

Step 2

Aim:- Install your choice of Linux distribution.  
e.g Ubuntu, Fedora, Debian.

Ubuntu is Ubuntu. It's a Free & Open Source Software  
Based on Debian. Ubuntu is officially released  
Under 3 Edition Desktop, Server, Union.

All the edition can be runned  
on the Computer alone or a virtual Box machine.  
It is a popular open source software  
for cloud computing with support of openstack.

Steps for installing Ubuntu in virtual machine:

Step 1:- Select a virtual optical file a physical disk  
to start Ubuntu in your virtual machine. Space  
given to it is 1.86 GB.

Step 2:- Select the language of your choice & click  
'Install Ubuntu'.  
You can also ~~start~~ Ubuntu for free on your computer  
device from its CD.

Step 3:- In updates and add software, click  
the Normal installation.

Step 4:- While configuring Installation type we need  
to click ~~Create Disk~~ & install Ubuntu

This step would delete all types of documents, photos etc. in all operating systems.

Step 5:- In this you only need to choose the location for the to work on Ubuntu.

Step 6:- In this type you need to choose username & password for the login in Ubuntu & the click on Continue.

Step 7:- Here you simply needs to type password again & it is done.

Step 8:- Type name of virtual disk & Recommended size. To be given is 2048 GB or 2TB.

Therefore now, the virtual box is ready to use.



## Updates and other software

What apps would you like to install to start with?

Normal installation

web browser, utilities, office software, games, and media players.

Minimal installation

Web browser and basic utilities.

**Other options**

Download updates while installing Ubuntu

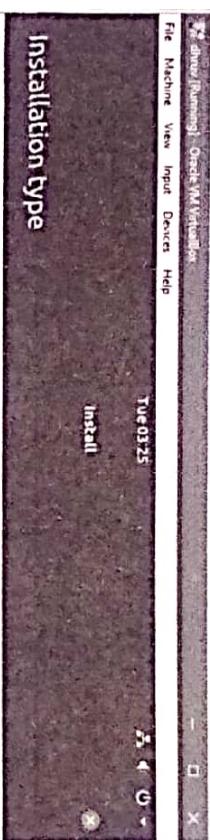
This saves time after installation.

Install third party software for graphics and WiFi hardware and additional media formats

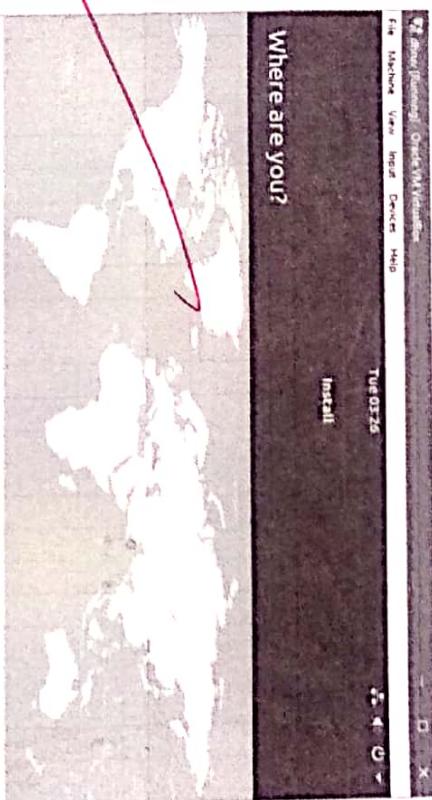
This software is subject to license terms included with its documentation. Some is proprietary.

Quit  
Back  
Continue

## step 4



## Step5



From as you can see all the pictures in your picture folder as thumbnail, where you can select

if you want to see a separate window from.

~~On the left side of background page there are many options like a full screen mode, click on it will be changed on the screen and our application will be closed.~~

### Changing the application picture:

On the screen menu bar is select settings option then click on appearance settings. A window will be pop-up with a lot of settings. On the main menu of the top right corner is appearance settings, click on it to change the appearance settings.

### Access appearance settings:

Background, theme, screensaver, different default option like changing the default background, environment, by changing the default desktop environment, by changing the background, theme, screensaver.

88

To add wallpaper that is in another folder, just click the plus icon below the thumb, then in pop-up window, select the path to Custom Folder & choose the picture inside of it.

### Changing Ubuntu theme:

Ubuntu also has an option to change the desktop themes, which in one click will change the entire look of your Computer look.

