

Aim: To learn open source operating system.

a) Learn any open source operating system of your choice Linux, android free BSD etc.

Linux is a family of open source Unix like operating system based on the Linux kernel on September 17 1991 by Linus.

Popular Linux distribution included Debian, Fedora and Ubuntu.

Here are commercial distribution of Linux and just Linux enterprise by red hat enterprises.

b) We are going to install the widely known distributed

Step 1: Load the iso file on bootable during or the

Step 2: Boot up the machine It will prompt with two, click on install Ubuntu.

Step 3: It will ask to configure the keyboard layout.

Step 4: It will ask to configure related to the

Step 5 It will ask you about the installation
Step 6 Wait for it to install and load the required files

* Identify the unique feature of the os you have

- ① Easy to install
 - ② Good support for hardware and easy to install post network
 - ③ Easy to + memory used application from no
 - ④ Strong kernel architecture
- a) Install your choice of Linux distribution e.g. Ubuntu, Fedora, Debian
 - b) Customize desktop environment by changing different default option like changing default background screen savers.

Accessing Appearance Setting

To access appearance setting in Ubuntu click on user menu to the top right corner.

Install an app instead

Who are you?

First name: chandru

User (optional) name: chandru-chandru

The email used when you last visited this website.

Mobile number: chandru

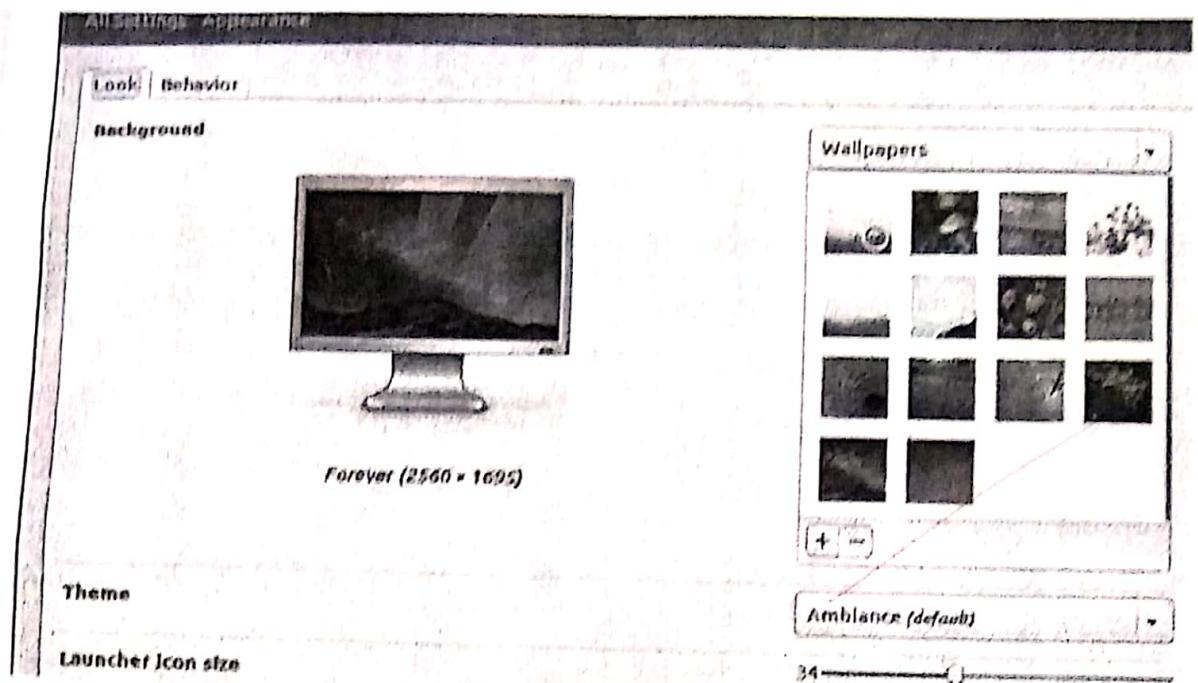
Create a password: 3333

Confirm your password: 3333

Log in automatically
 Remember my password and log in
 Encrypt my home folder

Time & Date

All Settings · Time & Date



to the menu bar and select system setting.
A window will pop up with all setting divided into Personal option from lets just select the appearance icon.

