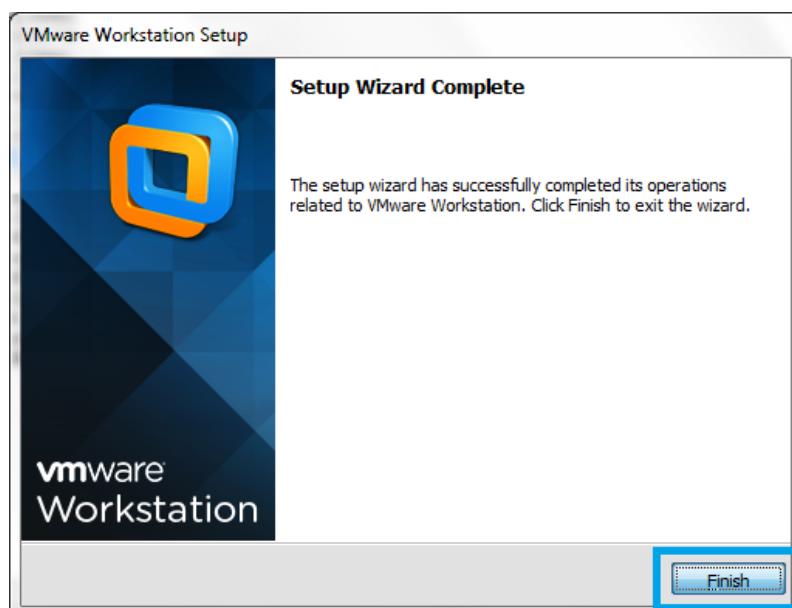
Step 9:



Step 10:



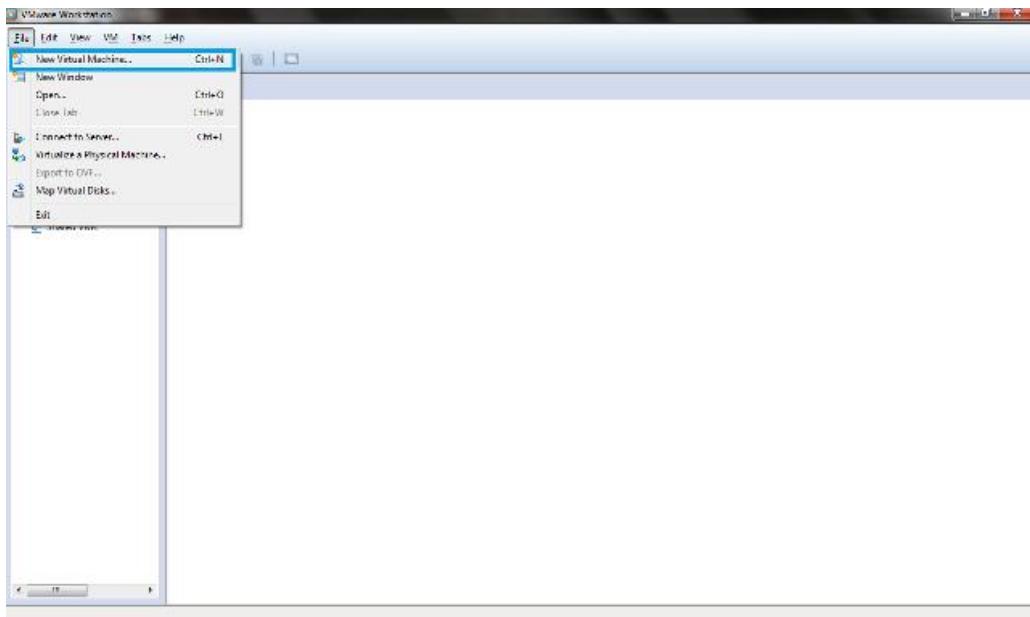
Step 11:



Practical 2:

Aim: Installation of Linux operating system (RedHat / Ubuntu) on virtual machine.

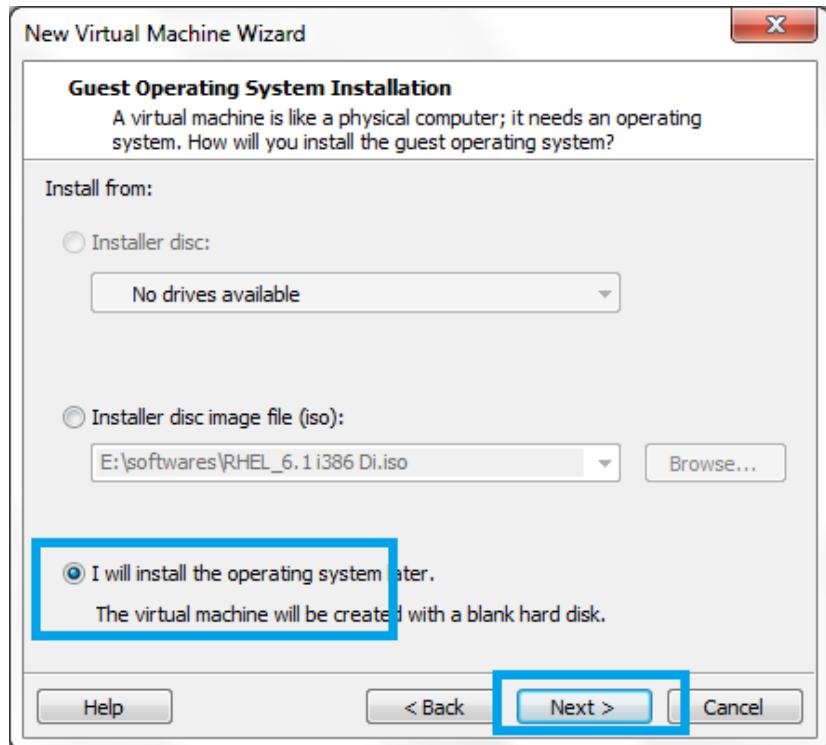
Step 1: Start VMWare Workstation. Select file menu



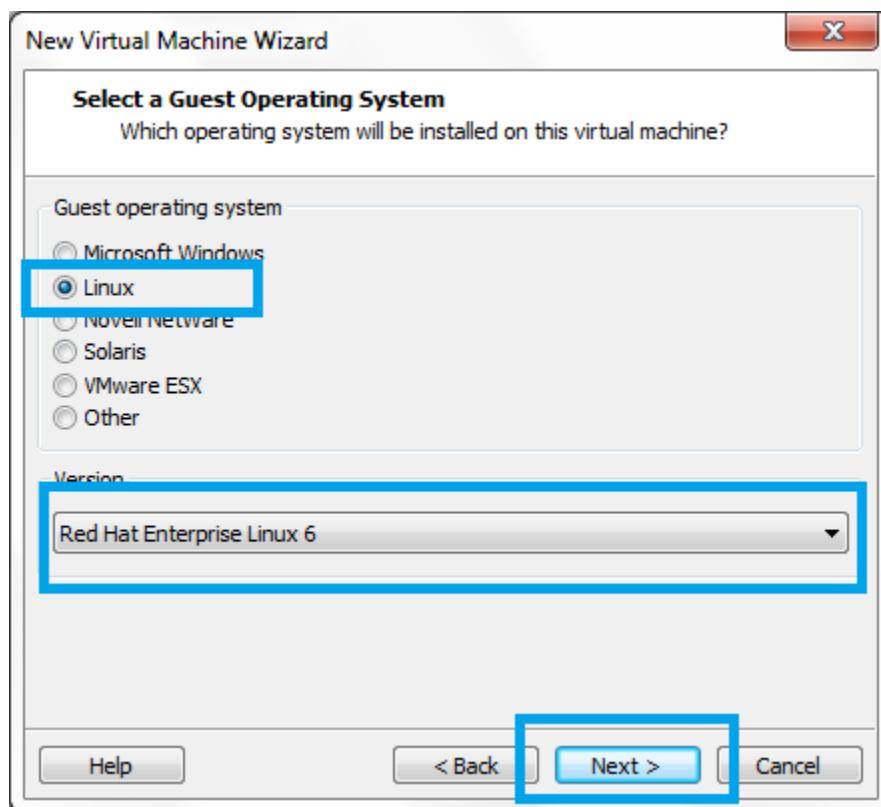
Step 2: Select typical.



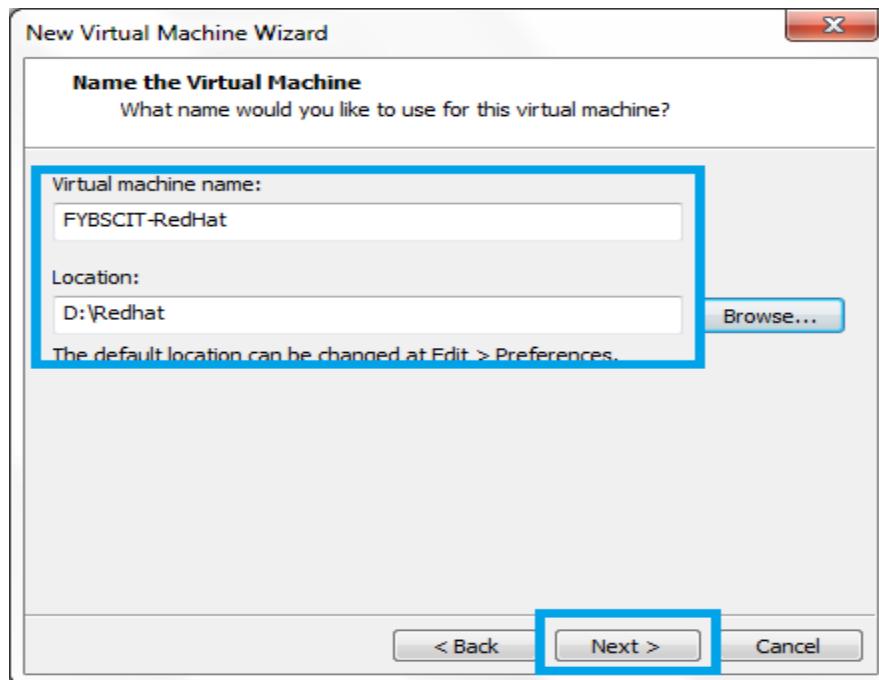
Step 3: Choose option 3.



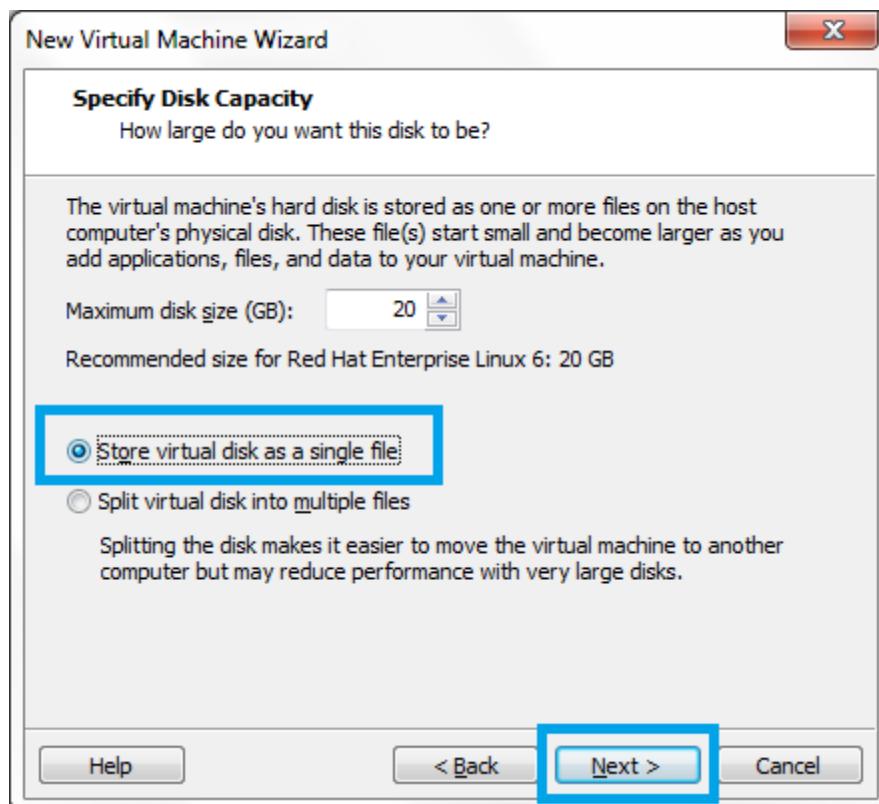
Step 4: Select Linux/version.



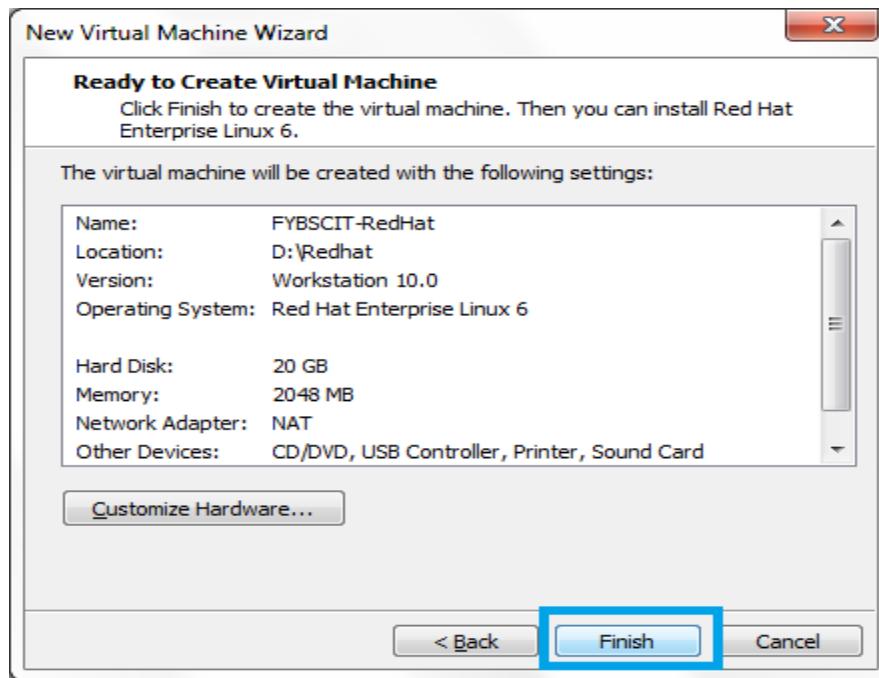
Step 5: Rename (optional).



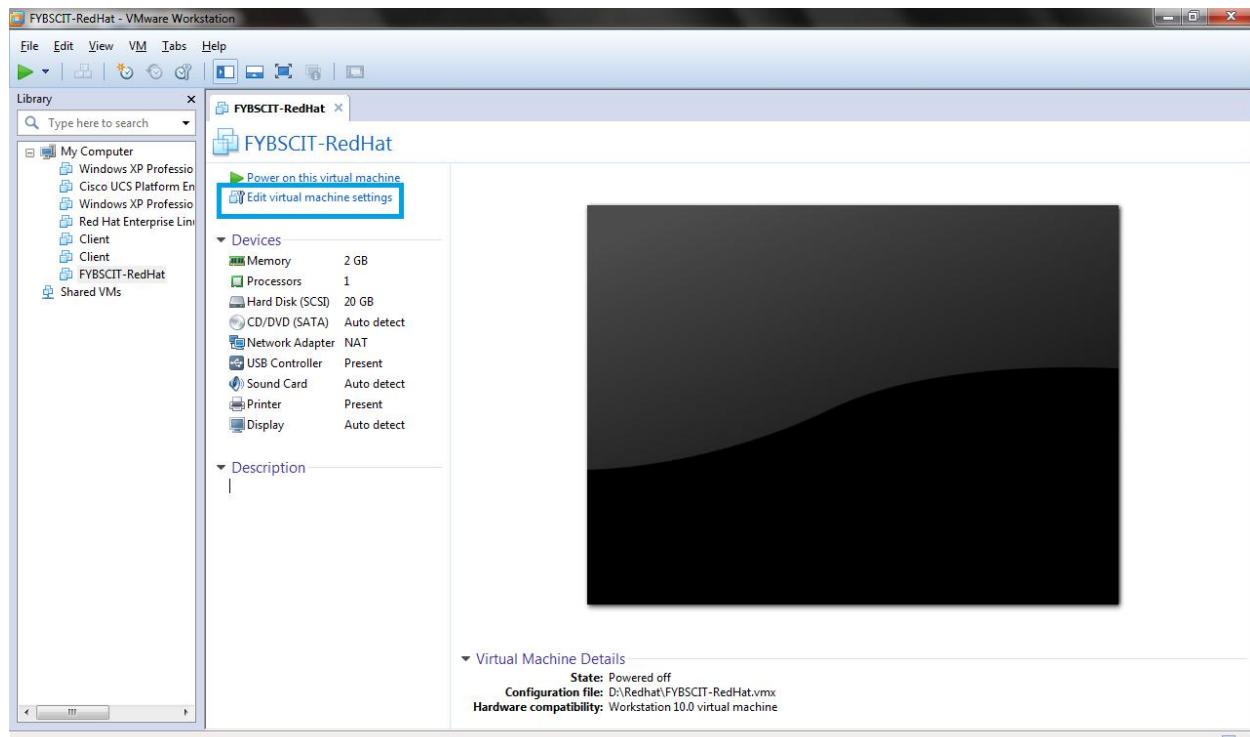
Step 6:



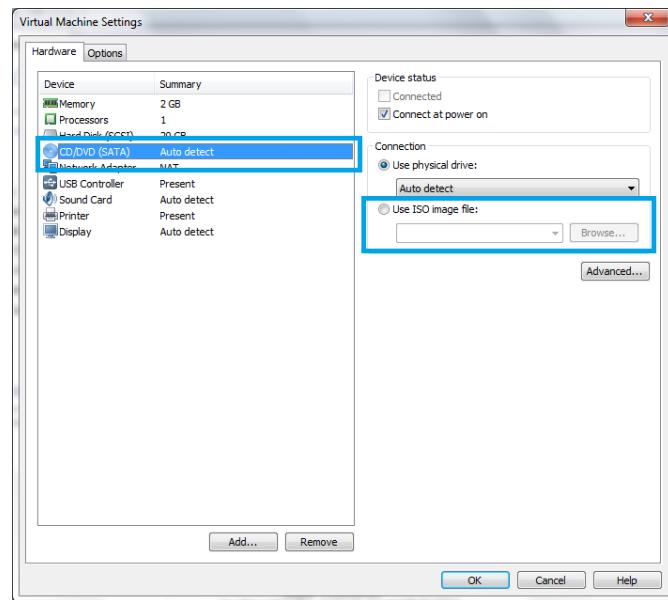
Step 7: Click Finish.



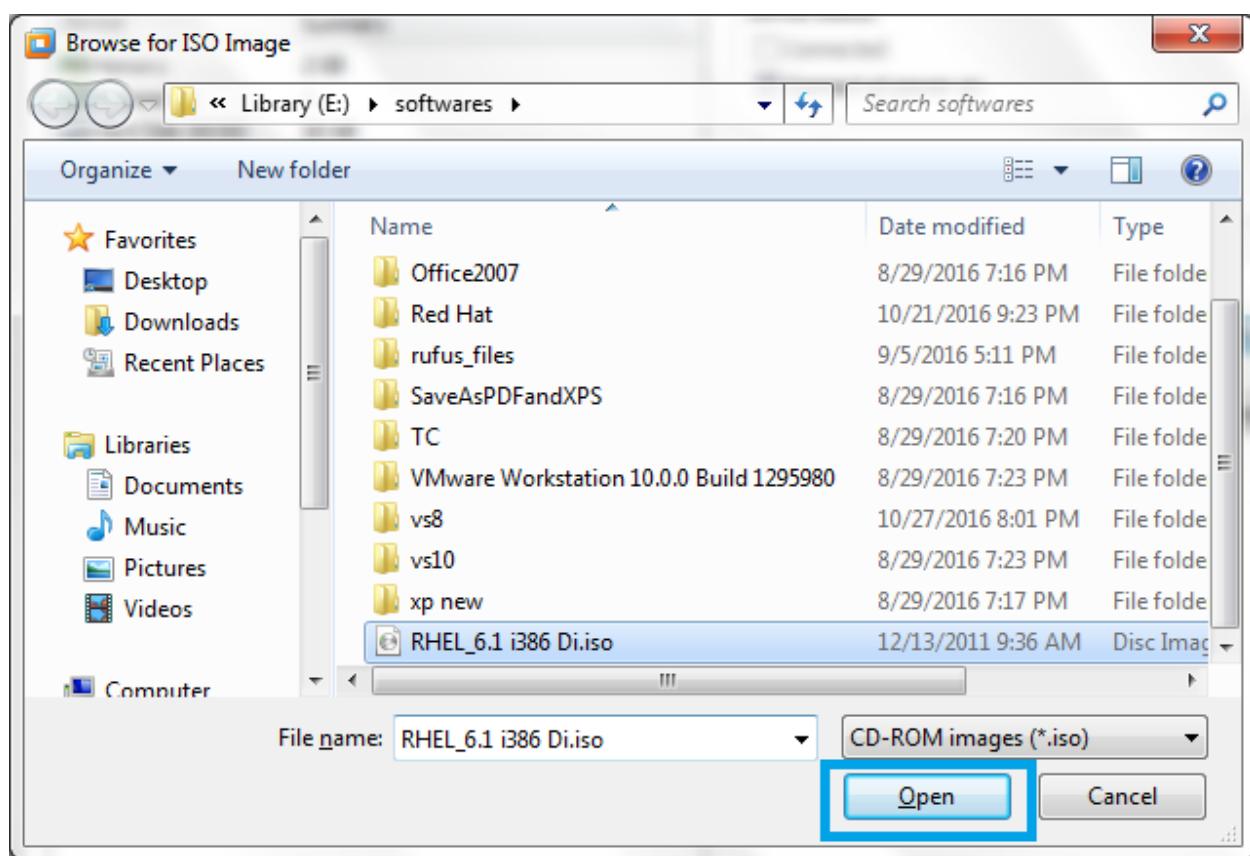
Step 8: Click “Edit Virtual Machine setting”



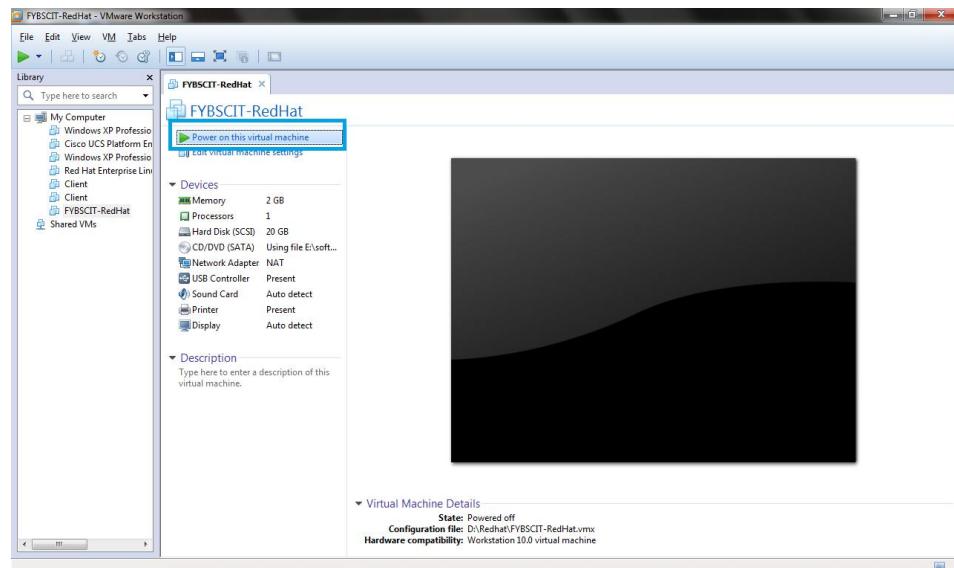
Step 9: Select CD/DVD -> Use ISO file -> Click browse.



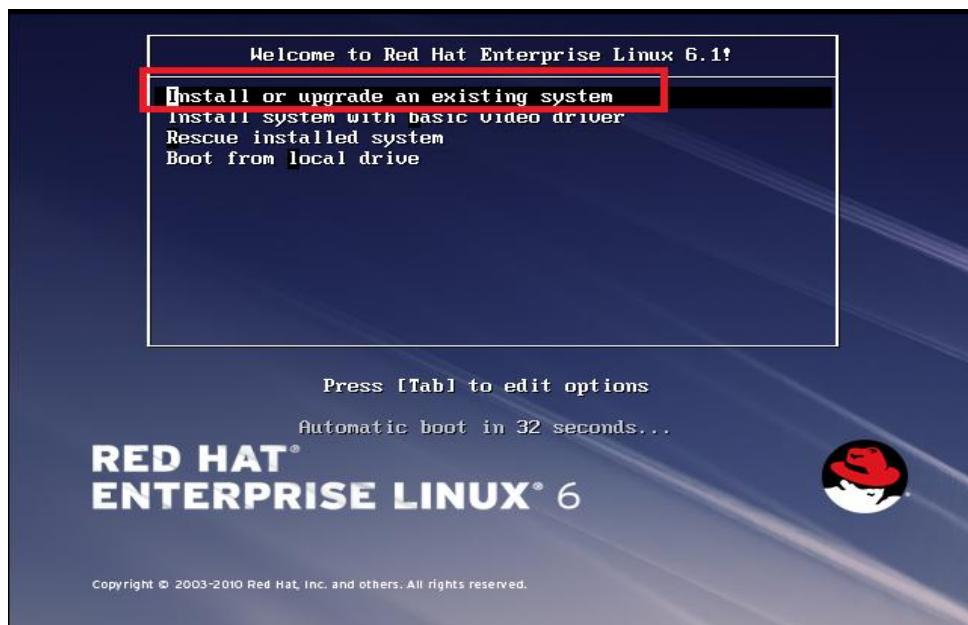
Step 10: Select ISO file.



Step 11: Power on the virtual machine



Step 12: Select “Install or Upgrade”



Step 13:

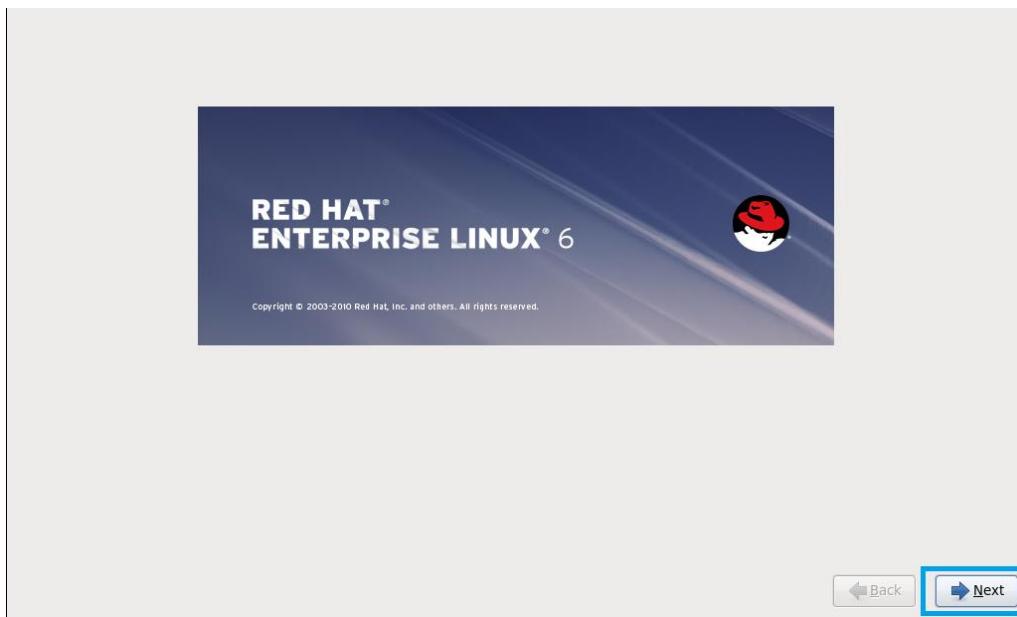
```
Using IPI No-Shortcut mode
registered taskstats version 1
input: ImPS/2 Generic Wheel Mouse as /devices/platform/i8042/serio1/input/input3
rtc_cmos 00:04: setting system clock to 2016-11-02 12:19:02 UTC (1478089142)
Initializing network drop monitor service
Freeing unused kernel memory: 524k freed
Write protecting the kernel text: 4268k
Write protecting the kernel read-only data: 1824k

Greetings.
anaconda installer init version 13.21.117 starting
mounting /proc filesystem... done
creating /dev filesystem... done
starting udev...done
mounting /dev/pts (unix98 pty) filesystem... done
mounting /sys filesystem... done
trying to remount root filesystem read write... done
mounting /tmp as tmpfs... done
running install...
running /sbin/loader
detecting hardware...
waiting for hardware to initialize...
detecting hardware...
waiting for hardware to initialize...
-
```

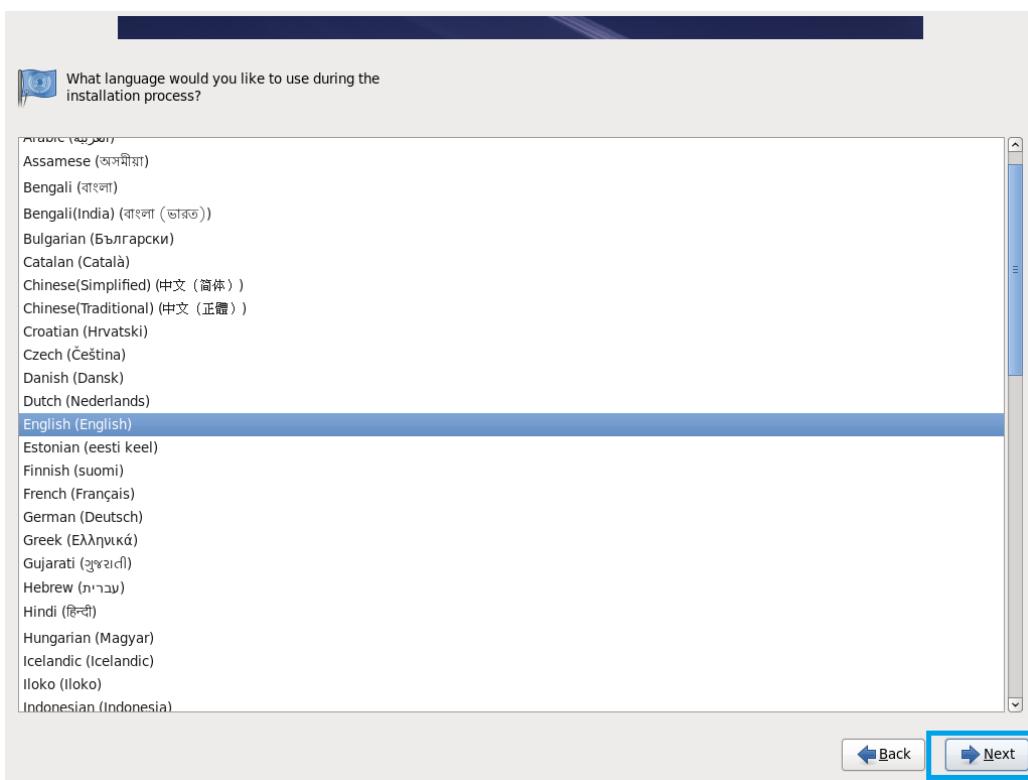
Step 14: Click skip.



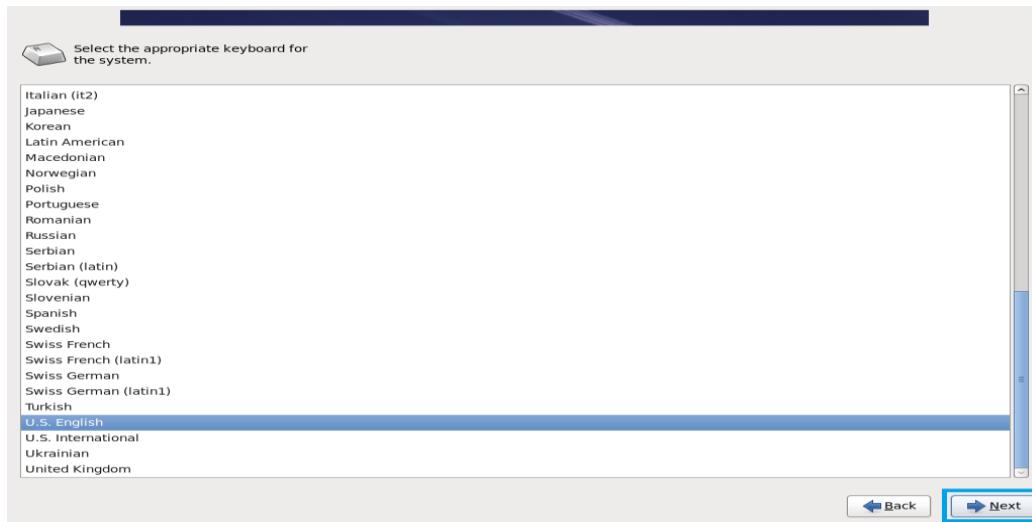
Step 15: Click Next.



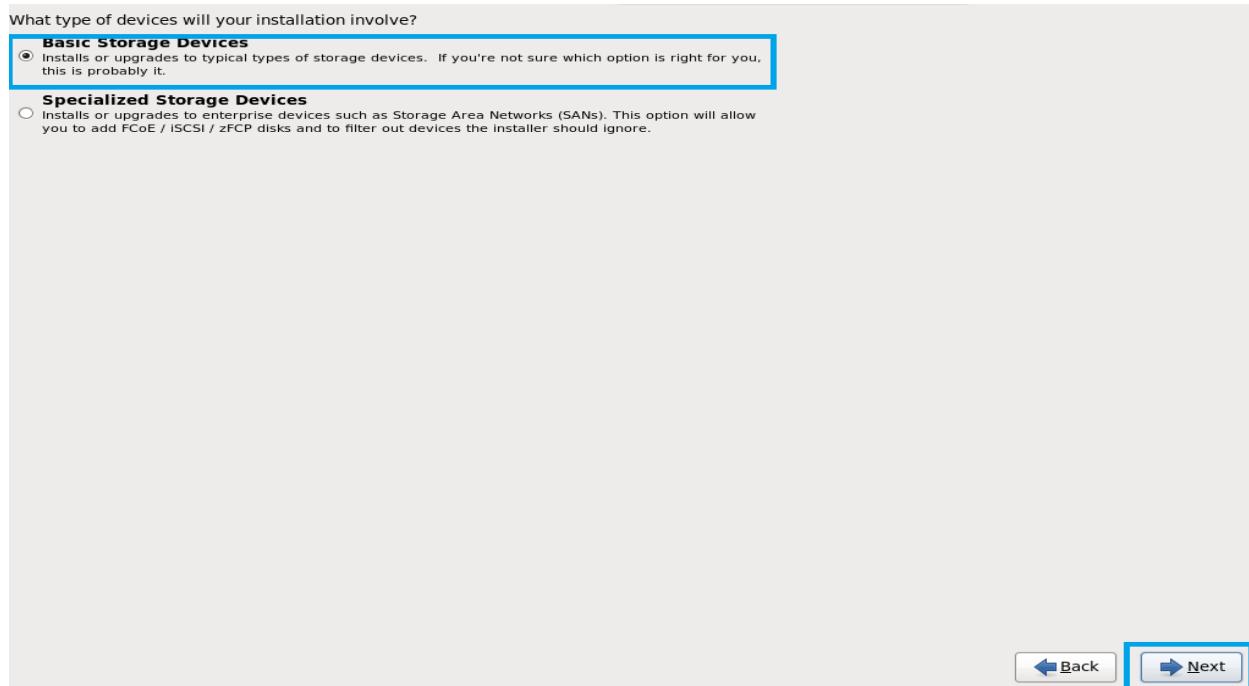
Step 16: Select Language.



Step 17: Select Keyboard Layout.