2) To do that, click on the drop-down menu below the wallpaper thumbnail & choose Between ambience & Radiance on High Contrast.

3) Ambiance is a light theme that looks a bit more mac-like, while Radiance is the darker brown theme used in Ubuntu by default.

4) Screen Resolution: Ascertian the Current Screen Resolution for your desktop.

Change the Size and Rotation of the Screen:

You can also change how big or how detailed things appears on the screen by changing the Screen Resolution.



- > You can change which way up the screen appears (for example if you have a rotating display) by changing rotation.
- > Click icon on the very right of the menubar & select System settings.
- > Open Screen display.
- > If you have multiple display and they are not mirrored, you can have different setting on each display, Select a display in the previous one.
- > Select your desire resolution, & rotation.
- Click apply, the new setting will be applied, for 30 sec Before Reverting Back, that way if you cannot see anything ~~until the new~~.
- Time setting ~~change the time zone of your system to your New York time~~
- If your currently in Indian time,  
How does the display time changes?
- After noting the time change, change the time zone Back to your location time zone.

Just click on the clock on the top bar & choose time & date setting, once the time & date 'windows open' choose manually so you can change the time & date manually, otherwise choose the time zone from the map & choose automatic.

By  
06/02

## PRACTICAL NO:- 2

37

Aim:- Installing & Removing Software

- q] Install GCC package, verify that its Run & Then remove it.

Step I:

First type 'gcc -v' - to know if you have already install gcc Compiler or not. If the output is 'Black' then it's mean that you don't have gcc installed.

Step II:

Type 'sudo apt-get install gcc' after typing the following command installation will take place

## Now TO UNINSTALL GCC COMPILER :-

In GCC 5.1.0 although there is no loop-level uninstall target, some directories in particular gcc, so you can do.

Type: cd Build/gcc  
Sudo make Uninstall

This does not remove everything that was installed, but it removes major Executable like gcc, g++, Cpp.... contained in that directories.

✓  
06/02

### PRACTICAL NO:- 3.

Aim:- Utilization of grep, man Command Documentation.

- a) finding info documentation from the command line :- bring up the info page for the grep command  
Bring up the usage section.

Ans:- To find info about any command 'info' command is used the syntax of info command is "info (Command name)".

We are going to find the info about the 'grep' command.

Open the terminal (Ctrl+Pf1+F7) & Type:  
info grep

After typing this command following output will displayed onto your screen.

You can also scroll through pages using (Space = up) & (backspace = down) keys.

Another more compacted form of showing info is the 'man' command the command is the same as 'info' but required date

~~Ques~~- Finding man page by section from the page terminal  
Ans:- Bring up the man page for the printf lib. Function  
which manual page section are library function.  
Found

Ans:- The number corresponds to what section or the  
manual page is from. It's user command, while  
it's Systemic stuff. The man page for man itself.  
Explains it and last the section only

```
jebadieba-VirtualBox:~/JebS ls  
-eject  
jebadieba-VirtualBox:~/JebS cat >aa.txt  
<--  
jebadieba-VirtualBox:~/JebS cat >bb.txt  
this is Linux  
jebadieba-VirtualBox:~/JebS diff aa.txt bb.txt  
<--  
jebadieba-VirtualBox:~/JebS cat >bb.txt  
this is Linux  
jebadieba-VirtualBox:~/JebS diff aa.txt bb.txt  
<--  
jebadieba-VirtualBox:~/JebS cat >bb.txt  
this is Linux  
jebadieba-VirtualBox:~/JebS gzip aa.txt  
jebadieba-VirtualBox:~/JebS gunzip bb.txt  
jebadieba-VirtualBox:~/JebS diff aa.txt.gz bb.txt.gz  
binary files aa.txt and bb.txt.gz differ
```

~~You can tell about sections of forests follows in  
this time at "water" stage before "leaf" stage  
of growth during which it will do some damage  
and then recover. However, when the tree  
is old enough to have a large diameter  
it may do some damage to the trunk  
and then recover.~~

## QUESTION NO. 4

### Common Linux Operations:

- a) Install new package on your System.  
Code: `apt-get install [package name]`
- b) Remove the package installations.  
Code: `apt-get remove [package name]`
- c) Find the password file / using find command  
✓ `# find / -name password`  
`/var/shell/doc/nos/dbs-253/pwd/pass`  
→  
• `/usr/bin/passwd`  
• `/etc/passwd`  
• `/etc/pwfile`.
- d) Find the directory password file under root  
↳ One level down.  
✓ `# find / -maxdepth 2 -name passwd`  
• `/etc/passwd`