Choosing wallpaper picture
on the left side Custom wallpaper. In Background part you can see your

on the right side is Port where we can select one of
the wallpaper clicking on any thumbnail our
of effect.

If you want to select wallpaper from you effect
picture folder click the drop down menu about select
item as your wallpaper.

To add wallpaper that is another folder just click
dropdown below the thumbnails or the item is Port
window selected the paths to our custom folder. A-
choose the picture inside of it.

Changing Ubuntu theme

- Ubuntu also has an option to change Desktop theme which is one click will change the entire way your computer looks.
- To do that click on the dropdown menu below the wallpaper thumbnails and choose between Ambiance or Radiance High.

- Ambiance is a light theme that look a bit man like while Radiance is the darker brown theme used in Ubuntu by default.

- c) • Screen Resolution: Assertion the current screen resolution of your desktop.
Change the size or rotation of the screen.

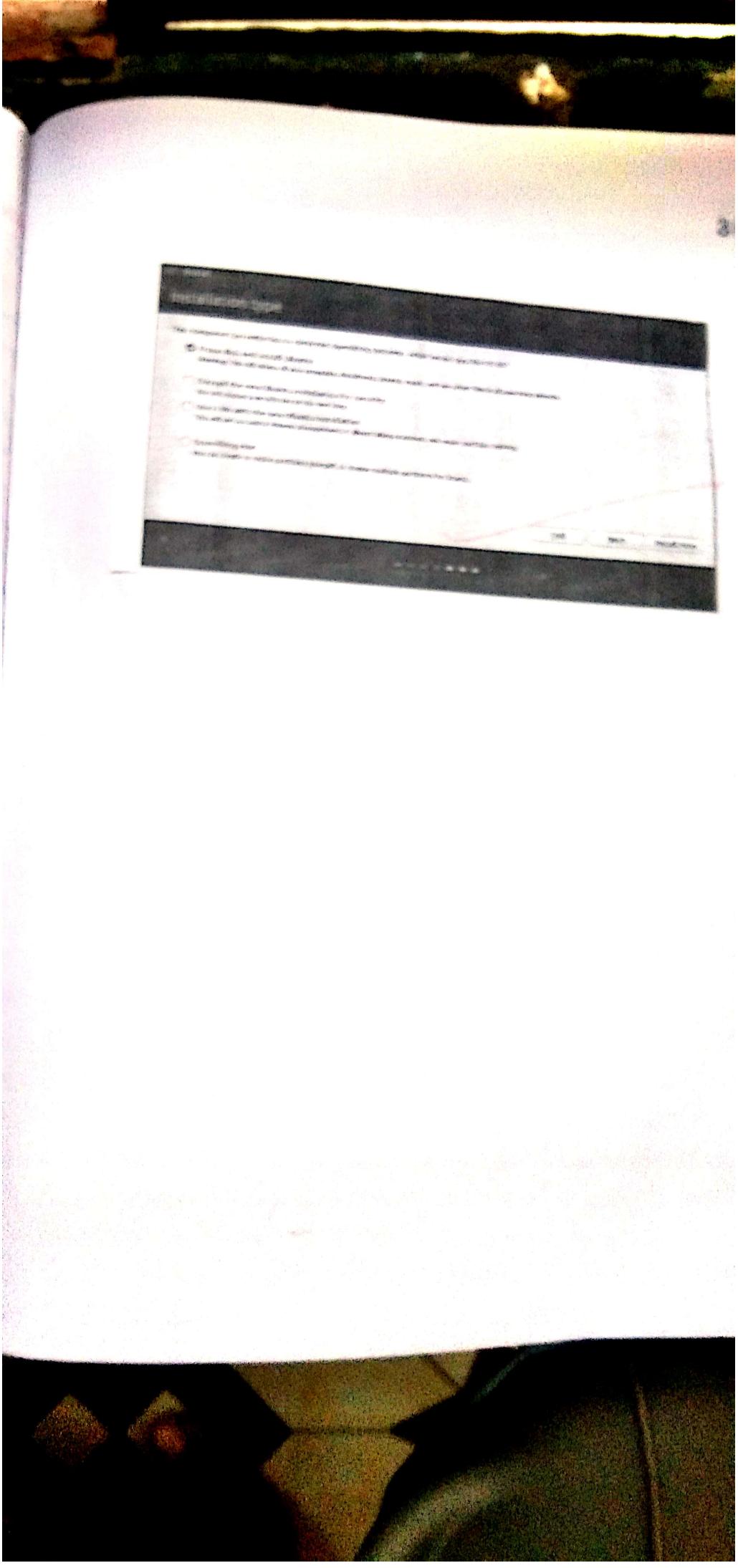
- You can change how big (or how detailed) thing appear on the screen by changing the screen resolution.