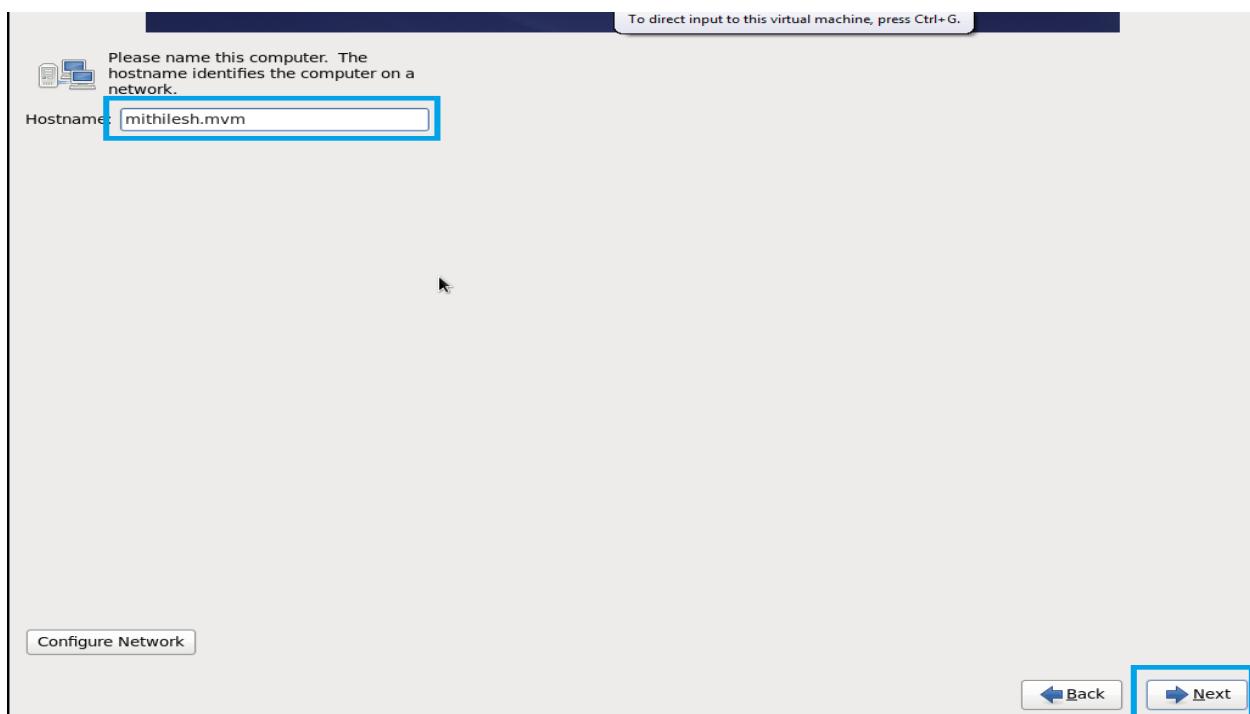
Step 18:



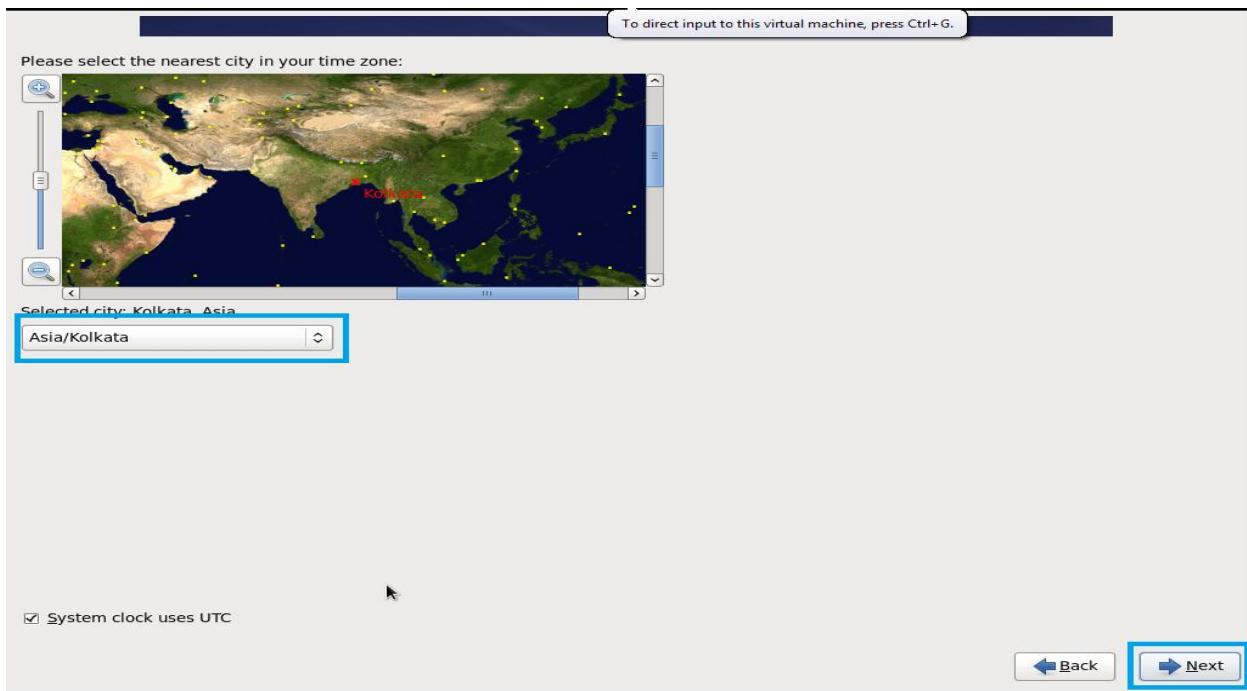
Step 19:



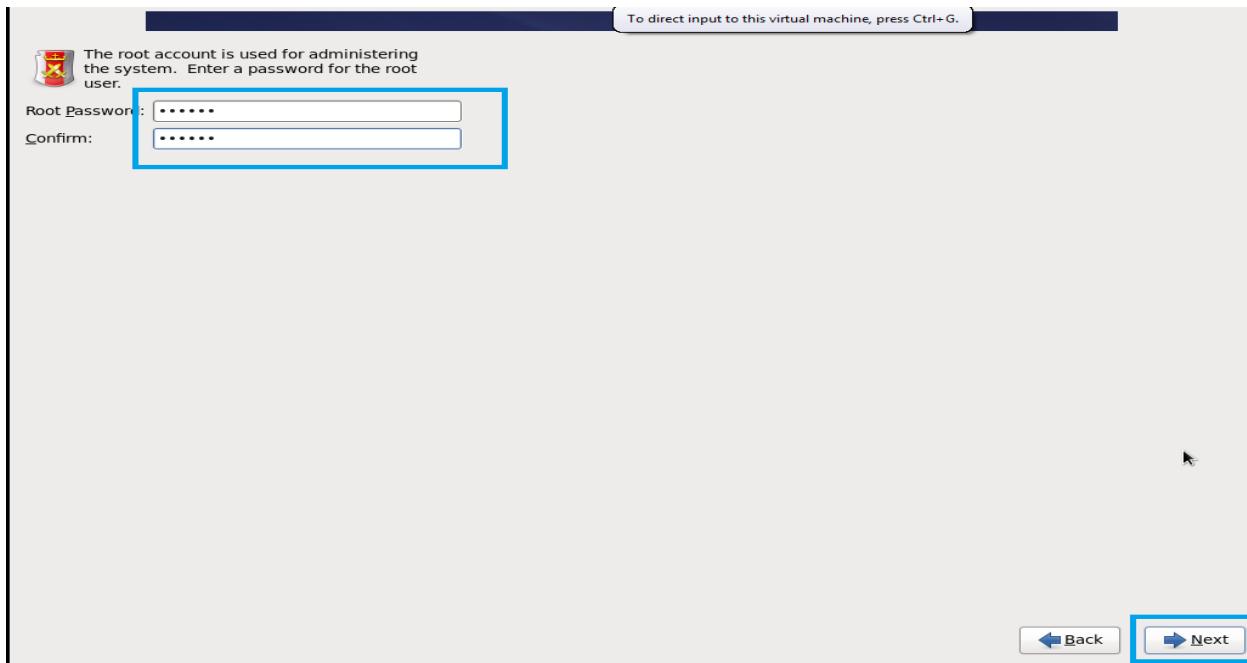
Step 20:



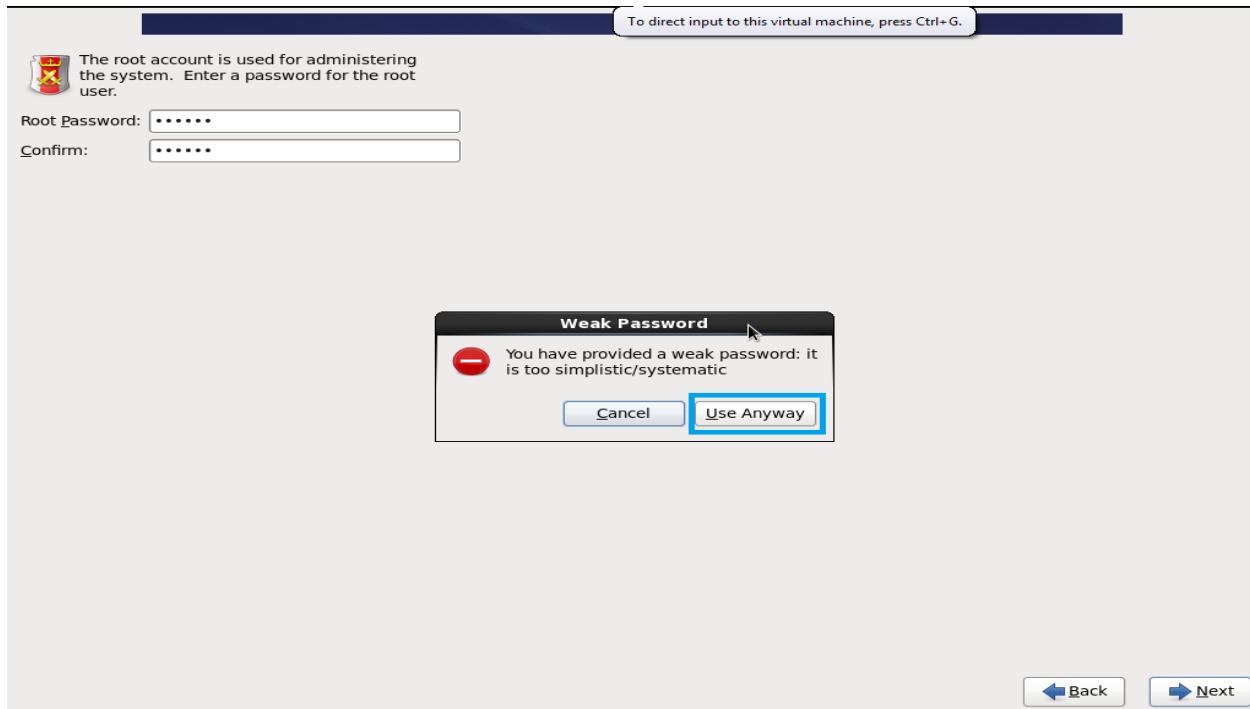
Step 21: Select timezone.



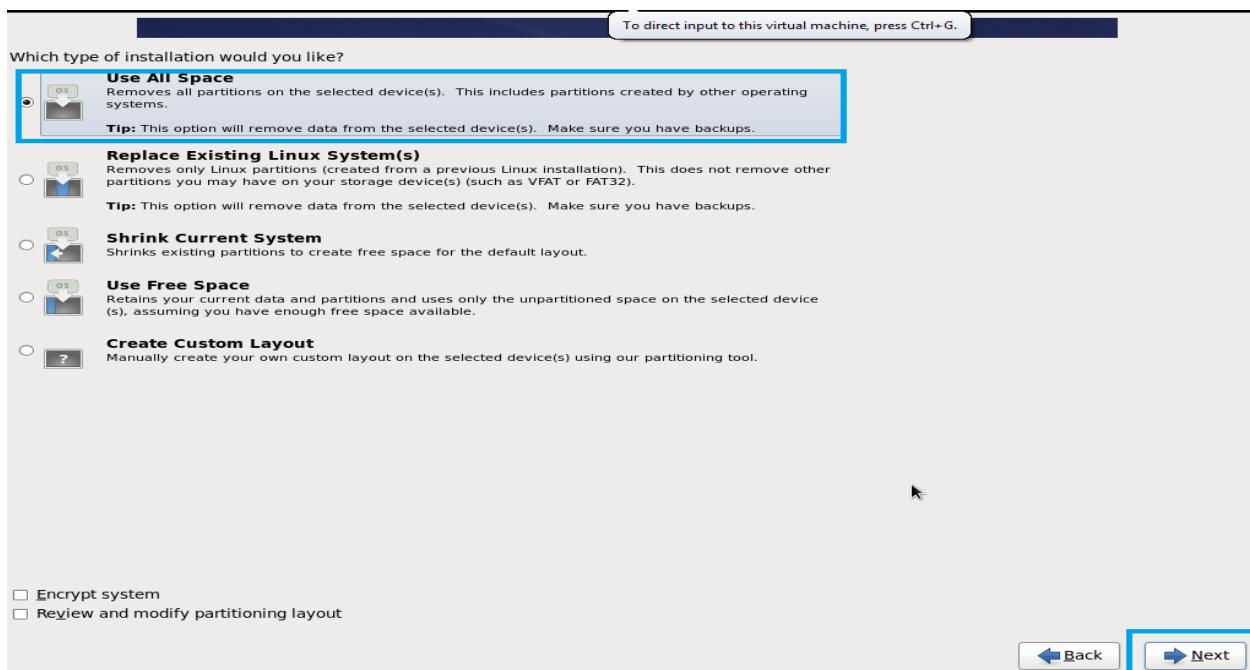
Step 22: Enter password for root user.



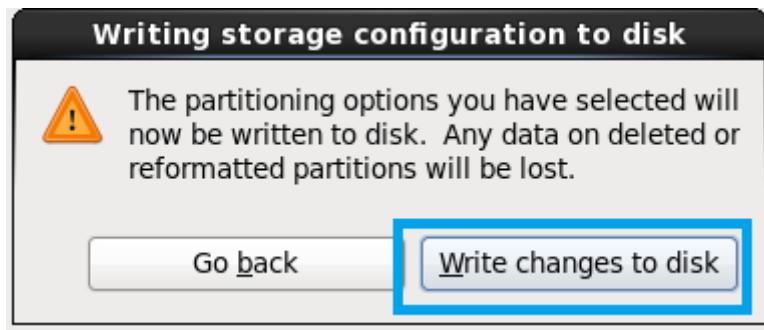
Step 23:



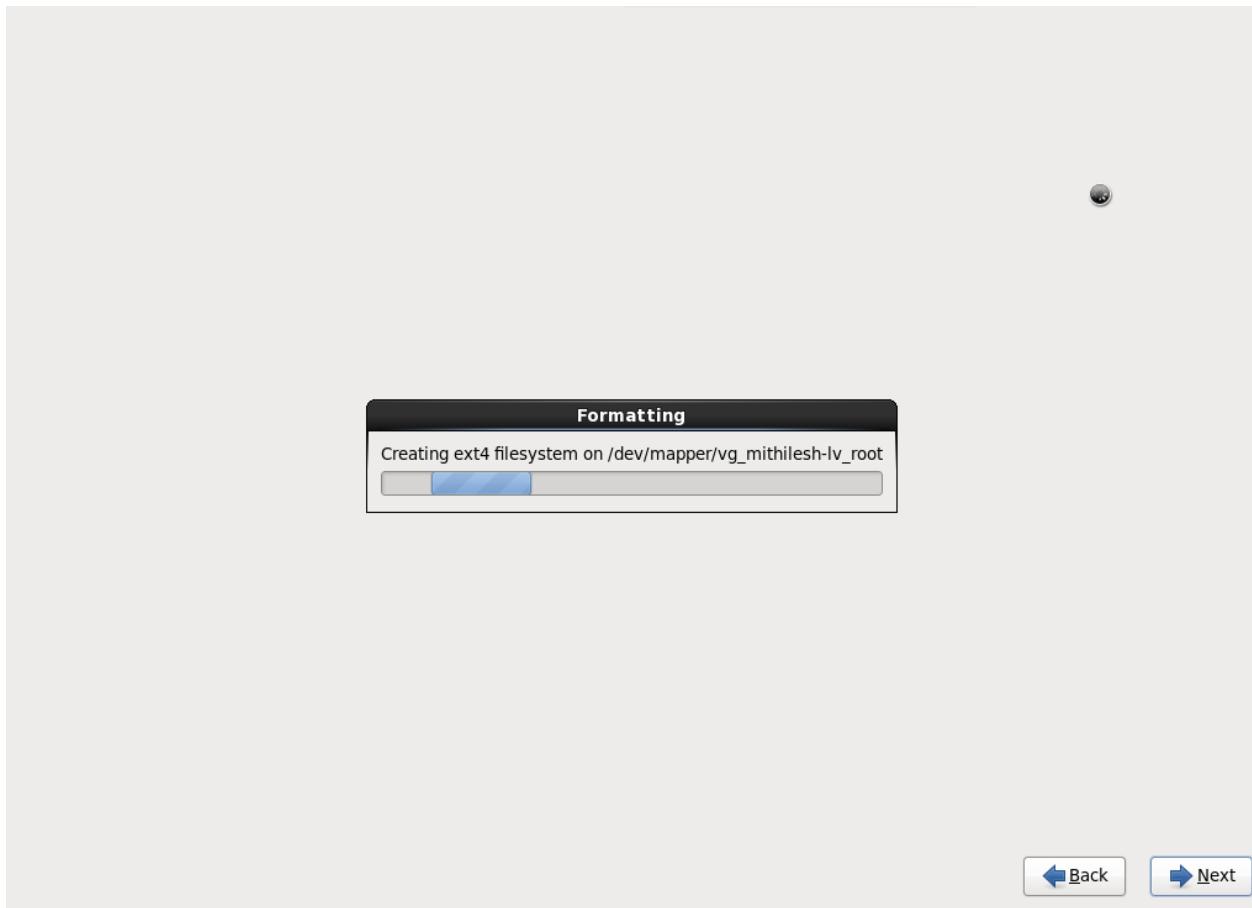
Step 24:



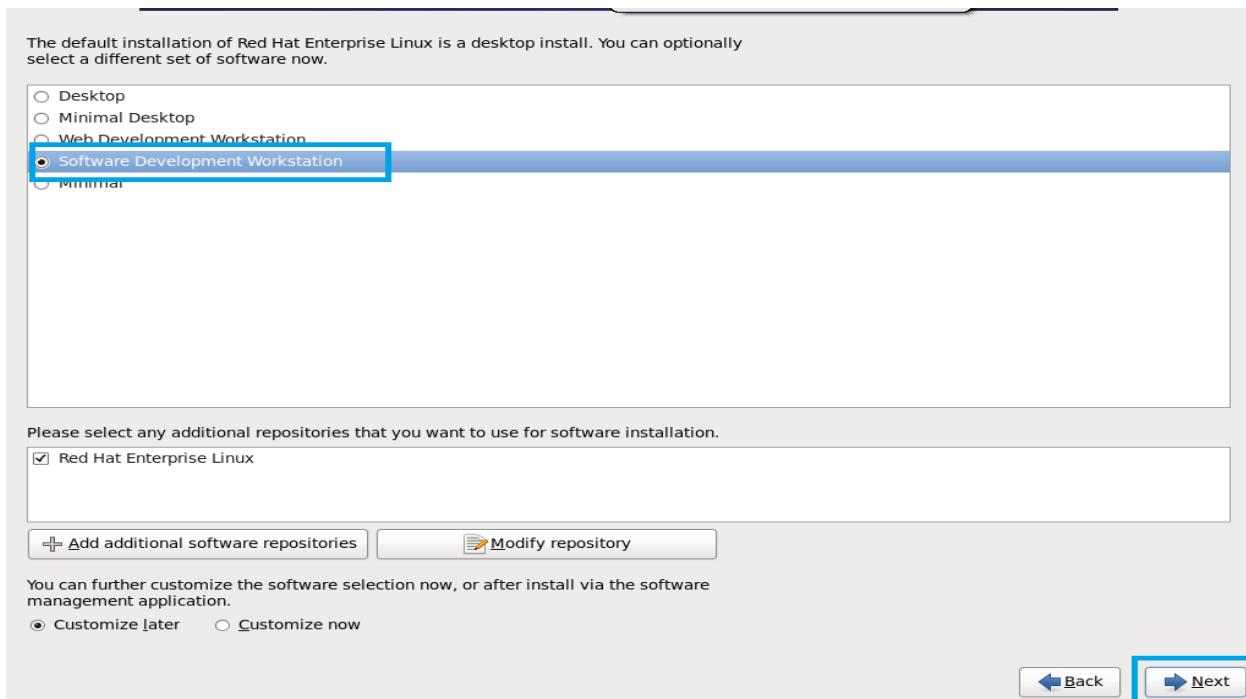
Step 25:



Step 26:



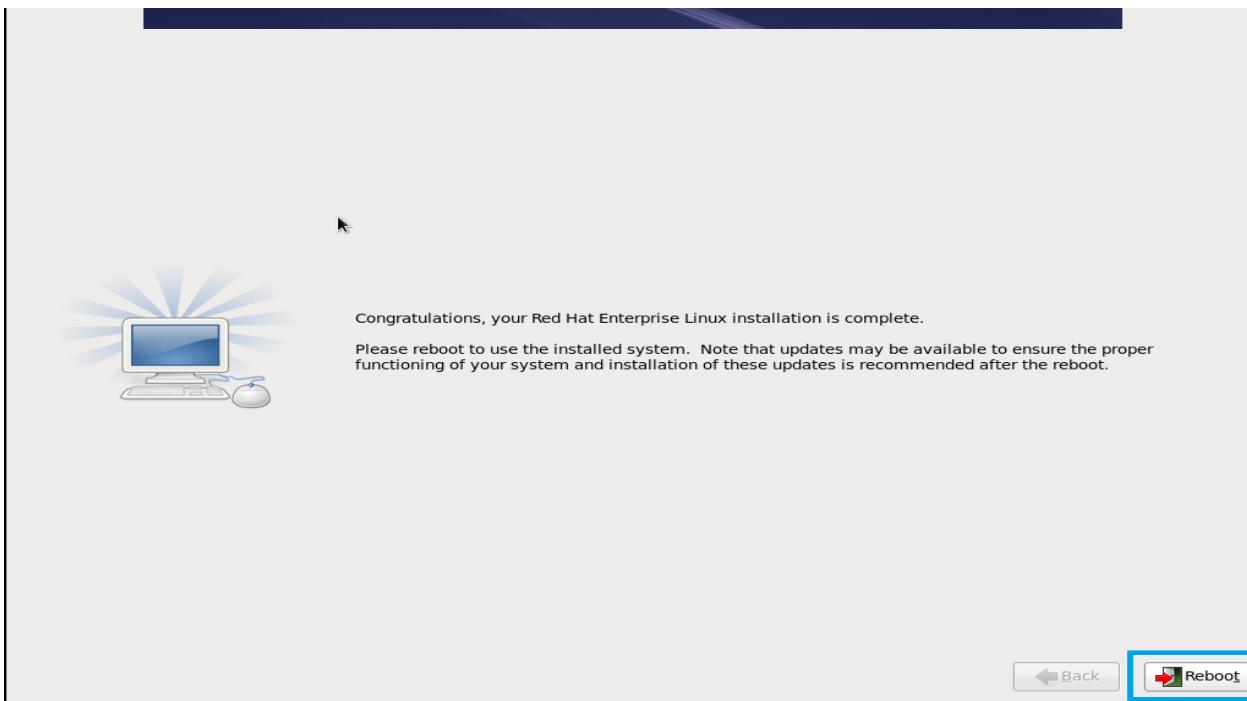
Step 27:



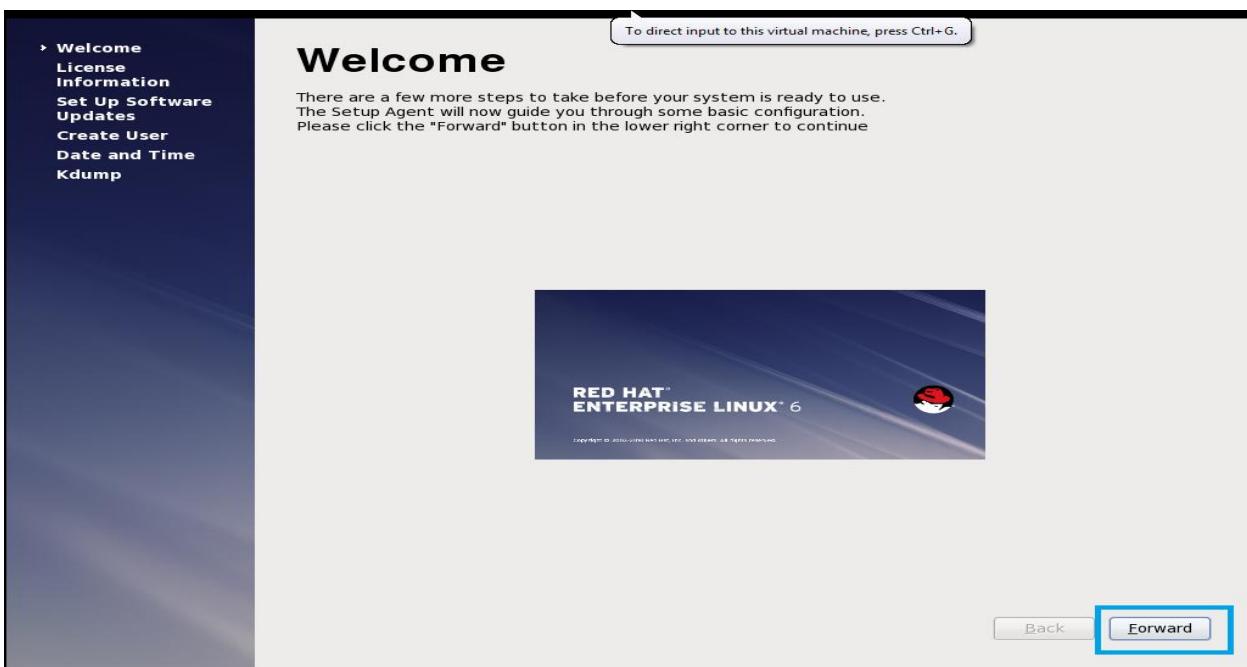
Step 28:



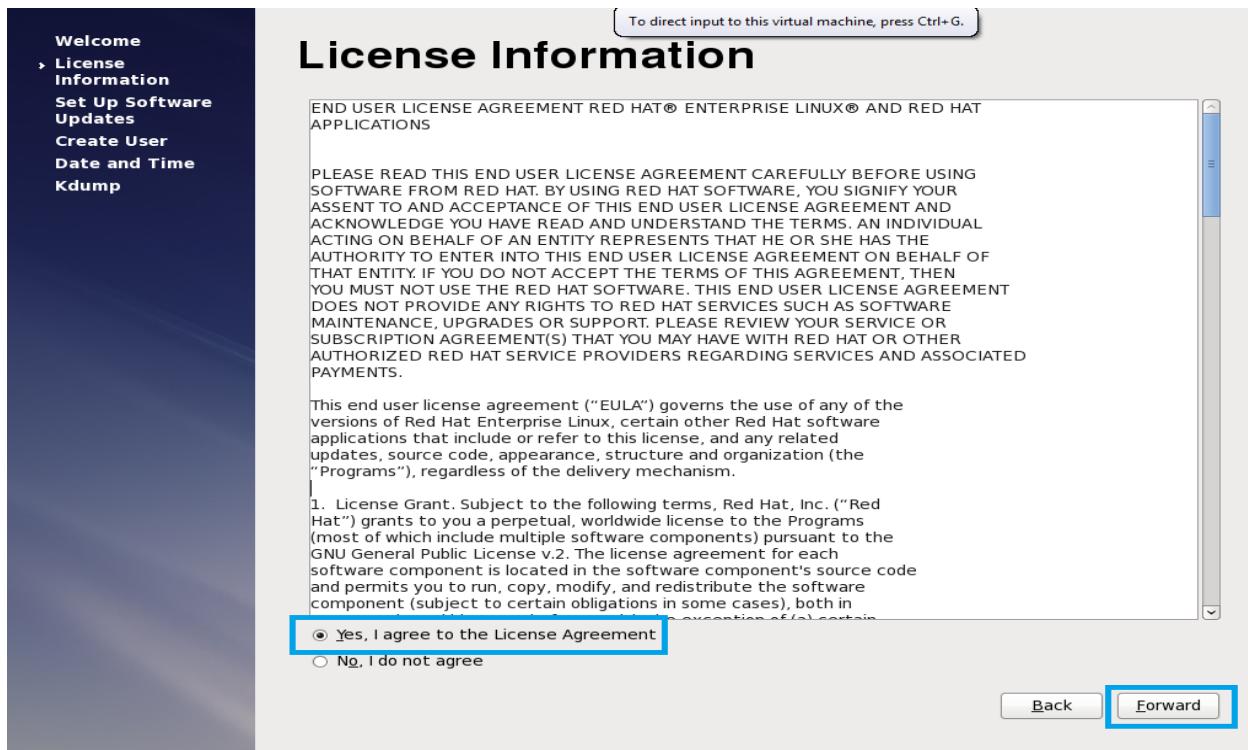
Step 29:



Step 30:



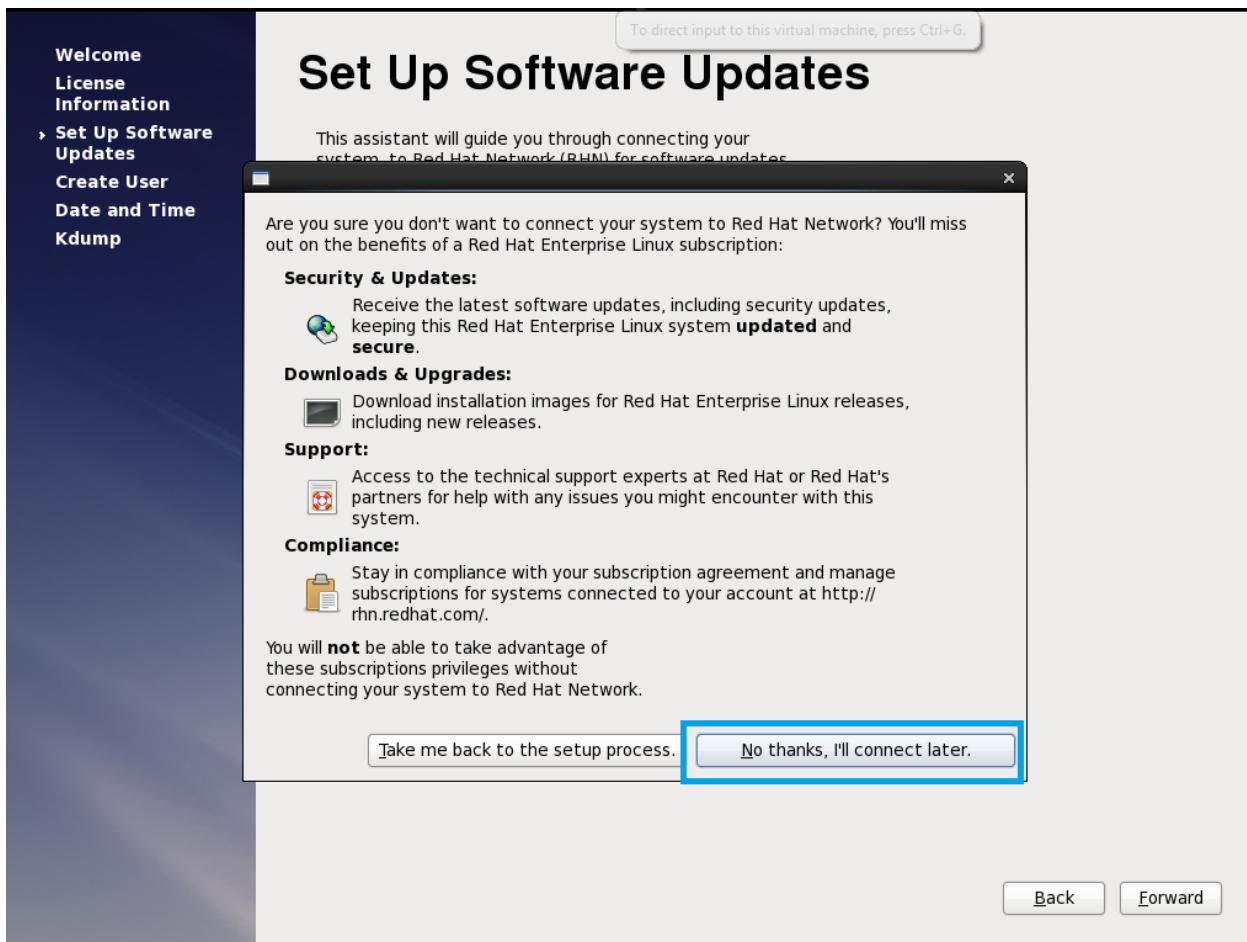
Step 31:



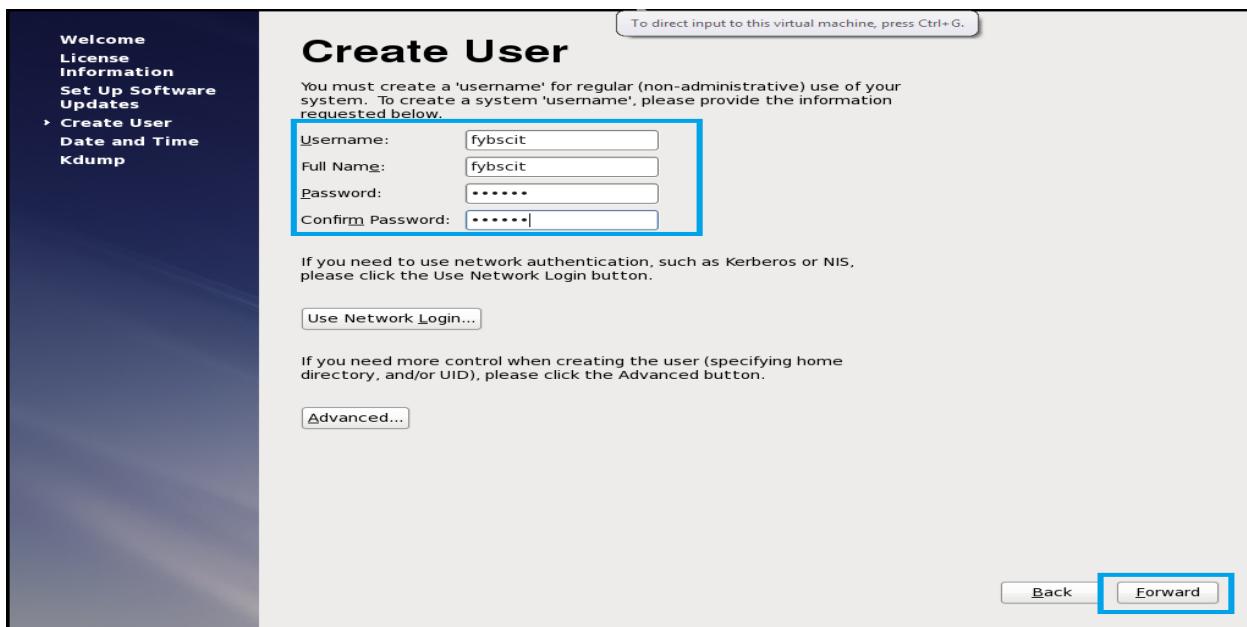
Step 32:



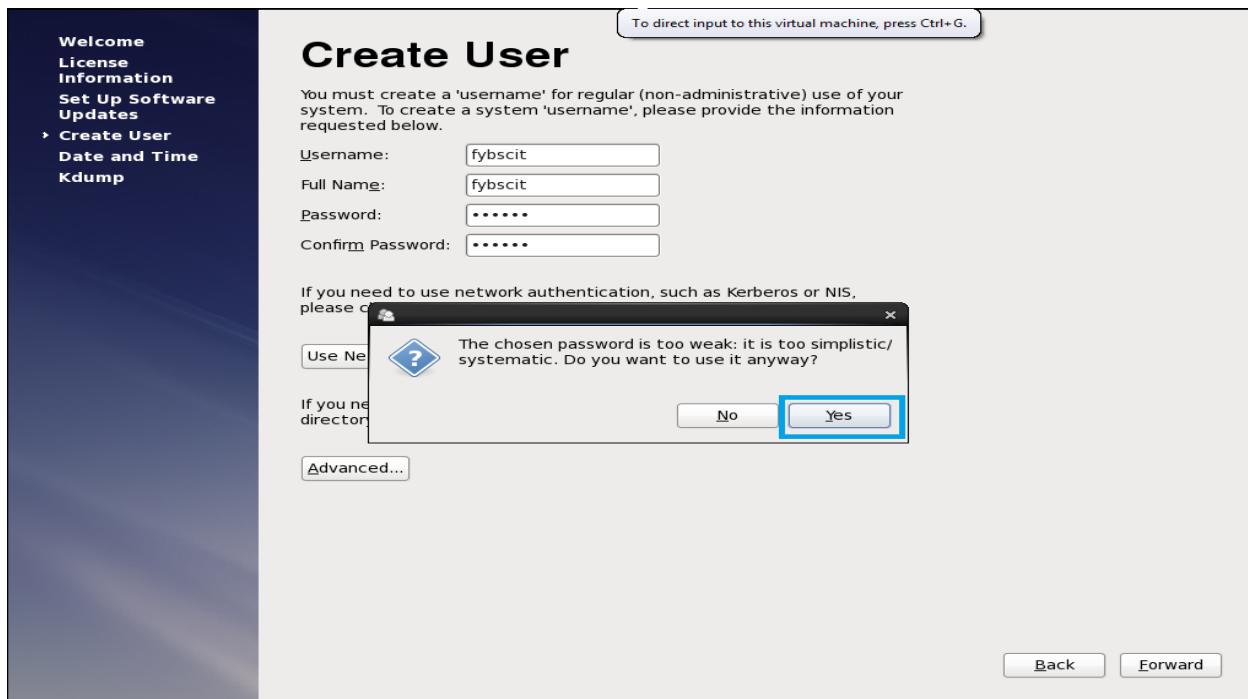
Step 33:



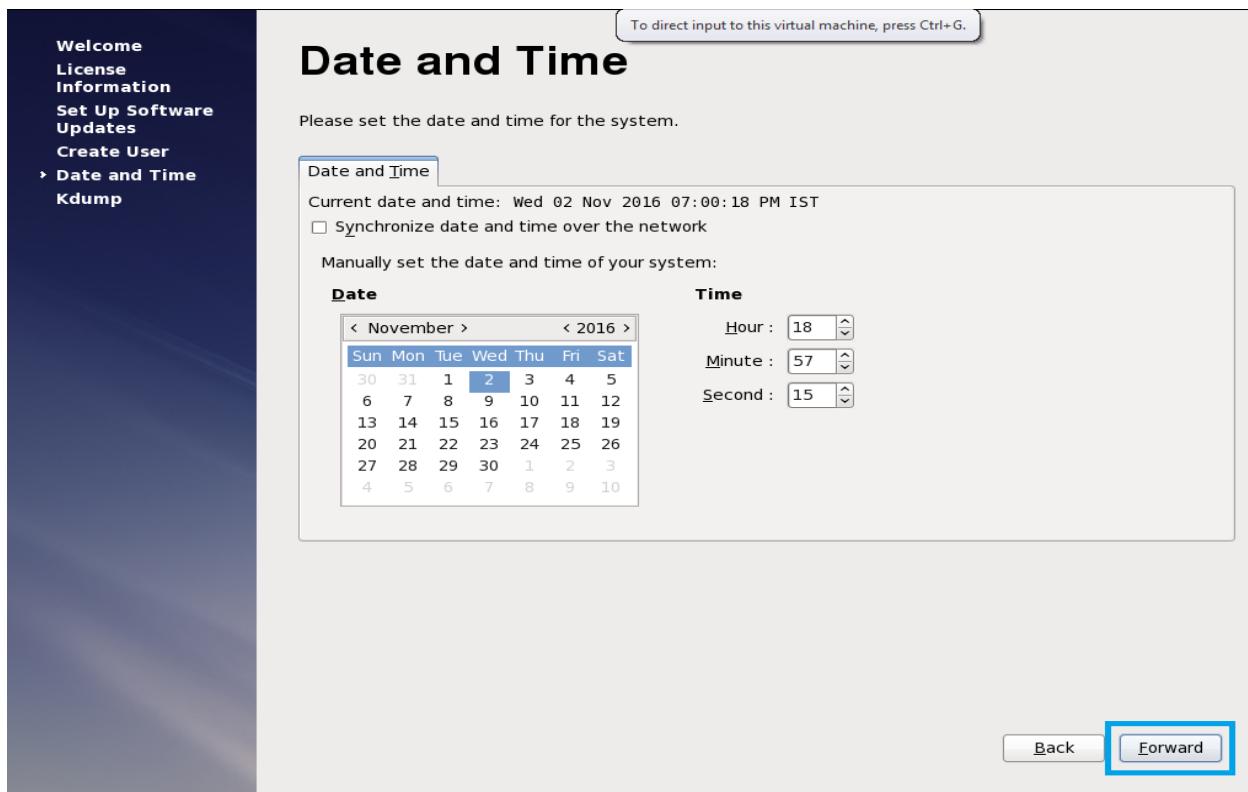
Step 34: Enter user details.



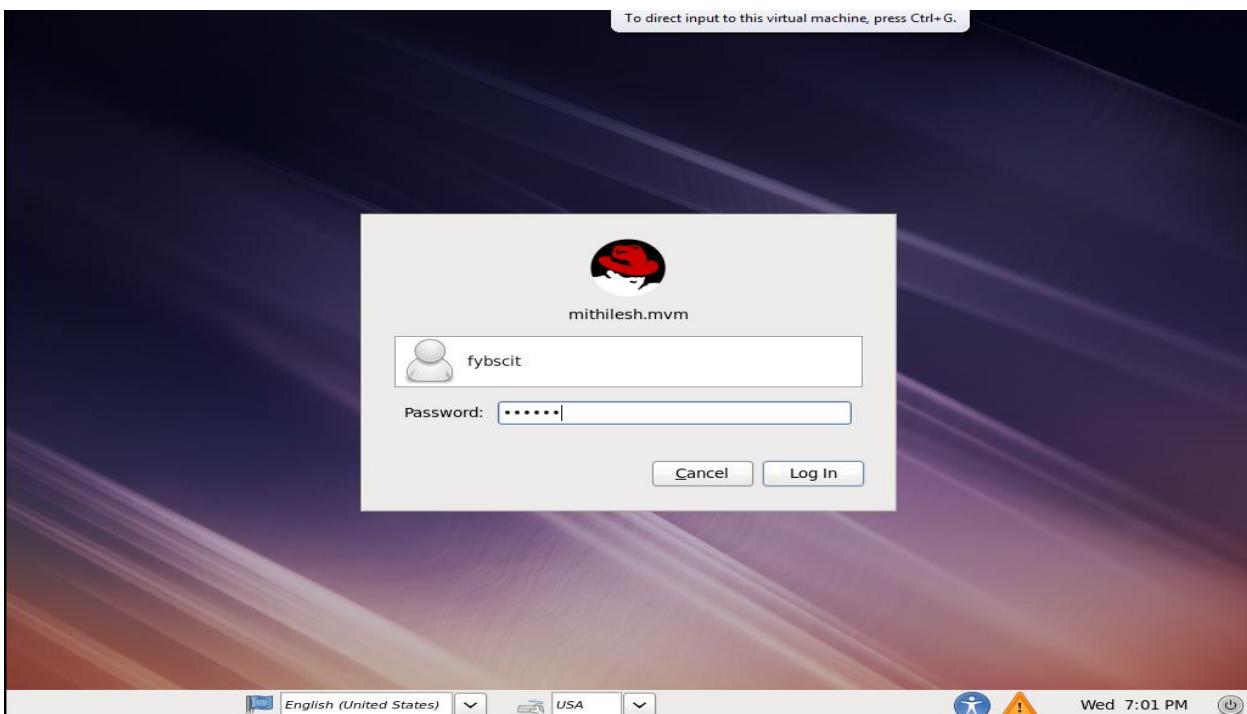
Step 35:



Step 36:



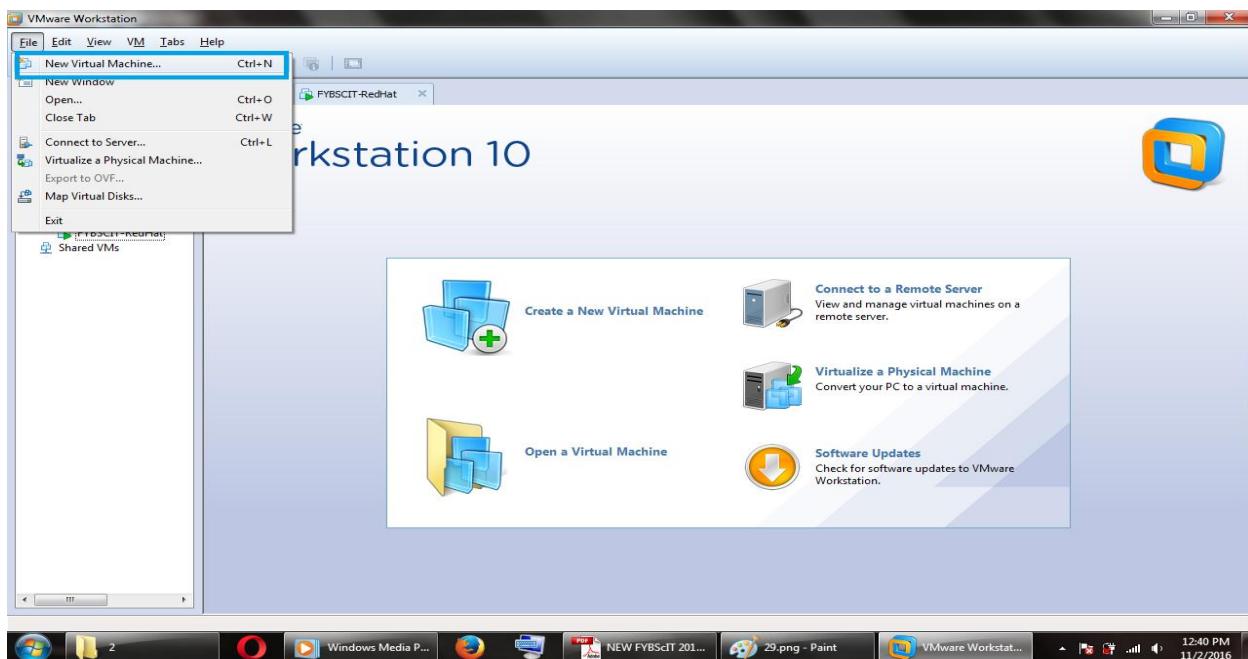
Step 37:Login.