- File that contain file under root and 2 level down
- ✓ `# find / -maxdepth 3 -name passwd`  
• `/usr/bin/passwd`  
• `/etc/passwd`  
• `/etc/pwfile`

Find the password file b/w sub-directories.  
Level 2 + 4

~~# find -maxdepth 3 -maxdepth 5 -name passwd~~

~~./user/bin/passwd~~  
~~./etc/passwd~~

42

- d) Create a symbolic link to the file file found in  
Just step  
~~ln -s file1 file2~~
- e) Create an Empty file Example.txt & move it to /tmp directory using Relative path name  
# touch Example.txt  
# mv Example.txt /tmp
- f) delete the file removed to /tmp in previous  
step by absolute method.  
~~rm /tmp/Example.txt~~
- g) Find the location of ls , ps, Both Command.  
~~# whereis ls~~  
~~ls : /bin/ls /usr/share/man/man1/ls.1.gz~~  
~~# whereis ps~~  
~~ps : /bin/ps /usr/share/man/man1/ps.1.gz~~  
~~ps : /share/man/man1/ps.1.gz~~  
~~# whereis bash~~  
Both : /bin/bash /etc/bash.bashrc /usr/share/man/man1/bash.1.gz

Q1 Explore mounted File System on your Computer ?  
Ans:- df -k

```
jeba@jeba-VirtualBox:~$ df -k
Filesystem      1K-blocks   Used   Available  Use% Mounted on
udev              494436      0    494436   0% /dev
tmpfs             102416   3676    98740   4% /run
/dev/sda1        7092728 3383372  3326024  51% /
tmpfs             512076   216    511860   1% /dev/shm
tmpfs              5120      4     5116   1% /run/lock
tmpfs             512076      0    512076   0% /sys/fs/cgroup
tmpfs             102416    48    102368   1% /run/user/1000
jeba@jeba-VirtualBox:~$
```

Q2 what are the ways to explore the mounted File System  
Ans:- mount

```
jeba@jeba-VirtualBox:~$ mount
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
udev on /dev type devtmpfs (rw,nosuid,relatime,size=494436k,nr_inodes=123609,mode=755)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,gid=5,mode=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,noexec,relatime,size=102416k,mode=755)
/dev/sda1 on / type ext4 (rw,relatime,errors=remount-ro,data=ordered)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev)
tmpfs on /run/lock type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k)
tmpfs on /sys/fs/cgroup type tmpfs (ro,nosuid,nodev,noexec,mode=755)
cgroup on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,nodev,noexec,relatime,xattr,release_agent=/lib/systemd/systemd-cgroups-agent,name=systemd,nsroot=/)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
cgroup on /sys/fs/cgroup/cpuset type cgroup (rw,nosuid,nodev,noexec,relatime,cpuset,nsroot=/)
cgroup on /sys/fs/cgroup/net_cls,net_prio type cgroup (rw,nosuid,nodev,noexec,relatime,net_cls,net_prio,nsroot=/)
cgroup on /sys/fs/cgroup/pids type cgroup (rw,nosuid,nodev,noexec,relatime,pids,nsroot=/)
cgroup on /sys/fs/cgroup/freezer type cgroup (rw,nosuid,nodev,noexec,relatime,freezer,nsroot=/)
cgroup on /sys/fs/cgroup/cpu,cpuacct type cgroup (rw,nosuid,nodev,noexec,relatime,cpu,cpuacct,nsroot=/)
cgroup on /sys/fs/cgroup/devices type cgroup (rw,nosuid,nodev,noexec,relatime,devices,nsroot=/)
cgroup on /sys/fs/cgroup/memory type cgroup (rw,nosuid,nodev,noexec,relatime,memory,nsroot=/)
cgroup on /sys/fs/cgroup/blkio type cgroup (rw,nosuid,nodev,noexec,relatime,blkio,nsroot=/)
cgroup on /sys/fs/cgroup/perf_event type cgroup (rw,nosuid,nodev,noexec,relatime,perf_event,nsroot=/)
cgroup on /sys/fs/cgroup/hugetlb type cgroup (rw,nosuid,nodev,noexec,relatime,hugetlb,nsroot=/)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=32,pgrp=1,timeout=0,minproto=5,maxproto=5,direct)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime)
```

③ Copying text from `ls -l` command.  
Ans: `cp command, N command.`

4) Archiving & Backup the work directory using  
tar, zip & bzip2 command.  
Ans: `zip ignore.txt  
Bzip ignore.txt`

5) Use diff command to Create diff of two of  
A) diff file1 file2 in file3

Use patch command to patch a file. And Angr[ge].  
The pattern using pattern command orgin

## PRACTICAL 6

- a) which account are you logged in? How do I  
out of?  
Ans: Who Command & whoami.