- You can change which way up thing appear (for example if you have a rotating system).
① click the icon on the every of the menubar and System.

- ② Open screen display.

- ③ Select your desired resolution and rotation.





A window will pop-up with all setting divided into personal, hardware and system option icons lets just select the appearance icon.

Time setting change (or new York time) the time zone of your system to

If you are currently displaying time change in India time now does the after rotating the time change . Change time zone to your local time zone.

Just click on the clock on the top bar, and choose time and date setting once the time and date window open choose manually so you can choose your time zone from the map and choose automatic.

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Practical 2

Ques: Installing and removing software.

a) Install gcc package verifying that it runs and remove it.

Step 1: First type gcc -v to know if you have directly installed gcc compiler not if the output is blank then it mean that you don't have gcc installed.

Step 2: Type sudo apt-get install gcc; after typing the following command installed ~~it~~ folder place

Step 3: Type sudo apt-get install built essential this will install all the libraries required for C & C++ program language.

Now do Mainstall left cochlea

In Old Slang although there is no Lab level
initialised target get, so you can do, some disjunctions
do have 9.0 in particular get, so you can't do.

Type : cd build /ge
Sudo make install

~~This does not remove every file that was pasted but it removes many executable like .exe, .bat, .com etc. contained in that directory~~

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Practical 3

Aim: Utilization of grep, man commands Documentation.

- a) finding info documentation from two commands like:-
bring up the info page for the group command bring
up the usage section.

Ans:- To find info about any command information
is used. The syntax of info command is info
(command name).

We are going to find the info about the
group command.

Open the terminal ($Ctrl + Alt + T$) and type:-
info grep

After typing this command following output will
be displayed on to your screen.

Name

ls ~ ls directory contents

Synopsis:- ls [option]... [file]

List information on the about files

-a-all

do not ignore entries start

-b- escaped

print c-style escapes

* 'man ls'

Name:

for A - content C - create the GNU version

Synopsis:-

a - different command deleted

Description:-
Takes stores and extracts files from disk

* 'man zip'

Name:

zip package and compress archive's files

Synopsis:-

z - PKT (see separate man page)

2 - Pkto (see separate man page)

Description:-

zip is compression and file packing utility
Unix, VMS, MS-DOS, OS/2

b) finding man page from the command line :- Bring up the man section .
 As:- To use the 'man' command simply type 'man' (command name)

Now we are going to find the manual for 'ls' command.

Name :-

~~ls~~ - ls directory contents.
 Synopsis : ls [options]... [files]
 -a - all
 list information in the about files

do not ignore entries starting with '-' - b - escapes

~~finding man pages~~ my topic : What man pages available that document file compression.

As:- 'tar', 'zip' are some man pages which are available for document file compression simple type `man tar`

Q) Finding man pages by section from the command
by looking up the man page for the `printf` function which
manual page section are library function found.

Ans: The number corresponds to what section of the
manual page is from, 1 is user command while 8 is
sys admin stuff. The man page for man itself
explains it & and lists no sections.

There are certain terms that have different page
in different section (eg: `printf` as a command appears
in section 1 as a 'stdlib' function appears in section 3), so
like that you can pass the section no. to the man
before the page name to choose which one you want
or use `man -a` to show every matching page in case

you can tell what section a term falls in with
`'man -k'` (equivalent to ~~as~~ a proper command). It will
do substituting matches too if you use '`term`
~~for~~ `is -m`'

) Command line help list the available operation for
the command. How can you do this?