Practical 3

Aim: Installation of Windows operating system on virtual machine.

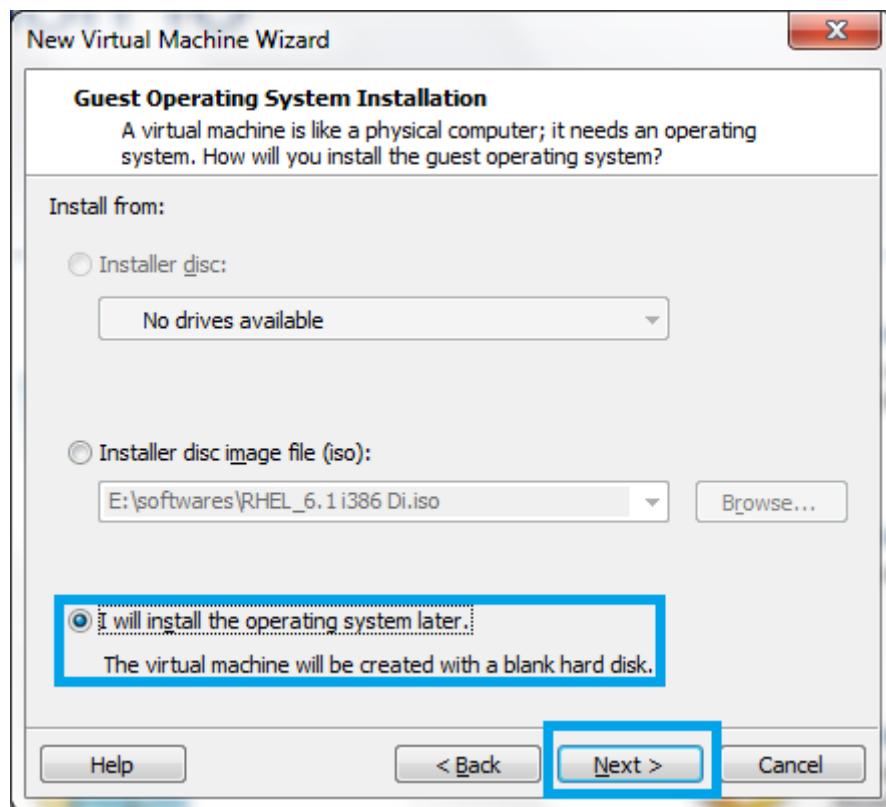
Step 1:



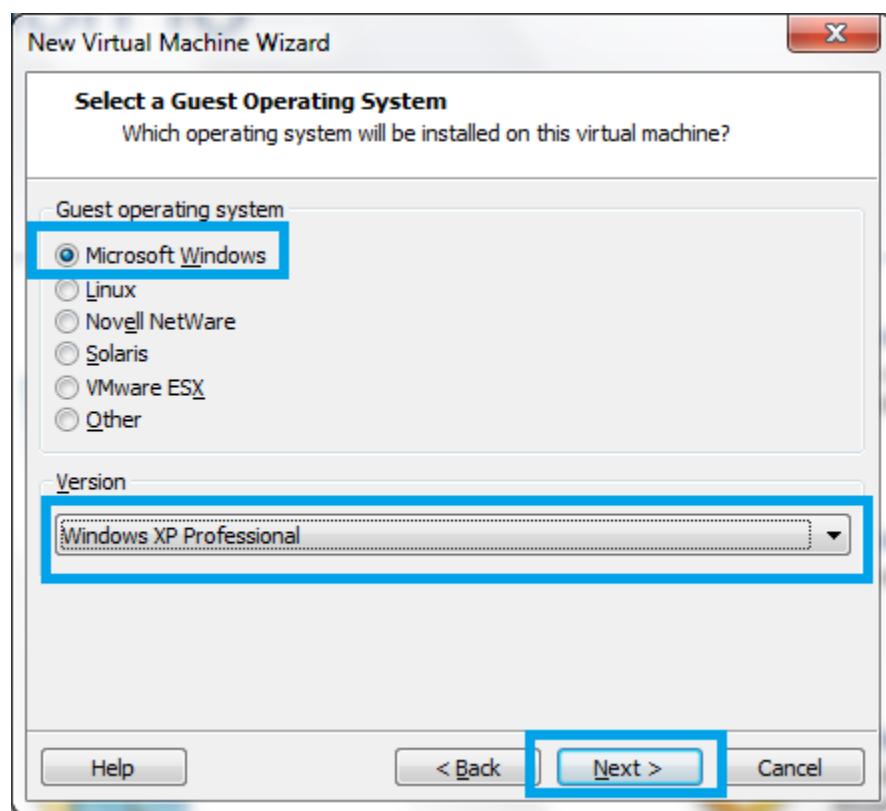
Step 2:



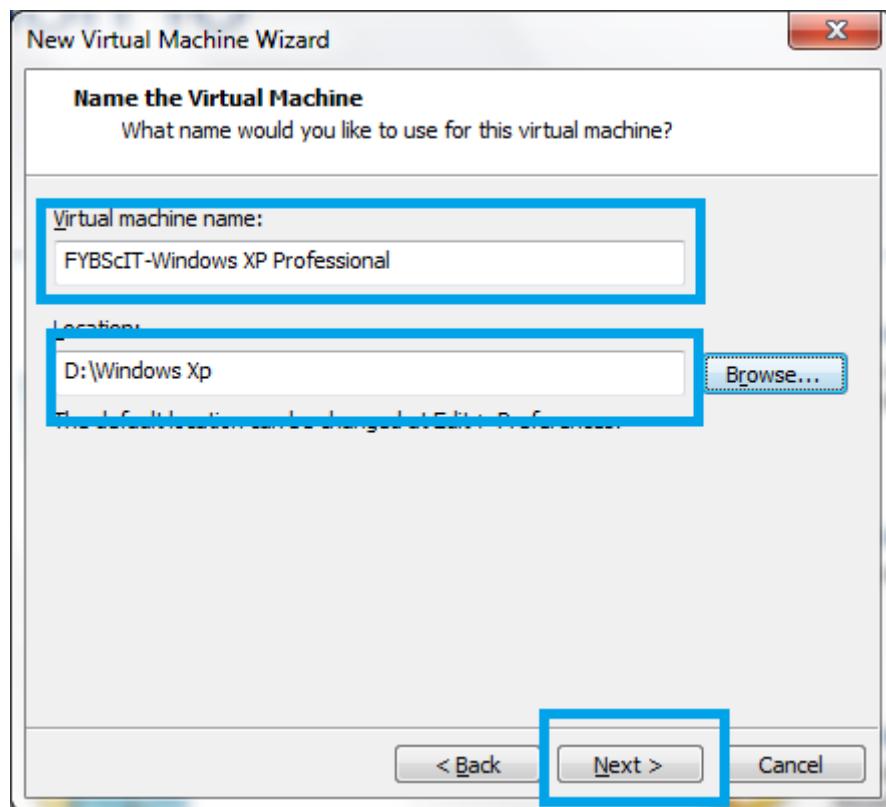
Step 3:



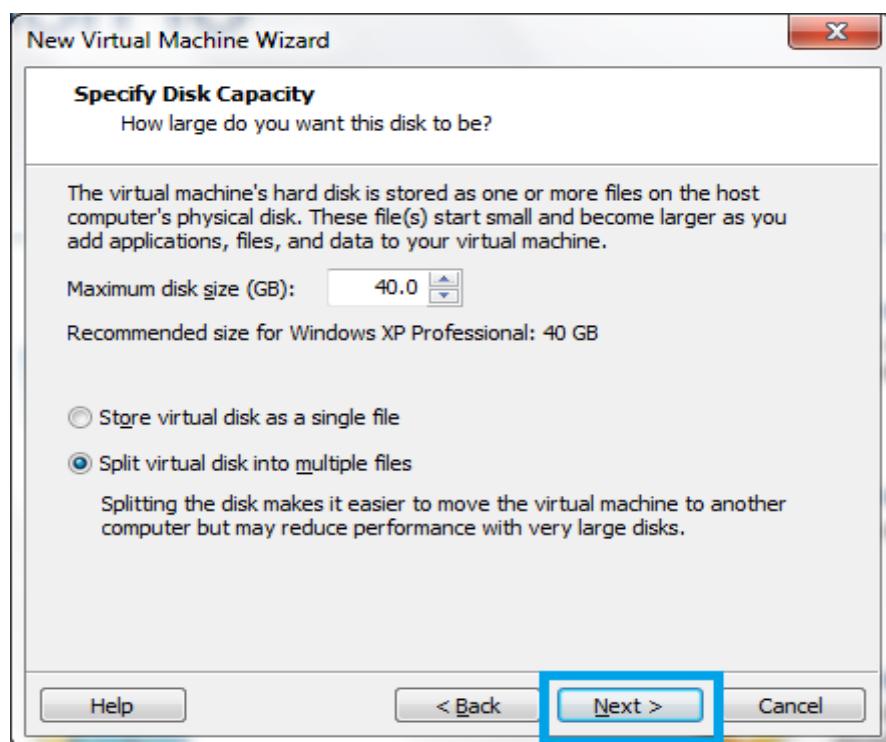
Step 4:



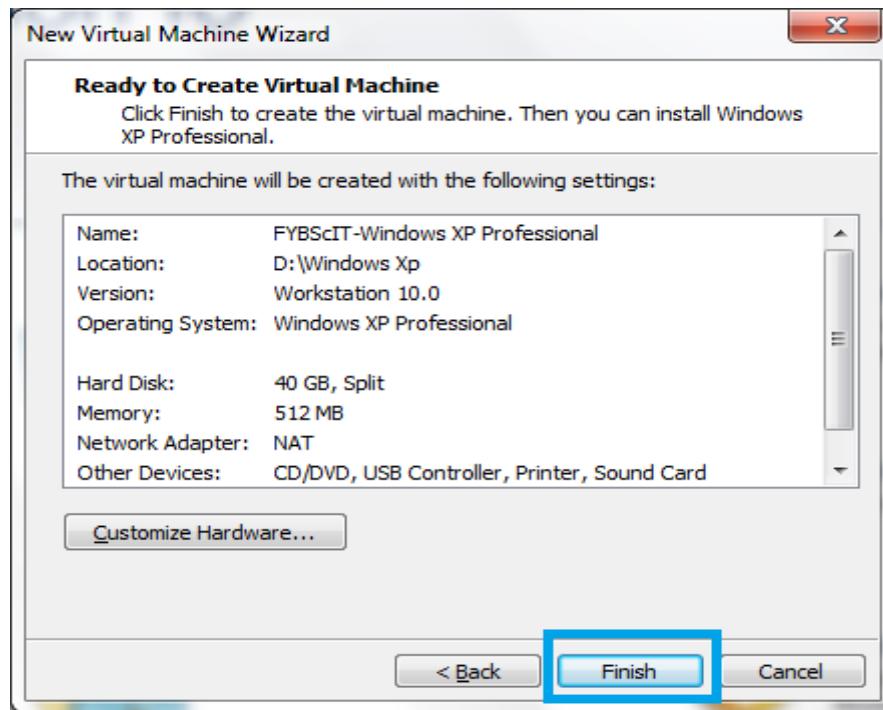
Step 5:



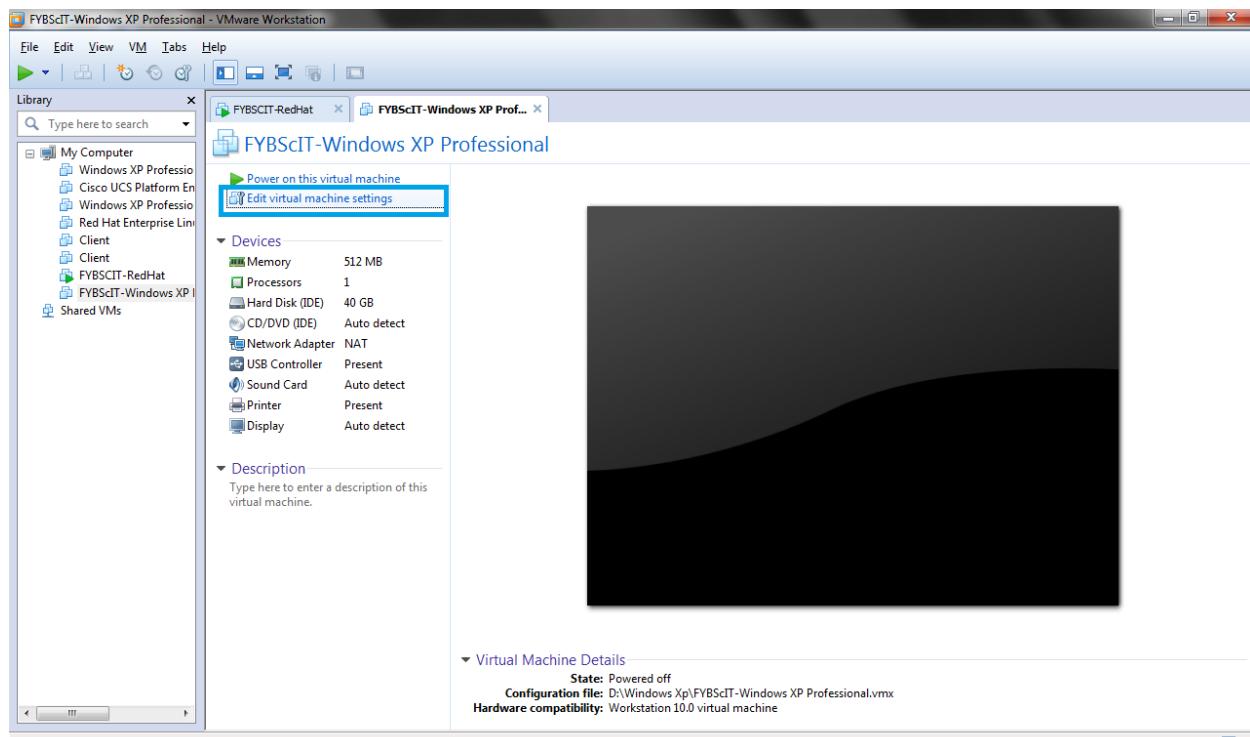
Step 6:



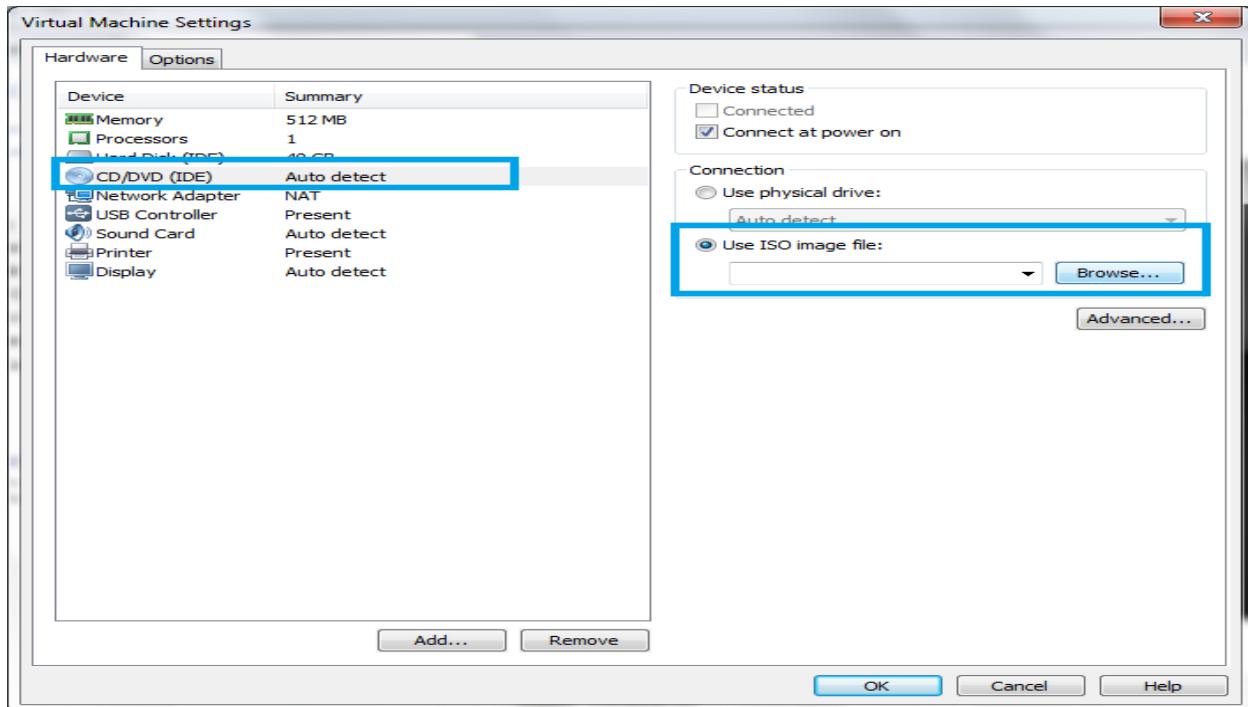
Step 7:



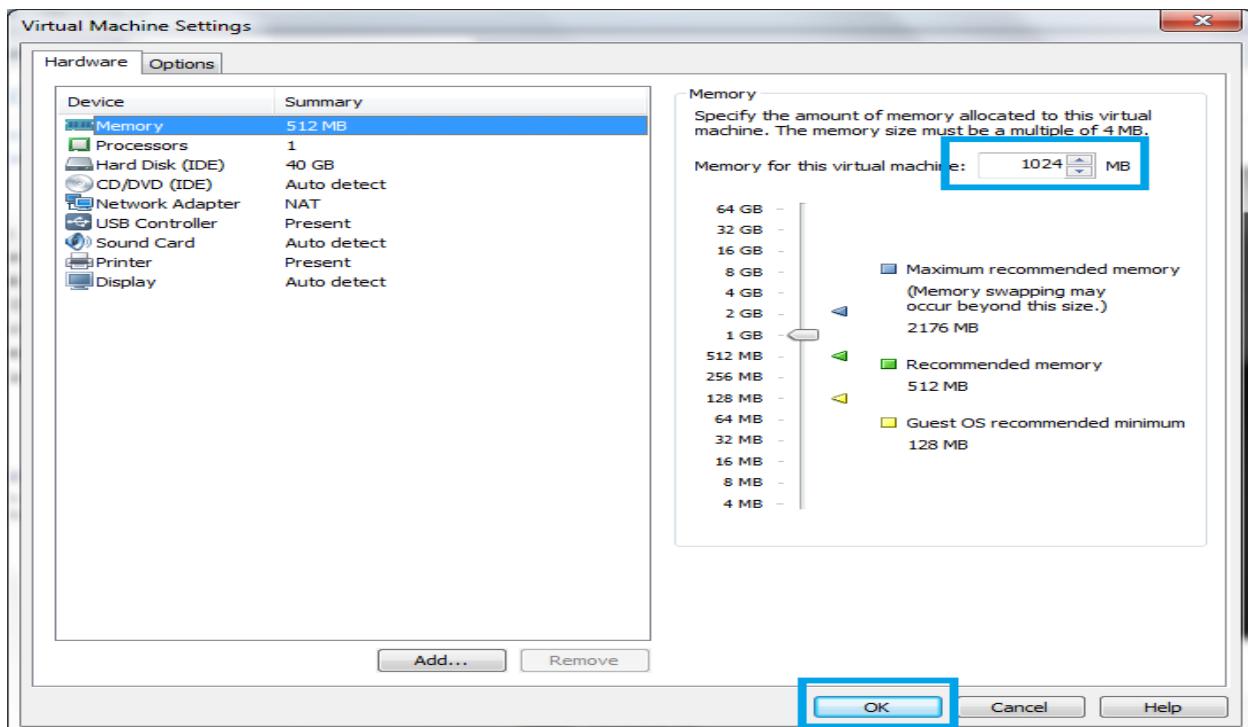
Step 8:



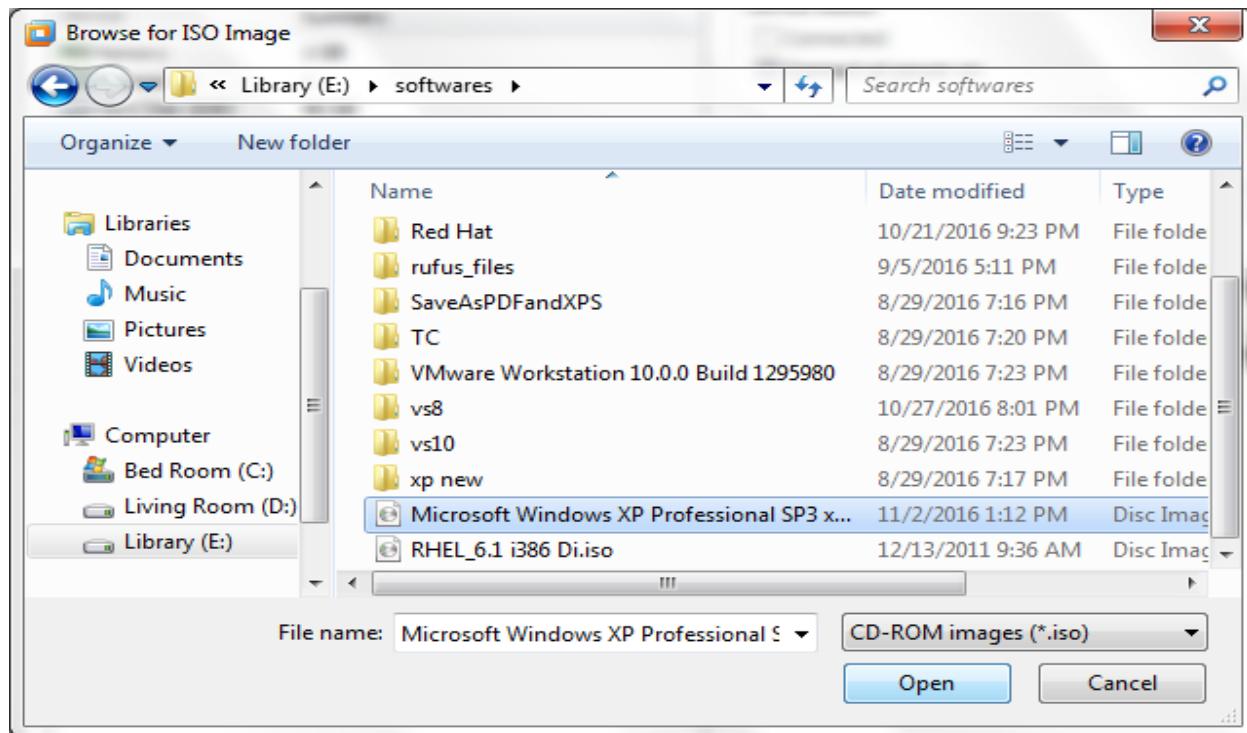
Step 9:



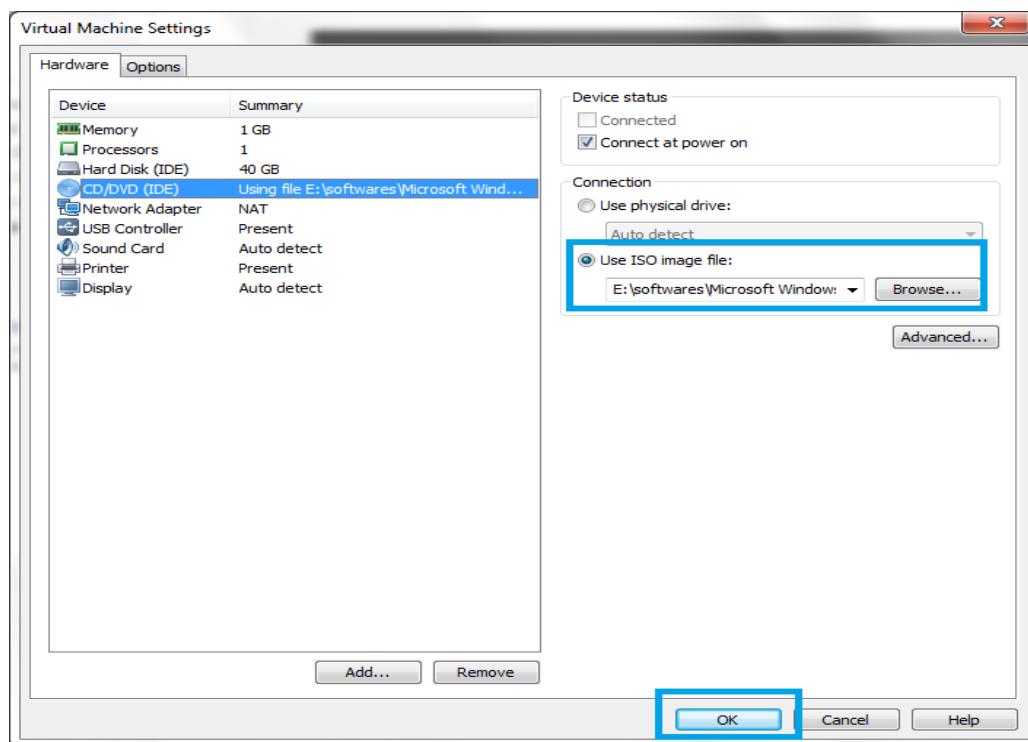
Step 10:



Step 11:



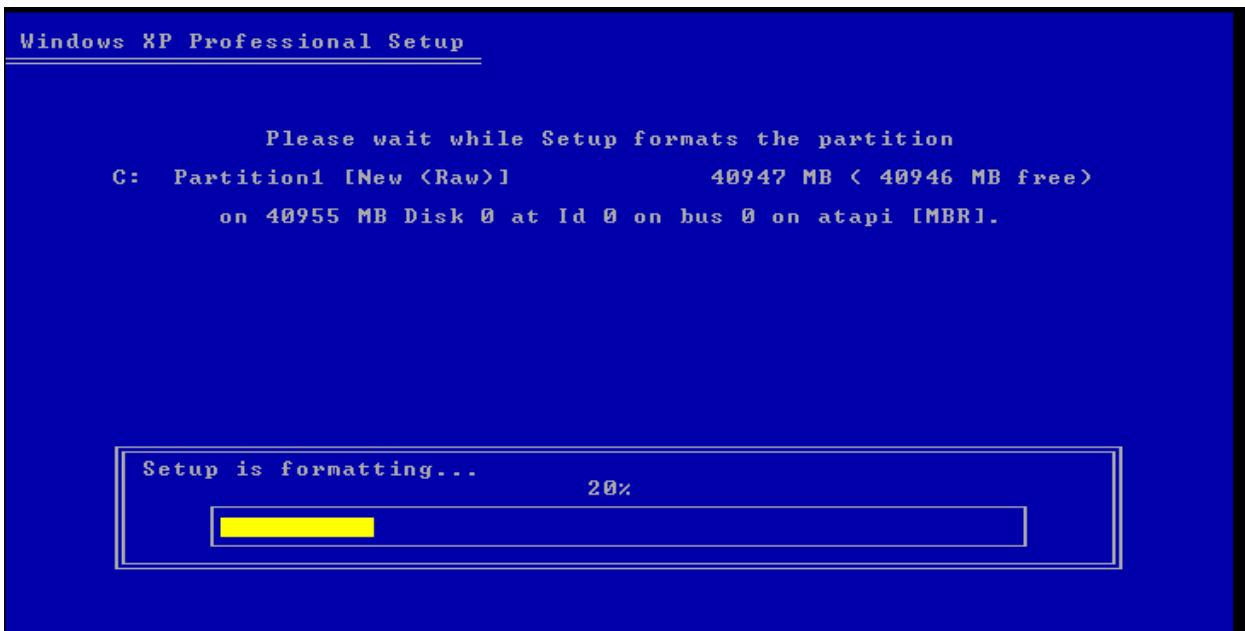
Step 12:



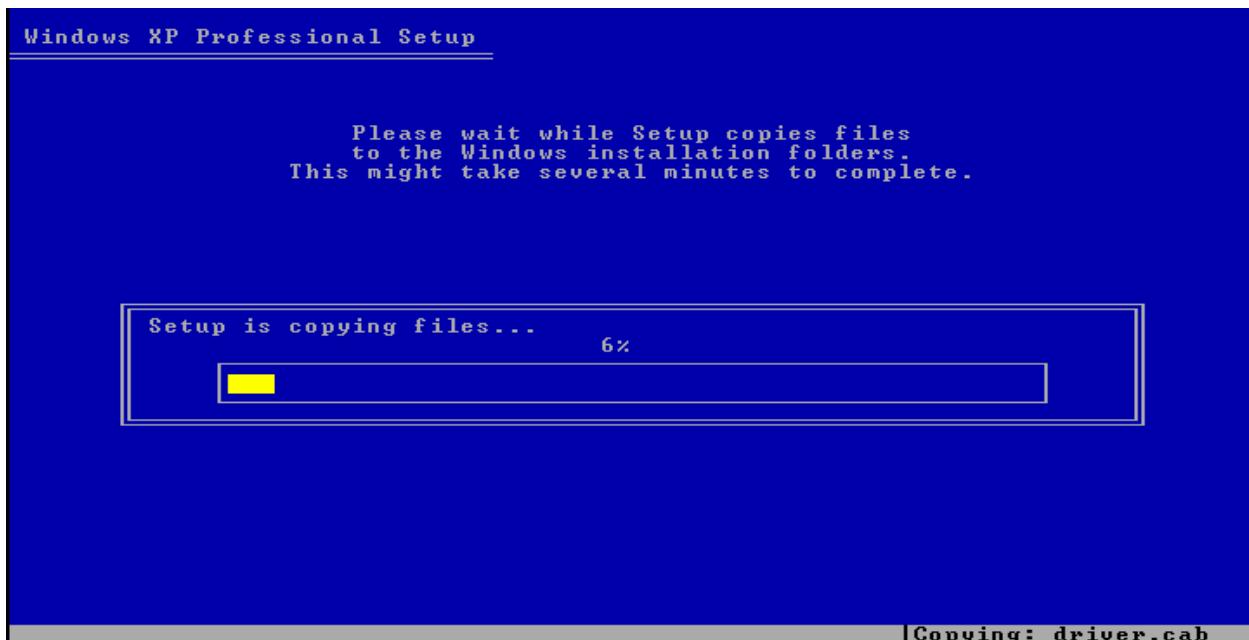
Step 13:



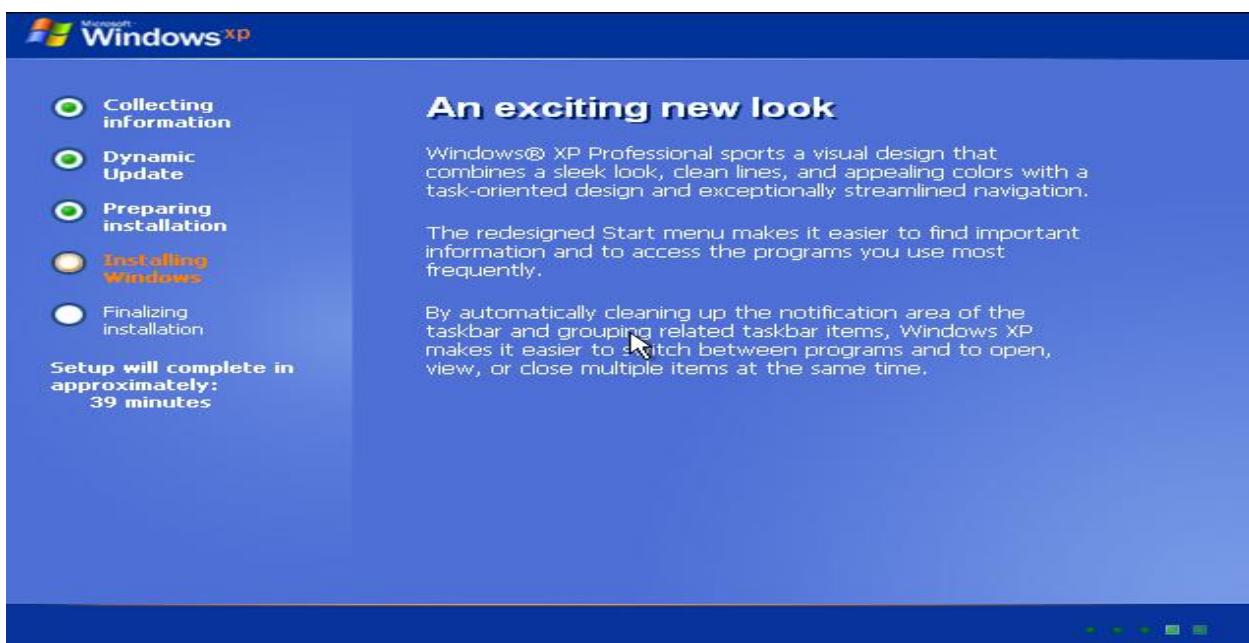
Step 14:



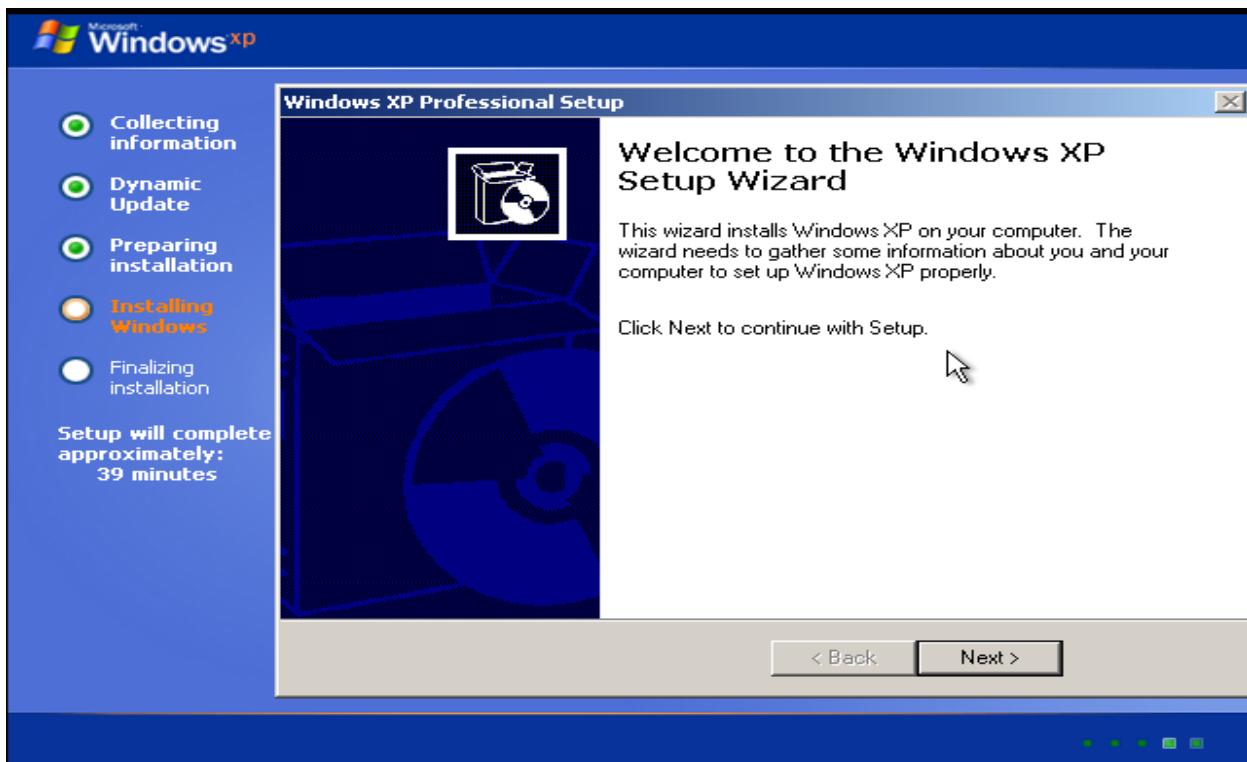
Step 15:



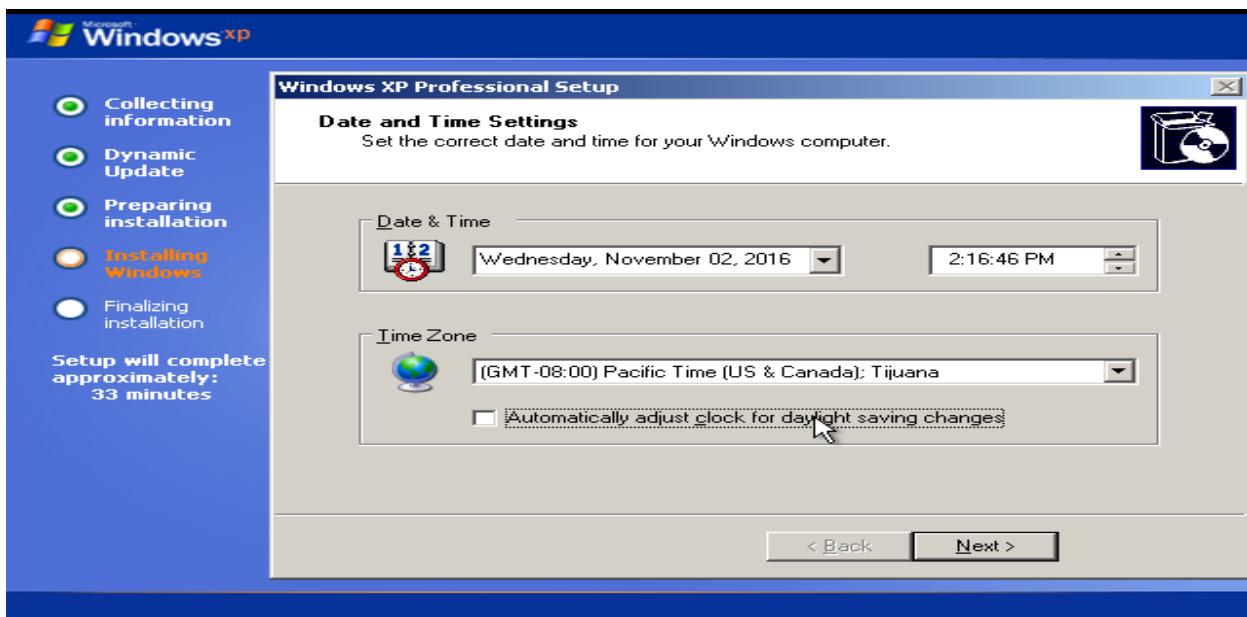
Step 16:



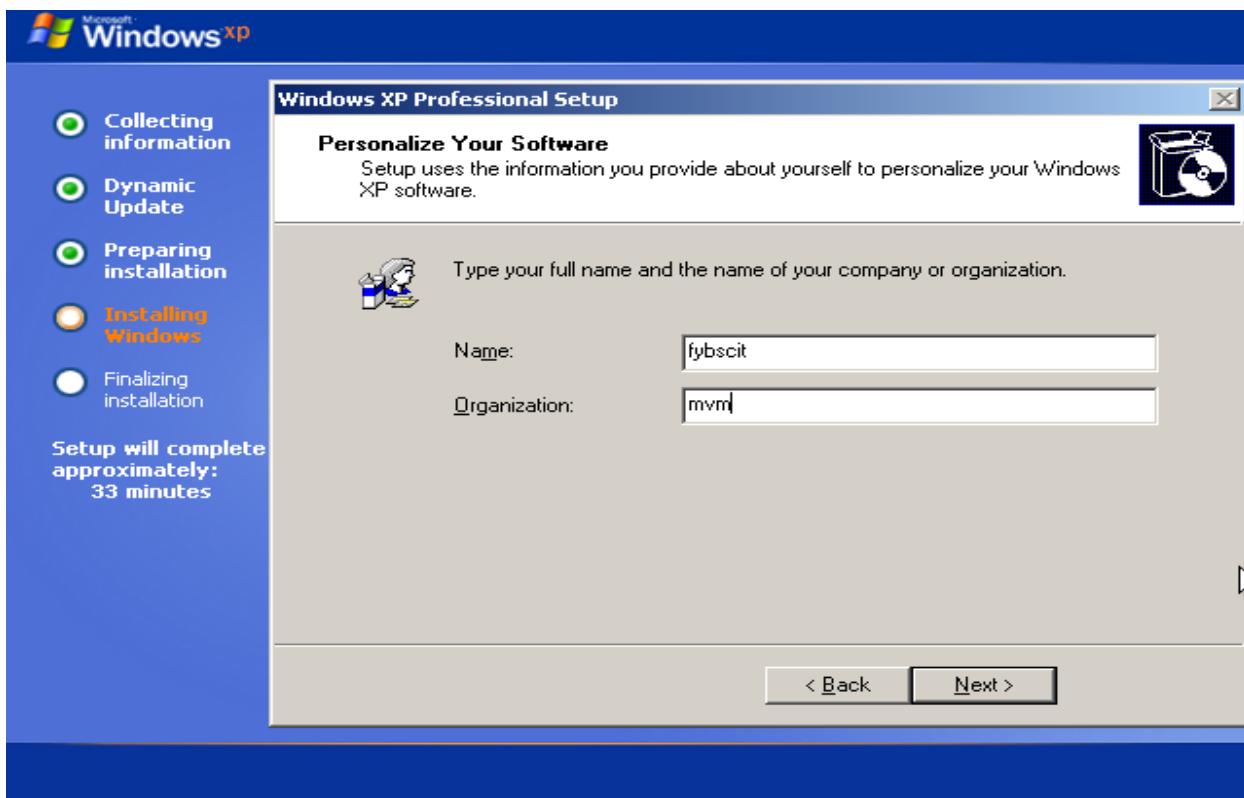
Step 17:



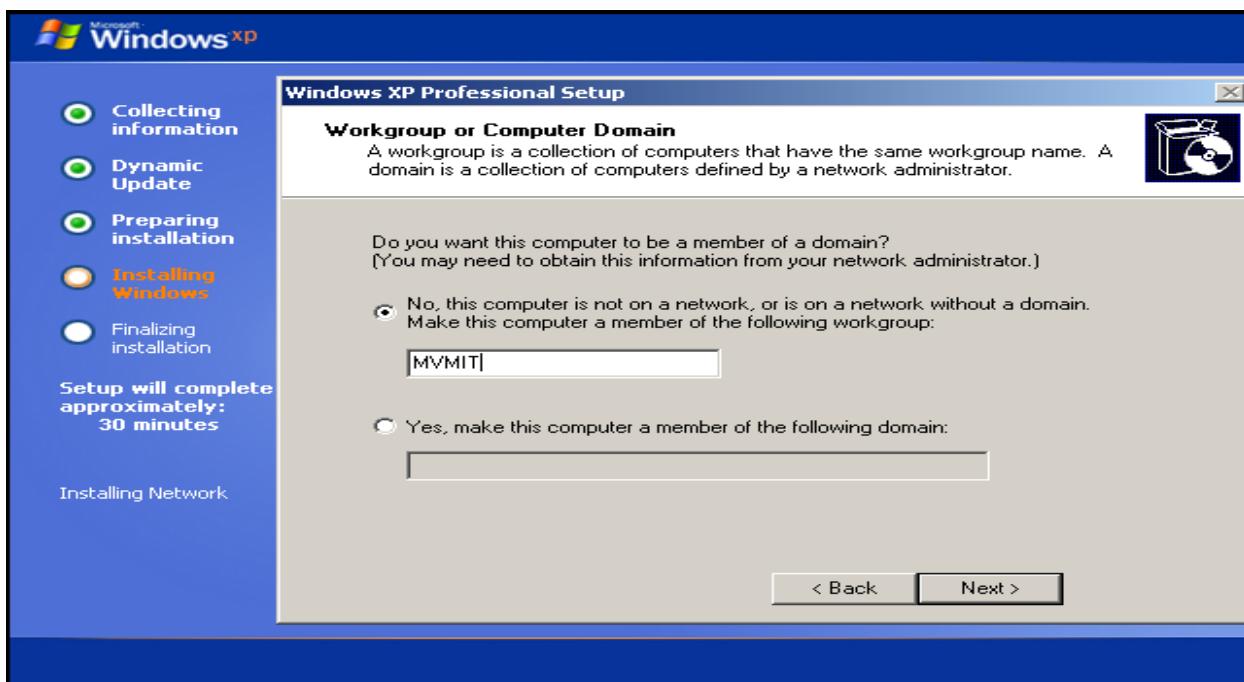
Step 18:



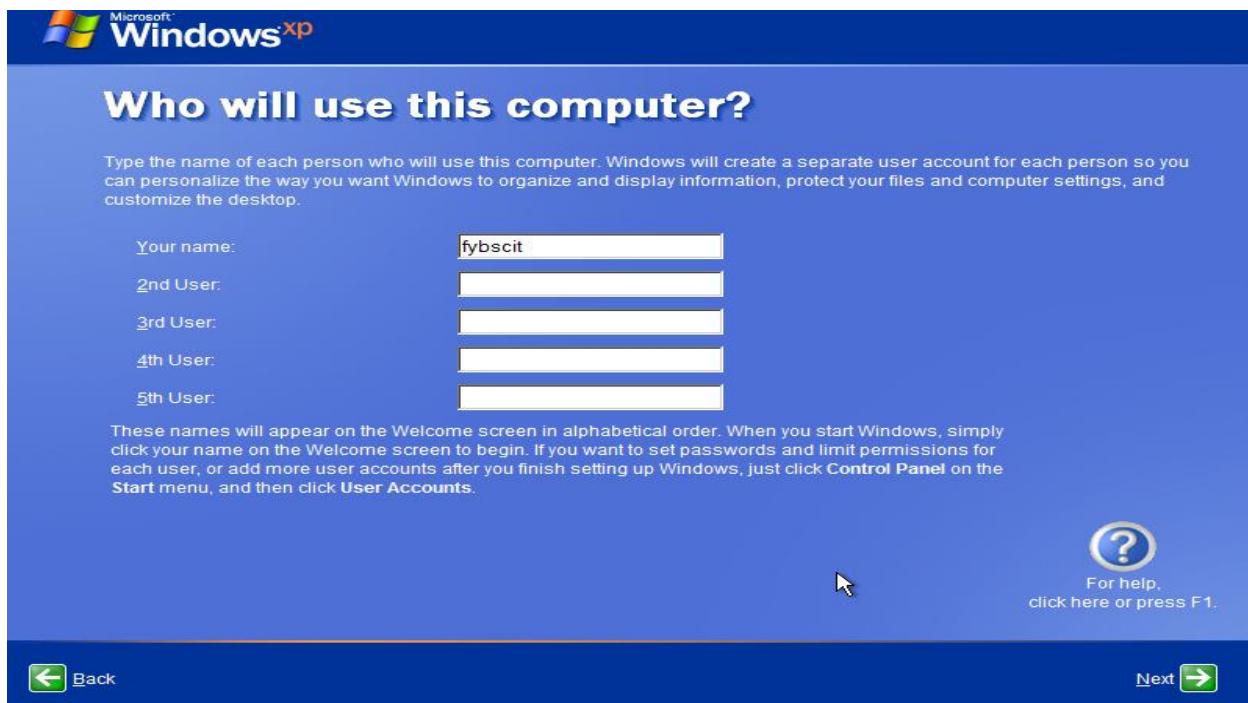
Step 19:



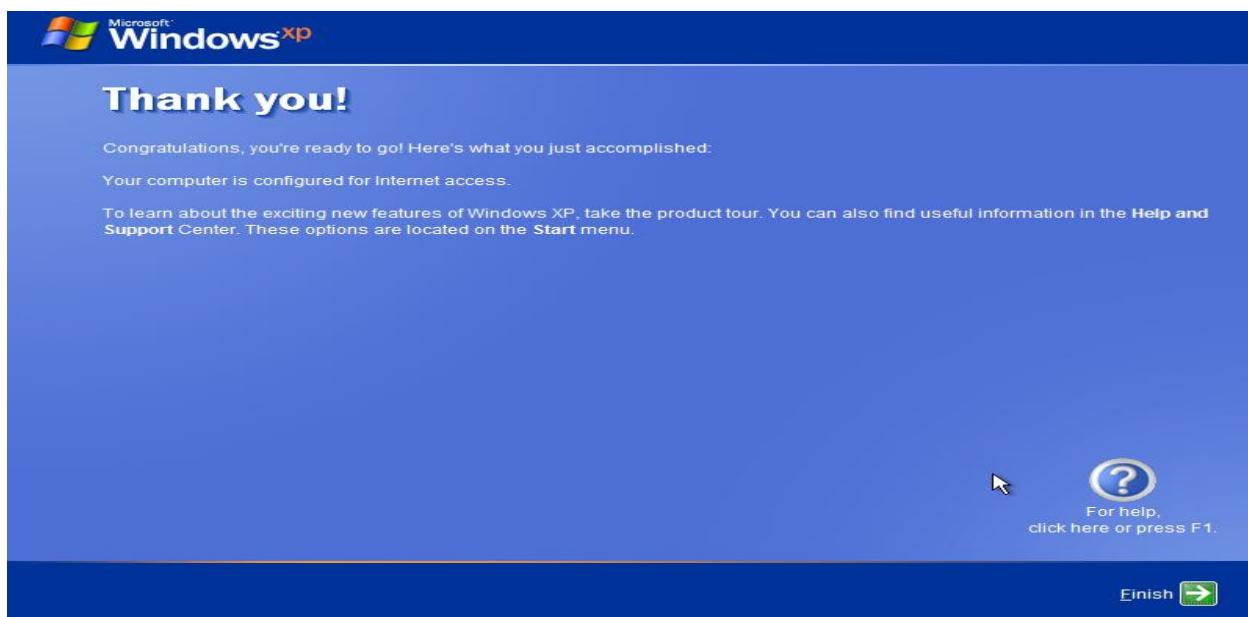
Step 20:



Step 21:



Step 22:



Step 23:



Practical 4

Aim: Linux commands: Working with Directories:

- a. **pwd, cd, absolute and relative paths, ls, mkdir, rmdir**
- b. **file, touch, rm, cp, mv, rename, head, tail, cat, tac, more, less, strings, chmod**

➤ **Command: pwd**

Print Working Directory - the absolute pathname of the current folder (i.e. it tells you where you are).

Syntax

pwd



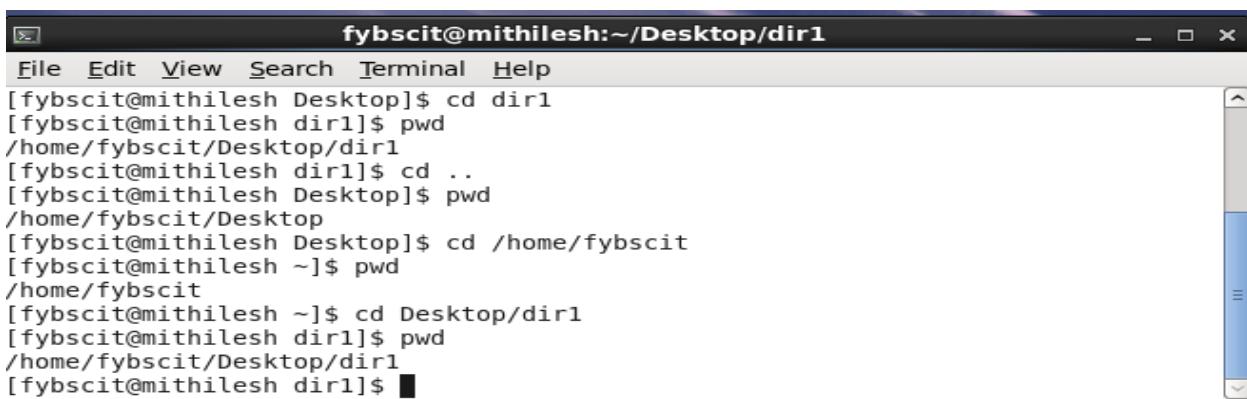
```
fysc@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fysc@mithilesh Desktop]$ pwd
/home/fysc/Desktop
[fysc@mithilesh Desktop]$
```

➤ **Command: cd**

Change Directory - change the current working Folder.

Syntax

cd [dir]



```
fysc@mithilesh:~/Desktop/dir1
File Edit View Search Terminal Help
[fysc@mithilesh Desktop]$ cd dir1
[fysc@mithilesh dir1]$ pwd
/home/fysc/Desktop/dir1
[fysc@mithilesh dir1]$ cd ..
[fysc@mithilesh Desktop]$ pwd
/home/fysc/Desktop
[fysc@mithilesh Desktop]$ cd /home/fysc
[fysc@mithilesh ~]$ pwd
/home/fysc
[fysc@mithilesh ~]$ cd Desktop/dir1
[fysc@mithilesh dir1]$ pwd
/home/fysc/Desktop/dir1
[fysc@mithilesh dir1]$
```

➤ Command: mkdir

Make Directory (Create folders)

Syntax

mkdir dirname

The image shows two terminal windows side-by-side. Both windows have a title bar 'fybscit@mithilesh:~/Desktop/dir1'. The top window has a menu bar with File, Edit, View, Search, Terminal, and Help. It displays the command 'vmware-tools-distrib' and its output: [fybscit@mithilesh Desktop]\$ mkdir dir1 and [fybscit@mithilesh Desktop]\$ mkdir dir2 dir3. The bottom window also has a menu bar with the same options. It displays the command 'vmware-tools-distrib' and its output: [fybscit@mithilesh Desktop]\$ mkdir dir1, [fybscit@mithilesh Desktop]\$ mkdir dir2 dir3, [fybscit@mithilesh Desktop]\$ ls, and the directory listing: dir1 dir2 dir3 vmware-tools-distrib.

➤ Command: rmdir

Remove Directory (Delete folders)

Syntax

rmdir foldername

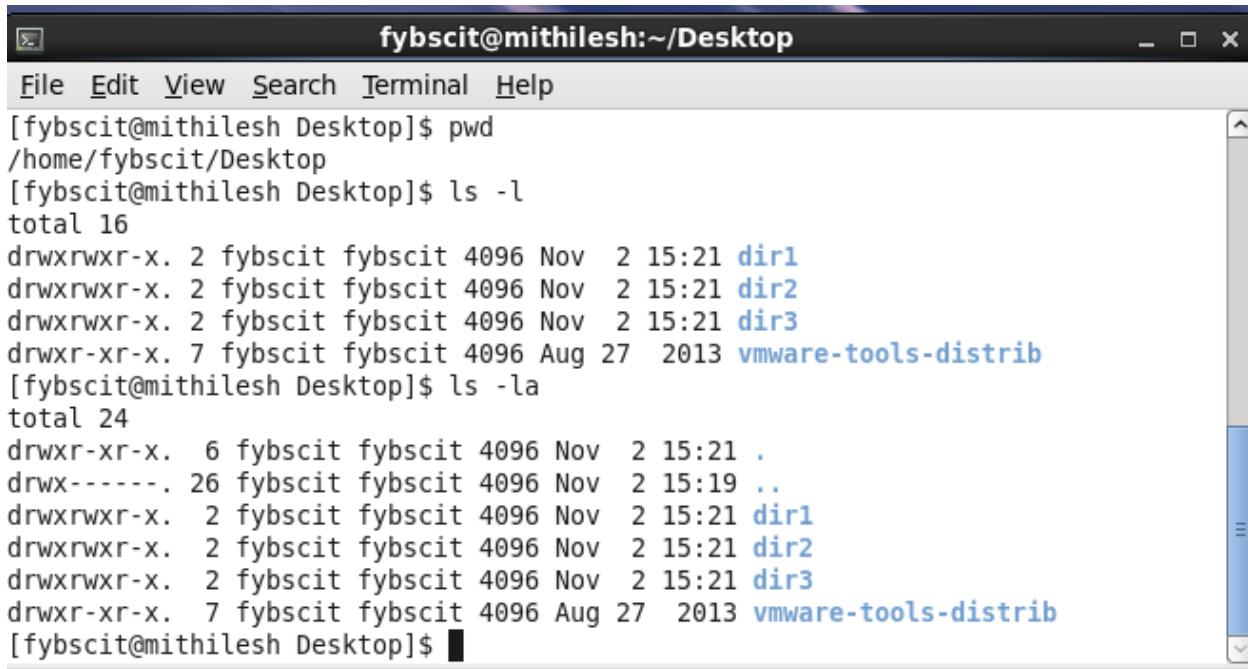
The image shows a single terminal window with a title bar 'fybscit@mithilesh:~/Desktop'. The window has a menu bar with File, Edit, View, Search, Terminal, and Help. It displays the command 'vmware-tools-distrib' and its output: [fybscit@mithilesh Desktop]\$ ls, followed by the directory listing: dir1 dir2 dir3. The user then enters [fybscit@mithilesh Desktop]\$ rmdir dir1, [fybscit@mithilesh Desktop]\$ ls, followed by the directory listing: dir2 dir3. Finally, the user enters [fybscit@mithilesh Desktop]\$ rmdir dir* and [fybscit@mithilesh Desktop]\$ ls, resulting in an empty directory listing: [fybscit@mithilesh Desktop]\$.

➤ **Command: ls**

List directory contents.

Options

- a List all entries including those starting with a dot .
- l List in long format.



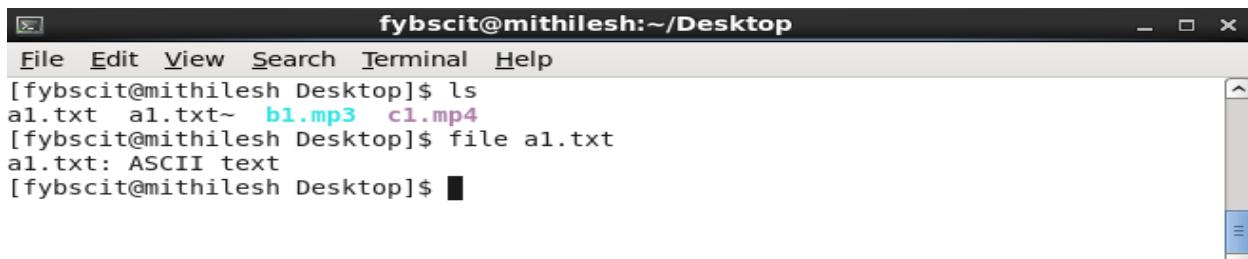
```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ pwd
/home/fybscit/Desktop
[fybscit@mithilesh Desktop]$ ls -l
total 16
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir1
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir2
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir3
drwxr-xr-x. 7 fybscit fybscit 4096 Aug 27 2013 vmware-tools-distrib
[fybscit@mithilesh Desktop]$ ls -la
total 24
drwxr-xr-x. 6 fybscit fybscit 4096 Nov  2 15:21 .
drwx----- 26 fybscit fybscit 4096 Nov  2 15:19 ..
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir1
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir2
drwxrwxr-x. 2 fybscit fybscit 4096 Nov  2 15:21 dir3
drwxr-xr-x. 7 fybscit fybscit 4096 Aug 27 2013 vmware-tools-distrib
[fybscit@mithilesh Desktop]$
```

➤ **Command: file**

Determine file type.

Syntax

file filename



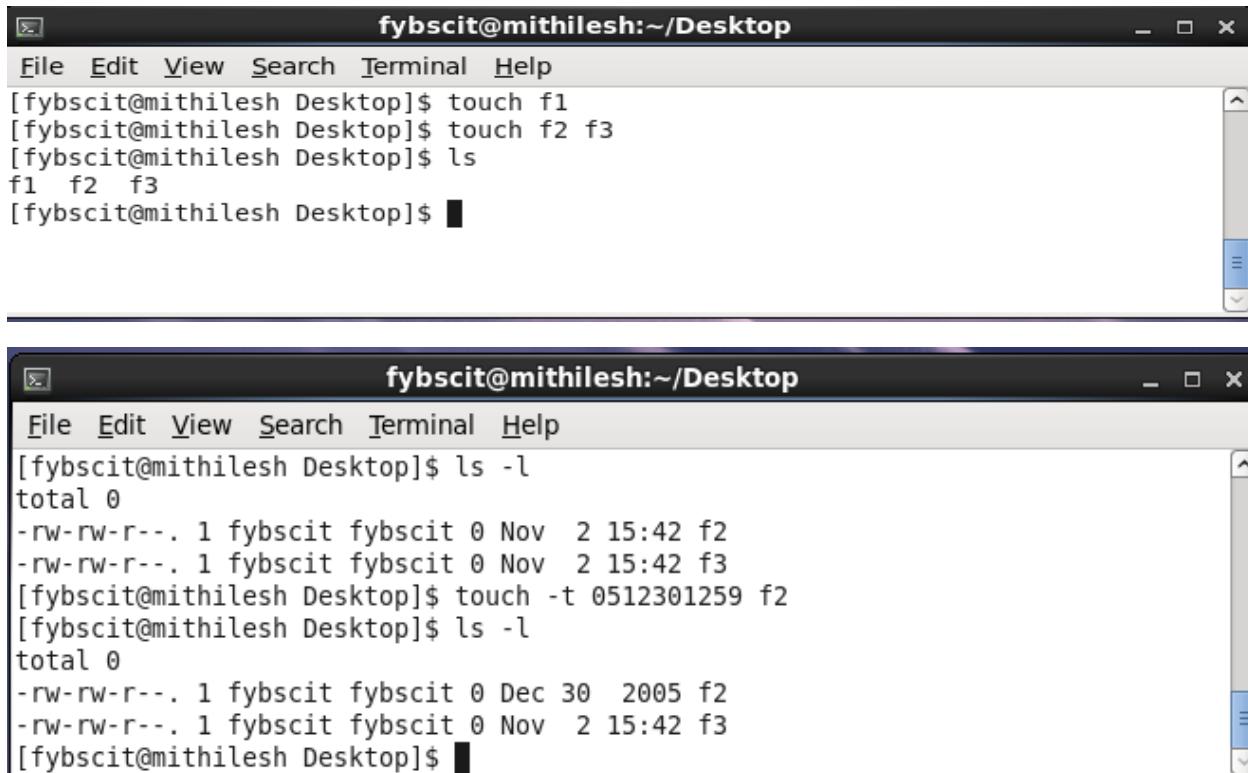
```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ ls
a1.txt a1.txt~ b1.mp3 c1.mp4
[fybscit@mithilesh Desktop]$ file a1.txt
a1.txt: ASCII text
[fybscit@mithilesh Desktop]$
```

➤ Command: touch

Change file timestamps. Sets the modification and access times of files to the current time of day. If the file doesn't exist, it is created with default permissions.

Syntax

touch [-t [[CC]YY]MMDDhhmm[.SS]] filename



```
[fybscit@mithilesh Desktop]$ touch f1
[fybscit@mithilesh Desktop]$ touch f2 f3
[fybscit@mithilesh Desktop]$ ls
f1  f2  f3
[fybscit@mithilesh Desktop]$ 
```



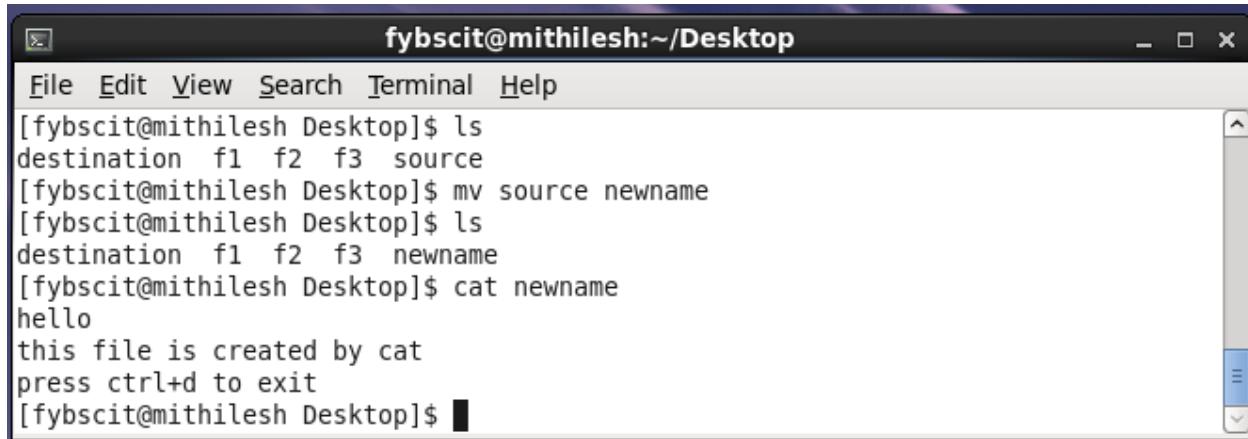
```
[fybscit@mithilesh Desktop]$ ls -l
total 0
-rw-rw-r--. 1 fybscit fybscit 0 Nov  2 15:42 f2
-rw-rw-r--. 1 fybscit fybscit 0 Nov  2 15:42 f3
[fybscit@mithilesh Desktop]$ touch -t 0512301259 f2
[fybscit@mithilesh Desktop]$ ls -l
total 0
-rw-rw-r--. 1 fybscit fybscit 0 Dec 30 2005 f2
-rw-rw-r--. 1 fybscit fybscit 0 Nov  2 15:42 f3
[fybscit@mithilesh Desktop]$ 
```

➤ Command: mv

Move files and/or folders.

Syntax

mv source target



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ ls
destination f1 f2 f3 source
[fybscit@mithilesh Desktop]$ mv source newname
[fybscit@mithilesh Desktop]$ ls
destination f1 f2 f3 newname
[fybscit@mithilesh Desktop]$ cat newname
hello
this file is created by cat
press ctrl+d to exit
[fybscit@mithilesh Desktop]$ 

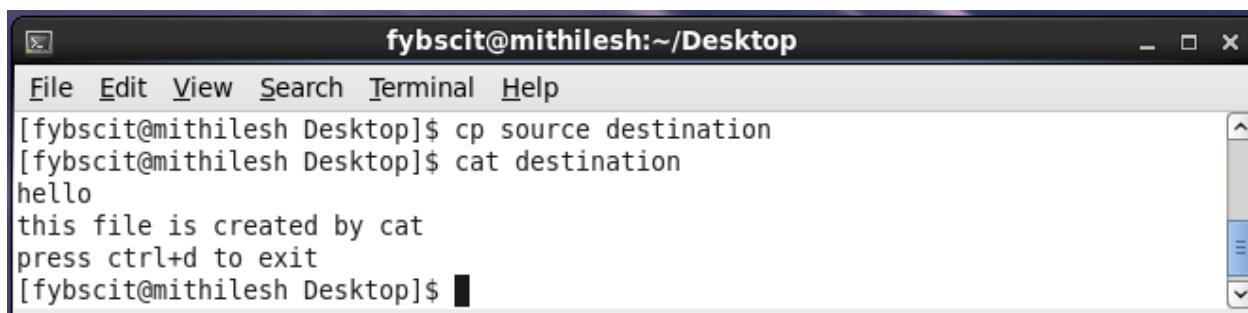
```

➤ Command: cp

Copy files.

Syntax

cp Source_file Target_file



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ cp source destination
[fybscit@mithilesh Desktop]$ cat destination
hello
this file is created by cat
press ctrl+d to exit
[fybscit@mithilesh Desktop]$ 

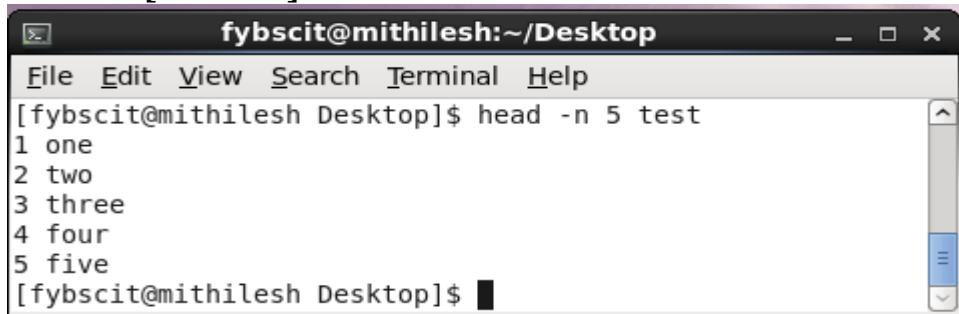
```

➤ Command: head

Display the first lines of a file

Syntax

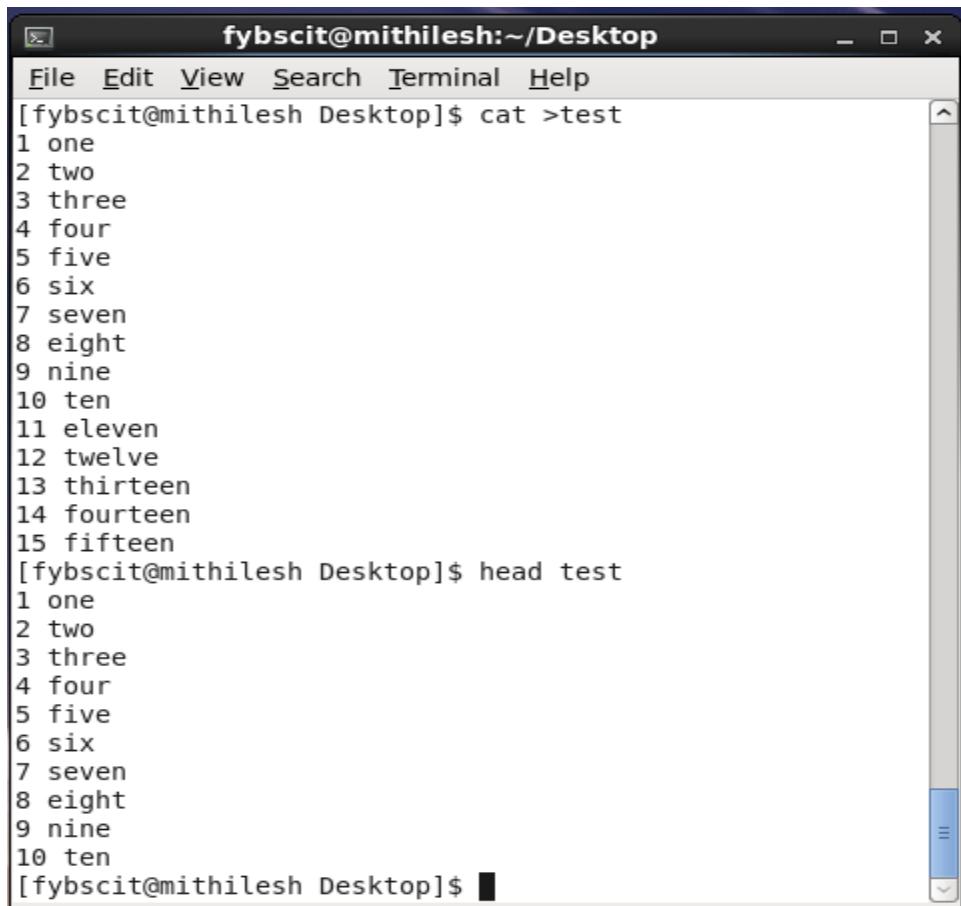
head [-n count] filename



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ head -n 5 test
1 one
2 two
3 three
4 four
5 five
[fybscit@mithilesh Desktop]$ 

```



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window shows the following session:

```
[fybscit@mithilesh Desktop]$ cat >test
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
[fybscit@mithilesh Desktop]$ head test
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
[fybscit@mithilesh Desktop]$
```

➤ Command: cat

Concatenate and print (display) the content of files.

cat filename (to display file content)

cat >filename (to redirect connect to a file)



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window shows the following session:

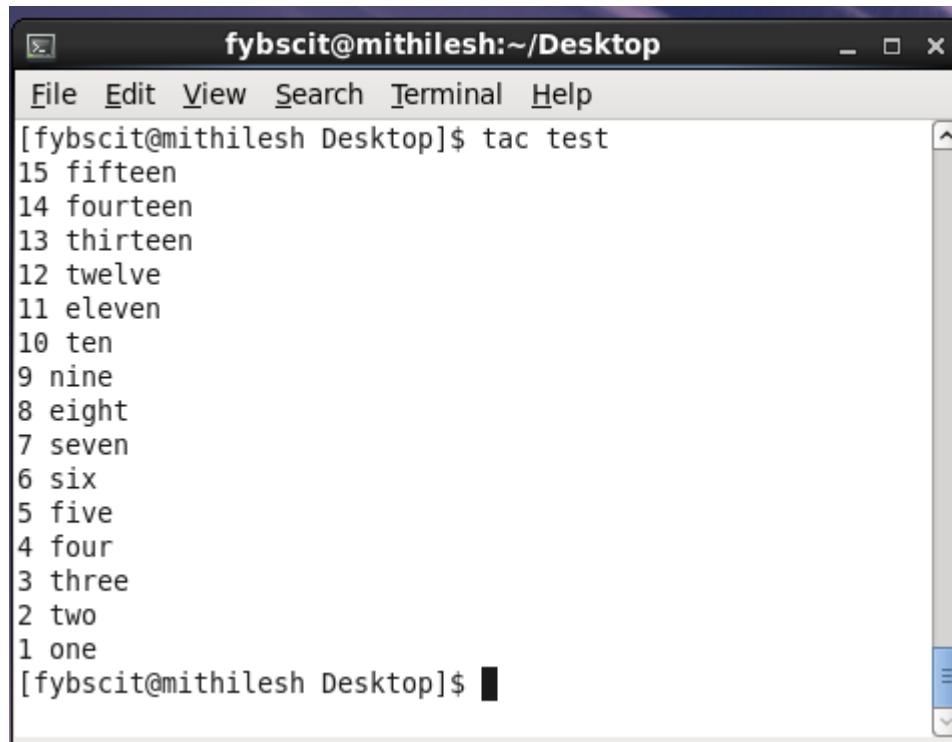
```
[fybscit@mithilesh Desktop]$ cat >source
hello
this file is created by cat
press ctrl+d to exit
[fybscit@mithilesh Desktop]$ cat source
hello
this file is created by cat
press ctrl+d to exit
[fybscit@mithilesh Desktop]$
```

➤ Command: tac

Display content of file in reverse order.

Syntax

tac filename



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a standard Linux-style interface with a menu bar (File, Edit, View, Search, Terminal, Help) and a scroll bar on the right. The terminal prompt is "[fybscit@mithilesh Desktop]\$". The command "tac test" is run, and its output is displayed: a list of numbers from 15 down to 1, each followed by its corresponding word ("fifteen", "fourteen", etc.). The scroll bar shows that there is more text above the visible area.

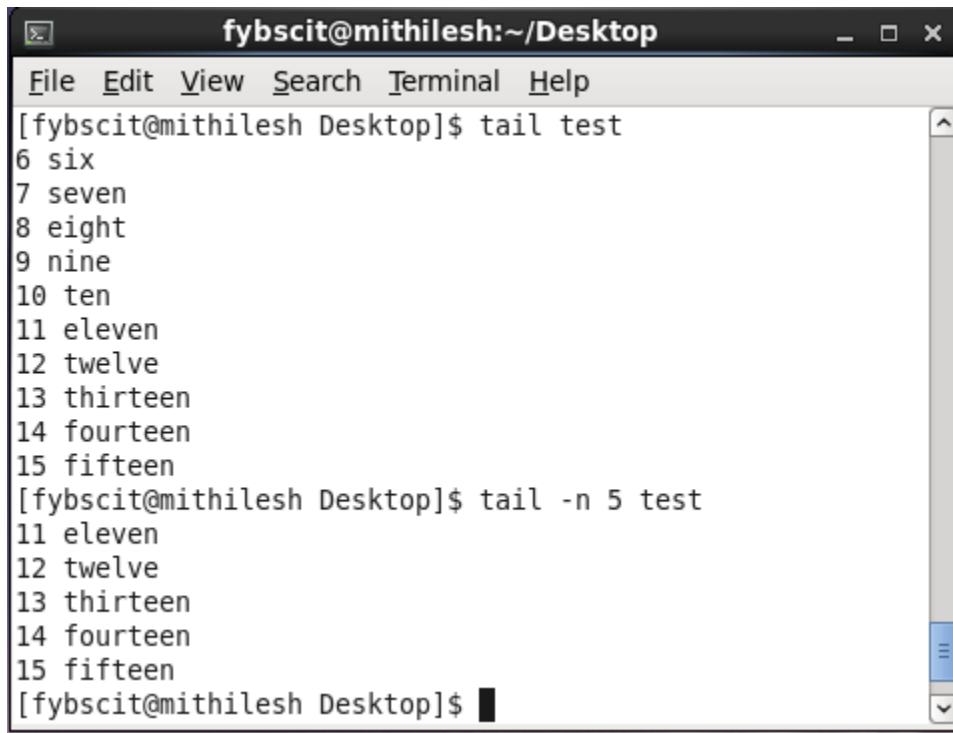
```
[fybscit@mithilesh Desktop]$ tac test
15 fifteen
14 fourteen
13 thirteen
12 twelve
11 eleven
10 ten
9 nine
8 eight
7 seven
6 six
5 five
4 four
3 three
2 two
1 one
[fybscit@mithilesh Desktop]$
```

➤ Command: tail

Display the last part of a file. Display the contents of file or, by default, its standard input, to the standard output.

Syntax

tail [-c number | -n number] [file]



The screenshot shows a terminal window titled "fybscit@mithilesh:~/Desktop". The window contains the following text:

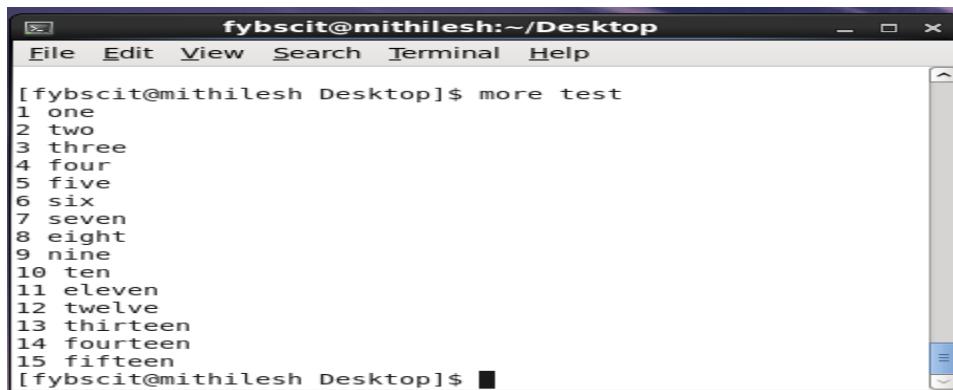
```
[fybscit@mithilesh Desktop]$ tail test
6 six
7 seven
8 eight
9 nine
10 ten
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
[fybscit@mithilesh Desktop]$ tail -n 5 test
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
[fybscit@mithilesh Desktop]$
```

➤ Command: more

Page through text one screenful at a time, less provides more emulation and extensive enhancements.

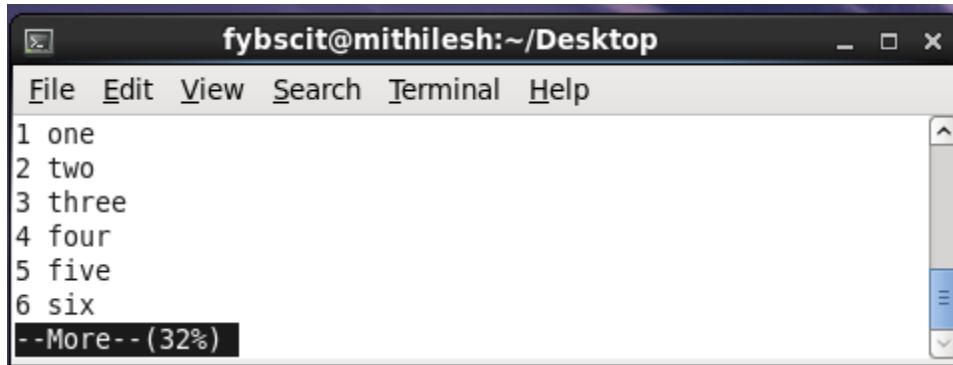
Syntax

more [-dlfpcsu] [-num] [+ pattern] [+ linenum] [file ...]



The screenshot shows a terminal window titled "fybscit@mithilesh:~/Desktop". The window contains the following text:

```
[fybscit@mithilesh Desktop]$ more test
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
[fybscit@mithilesh Desktop]$
```



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a menu bar with File, Edit, View, Search, Terminal, and Help. The main pane displays the following text:

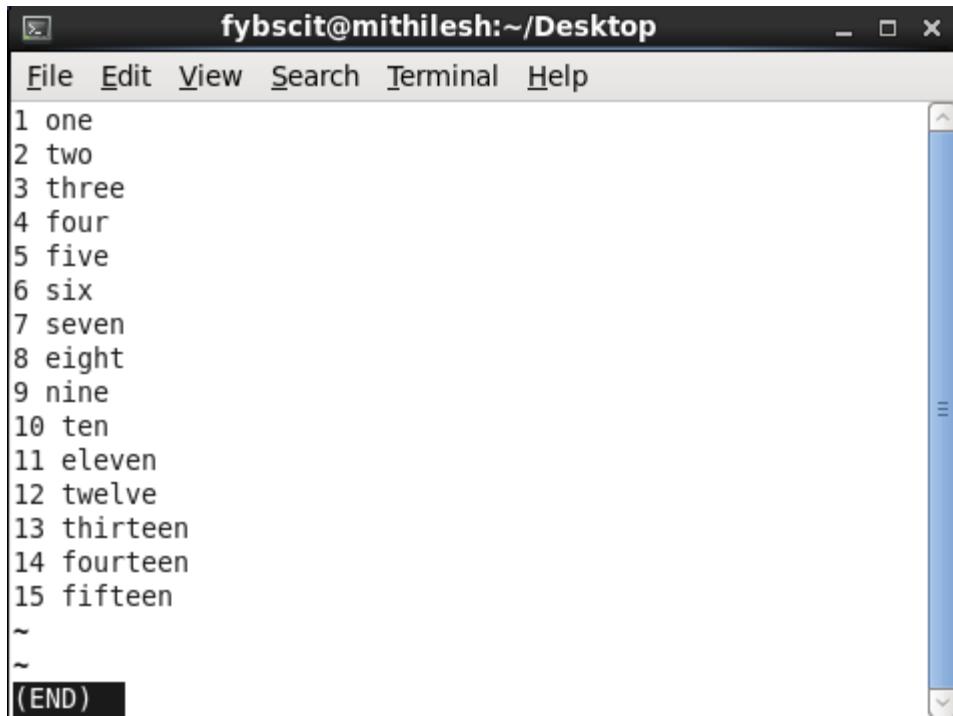
```
1 one
2 two
3 three
4 four
5 five
6 six
--More-- (32%)
```

➤ Command: less

Page through text one screenful at a time, search through output. less provides more emulation plus extensive enhancements such as allowing backward paging through a file as well as forward movement.

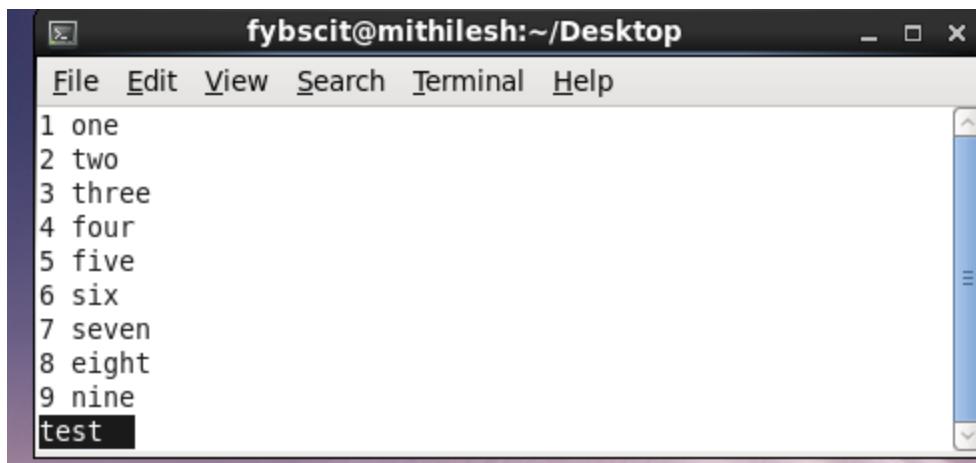
Syntax:

less filename



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a menu bar with File, Edit, View, Search, Terminal, and Help. The main pane displays the following text:

```
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
~
~
(END)
```



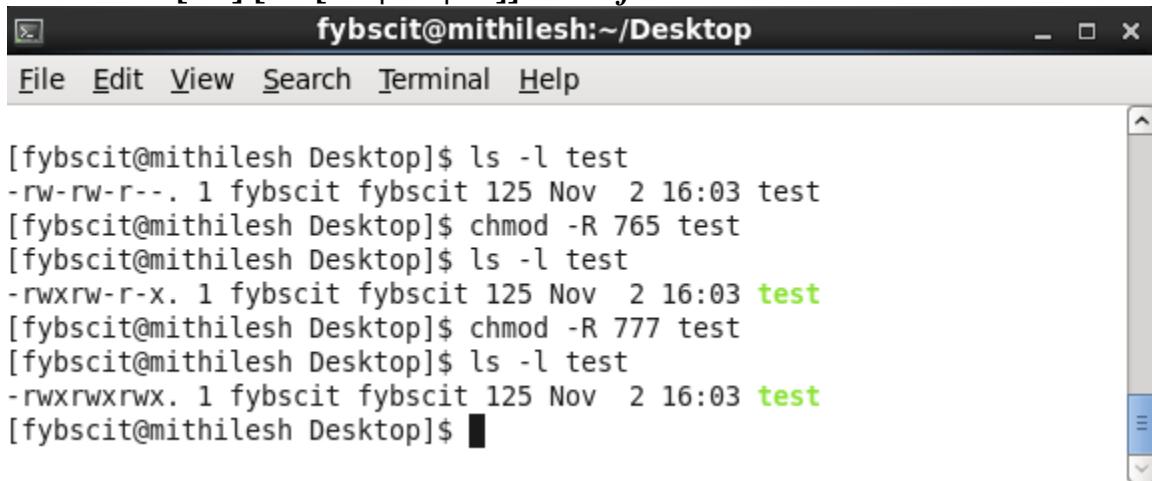
```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
test
```

➤ Command: chmod

Change access permissions, change mode.

Syntax

chmod [-fv] [-R [-H | -L | -P]] mode file ...



```
[fybscit@mithilesh Desktop]$ ls -l test
-rw-rw-r--. 1 fybscit fybscit 125 Nov  2 16:03 test
[fybscit@mithilesh Desktop]$ chmod -R 765 test
[fybscit@mithilesh Desktop]$ ls -l test
-rwxrw-r-x. 1 fybscit fybscit 125 Nov  2 16:03 test
[fybscit@mithilesh Desktop]$ chmod -R 777 test
[fybscit@mithilesh Desktop]$ ls -l test
-rwxrwxrwx. 1 fybscit fybscit 125 Nov  2 16:03 test
[fybscit@mithilesh Desktop]$
```

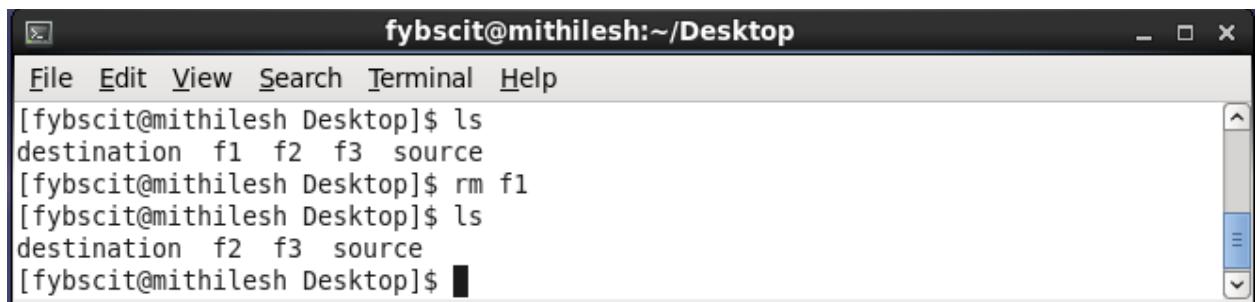
➤ Command: rm

Delete files and folders.

Syntax

rm filename

rm *



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a standard Linux-style interface with a menu bar containing "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal session shows the following commands and output:

```
[fybscit@mithilesh Desktop]$ ls
destination f1 f2 f3 source
[fybscit@mithilesh Desktop]$ rm f1
[fybscit@mithilesh Desktop]$ ls
destination f2 f3 source
[fybscit@mithilesh Desktop]$ █
```

Practical 5

Aim:Linux commands: Working with files:

- a. ps, top, kill, pkill, bg, fg,
- b. grep, locate, find, locate.
- c. date, cal, uptime, whoami, finger, uname, man, df, du, free, whereis, which.
- d. Compression: tar, gzip.

➤ Command: ps

Process status, information about processes running in memory.

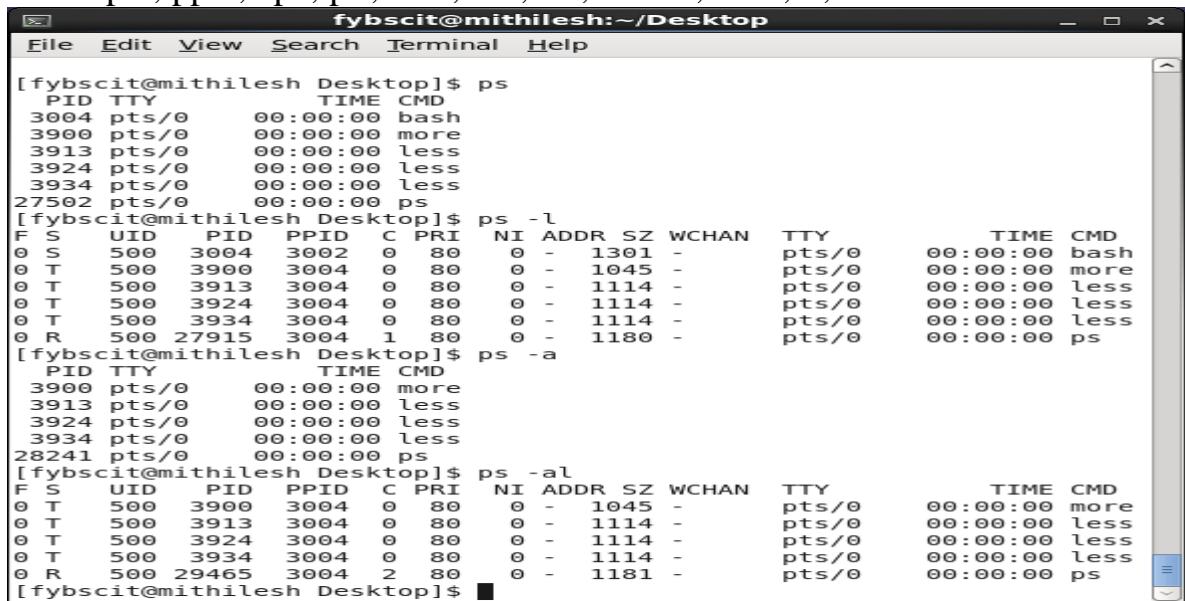
Syntax

```
ps [-aCcefhlMmrSTuvwx] [-O fmt] [-o fmt] [-p pid] [-t tty] [-U username]
```

```
ps [-L]
```

Options

- a Display information about other users' processes as well as your own.
- j Print information associated with the following keywords: user, pid, ppid, pgid, sess, jobc, state, tt, time and command.
- l Display information associated with the following keywords: uid, pid, ppid, cpu, pri, nice, vsz, rss, wchan, state, tt, time and command.



```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ ps
 PID TTY      TIME CMD
3004 pts/0    00:00:00 bash
3900 pts/0    00:00:00 more
3913 pts/0    00:00:00 less
3924 pts/0    00:00:00 less
3934 pts/0    00:00:00 less
27502 pts/0   00:00:00 ps
[fybscit@mithilesh Desktop]$ ps -l
F S  UID   PID  PPID C PRI  NI ADDR SZ WCHAN  TTY      TIME CMD
0 S  500  3004  3002  0  80  0 - 1301 - pts/0    00:00:00 bash
0 T  500  3900  3004  0  80  0 - 1045 - pts/0    00:00:00 more
0 T  500  3913  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 T  500  3924  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 T  500  3934  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 R  500  27915 3004  1  80  0 - 1180 - pts/0    00:00:00 ps
[fybscit@mithilesh Desktop]$ ps -a
 PID TTY      TIME CMD
3900 pts/0    00:00:00 more
3913 pts/0    00:00:00 less
3924 pts/0    00:00:00 less
3934 pts/0    00:00:00 less
28241 pts/0   00:00:00 ps
[fybscit@mithilesh Desktop]$ ps -al
F S  UID   PID  PPID C PRI  NI ADDR SZ WCHAN  TTY      TIME CMD
0 T  500  3900  3004  0  80  0 - 1045 - pts/0    00:00:00 more
0 T  500  3913  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 T  500  3924  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 T  500  3934  3004  0  80  0 - 1114 - pts/0    00:00:00 less
0 R  500  29465 3004  2  80  0 - 1181 - pts/0    00:00:00 ps
[fybscit@mithilesh Desktop]$
```

Command: top

List running processes on the system, in sorted order. Periodically displays a list of processes on the system in sorted order. The default key for sorting is pid, but other keys can be used instead.

Syntax

```
top [-a | -d | -e | -c mode]
```

```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
top - 16:27:34 up 1:13, 2 users, load average: 1.42, 1.23, 0.67
Tasks: 194 total, 2 running, 186 sleeping, 6 stopped, 0 zombie
Cpu(s): 8.7%us, 79.3%sy, 3.8%ni, 0.0%id, 6.5%wa, 0.5%hi, 1.1%si, 0.0%st
Mem: 2071588k total, 772580k used, 1299008k free, 47456k buffers
Swap: 4161528k total, 0k used, 4161528k free, 495664k cached

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
6611 root 39 19 3876 3152 624 S 25.5 0.2 0:09.47 prelink
2370 root 20 0 72176 25m 8324 S 6.6 1.2 1:42.38 Xorg
3002 fybscit 20 0 51812 11m 9512 S 2.3 0.6 0:14.34 gnome-terminal
16 root 20 0 0 0 S 0.7 0.0 0:00.47 kblockd/0
460 root 20 0 0 0 S 0.3 0.0 0:02.83 jbd2/dm-0-8
1371 root 20 0 38584 3964 3272 S 0.3 0.2 0:06.71 vmtoolsd
2716 fybscit 20 0 93284 22m 17m S 0.3 1.1 0:17.54 vmtoolsd
9637 fybscit 20 0 2672 1164 872 R 0.3 0.1 0:00.08 top
9684 root 39 19 21212 1408 1028 R 0.3 0.1 0:00.01 ld-linux.so.2
1 root 20 0 2852 1404 1192 S 0.0 0.1 0:02.64 init
2 root 20 0 0 0 S 0.0 0.0 0:00.01 kthreadd
3 root RT 0 0 0 0 S 0.0 0.0 0:00.00 migration/0
4 root 20 0 0 0 0 S 0.0 0.0 0:00.00 ksoftirqd/0
5 root RT 0 0 0 0 S 0.0 0.0 0:00.00 migration/0
6 root RT 0 0 0 0 S 0.0 0.0 0:00.00 watchdog/0
7 root 20 0 0 0 0 S 0.0 0.0 0:00.03 events/0
8 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuset
9 root 20 0 0 0 0 S 0.0 0.0 0:00.00 khelper
10 root 20 0 0 0 0 S 0.0 0.0 0:00.01 netns
11 root 20 0 0 0 0 S 0.0 0.0 0:00.00 async/mgr
12 root 20 0 0 0 0 S 0.0 0.0 0:00.00 pm
13 root 20 0 0 0 0 S 0.0 0.0 0:00.00 sync_supers
14 root 20 0 0 0 0 S 0.0 0.0 0:00.00 bdi-default
15 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kintegrityd/0
17 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kacpid
```

➤ Command: kill

Kill a process by specifying its PID, either via a signal or forced termination.

Common Kill Signals

Signal name	Signal value	Effect
-------------	--------------	--------

SIGHUP	1	Hangup
SIGINT	2	Interrupt from keyboard
SIGQUIT	3	Quit
SIGABRT	6	Abort
SIGKILL	9	Kill signal
SIGTERM	15	Termination signal - allow an orderly shutdown
SIGSTOP	17,19,23	Stop the process



The screenshot shows a terminal window titled "fybscit@mithilesh:~/Desktop". The session starts with a "clear" command, followed by a "ps" command which lists several processes (bash, less, top). Then, a "kill -9" command is issued to process 3913. Finally, another "ps" command is run, showing that the "less" process has been killed, indicated by the status "Killed".

```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ clear
[fybscit@mithilesh Desktop]$ ps
  PID TTY      TIME CMD
 3004 pts/0    00:00:00 bash
 3913 pts/0    00:00:00 less
 3924 pts/0    00:00:00 less
 3934 pts/0    00:00:00 less
 7193 pts/0    00:00:00 top
 8509 pts/0    00:00:00 top
 9637 pts/0    00:00:00 top
12467 pts/0    00:00:00 ps
[fybscit@mithilesh Desktop]$ kill -9 3913
[fybscit@mithilesh Desktop]$ ps
  PID TTY      TIME CMD
 3004 pts/0    00:00:00 bash
 3924 pts/0    00:00:00 less
 3934 pts/0    00:00:00 less
 7193 pts/0    00:00:00 top
 8509 pts/0    00:00:00 top
 9637 pts/0    00:00:00 top
12475 pts/0    00:00:00 ps
[2]   Killed          less test
[fybscit@mithilesh Desktop]$ █

```

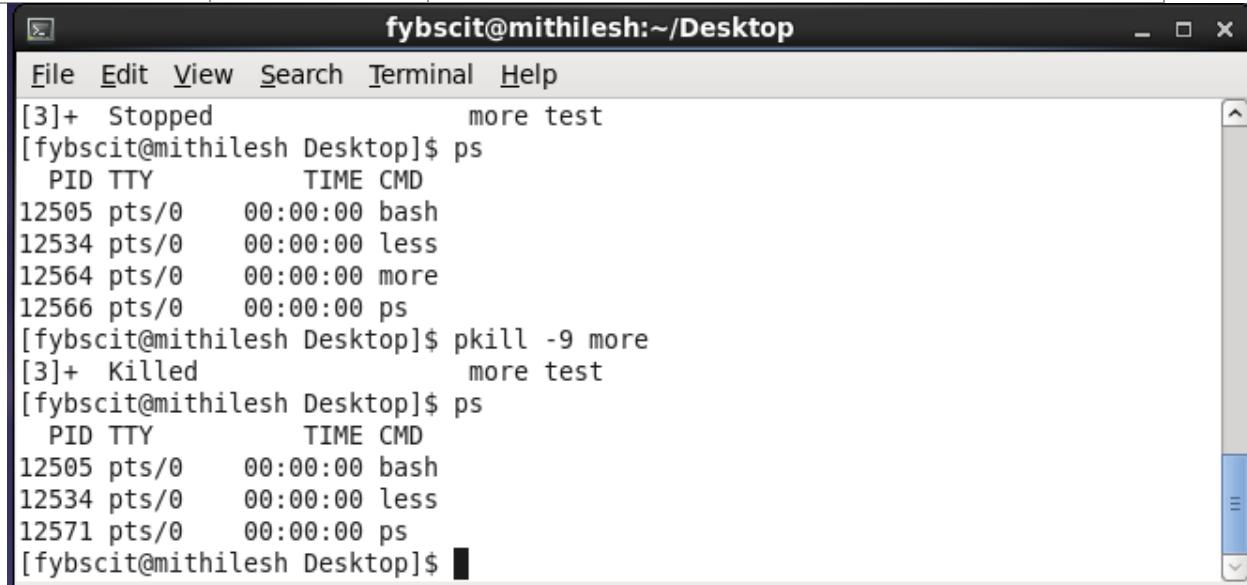
➤ Command: pkill

Kill processes by a full or partial name.

Common Kill Signals

Signal name	Signal value	Effect
SIGHUP	1	Hangup
SIGINT	2	Interrupt from keyboard
SIGQUIT	3	Quit

SIGABRT	6	Abort
SIGKILL	9	Kill signal
SIGTERM	15	Termination signal - allow an orderly shutdown
SIGSTOP	17,19,23	Stop the process



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[3]+ Stopped      more test
[fybscit@mithilesh Desktop]$ ps
  PID TTY      TIME CMD
12505 pts/0    00:00:00 bash
12534 pts/0    00:00:00 less
12564 pts/0    00:00:00 more
12566 pts/0    00:00:00 ps
[fybscit@mithilesh Desktop]$ pkill -9 more
[3]+ Killed      more test
[fybscit@mithilesh Desktop]$ ps
  PID TTY      TIME CMD
12505 pts/0    00:00:00 bash
12534 pts/0    00:00:00 less
12571 pts/0    00:00:00 ps
[fybscit@mithilesh Desktop]$ █

```

➤ Command: bg

Send to background.

Resume each suspended job *jobspec* in the background, as if it had been started with &.

Syntax

bg [jobspec ...]

➤ Command: fg

Send job to foreground. Resume *jobspec* in the foreground, and make it the current job.

Syntax

fg [jobspec ...]

➤ Command: grep

Search file(s) for specific text.

Syntax

```
grep <options> "Search String" [filename]
grep <options> [-e PATTERN] [FILE...]
grep <options> [-f FILE] [FILE...]
```

A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a menu bar with File, Edit, View, Search, Terminal, and Help. The terminal content shows:

```
[fybscit@mithilesh Desktop]$ cat >patternfile
two
five
[fybscit@mithilesh Desktop]$ grep -f patternfile test
2 two
5 five
[fybscit@mithilesh Desktop]$ grep -f patternfile *
patternfile:two
patternfile:five
test:2 two
test:5 five
[fybscit@mithilesh Desktop]$
```

A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a menu bar with File, Edit, View, Search, Terminal, and Help. The terminal content shows:

```
[fybscit@mithilesh Desktop]$ cat test
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
11 eleven
12 twelve
13 thirteen
14 fourteen
15 fifteen
[fybscit@mithilesh Desktop]$ grep "ten" test
10 ten
[fybscit@mithilesh Desktop]$ grep "seven" *
test:7 seven
[fybscit@mithilesh Desktop]$
```

➤ Command: locate

Find files. locate searches a database for all pathnames which match the specified pattern. The database is recomputed periodically, (about once a week) and contains the path-names of all files which are publicly accessible.

Syntax

locate pattern

➤ Command: find

Search a folder hierarchy for filename(s) that meet a desired criteria: Name, Size, File Type - see examples.

Syntax

find [-H] [-L] [-P] [path...] [expression]

List all the directory and sub-directory names:
\$ find . -type d

List all files in those sub-directories (but not the directory names)
\$ find . -type f

List all the file links:
\$ find . -type l

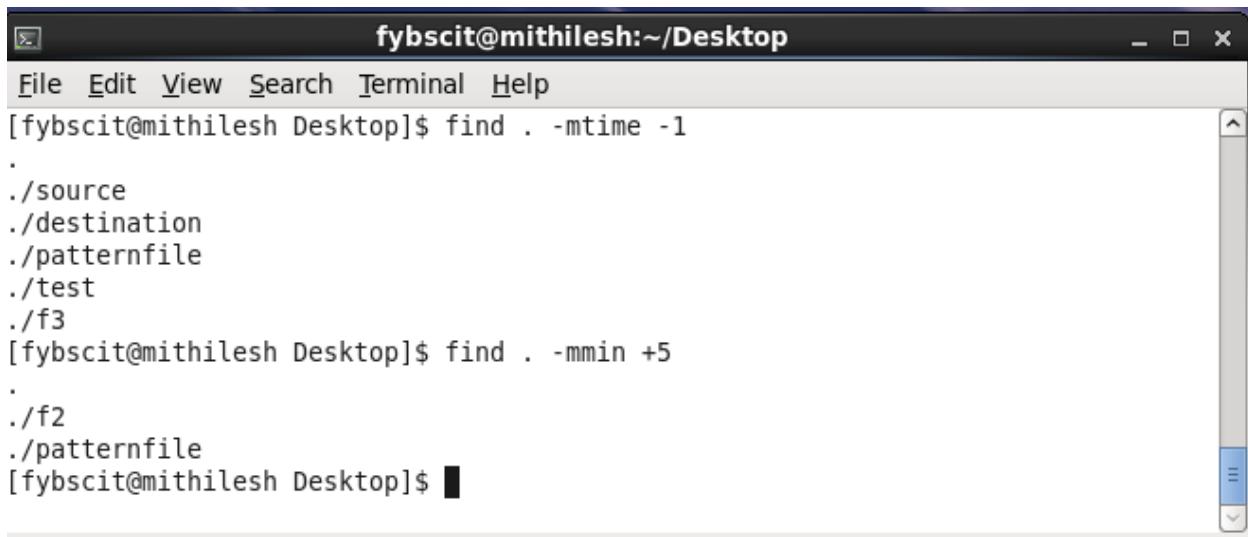
List all files (and subdirectories) in your home directory:
\$ find \$HOME

Find files that are over a gigabyte in size:
\$ find ~/Movies -size +1024M

Find files that are over 1 GB but less than 20 GB in size:
\$ find ~/Movies -size +1024M -size -20480M -print0

Find files have been modified within the last day:
\$ find ~/Movies -mtime -1

Find files have been modified within the last 30 minutes:
\$ find ~/Movies -mmin -30



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ find . -mtime -1
./source
./destination
./patternfile
./test
./f3
[fybscit@mithilesh Desktop]$ find . -mmin +5
./f2
./patternfile
[fybscit@mithilesh Desktop]$ 

```

➤ Command: date

Display or change the date.

Syntax

```

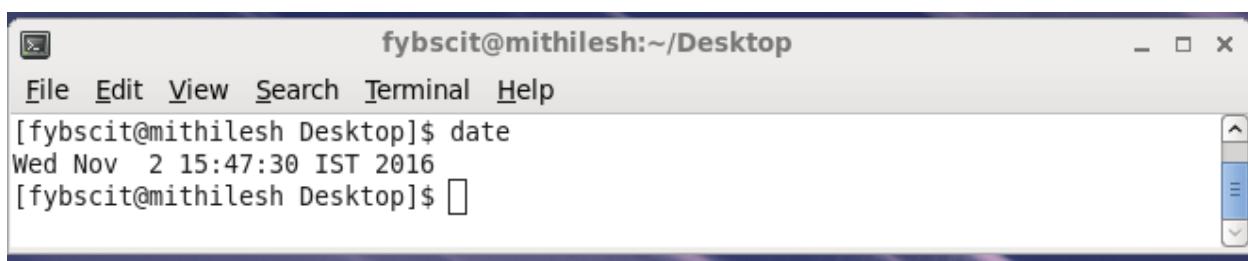
date [option]... [+Format]
date [option] [MMDHhmm[[CC]YY][.ss]]

```

'date' with no arguments prints the current time and date, in the format of the %c directive

The argument must consist entirely of digits, which have the following meaning:

MM	month
DD	day within month
HH	hour
MM	minute
CC	first two digits of year (optional)
YY	last two digits of year (optional)
SS	second (optional)



```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ date
Wed Nov 2 15:47:30 IST 2016
[fybscit@mithilesh Desktop]$ 

```

➤ Command: cal

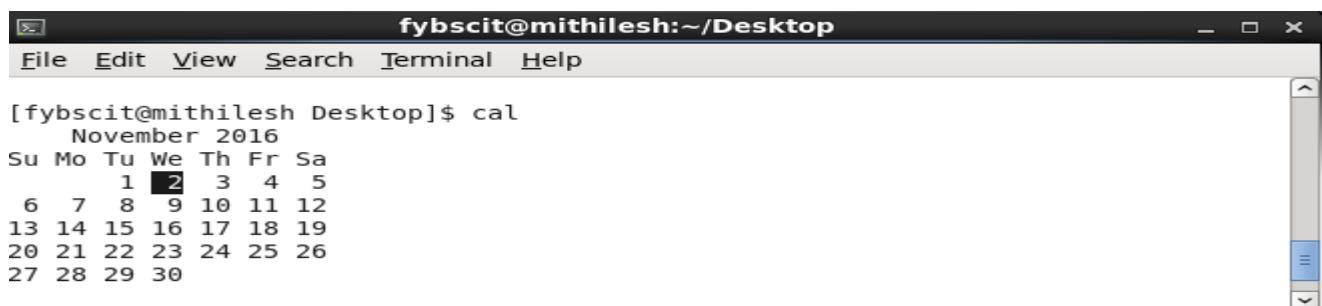
Display a calendar

Syntax

cal [-m] [[month] year]

Options:

- m Display monday as the first day of the week.
- j Display julian dates (days one-based, numbered from January 1).
- y Display a calendar for the current year.



The screenshot shows a terminal window with the title bar "fybscit@mithilesh:~/Desktop". The menu bar includes "File", "Edit", "View", "Search", "Terminal", and "Help". The command "cal" is run at the prompt "[fybscit@mithilesh Desktop]\$". The output displays the calendar for November 2016, starting with Monday as the first day of the week. The days of the month are listed in a grid format, with the 2nd highlighted in a black box.

```
[fybscit@mithilesh Desktop]$ cal
November 2016
Su Mo Tu We Th Fr Sa
      1  2  3  4  5
  6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
```

```

fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ cal -m 9 -y 2016
2016

January          February          March
Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su
      1 2 3       1 2 3 4 5 6 7       1 2 3 4 5 6
4 5 6 7 8 9 10    8 9 10 11 12 13 14    7 8 9 10 11 12 13
11 12 13 14 15 16 17  15 16 17 18 19 20 21  14 15 16 17 18 19 20
18 19 20 21 22 23 24  22 23 24 25 26 27 28  21 22 23 24 25 26 27
25 26 27 28 29 30 31  29

April            May              June
Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su
      1 2 3           1           1 2 3 4 5
4 5 6 7 8 9 10    2 3 4 5 6 7 8   6 7 8 9 10 11 12
11 12 13 14 15 16 17  9 10 11 12 13 14 15  13 14 15 16 17 18 19
18 19 20 21 22 23 24  16 17 18 19 20 21 22  20 21 22 23 24 25 26
25 26 27 28 29 30    23 24 25 26 27 28 29  27 28 29 30
30 31

July             August            September
Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su
      1 2 3           1 2 3 4 5 6 7           1 2 3 4
4 5 6 7 8 9 10    8 9 10 11 12 13 14  5 6 7 8 9 10 11
11 12 13 14 15 16 17  15 16 17 18 19 20 21  12 13 14 15 16 17 18
18 19 20 21 22 23 24  22 23 24 25 26 27 28  19 20 21 22 23 24 25
25 26 27 28 29 30 31  29 30 31 30 31 30 31

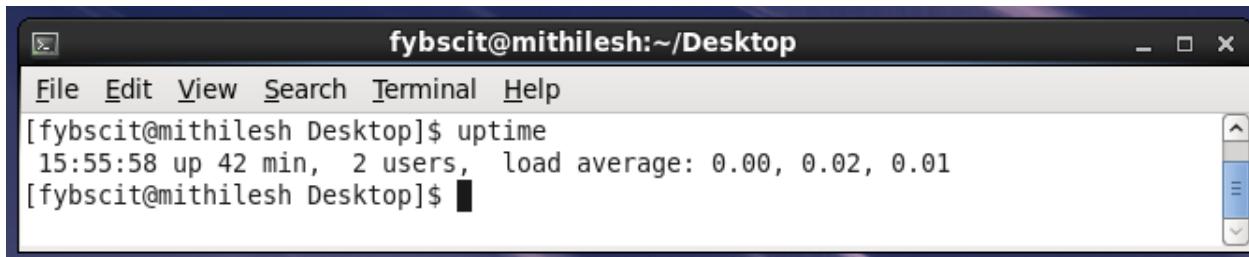
October          November          December
Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su   Mo Tu We Th Fr Sa Su
      1 2           1 2 3 4 5 6           1 2 3 4
3 4 5 6 7 8 9    7 8 9 10 11 12 13  5 6 7 8 9 10 11
10 11 12 13 14 15 16  14 15 16 17 18 19 20  12 13 14 15 16 17 18
17 18 19 20 21 22 23  21 22 23 24 25 26 27  19 20 21 22 23 24 25
24 25 26 27 28 29 30  28 29 30 31 31 31 31
31

[fybscit@mithilesh Desktop]$

```

➤ **Command: uptime**

Show uptime



```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ uptime
15:55:58 up 42 min, 2 users, load average: 0.00, 0.02, 0.01
[fybscit@mithilesh Desktop]$
```

➤ **Command: who**

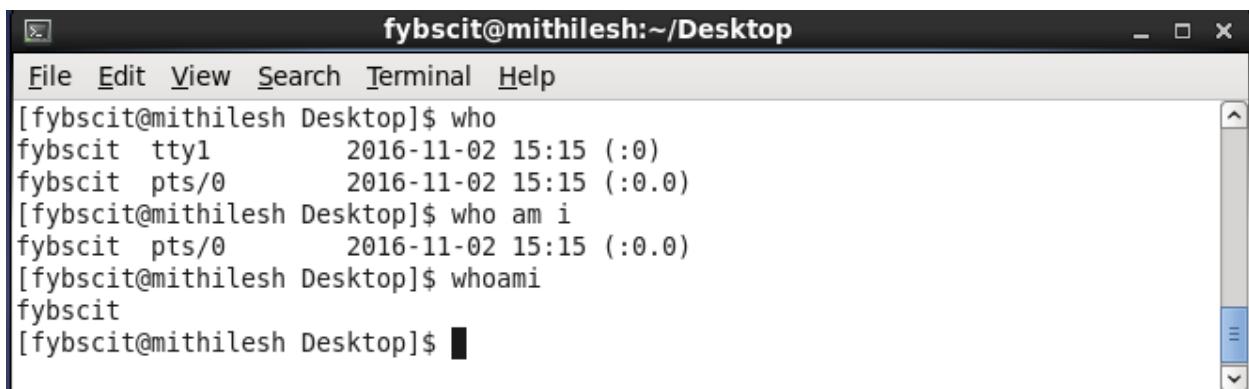
Print all usernames currently logged on, showing for each user the login name, tty name, the date and time of login, and hostname if not local.

Syntax

who [-mTuH] [file]
who am i

Options

- m Only print information about the current terminal.
This is the POSIX way of saying who am i.
- T Print a character after the user name indicating the state of the terminal line: `+' if the terminal is writable; `-' if it is not; and `?' if a bad line is encountered.
- u Print the idle time for each user.
- H Write column headings above the regular output.
- am I Returns the invoker's real user name.