- b) Display /etc/shadow file using Cat Command & understand the importance of shadow file.  
How it's different than password file.

Ans: cat /etc/shadow.

As the password file, each field in shadow file is also separated with ":" colon characters and one as follows:

- Username up to 8 characters. Case-sensitive, w/o "username". A direct match to the username in the /etc/passwd file.
- password, 13 characters Encrypted. A Blank Entry (eg.: "") indicates a password is not required to log in (usually a bad idea), & a "-" entry (-) indicates the account has been disabled.
- The number of days (Since Jan 01, 1970) since password was last changed.
- The number of days password may be changed (21200). Indicates user can keep this password unchanged for many many years.

```
jeba@jeba-VirtualBox:~$ pwd
/home/jeba
jeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~$ who
jeba    tty7          2020-01-15 20:32 (:0)
jeba@jeba-VirtualBox:~$ whoami
jeba@jeba-VirtualBox:~$ who -l
LOGIN   ttv1          2020-01-15 20:30                788 id=tty1
jeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~$ w
20:35:04 up 4 min, 1 user, load average: 0.79, 0.79, 0.38
USER  TTY      FROM              LOGIN@  IDLE   JCPU   PCPU WHAT
jeba  ttv1     :0                 20:32  4:128  0:09s  0.33s /sbin/upstart -
20:35:14 up 4 min, 1 user, load average: 0.60, 0.77, 0.37
USER  TTY      FROM              LOGIN@  IDLE   JCPU   PCPU WHAT
jeba  ttv1     :0                 20:32  4:138  0.00s  0.33s /sbin/upstart --user
jeba  ttv1     :0                 20:32  4:44  0.67s  0.33s /sbin/upstart -
jeba@jeba-VirtualBox:~$ w -s
20:36:12 up 5 min, 1 user, load average: 0.41, 0.69, 0.37
USER  TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
jeba  ttv1     20:32  5:36  0.00s  0.33s /sbin/upstart --user
```

```
jeba@jeba-VirtualBox:~$ history
1 who
2 whoami
3 who -l
4 who
5 w
6 w -s
7 w -h
8 w
9 clear
10 cat /etc/shadow
11 sudo cat /etc/shadow
12 cat /etc/passwd
13 sudo cat /etc/passwd
14 pwd
15 clear
16 history
jeba@jeba-VirtualBox:~$ 13
who -l
LOGIN   ttv1          2020-01-15 20:30                788 id=tty1
jeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~$ alias m="mkdir new"
jeba@jeba-VirtualBox:~$ m
jeba@jeba-VirtualBox:~$ ls
Desktop Downloads Music Pictures Templates
Documents examples.desktop new Public Videos
jeba@jeba-VirtualBox:~$
```

```
Jeba@Jeba-VirtualBox:~$ sudo cat /etc/passwd
[sudo] password for Jeba:
root:!:18246:0:99999:7:::
daemon:x:1:1:daemon:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
```

- The no. of days to warn user before Expiring password (7 for a full week)
- The no. of days after password Expires the account is disabled.

The no. of days since January 1, 1970 that an account has been disabled

A Reverse field for b62154 future use

Each field in a password entry is separated with colon characters & one or follows.  
username upto 8 characters. Case sensitive usually all lowercase

An 'x' in the password field password are stored.  
in the "password" file

Numeric user id This assigned by the "adduser" command. Unix use this field. Plus the following group field to identify which file belongs to the user

Normal group id Real not user group id's in a fairly unique manner for Unbreakable security. Isolating group id is matter less

full name of user. I'm not sure what the maximum length for this field is, but try to keep it reasonable (under 80 characters).

User's home directory (usually /home/user, e.g. /home/smith) all user's personal files, web page, Email forwarding, etc will be stored here.