Ans: `lsmod -m = swx` directory name.

command line operation.

a) Install package on your system

Sudo apt-get install (package name)

b) Remove the package installed

Sudo apt-get remove (package name)

c) find the Password file using find command

- # find / -name password
- /user/share/doc/passwd
- /user/bin/password
- /etc/passwd
- /etc/password

Find the directory password file under root and level down:

find / -maxdepth 2 -name password

- /etc/password

Find the Password file under root & 2 level de-

find / -maxdepth 2 -name Password
• /user/Parad/Password
• /etc/Parad>Password

Find the Password file between sub-directories level 2

find - maxdepth -name Password
• /user/bin/Password
• /etc/Parad/Password

c) Create a system symbolic link to the file you found in test step.

ln -sfile , file 2

e) Create an empty file example.txt if more than one directory using relative pathname
touch example.txt
mv example.txt /tmp/

g) find the location of ls, ps bash command
 # where is ls

ls: /bin/ls /usr/local/bin/ls .1.92

where is ps

ps: /bin/ps /usr/local/bin/ps: /bin/ps /usr/local/bin/ps .1.92

where bash

bash: /bin/bash /etc/bash .bashrc /usr/local/bin/bash .1.92

~~ps
location~~

```
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:~$ 

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,noexec,relatime,size=494430k,nr_inodes=123009,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=102410k,mode=755)
tmpfs on /run/lock type tmpfs (rw,nosuid,noexec,relatime,errors=remount-ro,dataordered)
/dev/sda1 on / type ext4 (rw,relatime,errors=remount-ro,dataordered)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k)
tmpfs on /run/lock type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k)
tmpfs on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,nodev,noexec,relatime,xattr,release_agent=/lib/systemd/systemd-cgroups-agent,name=systemd-nsroot/)
tmpfs on /sys/fs/cgroup/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
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/blktio 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)
hugetlbfss on /dev/hugepages type hugetlbfss (rw,relatime)
jeba@jeba-VirtualBox:~$ ls
Desktop  Downloads  Music  Public  Videos
Documents examples desktop  dd  Pictures  Templates
jeba@jeba-VirtualBox:~$ cd jeb
jeba@jeba-VirtualBox:~/jeb$ cat .gg.txt
cat: .gg.txt: No such file or directory
jeba@jeba-VirtualBox:~/jeb$ cat gg.txt
cat: gg.txt: No such file or directory
jeba@jeba-VirtualBox:~/jeb$ cat >gg.txt
welcome
Linux
^C
jeba@jeba-VirtualBox:~/jeb$ touch dd.txt
jeba@jeba-VirtualBox:~/jeb$ ls
dd.txt  gg.txt
jeba@jeba-VirtualBox:~/jeb$ cp gg.txt dd.txt
jeba@jeba-VirtualBox:~/jeb$ cat gg.txt
cat: gg.txt: No such file or directory
jeba@jeba-VirtualBox:~/jeb$ cat ss.txt
come
Linux
jeba@jeba-VirtualBox:~/jeb$ cat dd.txt
Linux
welcome
jeba@jeba-VirtualBox:~/jeb$ cat ss.txt
jeba@jeba-VirtualBox:~/jeb$ 
jeba@jeba-VirtualBox:~/jeb$ touch ss.txt
jeba@jeba-VirtualBox:~/jeb$ mv gg.txt ss.txt
cat: gg.txt: No such file or directory
jeba@jeba-VirtualBox:~/jeb$ cat gg.txt
jeba@jeba-VirtualBox:~/jeb$ cat ss.txt
come
Linux
jeba@jeba-VirtualBox:~/jeb$ 
```

Practical no. 5

file operation:

Explore mounted filesystem on your computer.

df -k

what are the different ways of exploring mounted file system of Linux?
mount.

copying text from files.

4) Archiving and backup the work directory using tar,
gzip + and bzip2 commands.

→ gzip filename.txt
Bzip2 filename.txt

5) Use diff command to create diff of two files.
→ diff fibname1 fibname2

6) Use Patch Command to patch file. And analyze the patch using
Patch Command again.