```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ who
fybscit  ttym1          2016-11-02 15:15 (:0)
fybscit  pts/0          2016-11-02 15:15 (:0.0)
[fybscit@mithilesh Desktop]$ who am i
fybscit  pts/0          2016-11-02 15:15 (:0.0)
[fybscit@mithilesh Desktop]$ whoami
fybscit
[fybscit@mithilesh Desktop]$
```

➤ Command: finger

- user information lookup program

Syntax

finger [-lmsp] [user ...] [user@host ...]

DESCRIPTION

The **finger** displays information about the system users.

➤ Command: uname

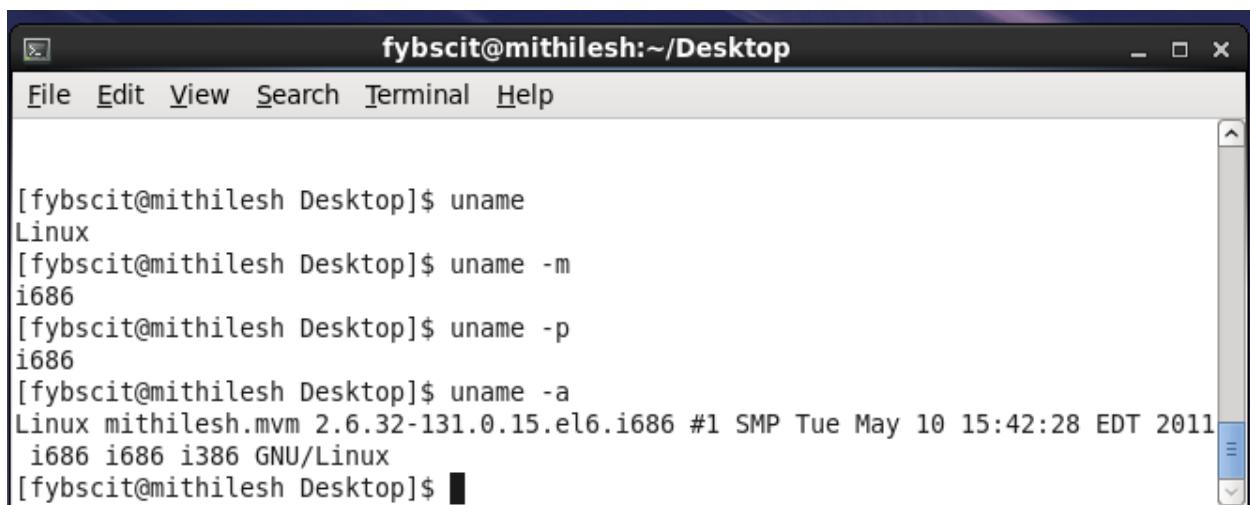
Print system information, print information about the machine and operating system it is run on. If no options are given, 'uname' acts as if the '-s' option were given.

Syntax

uname [options]...

Options

- a Print all of the below information.
- m Print the machine (hardware) type.
- n Print the machine's network node hostname.
- p Print the machine's processor type
- r Print the kernel release
- s Print the kernel name
- v Print the kernel version
- I Print the hardware platform or "unknown"
- o Print the operating system



A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a standard Linux desktop interface with a title bar, menu bar, and scroll bars. The terminal session shows the following commands and their output:

```
[fybscit@mithilesh Desktop]$ uname
Linux
[fybscit@mithilesh Desktop]$ uname -m
i686
[fybscit@mithilesh Desktop]$ uname -p
i686
[fybscit@mithilesh Desktop]$ uname -a
Linux mithilesh.mvm 2.6.32-131.0.15.el6.i686 #1 SMP Tue May 10 15:42:28 EDT 2011
i686 i686 i386 GNU/Linux
[fybscit@mithilesh Desktop]$
```

➤ Command: man

man is the interface used to view the system's reference manuals.

man formats and displays the on-line manual pages. If you specify section, **man** only looks in that section of the manual. **name** is normally the name of the manual page, which is typically the name of a command, function, or file.

➤ Command: du

Disk Usage - report the amount of disk space used by the specified files and for each subdirectory.

Syntax

du [options]... [file]...

With no arguments, `du' reports the disk space for the current directory. Normally the disk space is printed in units of 1024 bytes, but this can be overridden

OPTIONS

- a Show counts for all files, not just directories.
- b Print sizes in bytes, overriding the default block size (*note Block size::).
- c Print a grand total of all arguments after all arguments have been processed. This can be used to find out the total disk usage of a given set of files or directories.



The screenshot shows a terminal window titled "fybscit@mithilesh:~/Desktop". The window contains the following command-line session:

```
[fybscit@mithilesh Desktop]$ du
20 .
[fybscit@mithilesh Desktop]$ du -a
4 ./source
0 ./f2
4 ./destination
4 ./patternfile
4 ./test
0 ./f3
20 .
[fybscit@mithilesh Desktop]$ du -b
4342 .
[fybscit@mithilesh Desktop]$ du -c
20 .
20     total
[fybscit@mithilesh Desktop]$
```

➤ Command: df

Disk Free - display free disk space.
With no arguments, `df' reports the space used and available on all currently mounted filesystems (of all types). Otherwise, `df' reports on the filesystem containing each argument file.

SYNTAX

df [option] [file]

Normally the disk space is printed in units of 1024 bytes, but this can be overridden.

OPTIONS

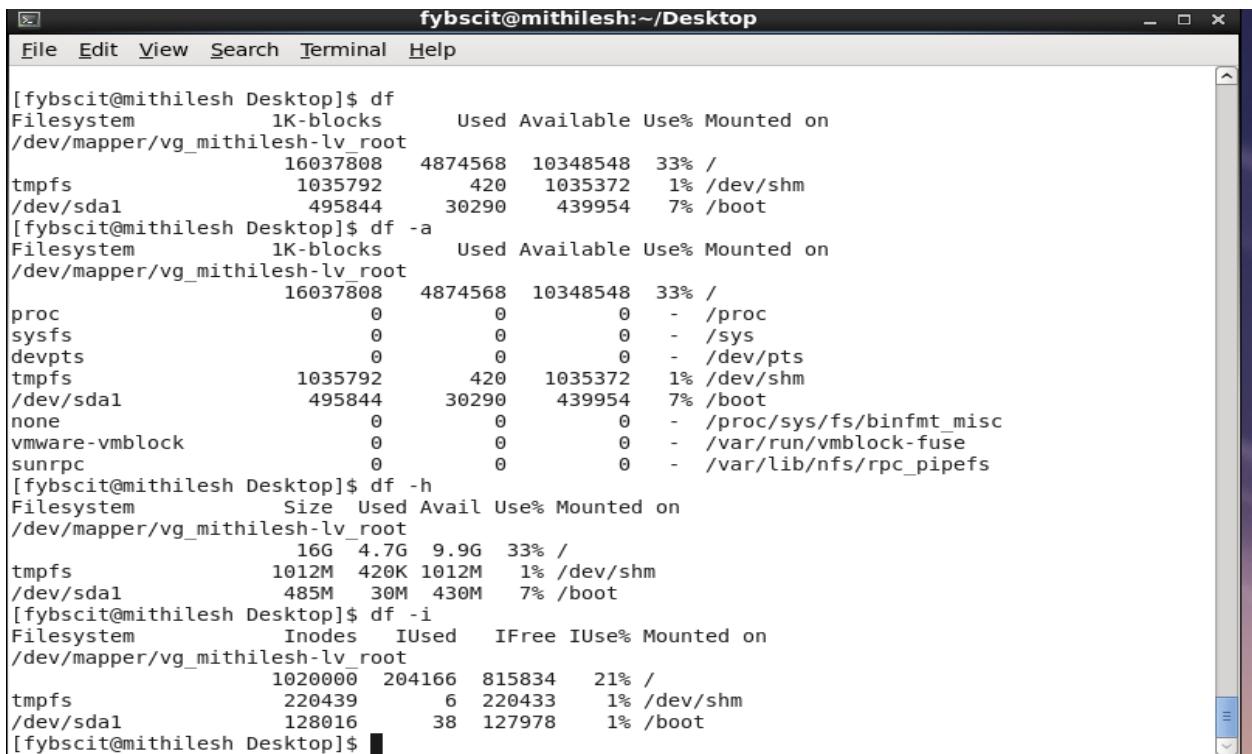
-a Include in the listing filesystems that have a size of 0 blocks, which are omitted by default. Such filesystems are typically special-purpose pseudo-filesystems, such as automounter entries. Also, filesystems of type "ignore" or "auto", supported by some operating systems, are only included if this option is specified.

-h Append a size letter such as 'M' for megabytes to each size. Powers of 1024 are used, not 1000; 'M' stands for 1,048,576 bytes. Use the '-H' or '--si' option if you prefer powers of 1000.

-I List inode usage information instead of block usage. An inode (short for index node) is contains information about a file such as its owner, permissions, timestamps, and location on the disk.

-k Print sizes in 1024-byte blocks, overriding the default block size.

-m Print sizes in megabyte (that is, 1,048,576-byte) blocks.



```
[fybscit@mithilesh Desktop]$ df
Filesystem      1K-blocks  Used Available Use% Mounted on
/dev/mapper/vg_mithilesh-lv_root    16037808  4874568  10348548  33% /
tmpfs            1035792     420   1035372   1% /dev/shm
/dev/sda1        495844    30290    439954   7% /boot
[fybscit@mithilesh Desktop]$ df -a
Filesystem      1K-blocks  Used Available Use% Mounted on
/dev/mapper/vg_mithilesh-lv_root    16037808  4874568  10348548  33% /
proc              0         0       0   - /proc
sysfs             0         0       0   - /sys
devpts             0         0       0   - /dev/pts
tmpfs            1035792     420   1035372   1% /dev/shm
/dev/sda1        495844    30290    439954   7% /boot
none              0         0       0   - /proc/sys/fs/binfmt_misc
vmware-vmblock      0         0       0   - /var/run/vmblock-fuse
sunrpc             0         0       0   - /var/lib/nfs/rpc_pipefs
[fybscit@mithilesh Desktop]$ df -h
Filesystem           Size  Used Avail Use% Mounted on
/dev/mapper/vg_mithilesh-lv_root    16G  4.7G  9.9G  33% /
tmpfs                1012M  420K  1012M   1% /dev/shm
/dev/sda1            485M   30M  430M   7% /boot
[fybscit@mithilesh Desktop]$ df -i
Filesystem      Inodes  IUsed   IFree IUse% Mounted on
/dev/mapper/vg_mithilesh-lv_root    1020000  204166  815834  21% /
tmpfs            220439     6  220433   1% /dev/shm
/dev/sda1        128016    38  127978   1% /boot
[fybscit@mithilesh Desktop]$
```

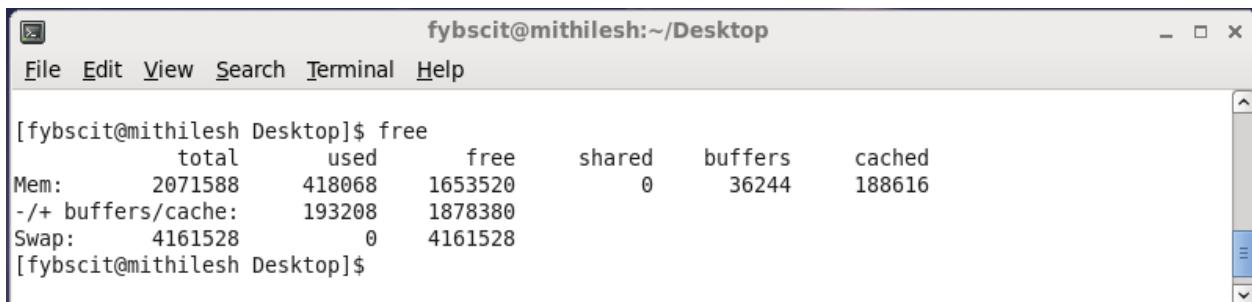
➤ Command: free

free is a command which can give us valuable information on available RAM in Linux machine. But many new Linux users and admins misinterpret its output. In this post we will walk through its output format and show you actual free RAM.

Line 1: Indicates Memory details like total available RAM, used RAM, Shared RAM, RAM used for buffers, RAM used of caching content.

Line 2: Indicates total buffers/Cache used and free.

Line 3: Indicates total swap memory available, used swap and free swap memory size available.



```
[fybscit@mithilesh Desktop]$ free
total        used        free      shared  buffers   cached
Mem:      2071588     418068    1653520          0     36244   188616
-/+ buffers/cache:  193208    1878380
Swap:        4161528          0    4161528
[fybscit@mithilesh Desktop]$
```

➤ Command: whereis

Search \$path, man pages and source files for an application file.

The supplied filenames are first stripped of leading pathname components and any (single) trailing extension of the form .ext (for example, .c). Prefixes of s. resulting from use of source code control are also dealt with. whereis then attempts to locate the desired program in a list of standard Linux directories (e.g., /bin, /etc, /usr/bin, /usr/local/bin/, etc.).

Syntax

whereis [options] files



```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ whereis ls
ls: /bin/ls /usr/share/man/man1p/ls.1p.gz /usr/share/man/man1/ls.1.gz
[fybscit@mithilesh Desktop]$ whereis cd
cd: /usr/share/man/man1p/cd.1p.gz /usr/share/man/man1/cd.1.gz
[fybscit@mithilesh Desktop]$
```

➤ Command: which

Locate a program file in the user's path.

For each of its arguments which prints to stdout the full path of the executable(s). It does this by searching the directories listed in the environment variable PATH.

Syntax

which [options] [--] program_name [...]



```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ which ls
alias ls='ls --color=auto'
/bin/ls
[fybscit@mithilesh Desktop]$ which cd
/usr/bin/which: no cd in (/usr/lib/qt-3.3/bin:/usr/local/bin:/usr/bin:/bin:/usr/local/sbin:/usr/sbin:/sbin:/home/fybscit/bin:/home/fybscit/bin)
[fybscit@mithilesh Desktop]$
```

➤ Command: tar

*The **tar** program is used to create, maintain, modify, and extract files that are archived in the **tar** format.*

For example, the following commands are all equivalent:

```
tar --create --file=archive.tar file1 file2
```

```
tar -c -f archive.tar file1 file2
```

```
tar -cf archive.tar file1 file2
```

```
tar cf archive.tar file1 file2
```

Functions

Specifying one of the following functions selects what **tar**'s main mode of operation will be:

A, --catenate, --concatenate	Append tar files to an archive.
c, --create	Create a new archive.
d, --diff, --compare	Calculate any differences between the archive and the file system.
--delete	Delete from the archive. (This function doesn't work on magnetic tapes).
r, --append	Append files to the end of a tar archive.
t, --list	List the contents of an archive.
--test-label	Test the archive label, and exit.
u, --update	Append files, but only those that are newer than the copy in the archive.
x, --extract, --get	Extract files from an archive.

The screenshot shows a Linux desktop environment with three windows:

- Terminal Window 1:** Shows the command line history:


```
[fybscit@mithilesh Desktop]$ ls
f2 f3 patternfile tartest.tar untitled folder
[fybscit@mithilesh Desktop]$ tar -xf tartest.tar
[fybscit@mithilesh Desktop]$ ls
f2 f3 patternfile source tartest.tar test untitled folder
[fybscit@mithilesh Desktop]$
```
- File Manager Window:** Titled "tartest.tar", it lists the contents of the tar archive:

Name	Size	Type	Date Modified
source	56 bytes	unknown	02 November 2016,...
test	125 bytes	unknown	02 November 2016,...

2 objects (181 bytes)
- Terminal Window 2:** Shows the command used to create the tar archive:


```
[fybscit@mithilesh Desktop]$ tar -c -f tartest.tar test source
[fybscit@mithilesh Desktop]$
[fybscit@mithilesh Desktop]$
```

➤ Command: gzip

gzip reduces the size of the named files using Lempel-Ziv coding (LZ77).

Compress or decompress named file(s)

SYNTAX

gzip options ...

OPTIONS

-c Write output on standard output; keep original files unchanged. If there are several input files, the output consists of a sequence of independently compressed members. To obtain better compression, concatenate all input files before compressing them.

-d Decompress.

-f Force compression or decompression even if the file has multiple links or the corresponding file already exists, or if the compressed data is read from or written to a terminal. If the input data is not in a format recognized by `gzip', and if the option

-h Print a help message describing the options, then quit.

```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ ls
f2 f3 patternfile source test
[fybscit@mithilesh Desktop]$ gzip -c test >a1.gz
[fybscit@mithilesh Desktop]$ ls
a1.gz f2 f3 patternfile source test
[fybscit@mithilesh Desktop]$
```

```
fybscit@mithilesh:~/Desktop
File Edit View Search Terminal Help
[fybscit@mithilesh Desktop]$ ls
a1.gz f2 f3 patternfile source
[fybscit@mithilesh Desktop]$ gzip -d a1.gz
[fybscit@mithilesh Desktop]$ ls
a1 f2 f3 patternfile source
[fybscit@mithilesh Desktop]$
```

Practical 6

Aim: Windows (DOS) Commands – 1

- a. Date, time, prompt, md, cd, rd, path.
- b. Chkdsk, copy, xcopy, format, fdisk, cls, defrag, del, move.

Command: DATE

Display or change the date.

Syntax

to display the date

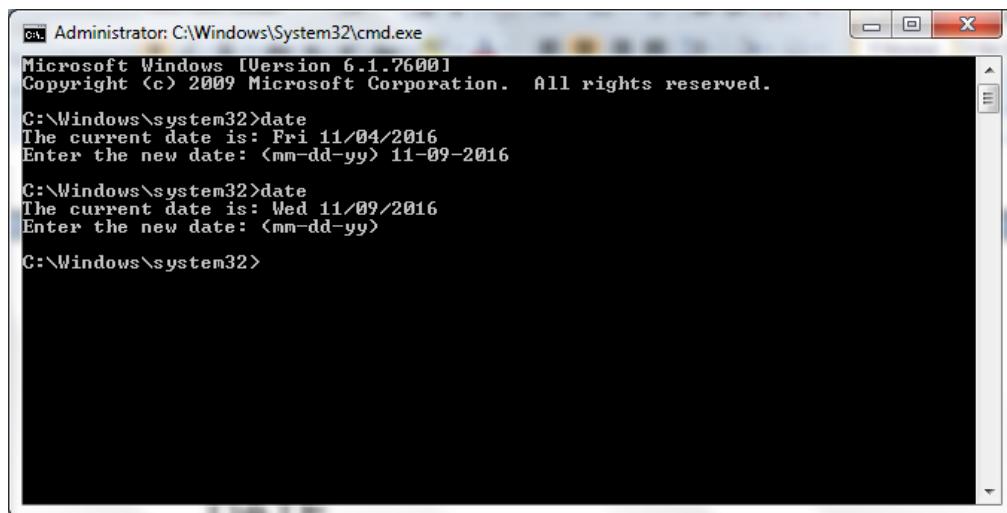
DATE /T

to set the system date

DATE

or

DATE <date_today>



The screenshot shows a Windows Command Prompt window titled "Administrator: C:\Windows\System32\cmd.exe". The window displays the following text:

```
Microsoft Windows [Version 6.1.7600]
Copyright © 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>date
The current date is: Fri 11/04/2016
Enter the new date: <mm-dd-yy> 11-09-2016

C:\Windows\system32>date
The current date is: Wed 11/09/2016
Enter the new date: <mm-dd-yy>

C:\Windows\system32>
```

➤ Command: TIME

Display or set the system time.

Syntax

TIME [new_time]

TIME

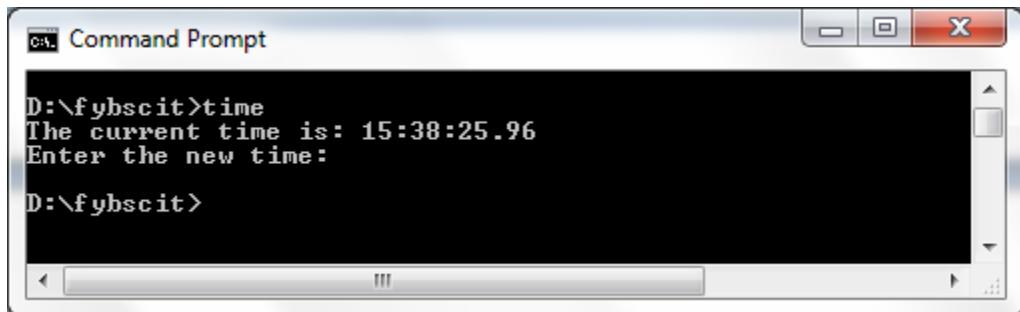
TIME /T

key

new_time : The time as HH:MM

TIME with no parameters will display the current time and prompt for a new value. Pressing ENTER will keep the same time.

/T : Just display the time, formatted according to the current Regional settings.



➤ Command: PROMPT

Change the cmd.exe command prompt.

Syntax

PROMPT [text]

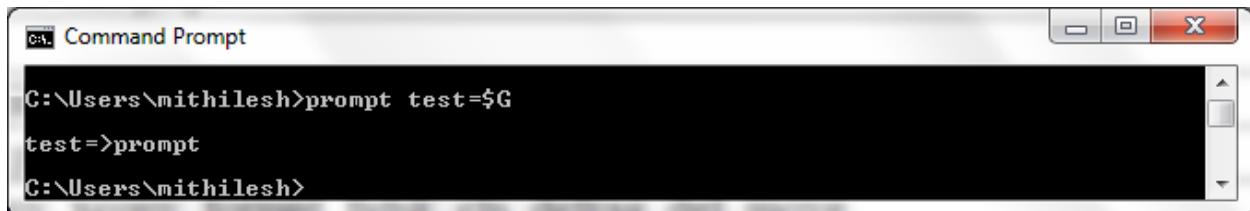
Key

text : a text string.

The prompt text can be made up of normal characters and the following special codes:

\$A & (Ampersand)
 \$B | (pipe)
 \$C ((Left parenthesis)
 \$D Current date
 \$E Escape code (ASCII code 27)
 \$F) (Right parenthesis)
\$G > (greater-than sign)
 \$H Backspace (erases previous character)
 \$L < (less-than sign)
 \$M Display the remote name for Network drives
 \$N Current drive
\$P Current drive and path
 \$Q = (equal sign)
 \$S (space)
 \$T Current time
 \$V Windows NT version number
 \$_ Carriage return and linefeed

The default prompt is \$P\$G (drive/path followed by >)



➤ Command: MD

Make Directory - Creates a new folder.

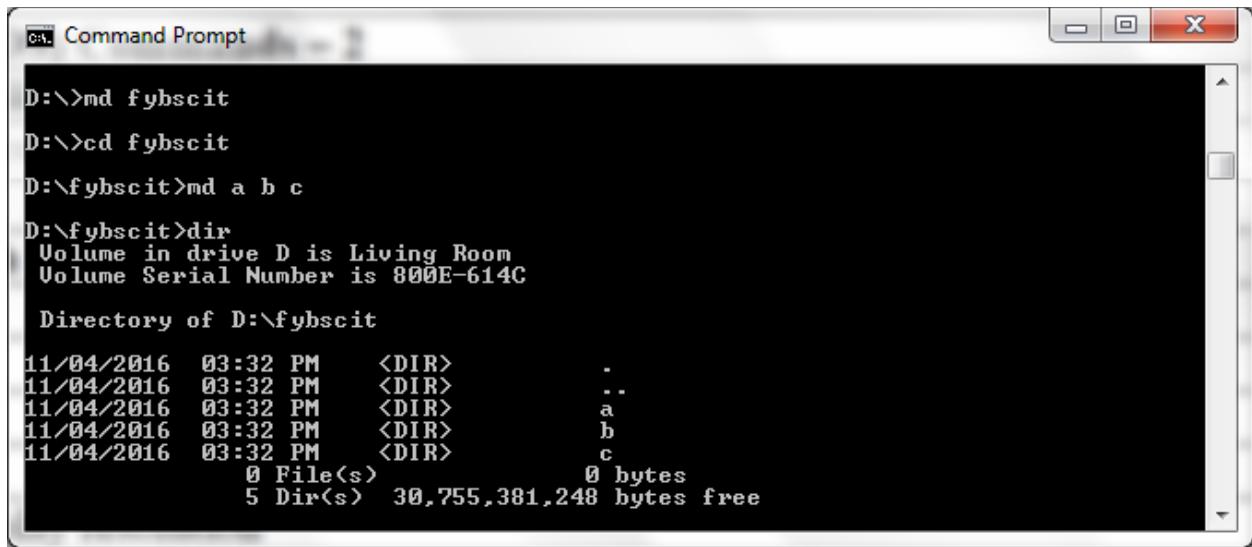
Syntax

MD [drive:]path

Key

The path can consist of any valid characters up to the maximum path length available

You should avoid using the following characters in folder names - they are known to cause problems © ® " - & ' ^ () and @



```
D:\>md fybscit
D:\>cd fybscit
D:\fybscit>md a b c
D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  03:32 PM    <DIR>      .
11/04/2016  03:32 PM    <DIR>      ..
11/04/2016  03:32 PM    <DIR>      a
11/04/2016  03:32 PM    <DIR>      b
11/04/2016  03:32 PM    <DIR>      c
               0 File(s)   0 bytes
               5 Dir(s)  30,755,381,248 bytes free
```

➤ Command: RD

Delete folder(s)

Syntax

RD pathname
 RD /S pathname
 RD /S /Q pathname

Key

/S : Delete all files and subfolders in addition to the folder itself.

Use this to remove an entire folder tree.

/Q : Quiet - do not display Y/N confirmation

Place any long pathnames in double quotes.

RD will only delete an empty folder.

RD /Q will *silently* fail to delete any folders that are not empty.

RD /S will delete subfolders even if they contain files.

RD does not support wildcards but you can remove multiple folders in one command:

RD C:\docs\Jan C:\docs\Feb "C:\My Documents\Mar"

```

D:\fybscit>dir
Volume in drive D is Living Room
Volume Serial Number is 800E-614C

Directory of D:\fybscit

11/04/2016  03:32 PM    <DIR>      .
11/04/2016  03:32 PM    <DIR>      ..
11/04/2016  03:32 PM    <DIR>      a
11/04/2016  03:32 PM    <DIR>      b
11/04/2016  03:32 PM    <DIR>      c
              0 File(s)   0 bytes
              5 Dir(s)  30,755,258,368 bytes free

D:\fybscit>rd a

D:\fybscit>dir
Volume in drive D is Living Room
Volume Serial Number is 800E-614C

Directory of D:\fybscit

11/04/2016  03:37 PM    <DIR>      .
11/04/2016  03:37 PM    <DIR>      ..
11/04/2016  03:32 PM    <DIR>      b
11/04/2016  03:32 PM    <DIR>      c
              0 File(s)   0 bytes
              4 Dir(s)  30,755,258,368 bytes free

D:\fybscit>rd b c

D:\fybscit>dir
Volume in drive D is Living Room
Volume Serial Number is 800E-614C

Directory of D:\fybscit

11/04/2016  03:37 PM    <DIR>      .
11/04/2016  03:37 PM    <DIR>      ..
              0 File(s)   0 bytes
              2 Dir(s)  30,755,258,368 bytes free

D:\fybscit>

```

➤ Command: PATH

Display or set a search path for executable files

Syntax

PATH pathname [;pathname] [;pathname] [;pathname]...

Key

pathname : drive letter and/or folder

PATH without parameters will display the current path.

```

D:\fybscit>path
PATH=C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Program Files\Microsoft SQL Server\100\Tools\Binn\;C:\Program Files\Microsoft SQL Server\100\DTS\Binn\;C:\Program Files\PuTTY\
D:\fybscit>javac
'javac' is not recognized as an internal or external command,
operable program or batch file.
D:\fybscit>path=C:\Program Files\Java\jdk1.7.0\bin
D:\fybscit>javac
Usage: javac <options> <source files>
where possible options include:
  -g                           Generate all debugging info
  -g:none                      Generate no debugging info
  -g:{lines,vars,source}        Generate only some debugging info
  -nowarn                      Generate no warnings
  -verbose                     Output messages about what the compiler is doing
  -deprecation                 Output source locations where deprecated APIs are u
sed
  -classpath <path>           Specify where to find user class files and annotati
on processors
  -cp <path>                   Specify where to find user class files and annotati
on processors
  -sourcepath <path>          Specify where to find input source files
  -bootclasspath <path>       Override location of bootstrap class files
  -extdirs <dirs>              Override location of installed extensions
  -endorseddirs <dirs>        Override location of endorsed standards path
  -proc:{none,only}            Control whether annotation processing and/or compil
ation is done.
  -processor <class1>[,<class2>,<class3>...] Names of the annotation processors
  to run; bypasses default discovery process
  -processorpath <path>        Specify where to find annotation processors
  -d <directory>               Specify where to place generated class files
  -s <directory>               Specify where to place generated source files
  -implicit:{none,class}      Specify whether or not to generate class files for
implicitly referenced files
  -encoding <encoding>         Specify character encoding used by source files
  -source <release>            Provide source compatibility with specified release

```

➤ Command: chkdsk

Check Disk - check and repair disk problems

Syntax

CHKDSK [drive:][[path]filename] [/F] [/V] [/R] [/L[:size]]

Key

[*drive:*] The drive to check.

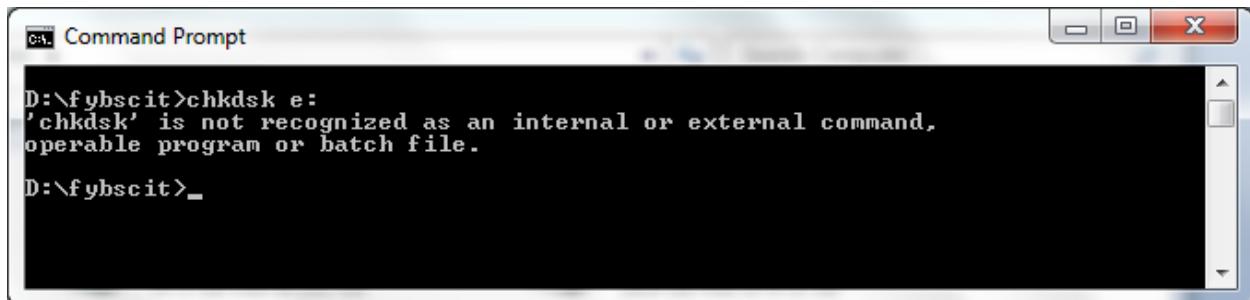
filename File(s) to check for fragmentation (FAT only).

/F Automatically Fix file system errors on the disk.

- /X Fix file system errors on the disk, (Win2003 and above)
dismounts the volume first, closing all open file handles.
- /R Scan for and attempt Recovery of bad sectors.
- /V Display the full path and name of every file on the disk.
- /L:size NTFS only: change the log file size to the specified number of kilobytes.
If size is not specified, displays the current log size and the drive type (FAT or NTFS).
- /C Skip directory corruption checks.
- /I Skip corruption checks that compare directory entries to the file record segment (FRS) in the volume's master file table (MFT)

Example:

CHKDSK C: /F



The screenshot shows a Windows Command Prompt window titled "Command Prompt". The window has a standard Windows title bar with minimize, maximize, and close buttons. The main area of the window is a black terminal window. At the top left, it shows the command prompt "D:\fybscit>". The user typed "chkdsk e:" and received an error message: "'chkdsk' is not recognized as an internal or external command, operable program or batch file." Below this, the prompt "D:\fybscit>" appears again, followed by a blank line. The window has scroll bars on the right side.

```

Administrator: Command Prompt
D:\>chkdsk e:
The type of the file system is NTFS.
Volume label is Library.

WARNING! F parameter not specified.
Running CHKD$K in read-only mode.

CHKDSK is verifying files (stage 1 of 3)...
 39168 file records processed.
File verification completed.
 11 large file records processed.
 0 bad file records processed.
 0 EA records processed.
 0 reparse records processed.
CHKDSK is verifying indexes (stage 2 of 3)...
 45336 index entries processed.
Index verification completed.
 0 unindexed files scanned.
 0 unindexed files recovered.
CHKDSK is verifying security descriptors (stage 3 of 3)...
 39168 file SDs/SIDs processed.
Security descriptor verification completed.
 3085 data files processed.
CHKDSK is verifying Usn Journal...
 26006704 USN bytes processed.
Usn Journal verification completed.
Windows has checked the file system and found no problems.

102399999 KB total disk space.
 84804752 KB in 23025 files.
   8212 KB in 3086 indexes.
    0 KB in bad sectors.
  133855 KB in use by the system.
   65536 KB occupied by the log file.
 17453180 KB available on disk.

    4096 bytes in each allocation unit.
 255999999 total allocation units on disk.
 4363295 allocation units available on disk.

D:\>

```

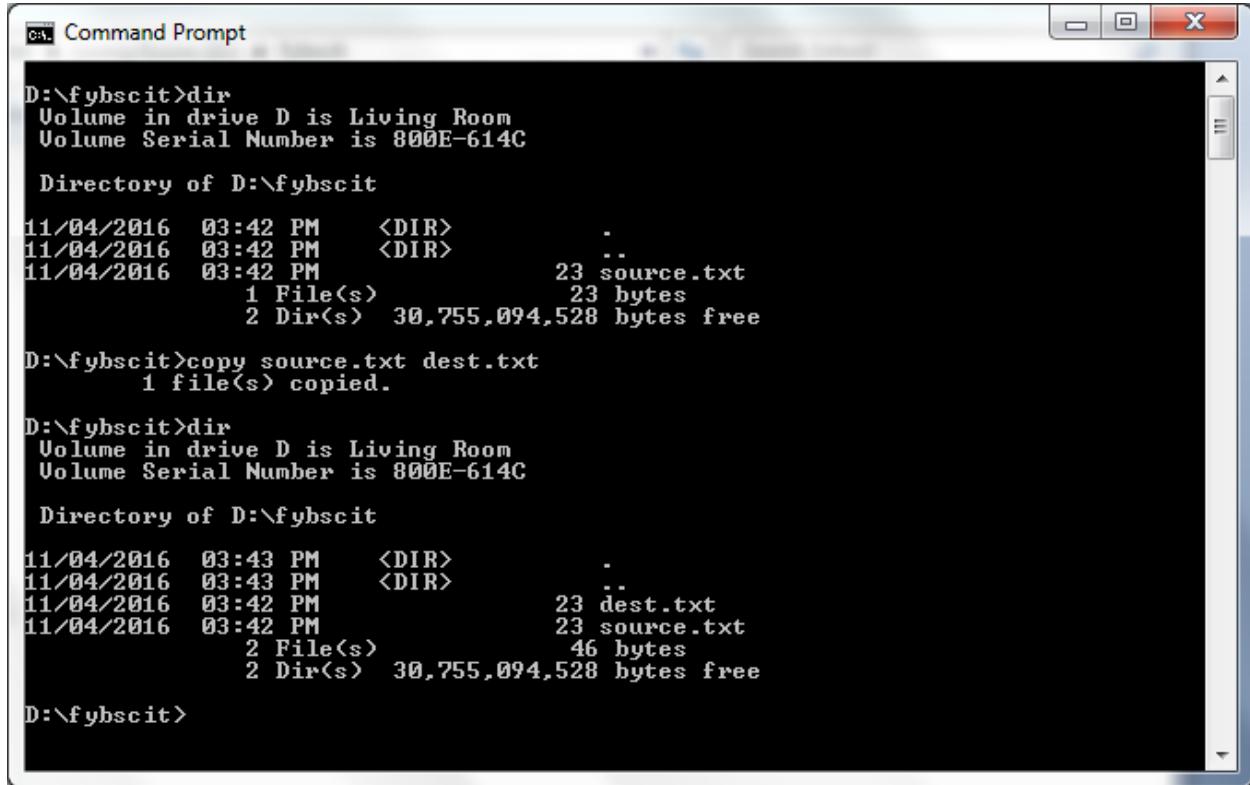
➤ Command: COPY

Copy one or more files to another location.

Syntax

COPY [options] [/A|/B] source [/A|/B] [+ source2 [/A|/B]...] [destination [/A|/B]]

COPY source1 + source2.. destination [options]



```

C:\ Command Prompt

D:\fybscit>dir
Volume in drive D is Living Room
Volume Serial Number is 800E-614C

Directory of D:\fybscit

11/04/2016  03:42 PM    <DIR>      .
11/04/2016  03:42 PM    <DIR>      ..
11/04/2016  03:42 PM                23 source.txt
                           1 File(s)       23 bytes
                           2 Dir(s)  30,755,094,528 bytes free

D:\fybscit>copy source.txt dest.txt
      1 file(s) copied.

D:\fybscit>dir
Volume in drive D is Living Room
Volume Serial Number is 800E-614C

Directory of D:\fybscit

11/04/2016  03:43 PM    <DIR>      .
11/04/2016  03:43 PM    <DIR>      ..
11/04/2016  03:42 PM                23 dest.txt
11/04/2016  03:42 PM                23 source.txt
                           2 File(s)       46 bytes
                           2 Dir(s)  30,755,094,528 bytes free

D:\fybscit>

```

➤ Command: XCOPY

Copy files and/or directory trees to another folder. XCOPY is similar to the COPY command except that it has additional switches to specify both the source and destination in detail.

Syntax

`XCOPY source [destination] [options]`

FORMAT.com

Format a disk for use with Windows.

Syntax

`FORMAT volume [/FS:file-system] [/V:label] [/Q] [/L] [/A:size] [/C] [/I:state] [/X] [/P:passes] [/S:state]`

`FORMAT volume [/V:label] [/Q] [/F:size] [/P:passes]`

`FORMAT volume [/V:label] [/Q] [/T:tracks /N:sectors] [/P:passes]`

`FORMAT volume [/V:label] [/Q] [/P:passes]`

`FORMAT volume [/Q]`

➤ Command: FDISK

The FDisk utility is no longer supplied with recent Windows operating systems.

To reset disk partition information - boot using the install CD and choose the install/repair option.

Command: DEFrag

Defragment hard drive.

Syntax

DEFRAG <volume> [-a] [-f] [-v] [-?]

Options

volume drive letter or mount point (d: or d:\vol\mountpoint)

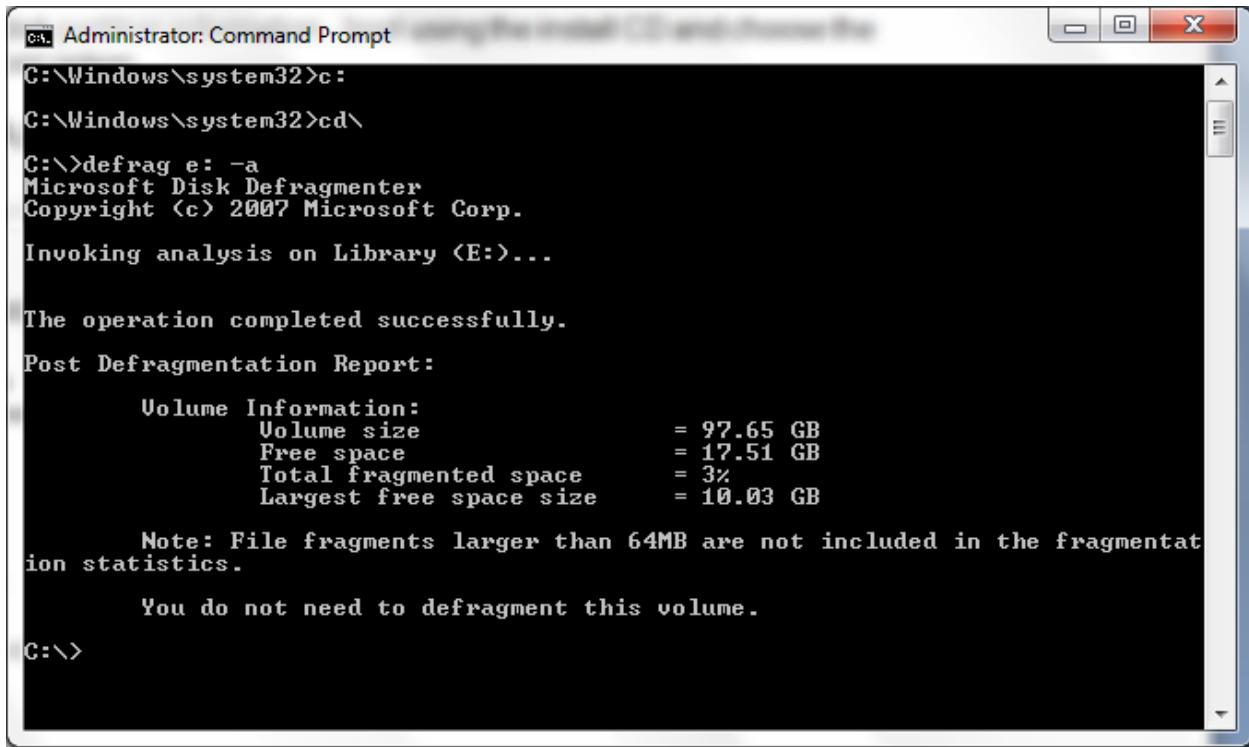
-a Analyze only

-f Force defragmentation even if free space is low

-v Verbose output

Example:

DEFRAG c:



```
C:\> Administrator: Command Prompt
C:\Windows\system32>c:
C:\Windows\system32>cd\
C:\>defrag e: -a
Microsoft Disk Defragmenter
Copyright (c) 2007 Microsoft Corp.

Invoking analysis on Library (E:)... 

The operation completed successfully.

Post Defragmentation Report:

    Volume Information:
        Volume size          = 97.65 GB
        Free space           = 17.51 GB
        Total fragmented space = 3%
        Largest free space size = 10.03 GB

    Note: File fragments larger than 64MB are not included in the fragmentation statistics.

    You do not need to defragment this volume.

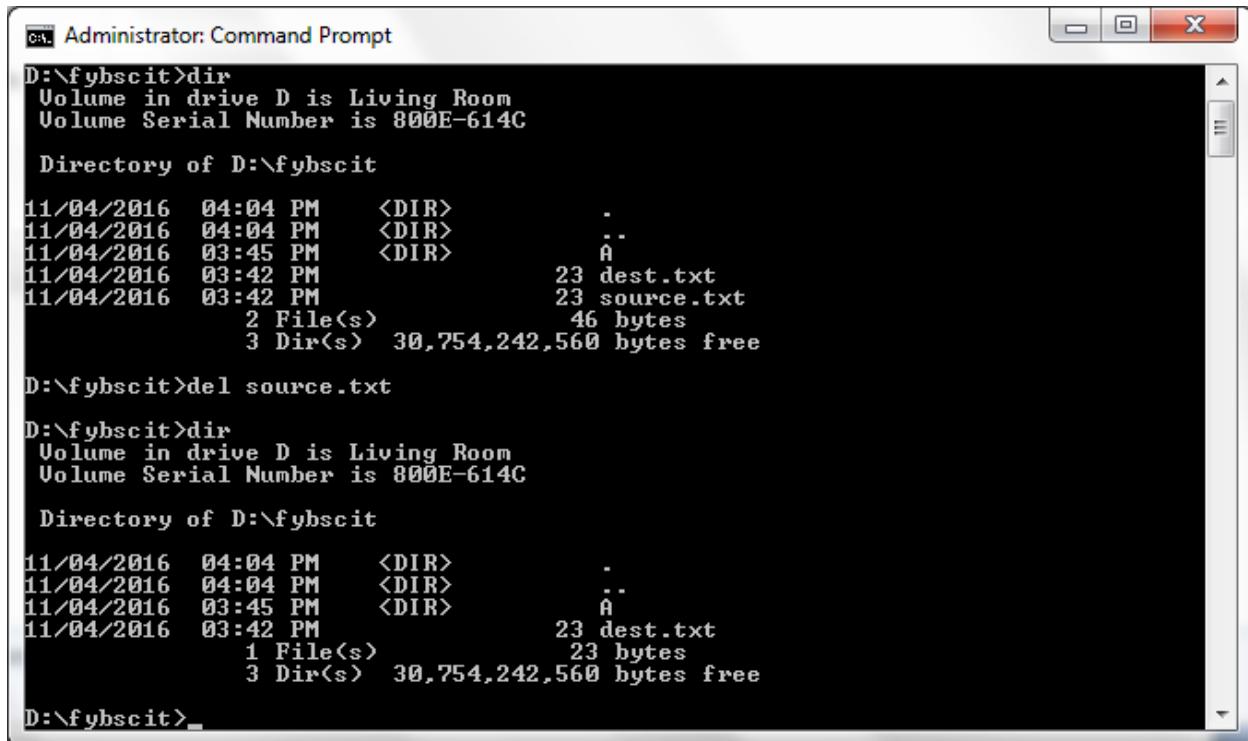
C:\>
```

➤ Command: DEL

Delete one or more files.

Syntax

DEL [options] [/A:file_attributes] files_to_delete



```

Administrator: Command Prompt
D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  04:04 PM    <DIR> .
11/04/2016  04:04 PM    <DIR> ..
11/04/2016  03:45 PM    <DIR>   A
11/04/2016  03:42 PM            23 dest.txt
11/04/2016  03:42 PM            23 source.txt
                           2 File(s)   46 bytes
                           3 Dir(s)  30,754,242,560 bytes free

D:\fybscit>del source.txt

D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  04:04 PM    <DIR> .
11/04/2016  04:04 PM    <DIR> ..
11/04/2016  03:45 PM    <DIR>   A
11/04/2016  03:42 PM            23 dest.txt
                           1 File(s)   23 bytes
                           3 Dir(s)  30,754,242,560 bytes free

D:\fybscit>_

```

➤ Command: MOVE

Move a file from one folder to another

Syntax

MOVE [options] [Source] [Target]

Key

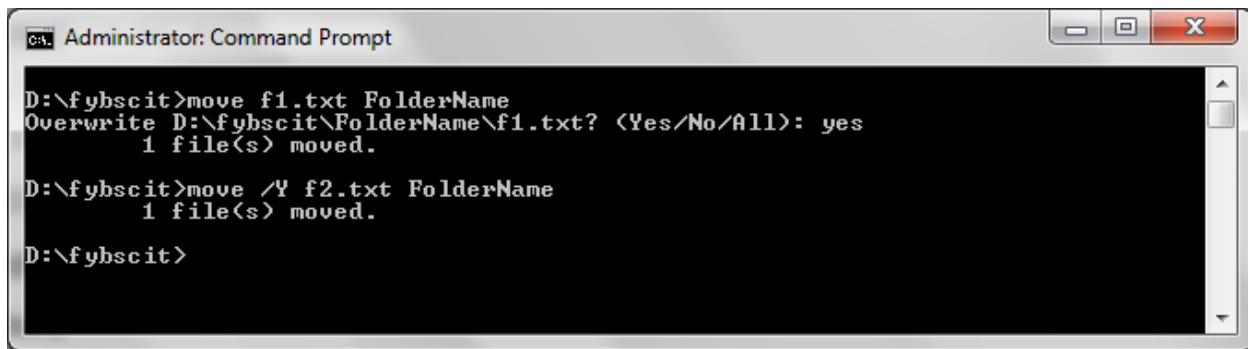
source : The path and filename of the file(s) to move.

target : The path and filename to move file(s) to.

options:

/Y Suppress confirmation prompt, when overwriting files.

/-Y Enable confirmation prompt, when overwriting files.



The screenshot shows an 'Administrator: Command Prompt' window. The command `move f1.txt FolderName` is run, followed by a confirmation prompt: `Overwrite D:\fybscit\FolderName\f1.txt? (Yes/No/All): yes`. The response `yes` is entered, and the output `1 file(s) moved.` is displayed. A second command, `move /Y f2.txt FolderName`, is then run, which moves the file without prompting for confirmation, resulting in the output `1 file(s) moved.`. The command prompt ends with `D:\fybscit>`.