User's "shell account", often set to '/bin/bash' to provide access to the bash shell (my personal favorite shell)

Get your current working directory pwd.

Explore different ways of getting Command History, how to run previously Executed Command without typing it history Line Number.

Create alias to most commonly used Command Alias Command Instructs the shell to replace or swap with one another string while executing the Commands

alias alias = "Command"

## PRACTICAL: 7

## LINON EDITOR VI

i) Create, modify, search & Navigate a file in Edition

ii) Create a file

To create a file, on the terminal type `vi` followed by filename

iii) modifying the file:

To modify a file on the vi editor, type 'o'

iv) Search in a file

To find a word (Forward Search) press 'f' followed by the word to search.

v) Navigate

Movement in form of directions

Key	Action
K	Moves Cursor up
J	Moves Cursor down
h	Moves Cursor left
l	Moves Cursor right

and localization.

Hot

Action.

move Book to Beginning of file, use  
move forward to end word  
move forward to Beginning of file  
move to first character of line  
move to end of line.

Scrolling.

Hot

Action

Action
scroll forward
scroll backward
scroll page
scroll half page

ctrl + up

ctrl + down

ctrl + left

ctrl + right

b) Learn all Escapes Command like Search / replace  
highlight showing borders.  
c) Replace

Ctrl + f / Ctrl + h  
Search / replace or  
Find / replace

```
Hello  
This is our Linux example  
Welcome  
Welldone  
This is VI Editor  
Thank you
```

```
:set hlsearch
```

Show the line number

Use set nu

```
jeba@jeba-VirtualBox ~  
1 Hello  
2 This is our Linux example  
3 Welcome  
4 Welldone  
5 This is VI Editor  
6 Thank you
```

```
:set nu
```

## PRACTICAL NO:- 8

### LINUX SECURITY

- a) Use of Sudo to Change User privileges  
Create an unnamed user!

To give some user sudo privileges edit /etc/sudoers using visudo. Enter new line as highlighted below.

- b) Identifying operation that acquires sudo privilege

- c) Modify Expiration Date for new user with password ageing.

```
jeba@jeba-VirtualBox:~$ sudo useradd user1
[sudo] password for jeba:
jeba@jeba-VirtualBox:~$ sudo passwd user1
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
jeba@jeba-VirtualBox:~$
```

```
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults env_reset
Defaults mail_badpass
Defaults secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"
#
# Host alias specification
#
# User alias specification
#
# Cmnd alias specification
#
# User privilege specification
root    ALL=(ALL:ALL) ALL
user1   ALL=(ALL:ALL) ALL
```

```
jeba@jeba-VirtualBox:~$ su user1
Password:
user1@jeba-VirtualBox:/home/jeba$ mkdir folder1
mkdir: cannot create directory 'folder1': Permission denied
user1@jeba-VirtualBox:/home/jeba$ sudo mkdir folder1
[sudo] password for user1:
user1 is not in the sudoers file. This incident will be reported.
```

```
jeba@jeba-VirtualBox:~$ sudo chage -l user1
jeba@jeba-VirtualBox:~$ Last password change : Jan 20, 2015
Password expires : never
Password inactive : never
Account expires : never
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires : 7
```