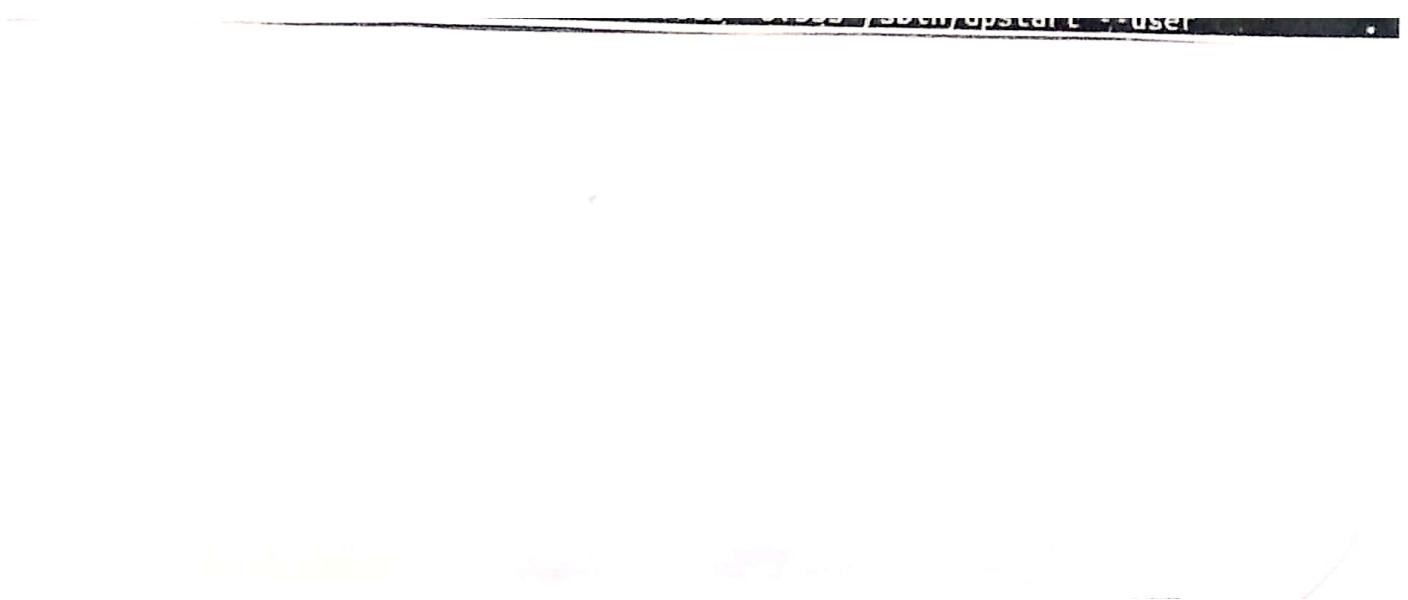
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```
jeba@jeba-VirtualBox:~$ tar -cvf data.tar /mn
tar: data.tar: Cannot open: Permission denied
tar: Error is not recoverable: exiting now
jeba@jeba-VirtualBox:~$ sudo tar -cvf data.tar /mn
tar: Removing leading '/' from member names
/mn/
/mn/hd/
jeba@jeba-VirtualBox:~$ ls
bin  data.tar  etc      lib      mn  opt  run  srv  usr
boot dd   home  lost+found  mnt  proc  sbin  sys  var
cdrom dev  initrd.img  media  mnt1  root  snap  vmlinuz
jeba@jeba-VirtualBox:~$ cat data.tar
mn/0000755000000000000000000000000013605376557010365 Sustar rootrootmn/mn/0000755000000000000000000000000013605376557010766 Sustar rootrootjeba@jeba-VirtualBox:~$
```

```
jeba@jeba-VirtualBox:~/jeb$ bzip2 ss.txt
jeba@jeba-VirtualBox:~/jeb$ ls
dd.txt  ss.txt.bz2
jeba@jeba-VirtualBox:~/jeb$ cat ss.txt.bz2
BZh9lAY&SY`+|||+|||
'3ew5S++|||1 jeba@jeba-VirtualBox:~/jeb$ gzip dd.txt
jeba@jeba-VirtualBox:~/jeb$ ls
dd.txt.gz  ss.txt.bz2
jeba@jeba-VirtualBox:~/jeb$ cat dd.txt.gz
+|||+|||d.txt+OeIeeMeee++eo|||+Xzjeba@jeba-VirtualBox:~/jeb$
```