```
D:\fybscit>move f1.txt FolderName
Overwrite D:\fybscit\FolderName\f1.txt? (Yes/No/All): yes
1 file(s) moved.

D:\fybscit>move /Y f2.txt FolderName
1 file(s) moved.

D:\fybscit>
```

Practical 7

Aim: Windows (DOS) Commands – 2

- a. Diskcomp, diskcopy, diskpart, doskey, echo
- b. Edit, fc, find, rename, set, type, ver

➤ Command: DISKCOMP

Compare the content of two floppy disks.

Syntax

DISKCOMP floppy_drive1: floppy_drive2:

Key

floppy_drive is the drive letter

The two disks must be the same type,
e.g. both 1.44 Mb or both 720 K

If you specify the same drive letter for floppy_drive1 and floppy_drive2 - you will be prompted to enter each disk.

For Example:

DISKCOMP A: A:

```
D:\fybscit>diskcomp d: d:
Invalid drive specification.
The specified drive does not exist
or is non-removable.

D:\fybscit>
```

➤ Command: DISKCOPY

Copy the content of one floppy disk to another.

Syntax

DISKCOPY *floppy_drive1:floppy_drive2: [/V]*

Key

/V Verify that the information was copied correctly.

The two disks must be the same type,
e.g. both 1.44 Mb or both 720 K

If you specify the same drive letter for *floppy_drive1* and *floppy_drive2* - you will be prompted to enter each disk.

DISKCOMP A: A:

➤ Command: DiskPart

Disk Administration, Partition a disk.

Syntax

DISKPART

LIST Display a list of objects:

LIST Disk

LIST Partition

LIST Volume

LIST vdisk (Windows 7/Server 2008 R2 only)

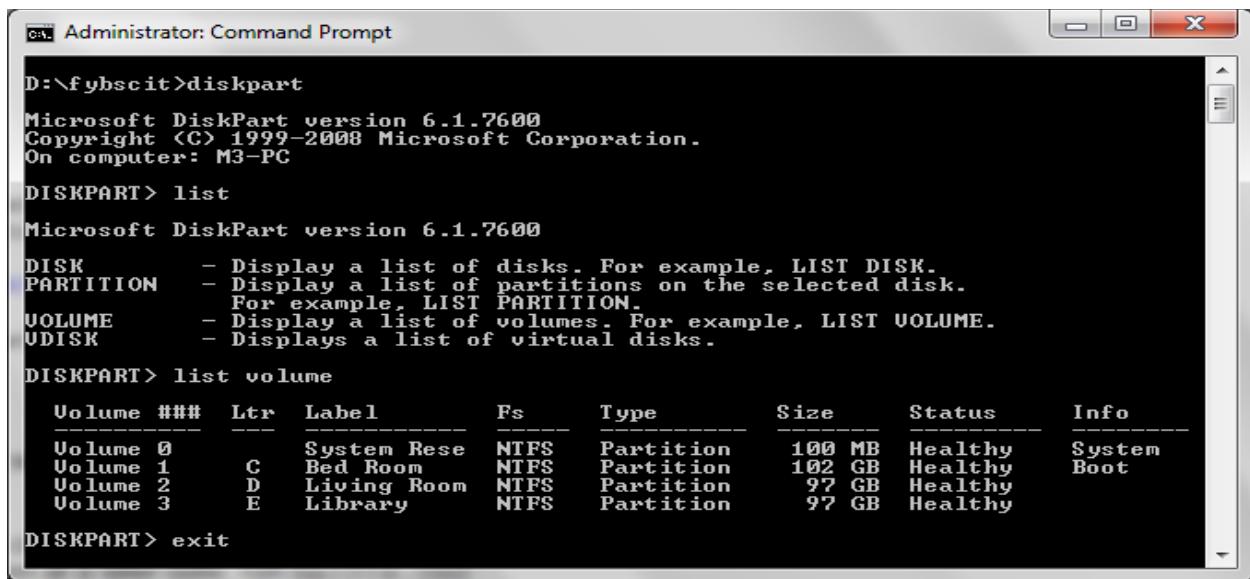
SELECT Shift the focus to an object:

SELECT Disk={ *n* | *diskpath* | system | next }

SELECT Partition={ *n* | *d* } (Volume number or Drive letter)

SELECT Volume={ *n* | *d* } [noerr] (Volume number or Drive Letter)

SELECT vdisk file=*fullpath* [noerr]



```
D:\>fybscit>diskpart
Microsoft DiskPart version 6.1.7600
Copyright <C> 1999-2008 Microsoft Corporation.
On computer: M3-PC

DISKPART> list

Microsoft DiskPart version 6.1.7600

DISK      - Display a list of disks. For example, LIST DISK.
PARTITION - Display a list of partitions on the selected disk.
            For example, LIST PARTITION.
VOLUME   - Display a list of volumes. For example, LIST VOLUME.
UDISK    - Displays a list of virtual disks.

DISKPART> list volume
Volume #### Ltr Label        Fs     Type        Size     Status     Info
       0      System Rese  NTFS   Partition   100 MB  Healthy   System
       1      C     Bed Room  NTFS   Partition   102 GB  Healthy   Boot
       2      D     Living Room NTFS   Partition   97  GB  Healthy
       3      E     Library   NTFS   Partition   97  GB  Healthy

DISKPART> exit
```

➤ Command : DOSKEY

Recall and edit commands at the DOS prompt, and create macros. You cannot run a Doskey macro from a batch file.

Syntax

DOSKEY [options] [macroname=[text]]

Examples

A macro to open notepad

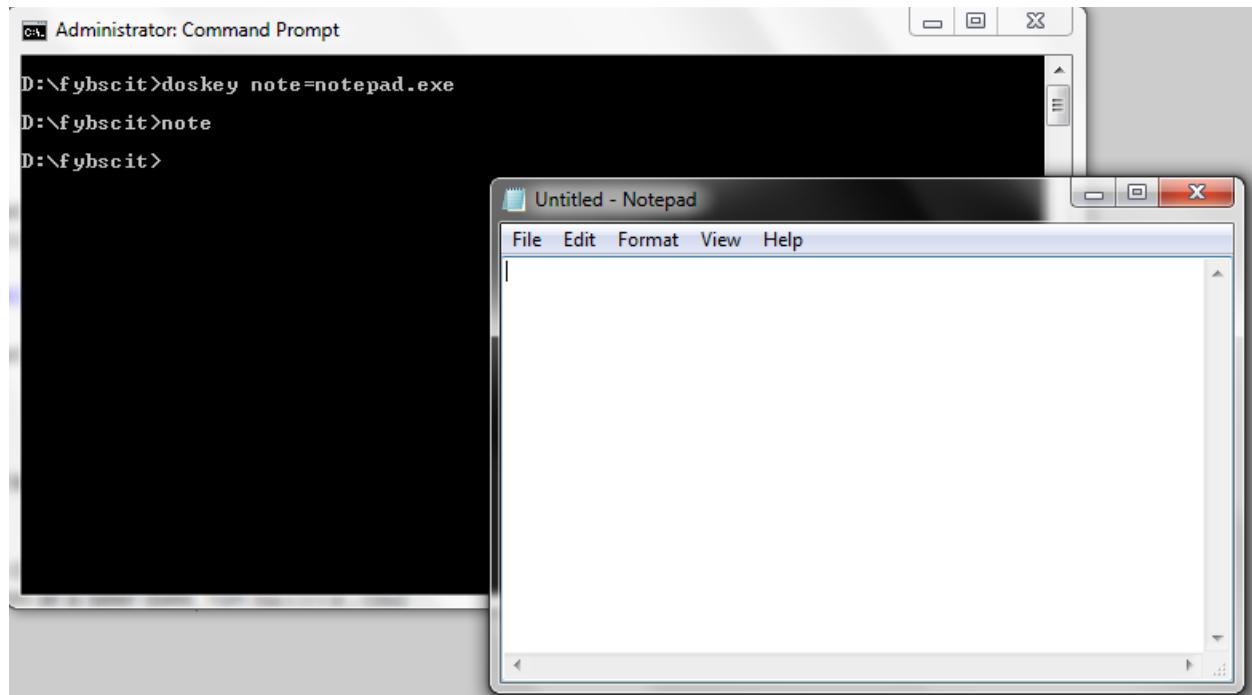
DOSKEY note=notepad.exe

A macro to open WordPad

DOSKEY wpad="C:\Program Files\Windows NT\Accessories\wordpad.exe"

A macro called 'd' to run dir/w

DOSKEY d=dir/w



➤ Command: ECHO

Display messages on screen, turn command-echoing on or off.

Syntax

ECHO [ON | OFF]

ECHO [*message*]

Key

ON : Display each line of the batch on screen (default)

OFF : Only display the command output on screen

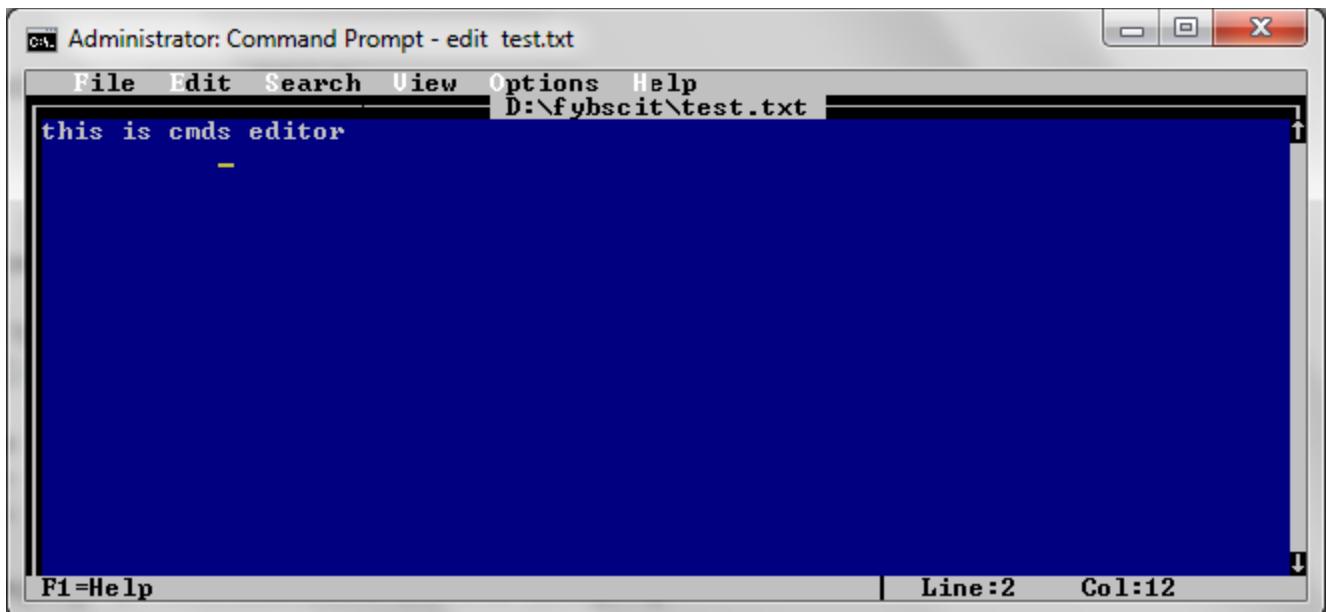
message : a string of characters to display

Type ECHO without parameters to display the current echo setting (ON or OFF).



Command: edit

An Editor



➤ Command: FC

Compare the contents of two files or sets of files. Display any lines which do NOT match.

Syntax

FC /B pathname1 pathname2
FC [options] pathname1 pathname2

Key

/B : Perform a binary comparison.

options

/C : Do a case insensitive string comparison

/A : Displays only first and last lines for each set of differences.

/U : Compare files as UNICODE text files.

/L : Compares files as ASCII text. (default)

/N : Display line numbers (ASCII only)

```
D:\fybscit>fc f1.txt f1.txt
Comparing files f1.txt and F1.TXT
FC: no differences encountered

D:\fybscit>
```

```
D:\fybscit>fc f1.txt f2.txt
Comparing files f1.txt and F2.TXT
***** f1.txt
hi
this is sample file1
***** F2.TXT
hi
this is sample file2
*****
```

D:\fybscit>_

➤ Command: FIND

Search for a text string in a file & display all the lines where it is found.

Syntax

FIND [/V] [/C] [/N] [I] "string" [pathname(s)]

Key

"string" : The text string to find (must be in quotes).

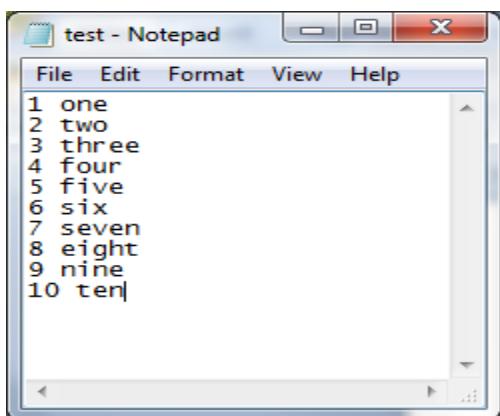
[pathname] : A drive/file(s) to search (wildcards accepted).

/V : Display all lines NOT containing the specified string.

/C : Count the number of lines containing the string.

/N : Display Line numbers.

/I : Ignore the case of characters when searching for the string.



```
D:\fybscit>find "seven" test.txt
----- TEST.TXT
7 seven

D:\fybscit>find "xyz" test.txt
----- TEST.TXT

D:\fybscit>find /N "six" test.txt
----- TEST.TXT
[6]6 six

D:\fybscit>
```

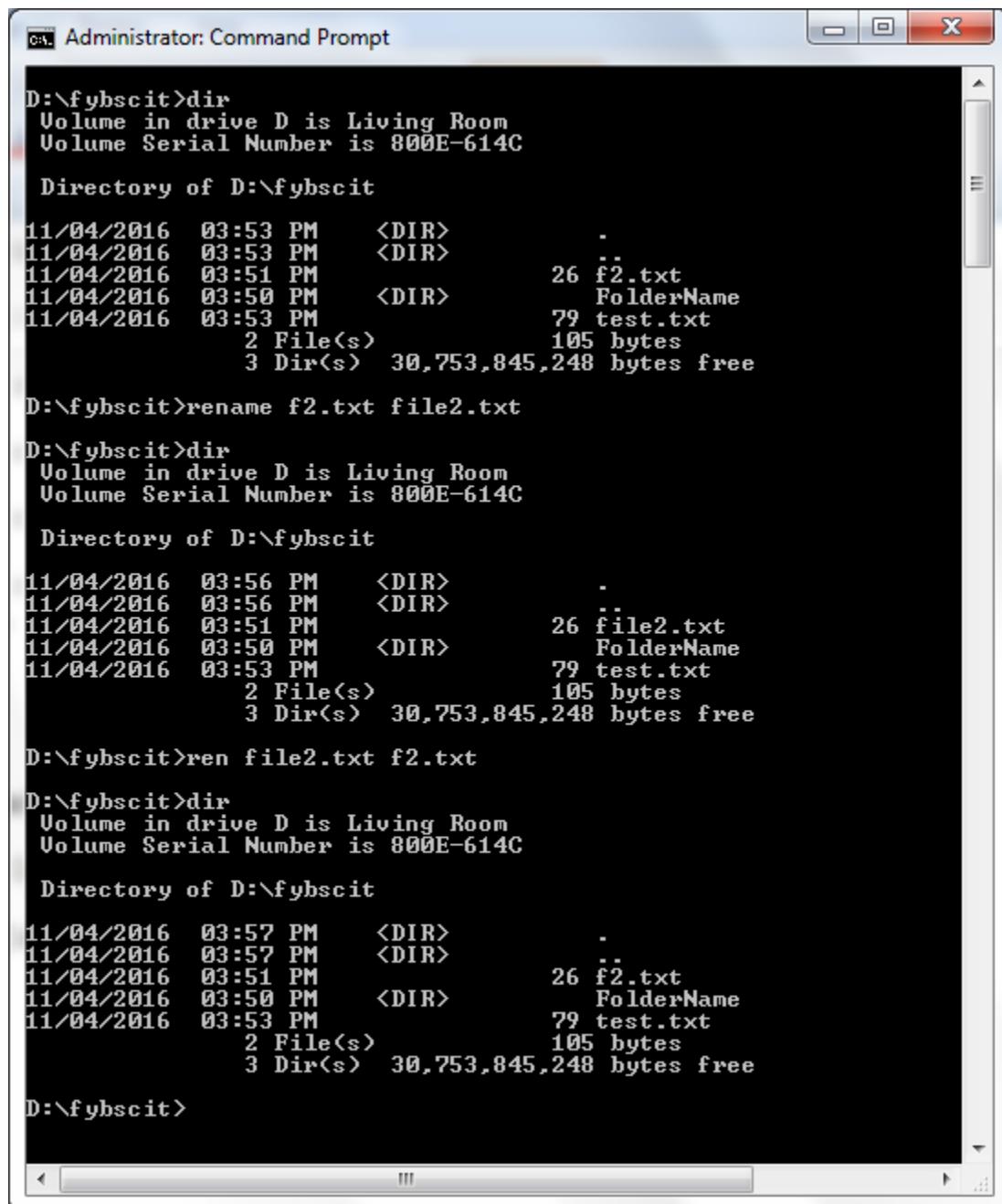
A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt". The window shows several command-line executions of the "find" command. The first command, "find "seven"" finds the word "seven" at line 7 of the file "TEST.TXT". The second command, "find "xyz"" finds nothing, so it outputs "----- TEST.TXT". The third command, "find /N "six"" finds the word "six" at line 6 of the file "TEST.TXT". The prompt "D:\fybscit>" appears at the end of the session.

Command: REN/RENAME

Rename a file or files.

REN [drive:] [path] SourceMask TargetMask

RENAME is a synonym for REN



```

Administrator: Command Prompt
D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  03:53 PM    <DIR>      .
11/04/2016  03:53 PM    <DIR>      ..
11/04/2016  03:51 PM            26 f2.txt
11/04/2016  03:50 PM    <DIR>      FolderName
11/04/2016  03:53 PM            79 test.txt
                           2 File(s)   105 bytes
                           3 Dir(s)  30,753,845,248 bytes free

D:\fybscit>rename f2.txt file2.txt

D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  03:56 PM    <DIR>      .
11/04/2016  03:56 PM    <DIR>      ..
11/04/2016  03:51 PM            26 file2.txt
11/04/2016  03:50 PM    <DIR>      FolderName
11/04/2016  03:53 PM            79 test.txt
                           2 File(s)   105 bytes
                           3 Dir(s)  30,753,845,248 bytes free

D:\fybscit>ren file2.txt f2.txt

D:\fybscit>dir
 Volume in drive D is Living Room
 Volume Serial Number is 800E-614C

 Directory of D:\fybscit

11/04/2016  03:57 PM    <DIR>      .
11/04/2016  03:57 PM    <DIR>      ..
11/04/2016  03:51 PM            26 f2.txt
11/04/2016  03:50 PM    <DIR>      FolderName
11/04/2016  03:53 PM            79 test.txt
                           2 File(s)   105 bytes
                           3 Dir(s)  30,753,845,248 bytes free