jeba@jeba-VirtualBox:~\$ changing the aging information for user1  
Enter the new value, or press ENTER for the default

```
Minimum Password Age [0]: 100
Maximum Password Age [9999]: 200
Last Password Change (YYYY-MM-DD) [2020-01-20]: 2020-01-21
Password Expiration Warning [7]: 5
Password Inactive [-1]: -1
Account Expiration Date (YYYY-MM-DD) [-1]: 2020-01-31
Last password change : Jan 21, 2020
Password expires : Aug 08, 2020
Password inactive : never
Account expires : Jan 31, 2020
Minimum number of days between password change : 100
Maximum number of days between password change : 200
Number of days of warning before password expires : 5
```

```
jeba@jeba-VirtualBox:~$ sudo chage -E 25/01/2020 -m 10 -M 90 -I 30 -W 30 user1
jeba@jeba-VirtualBox:~$ sudo chage -l user1
Last password change .. : Jan 21, 2020
Password expires : Apr 20, 2020
Password inactive : May 20, 2020
Account expires : Jan 01, 2022
Minimum number of days between password change : 10
Maximum number of days between password change : 90
Number of days of warning before password expires : 30
```

```
jeba@jeba-VirtualBox:~$ ifconfig
enp0s3      Link encap:Ethernet HWaddr 08:00:27:0e:6b:69
             inet addr:10.0.2.15 Bcast:10.0.2.255 Mask:255.255.255.0
               inet6 addr: fe80::c0cd:53a0:d5a3:848e/64 Scope:Link
                     UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
                     RX packets:2 errors:0 dropped:0 overruns:0 frame:0
                     TX packets:73 errors:0 dropped:0 overruns:0 carrier:0
                     collisions:0 txqueuelen:1000
                     RX bytes:1180 (1.1 KB) TX bytes:8518 (8.5 KB)

lo          Link encap:Local Loopback
             inet addr:127.0.0.1 Mask:255.0.0.0
               inet6 addr: ::1/128 Scope:Host
                     UP LOOPBACK RUNNING MTU:65536 Metric:1
                     RX packets:53240 errors:0 dropped:0 overruns:0 frame:0
                     TX packets:53240 errors:0 dropped:0 overruns:0 carrier:0
                     collisions:0 txqueuelen:1
                     RX bytes:4225072 (4.2 MB) TX bytes:4225072 (4.2 MB)
```

```
jeba@jeba-VirtualBox:~
```

```
jeba@jeba-VirtualBox:~$ hostname
jeba-VirtualBox
jeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~$ ping www.google.com
PING www.google.com (172.217.31.196) 56(84) bytes of data.
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=1 ttl=54 time=97.8 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=2 ttl=54 time=82.0 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=3 ttl=54 time=84.8 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=4 ttl=54 time=87.1 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=5 ttl=54 time=93.5 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=6 ttl=54 time=86.9 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=7 ttl=54 time=98.0 ms
64 bytes from maa03s28-in-f4.1e100.net (172.217.31.196): icmp_seq=8 ttl=54 time=90.9 ms
^Z
[1]+  Stopped                  ping www.google.com
jeba@jeba-VirtualBox:~$
```

www.GlobeTrotter.com

[www.google.com](http://www.google.com)

QUERY: STATION: WEDDING, MI 49265  
CAT: RUSTIC. OWNER: J. A. HARRIS  
X-REF: 1. ANSWER: 1. AUTHORITY: 0. ADDITIONAL: 2

FLUIDS: 4

11  
THE CLOTHES LINE

SECTION 10

**NESTA**  
[www.google.com](http://www.google.com)

QUERY TIME: 152 SEC  
SERVER: 127.0.1.1#53(127.0.1.1)  
WHEN: Mon Jan 20 22:40:06 IST 2020  
NSG SIZE rcvd: 59

jeba@jeba-VirtualBox:~\$

```
jeba@jeba-VirtualBox:~$ traceroute www.google.com  
traceroute to www.google.com (172.217.166.100), 30 hops max, 60 byte packets  
1. 10.0.2.2 (10.0.2.2) 0.190 ms 0.143 ms 0.151 ms  
2 * * *  
3 10.0.2.2 (10.0.2.2) 68.568 ms 68.486 ms 68.405 ms  
jeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~$ route  
Kernel IP routing table  
Destination      Gateway  
default          10.0.2.2  
10.0.2.0        *  
link-local      *jeba@jeba-VirtualBox:~$
```

Genmask	Flags	Metric	Ref	Use	Iface
0.0.0.0	UC	100	0	0	enp0s3
255.255.255.0	U	100	0	0	enp0s3
255.255.0.0	U	1000	0	0	enp0s3