```
jeba@jeba-VirtualBox:~/jeb$ ls
dd.txt.gz  ss.txt.bz2
jeba@jeba-VirtualBox:~/jeb$ cat >aa.txt
hello world
^C
jeba@jeba-VirtualBox:~/jeb$ cat >bb.txt
this is linux^C
jeba@jeba-VirtualBox:~/jeb$ diff aa.txt bb.txt
1de
< hello world
jeba@jeba-VirtualBox:~/jeb$ cat >bb.txt
this is Linux
^C
jeba@jeba-VirtualBox:~/jeb$ diff aa.txt bb.txt
1c1
< hello world
---
> this is Linux
jeba@jeba-VirtualBox:~/jeb$ gzip aa.txt
jeba@jeba-VirtualBox:~/jeb$ gzip bb.txt
jeba@jeba-VirtualBox:~/jeb$ diff aa.txt.gz bb.txt.gz
Binary files aa.txt.gz and bb.txt.gz differ
```

```
jeba@jeba-VirtualBox:~/jeb$ cat >hi.txt
hi
hi
hi
^C
jeba@jeba-VirtualBox:~/jeb$ cat >hii.txt
hello
hello
hello
^C
jeba@jeba-VirtualBox:~/jeb$ diff -u hi.txt hii.txt >sam.patch
jeba@jeba-VirtualBox:~/jeb$ patch ,sam.patch
^C
jeba@jeba-VirtualBox:~/jeb$ patch <sam.patch
patching file hi.txt
jeba@jeba-VirtualBox:~/jeb$ cat sam.patch
--- hi.txt      2020-01-08 22:14:55.463569834 +0530
+++ hii.txt     2020-01-08 22:15:16.259898738 +0530
@@ -1,3 +1,3 @@
-hi
-hi
-hi
+hello
+hello
+hello
jeba@jeba-VirtualBox:~/jeb$
```



Pactical 6.8

Use of Environment.

- A) Which account you are logged in? How do you find out?
 who command & whoami
- B) Display /etc/shadow file using cat command and understand the structure of shadow file. How it's different than passwd file.
 cat /etc/shadow
- As with the passwd file, each file in the shadow file is also separated with ":" colon characters and are as follows:
- Username, up to 8 characters - case-sensitive, usually all lowercase and don't match to the username in the /etc/passwd file.
 - Password, 13 characters encrypted. A blank entry (eg ::) indicate password is not required to log in (usually a bad idea)
 - and a "+" entry (eg :+*) indicate the account has been disabled.
 - The number of days (since January 1, 1970) since the password last changed.
 - The number of days after which password must be changed (it indicate user can keep his or her password unchanged for many years)
 - The number of days to warn user of an expiring password (7 days for week)

The number of days after password expires that account disabled.

- The number of days since Jan 1, 1970 that an account has been disabled
- A reserved field for possible future use.

Each field in a passwd entry is separated with ":" colon character, and are as follows:

- Username, up to 8 characters. Case-sensitive, usually all lowercase.
- An "*" in the Password field. Passwords are stored in the "/etc/shadow" file.
- Numeric user id. This is assigned by the "adduser" script. User uses ...this field, plus the following group sets.
Red Hat field, to identify which files belong to user.
- Numeric group id. Red Hat uses group id's in a fairly unique manner for enhanced file security. Usually group id match to user id.
- Full name of user. I'm not sure that the maximum length for this field is, but say to keep it reasonable (under 30 characters).
- User's home directory. Usually /home/username (e.g. home/jsmith). All user's personal files, web pages, mail forwarding, etc will be stored files here.
- User "shell account". Often set to "/bin/bash" to provides to the bash shell (my personal favorite shell).