D:\fybscit>

```

➤ Command: SET

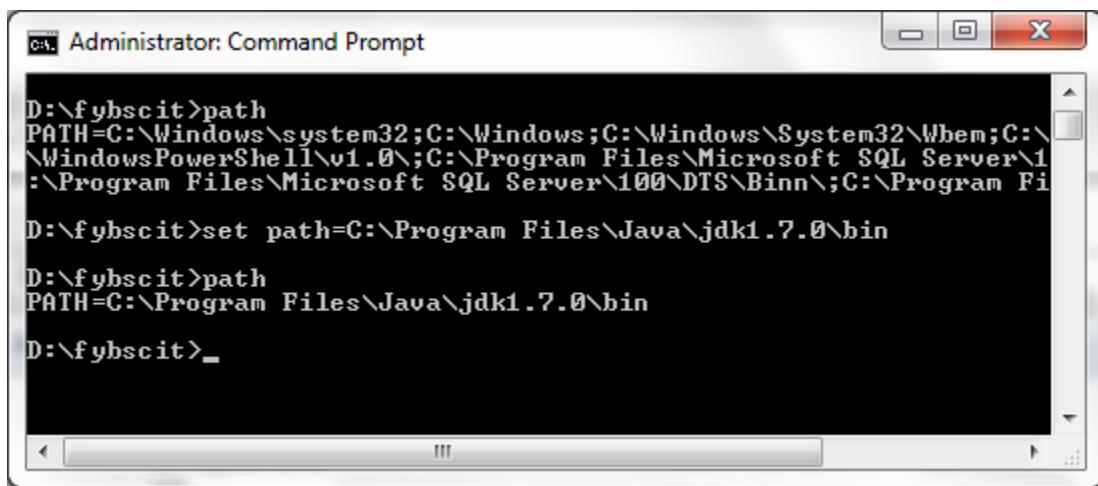
Display, set, or remove CMD environment variables. Changes made with SET will remain only for the duration of the current CMD session.

Syntax

SET *variable*

SET *variable*=*string*

SET /A "variable=*expression*"



The screenshot shows a Windows Command Prompt window titled "Administrator: Command Prompt". The window contains the following text:

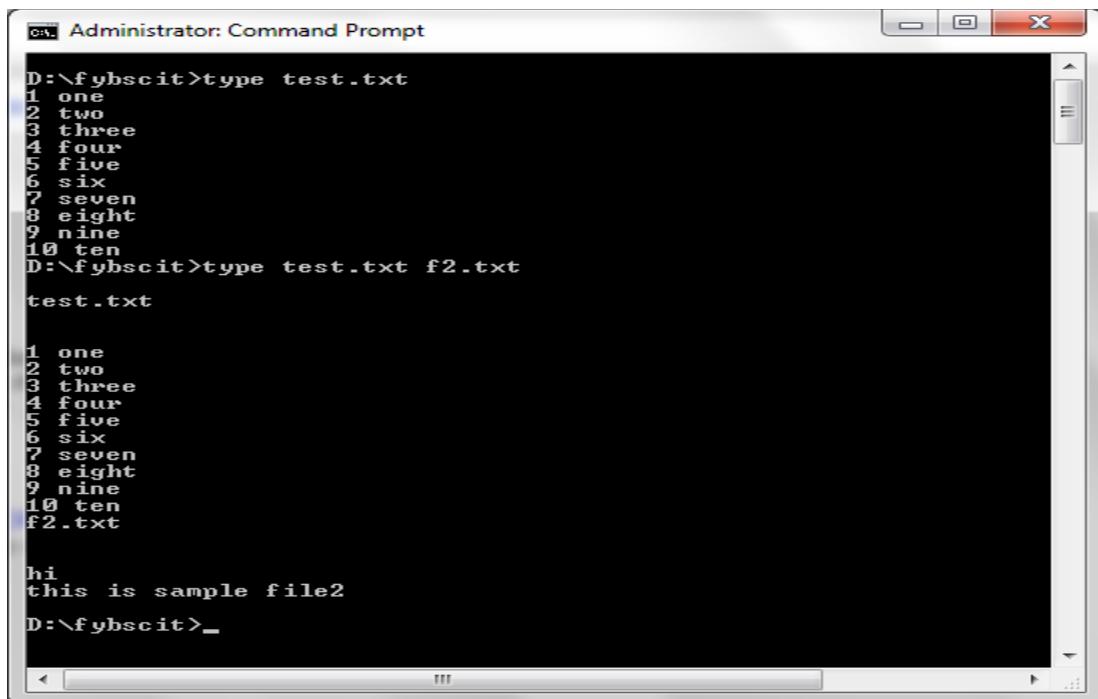
```
D:\fybscit>path
PATH=C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\PowerShell\v1.0\;C:\Program Files\Microsoft SQL Server\130\Tools\Binn\;C:\Program Files\Microsoft SQL Server\100\DTSP\Binn\;C:\Program Fi
D:\fybscit>set path=C:\Program Files\Java\jdk1.7.0\bin
D:\fybscit>path
PATH=C:\Program Files\Java\jdk1.7.0\bin
D:\fybscit>_
```

➤ Command: TYPE

Display the contents of one or more text files.

Syntax

TYPE [*drive:][pathname(s)*]



D:\fybscit>type test.txt
1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
D:\fybscit>type test.txt f2.txt
test.txt

1 one
2 two
3 three
4 four
5 five
6 six
7 seven
8 eight
9 nine
10 ten
f2.txt

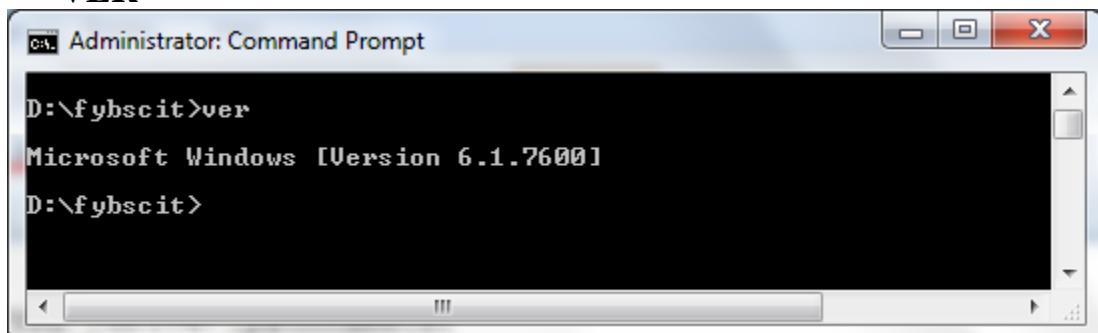
hi
this is sample file2
D:\fybscit>

➤ Command: VER

Display the current operating system version.

Syntax

VER



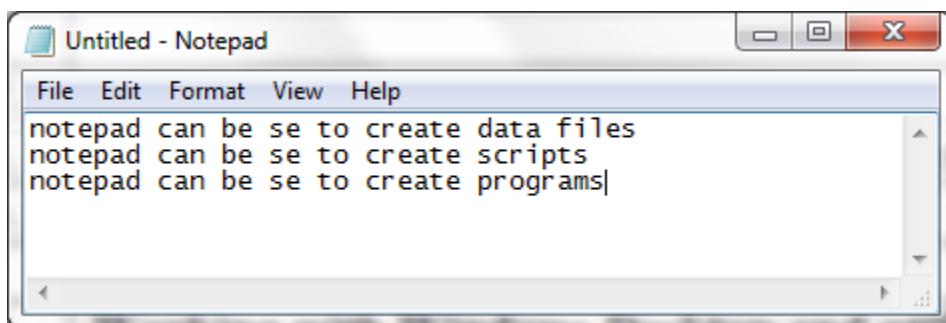
D:\fybscit>ver
Microsoft Windows [Version 6.1.7600]
D:\fybscit>

Practical 8

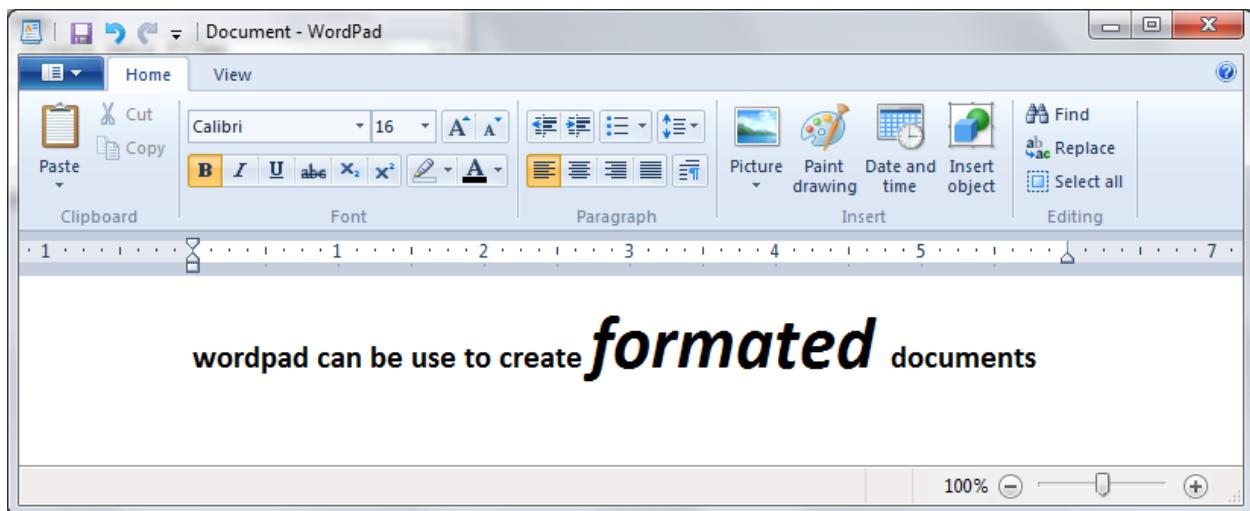
Aim: Working with Windows Desktop and utilities

- a. Notepad
- b. Wordpad
- c. Paint
- d. Taskbar
- e. Adjusting display resolution
- f. Using the browsers
- g. Configuring simple networking
- h. Creating users and shares

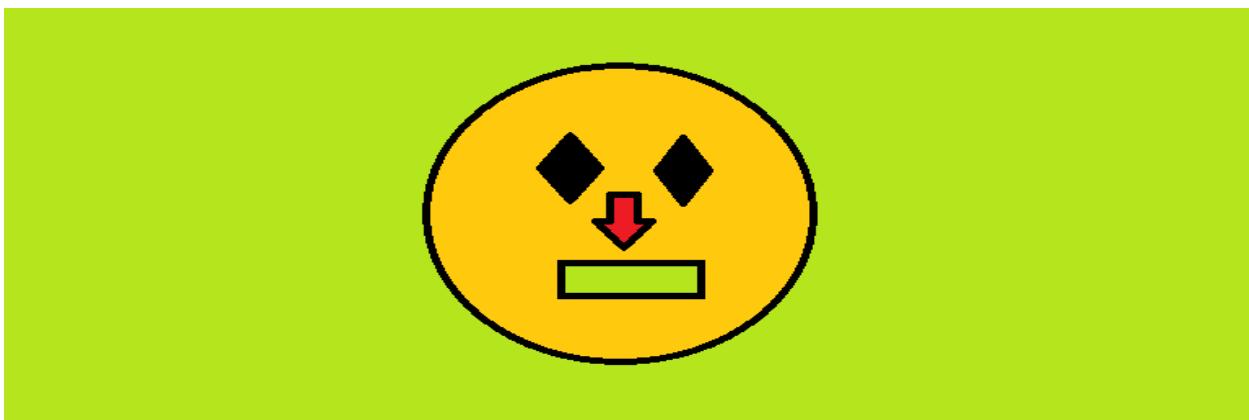
a. Notepad



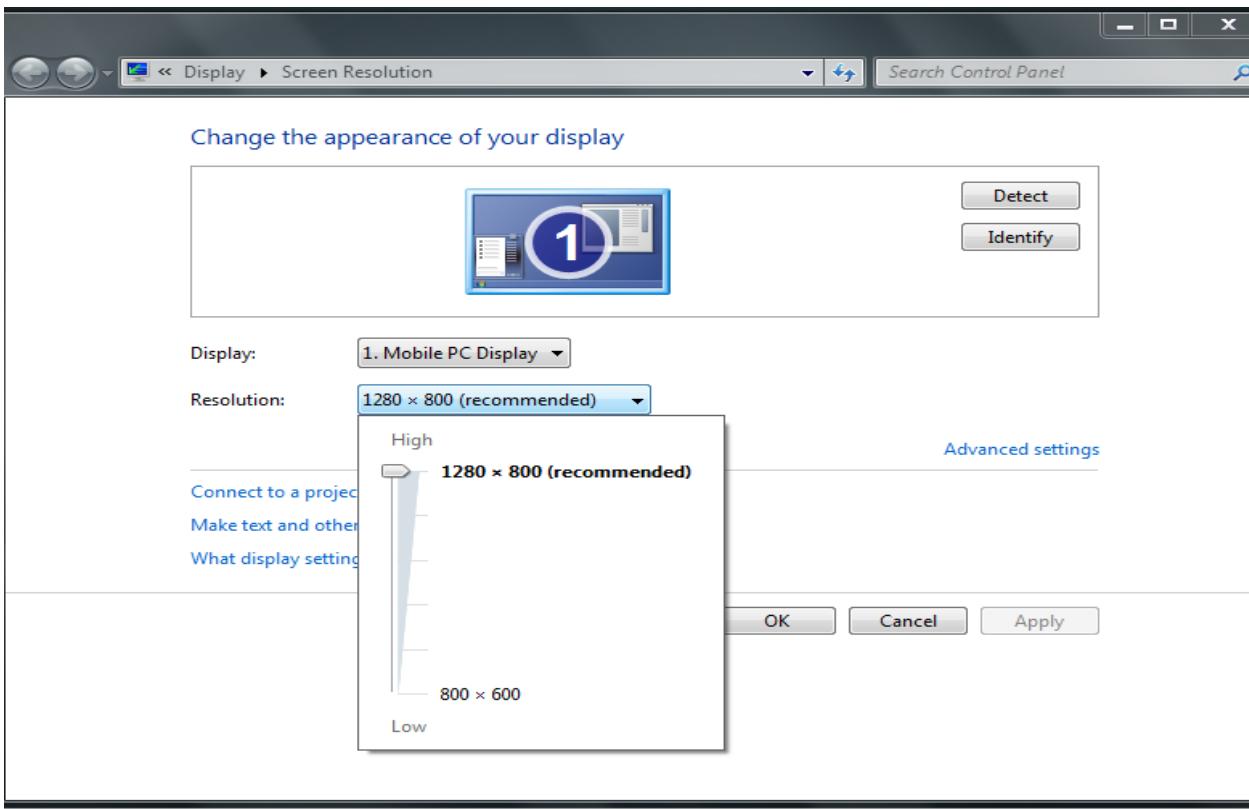
b. Wordpad

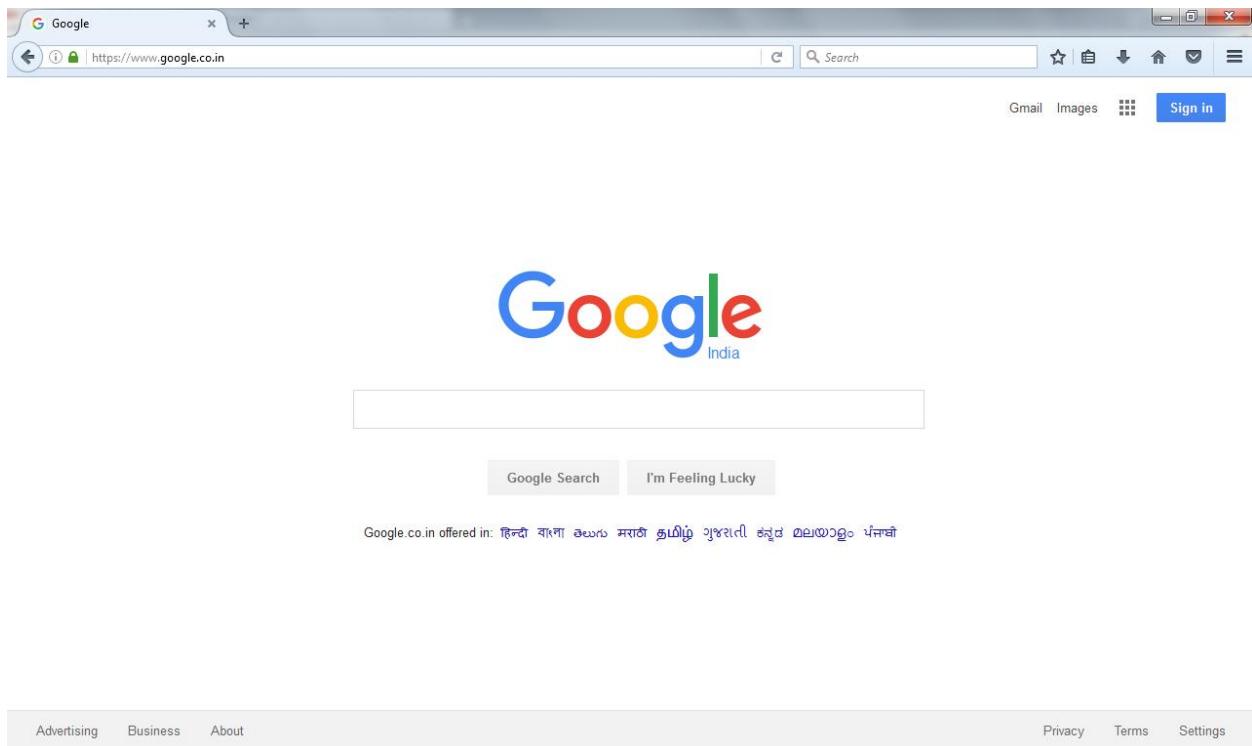
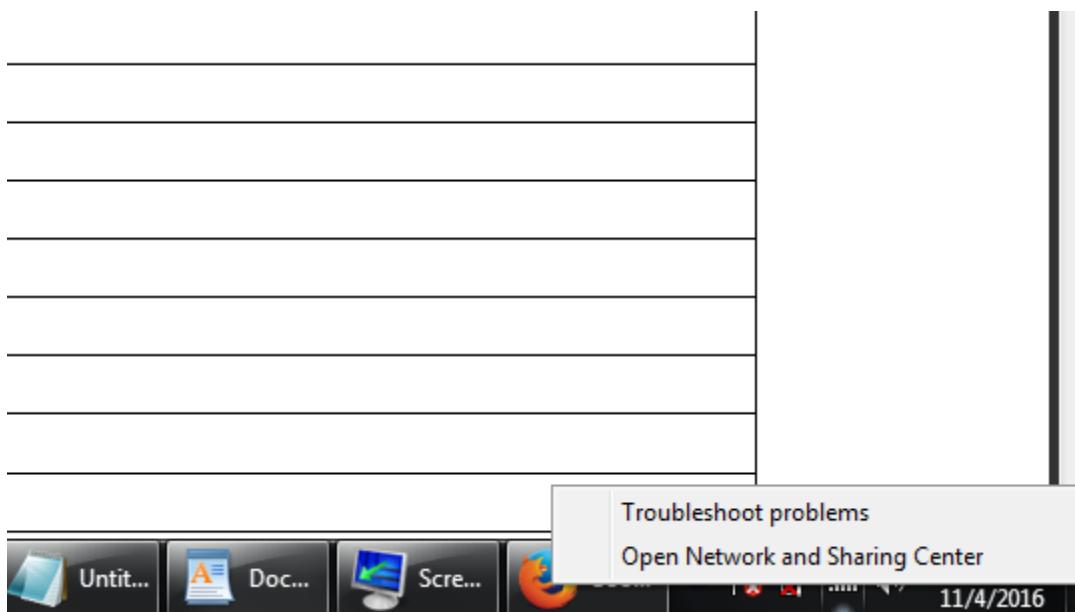


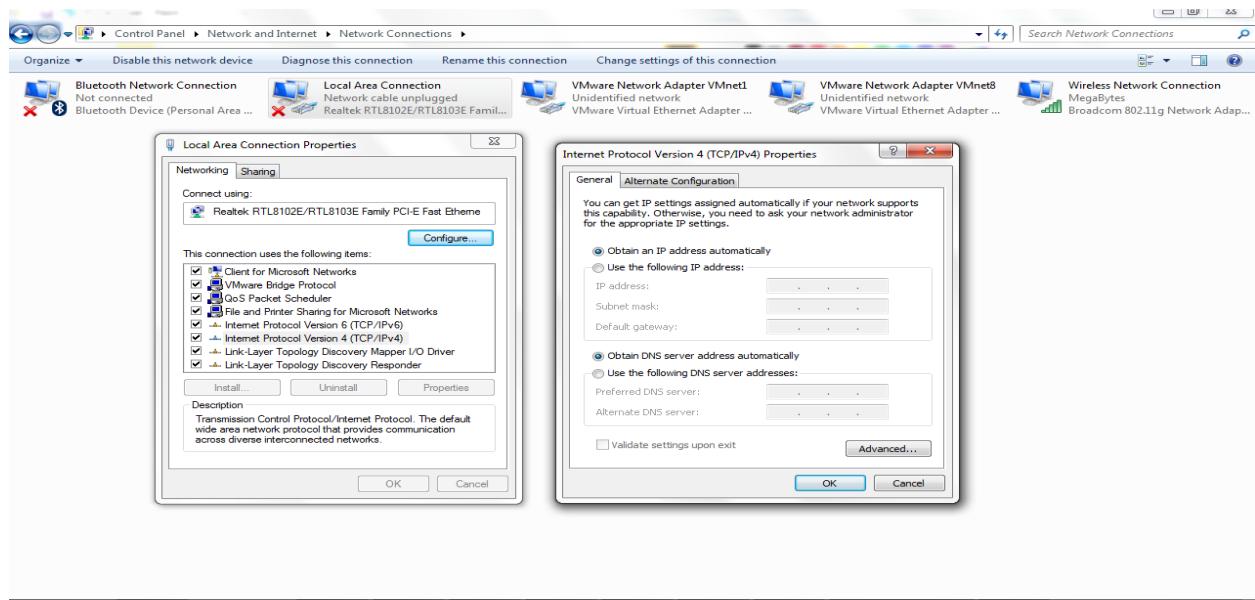
c. Using Paint



e. Screen resolution

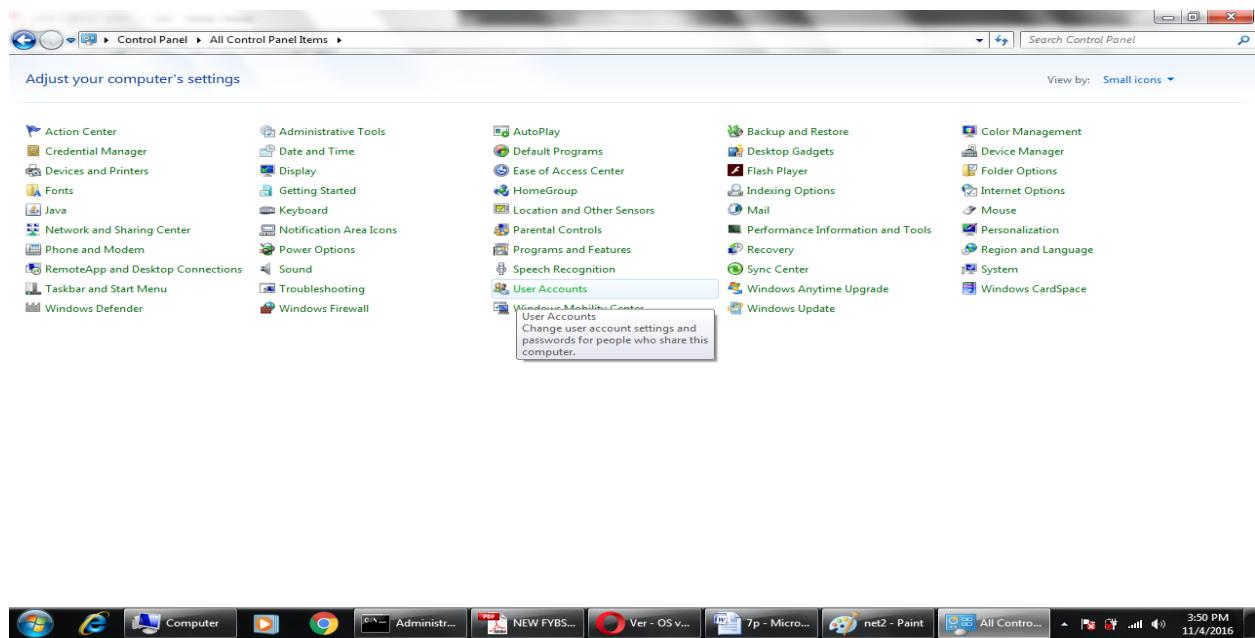


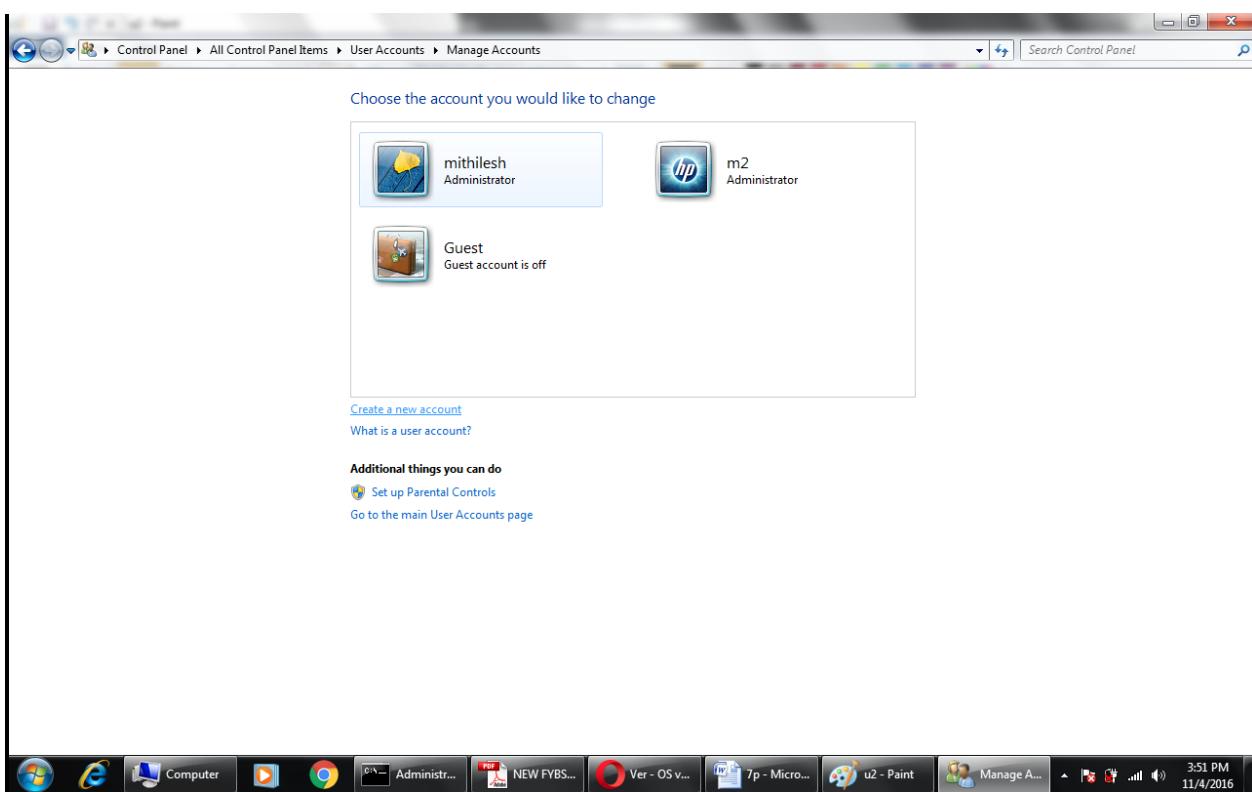
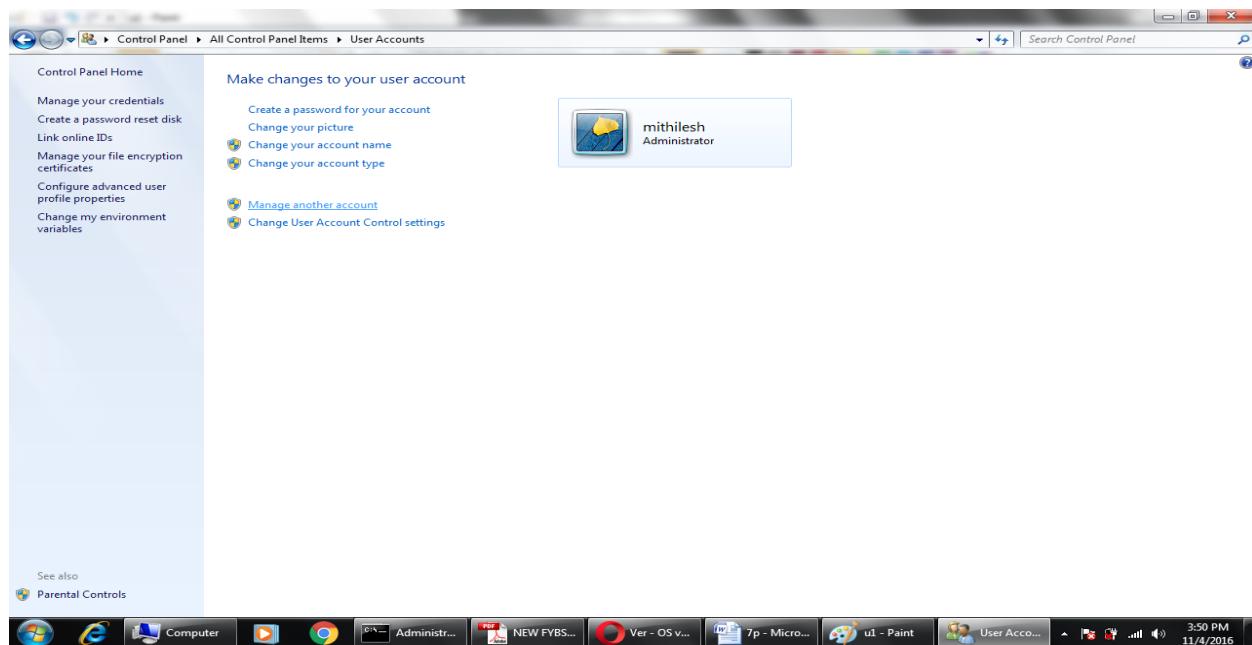
f. Using Browser:**g. Setting IP Address: (Refer notebook)**

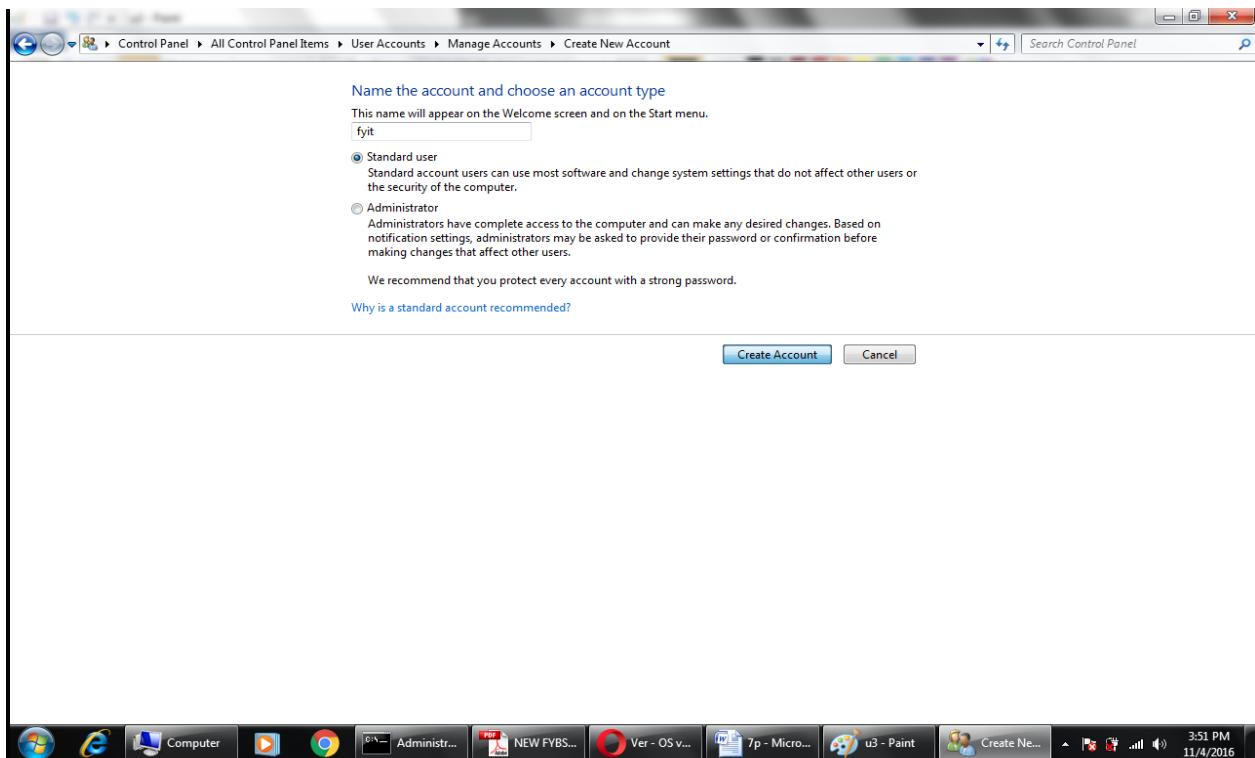


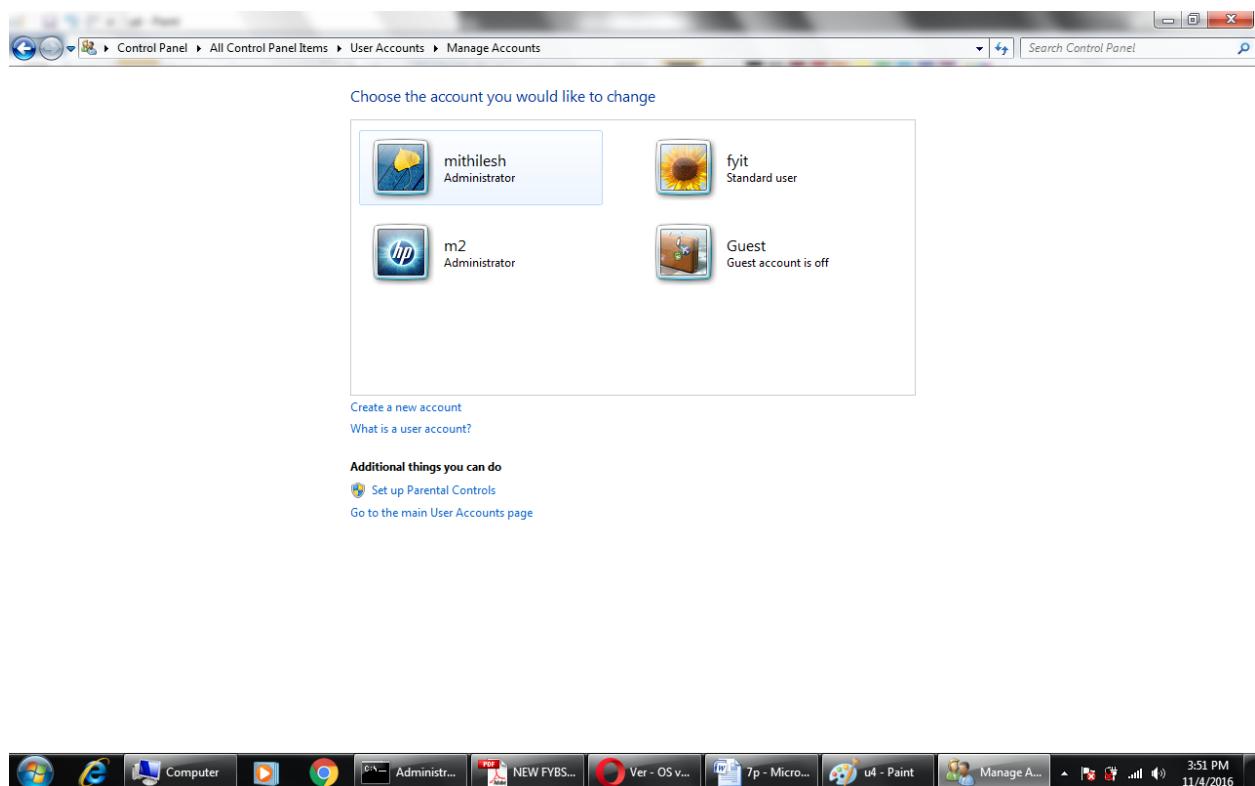
h. Creating user

Step 1:

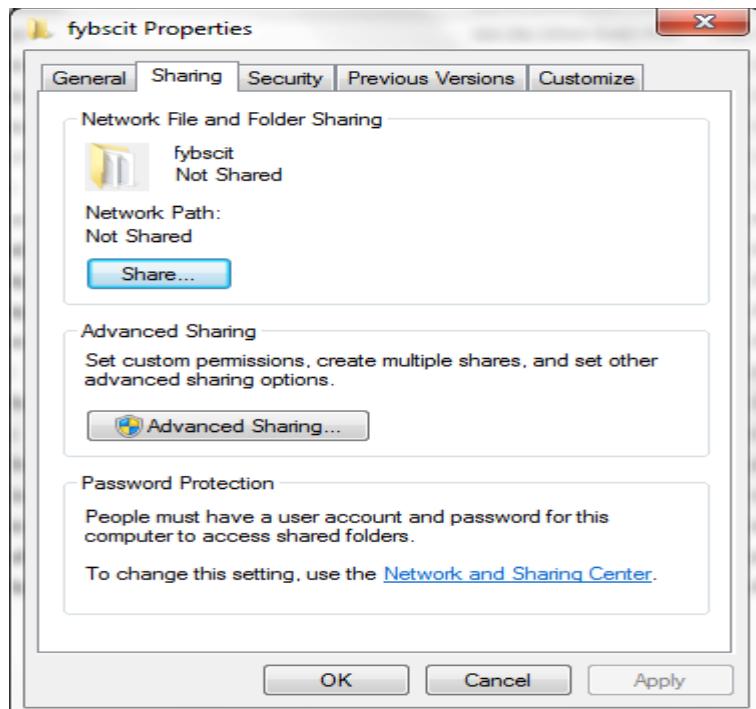


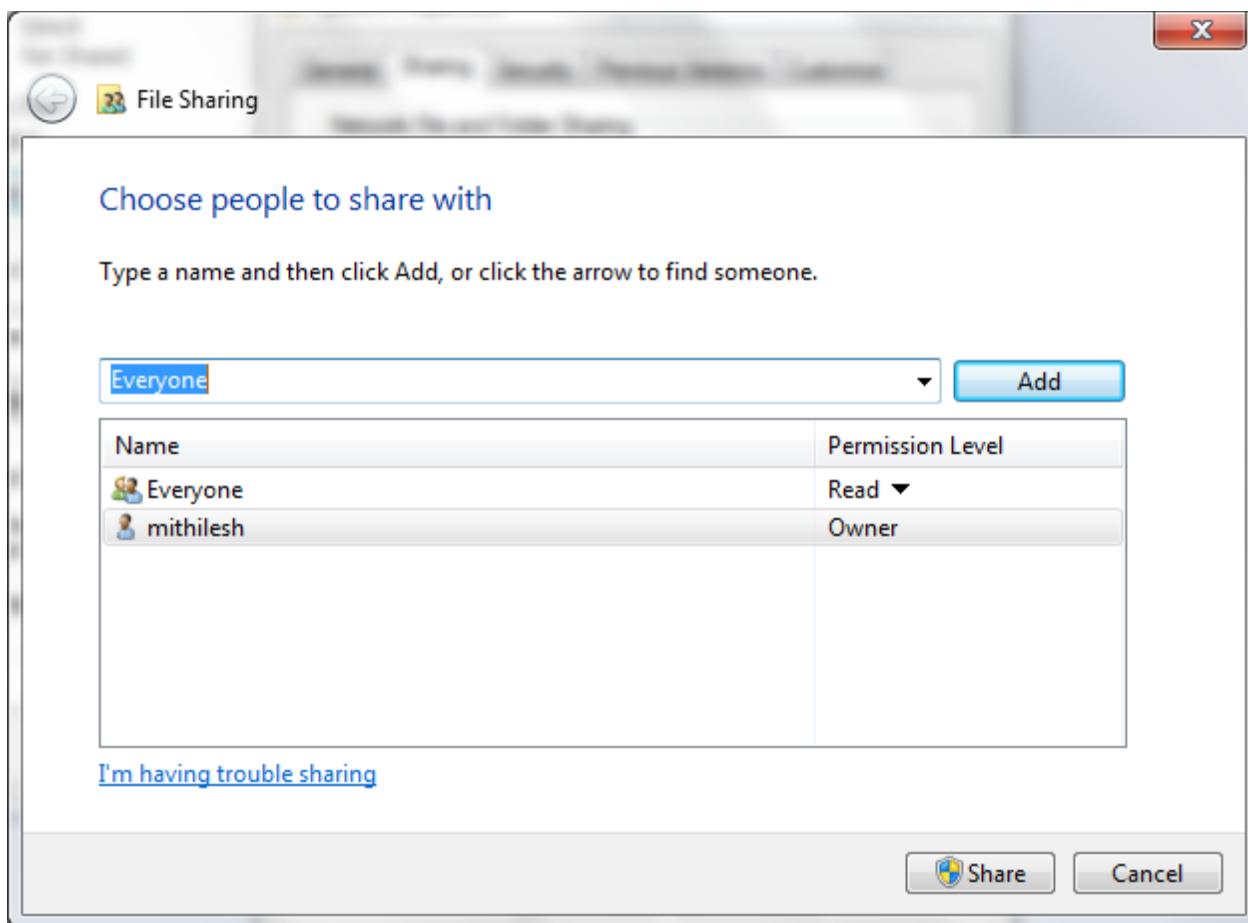






h-II. Creating User Share





Practical 9

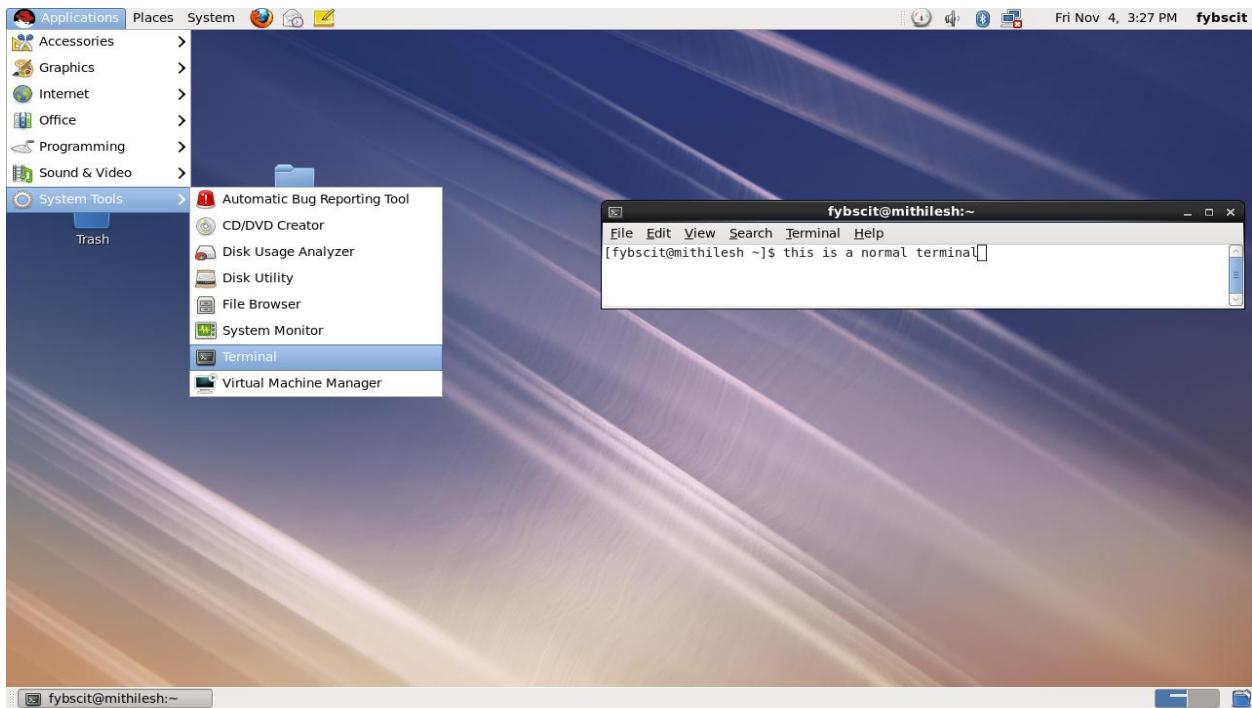
Aim: Working with Linux Desktop and utilities

- a. The vi editor.
 - b. Graphics
 - c. Terminal
 - d. Adjusting display resolution
 - e. Using the browsers
 - f. Configuring simple networking
 - g. Creating users and shares

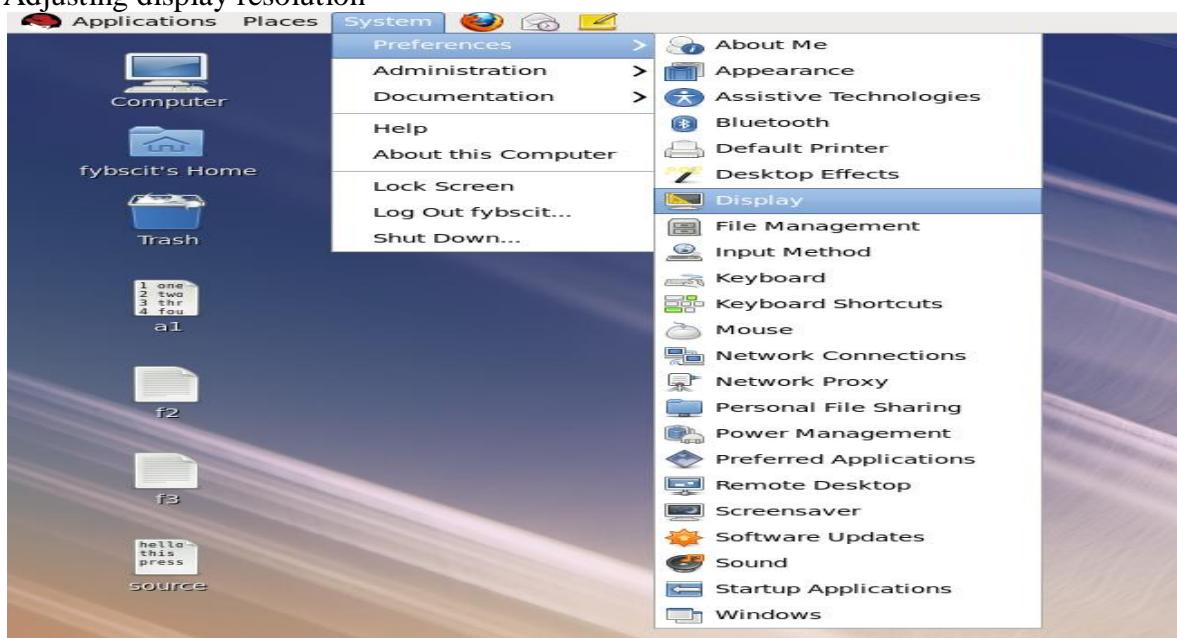
a. The vi editor.

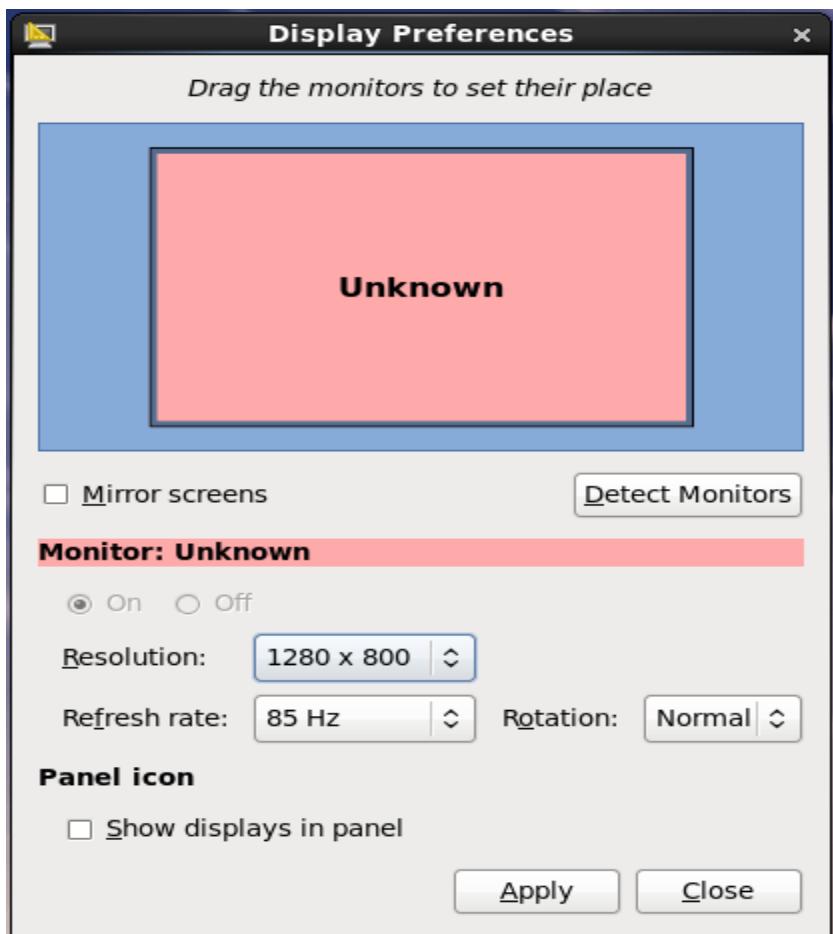
A screenshot of a terminal window titled "fybscit@mithilesh:~/Desktop". The window has a standard Linux-style title bar with icons for minimize, maximize, and close. Below the title bar is a menu bar with options: File, Edit, View, Search, Terminal, and Help. The main area of the terminal shows a command-line interface. The user has typed "[fybscit@mithilesh Desktop]\$ vi newfile" and pressed Enter. The cursor is now positioned at the end of the command line, indicated by a vertical bar. The terminal window is set against a dark blue background.

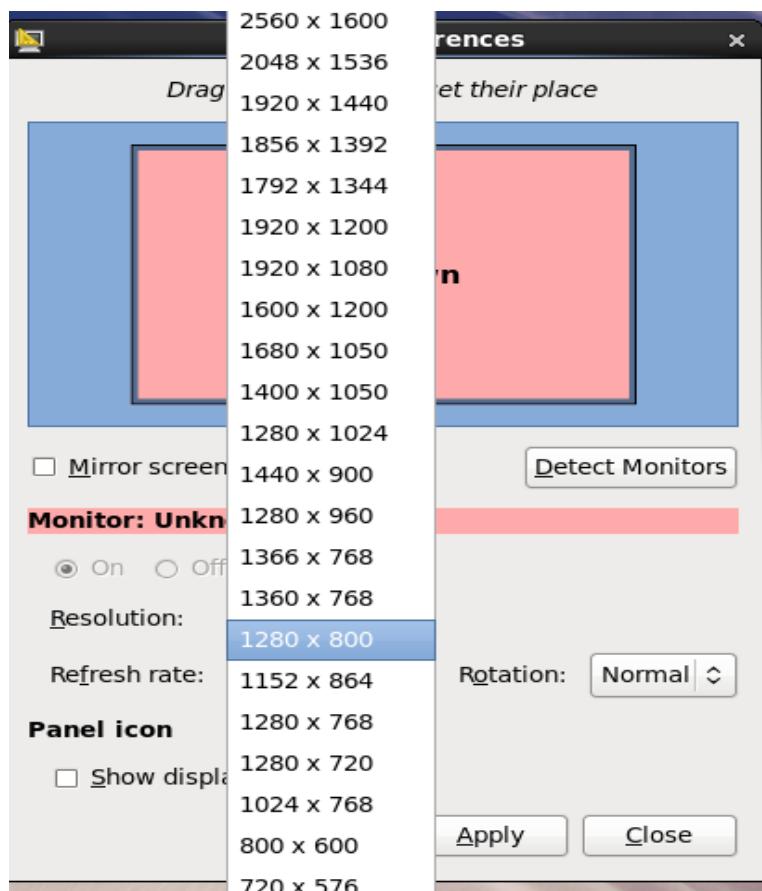
c. Terminal



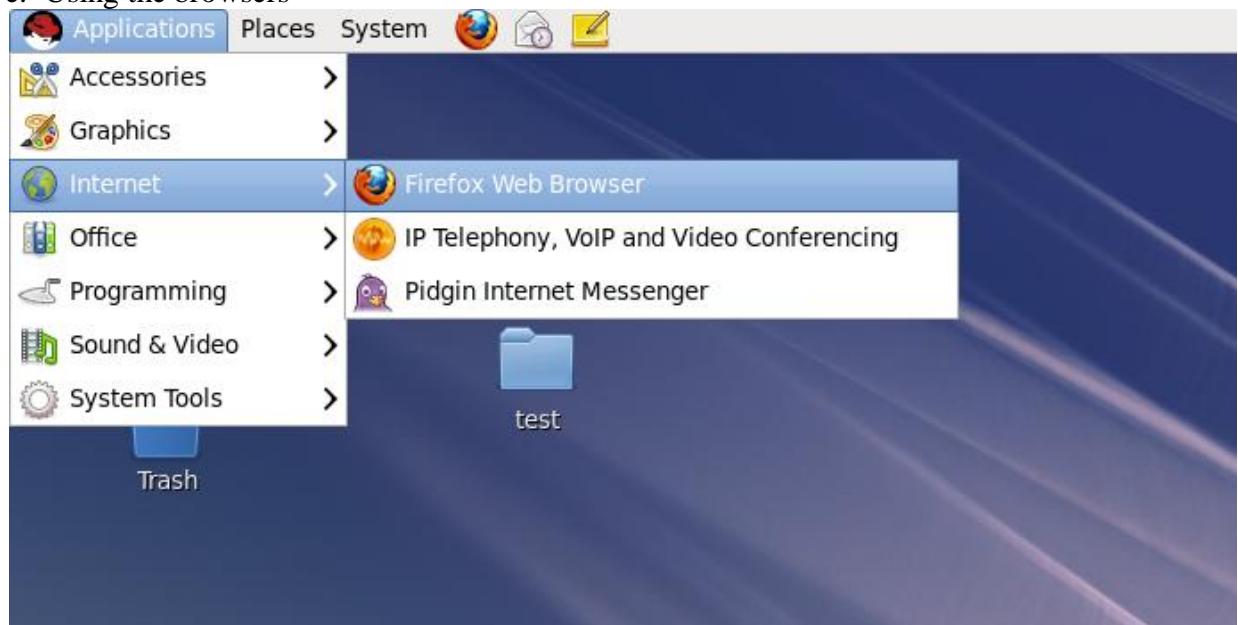
c. Adjusting display resolution

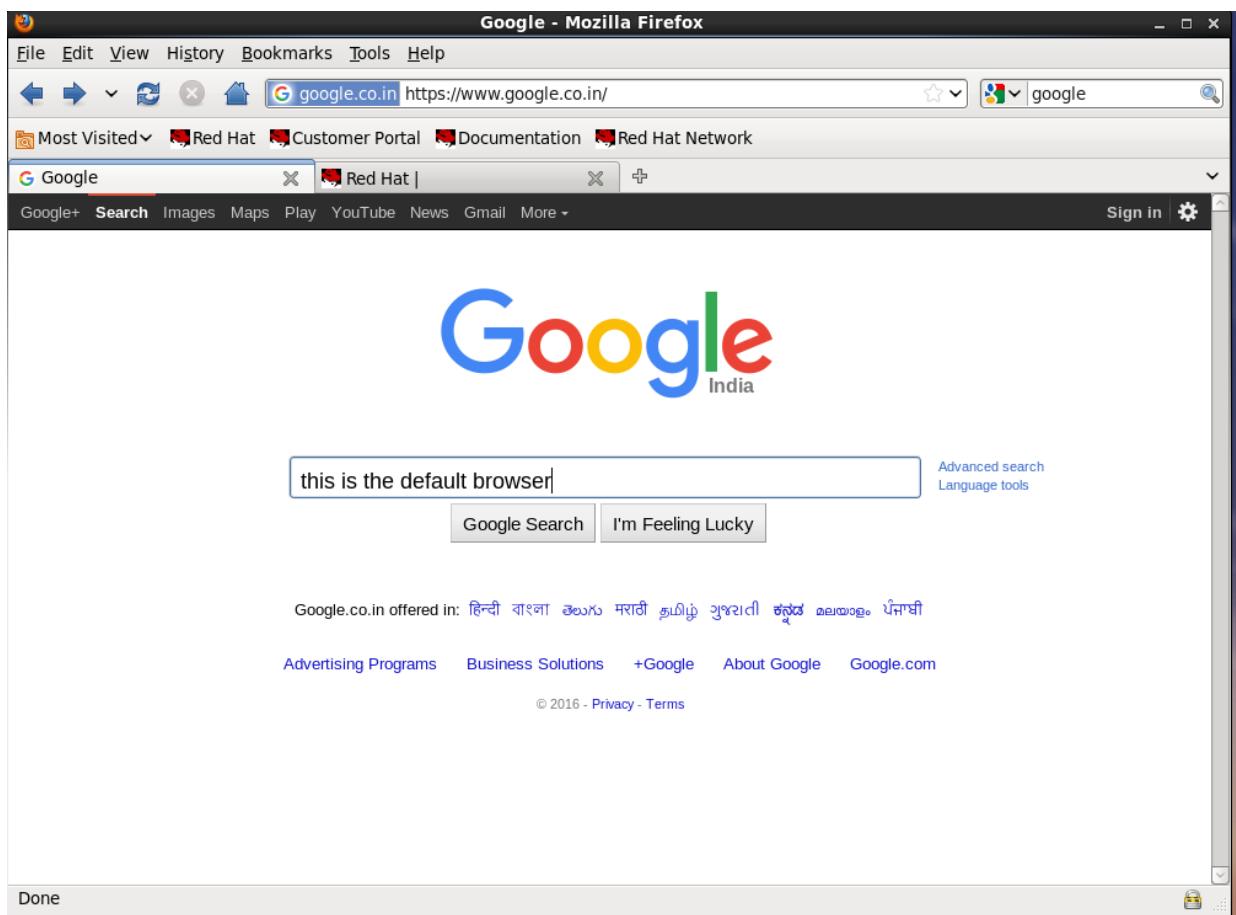






e. Using the browsers





f. Configuring simple networking







g. Creating users