36

## Practical No: 10

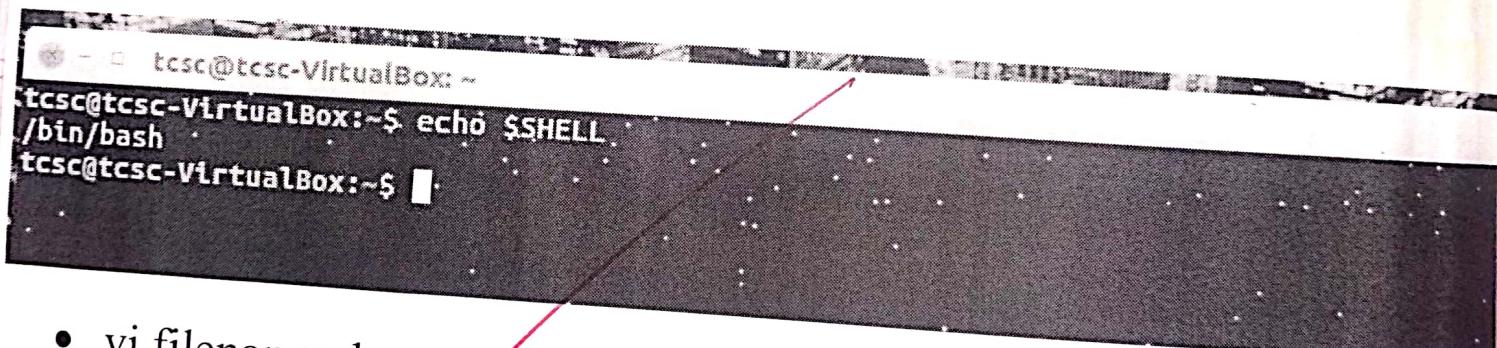
### AIM OF SHELL SCRIPTING:

#### AIM: SHELL SCRIPTING

##### Basics of shell scripting

- a) To get a shell, you need to start a terminal
- b) To see what shell you have, run: ~~echo \$SHELL~~
- c) In linux, the dollar sign(\$) stands for shell variable.
- d) The echo command just returns whatever you type in.
- e) ~~#!/bin/bash~~ – It is called shebang. It is written at the top of a shell script and it passes the instruction to the program /bin/bash

Echo \$SHELL



```
tcsc@tcsc-VirtualBox: ~
tcsc@tcsc-VirtualBox:~$ echo $SHELL
/bin/bash
tcsc@tcsc-VirtualBox:~$
```

- vi filename.sh  
#!/bin/bash  
echo "THIS IS LINUX!"

```
linux.sh [New File]
```

- chmod 777 filename.sh
- ./filename.sh

```
tsc@tsc-VirtualBox:~$ vi linux.sh
tsc@tsc-VirtualBox:~$ chmod 777 linux.sh
tsc@tsc-VirtualBox:~$ ./linux.sh
THIS IS LINUX!
tsc@tsc-VirtualBox:~$
```

program to display your name,

```
#!/bin/bash
echo "Enter your name!"
read name
echo "My name is: $name"
```

program to find sum of two variables

```
#!/bin/bash
a=100
b=25
sum=$((a+b))
echo "Sum is: $sum"
```

```
#!/bin/bash
echo "Enter your name:"
read name
echo "My name is: $name"
```

```
tcsc@tcsc-VirtualBox:~$ vi ubuntu.sh
tcsc@tcsc-VirtualBox:~$ chmod 777 ubuntu.sh
tcsc@tcsc-VirtualBox:~$ ./ubuntu.sh
Enter your name:
TANVI
My name is: TANVI
tcsc@tcsc-VirtualBox:~$
```

```
#!/bin/bash
a=100
b=25
sum=$((a+b))
echo "Sum is:$sum"
```

# ED - Command

tcsc@tcsc-VirtualBox:~\$

subjects offered in cs.  
datastructure  
database management  
Linux  
python  
green tech  
softskill  
stats  
calculus  
computer basic

```
tcsc@tcsc-VirtualBox:~$ chmod 777 lln.sh
tcsc@tcsc-VirtualBox:~$ ./lln.sh
sum is:120
tcsc@tcsc-VirtualBox:~$
```

tcsc@tcsc-VirtualBox:~\$ sed 3,5d cs.txt

subjects offered in cs

datastructure

green tech

softskill

stats

calculus

computer basic

tcsc@tcsc-VirtualBox:~\$

Delete a line

To delete line , use no number followed  
by d ,

```
tcsc@tcsc-VirtualBox:~$ vi linux.sh
tcsc@tcsc-VirtualBox:~$ chmod 777 linux.sh
tcsc@tcsc-VirtualBox:~$ ./linux.sh
THIS IS LINUX!
tcsc@tcsc-VirtualBox:~$
```

6/

5/

~~Add a new file with some Content  
Every man pattern, ~~the~~ option ↗.~~

```
tcsc@tcsc-VirtualBox:~$ sed '/cs/i "this is linux"' cs.txt
"this is linux"
subjects offered in cs
datastructure
database management
Linux
python
green tech
softskill
stats
calculus
computer basic
tcsc@tcsc-VirtualBox:~$
```