```
jeba@jeba-VirtualBox: ~
jeba@jeba-VirtualBox:~$ history
1 who
2 whoami
3 who -l
4 clear
5 w
6 w -s
7 w -h
8 w -f
9 clear
10 cat /etc/shadow
11 sudo cat /etc/shadow
12 clear
13 sudo cat /etc/passwd
14 pwd
15 clear
16 history
jeba@jeba-VirtualBox:~$ !3
who -l
LOGIN    ttym1      2020-01-15 20:30
jeba@jeba-VirtualBox:~$
```

Get your current directory.

pwd

Explore different ways of getting command history, how to run previously executed command without typing it.
history

Create alias to most commonly used commands
Alias command instructs the shell to replace one string with another string while executing the command
alias label = "some command"

BB
23/01

moves cursor up

moves cursor down

moves cursor left

moves cursor right

○○○ jeba@jeba-VirtualBox -

Hello
This is my Linux example
Welcone
Welldone
This is Vi Editor
Thank you

I

:g/n/s//our/gc

○○○ jeba@jeba-VirtualBox -

Hello
This is [] Linux example
Welcone
Welldone
This is Vi Editor
Thank you.

replace with our (y/n/e/q/i) :

○○○ jeba@jeba-VirtualBox -

Hello
This is our,Linux example
Welcone
Welldone
This is Vi,Editor
Thank you

Scolling

key	Action
Ctrl + f	scrolls forward
Ctrl + b	scrolls backwards
Ctrl + d	scrolls half page
Ctrl + u	scrolls half page down

Learn all essential command like search/replace, highlight, show
line numbers -

→ Replace

~~Highlight
use set sethighlight~~

~~Show the line number
use set nu~~

```
1.■  
2 Hello  
3 This is our Linux example  
4 Welcome  
5 Welldone  
6 This is vi Editor  
7 Thank you
```

```
:set nu
```

```
# 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.
```

Final ?

your security

> use of sudo to change user privileges to root.

(note or user cannot use)

use of sudo to change user privileges to root.

(note or user cannot use)

use of sudo to change user privileges to root.

(note or user cannot use)

To give some user root privileges can be done using sudo. End of newline highlighted below.

- a) Identify operation that requires sudo privilege.
- b) modify operation above given user password against

E : Expiration Date

m : Maximum number of days before password change

-M : Number of days password is valid

-I : Account is active

w : Number of days of warning before a password change is required

d) Delete newly added user

```
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:~$
```

jeba@jeba-VirtualBox

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



- a) Use O dig (error or)
- b) Use O dig (error or)
- c) Use O dig (error or)
- d) Use O dig (error or)
- e) Troubleshooting network using ping (error or)

```
jebas@jeba-VirtualBox:~$ route  
Kernel IP routing table  
Destination     Gateway      Genmask       Flags Metric Ref Use Iface  
default         10.0.2.2    0.0.0.0       UG    100   0    0 enp0s3  
10.0.2.0        *           255.255.255.0  U     100   0    0 enp0s3  
link-local      *           255.255.0.0    U     1000  0    0 enp0s3  
jebas@jeba-VirtualBox:~$
```

```

imbudjuba-VirtualBox:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
PROTO RefCnt Flags      TYPE      State
unix 2 [ ]  DGRAM
unix 2 [ ]  DGRAM
unix 16 [ ]  DGRAM
dev Log
unix 7 [ ]  DGRAM
socket
unix 3 [ ]  DGRAM
unix 3 [ ]  STREAM   CONNECTED
stdout
unix 3 [ ]  STREAM   CONNECTED
stdout
unix 3 [ ]  STREAM   CONNECTED
unix 3 [ ]  STREAM   CONNECTED

```

use of last command:

a)

) Use of related command and No? command:

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Aim: Shell scripting

Basic of shell scripting

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

Echo \$SHELL

• vi filename.sh

#!/bin/bash

echo "THIS IS LINUX!"

• chmod 777 filename.sh

• ./filename.sh

```
#!/bin/bash  
echo "THIS IS LINUX!"
```

linux.sh [New File]

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

Step to write and execute a shell script.

Shell script is just a simple text file with .sh having executable permission.

- a) Open terminal.
- b) Navigate to the place where you want to create using cd command
- c) Touch filename.sh
- d) vi filename.sh [You can use your favorite editor]
- e) chmod 777 filename.sh [for making the script executable]
- f) sh filename.sh or ./filename.sh [for running the script]

Program to display your name.

```
#!/bin/bash
Echo "Enter your name:"
Read Name
Echo "My name is:$name"
```

Q2

Program to find the sum of two variable.

```
Vi filenam.p.l  
#!/bin/bash
```

a=100

b=25

Sum=\$((a+b))

Echo "sum is : \$Sum"

```
tcsc@tcsc-VirtualBox: ~  
tcsc@tcsc-VirtualBox: ~$ vi linux2.sh  
tcsc@tcsc-VirtualBox: ~$ chmod 777 linux2.sh  
tcsc@tcsc-VirtualBox: ~$ ./linux2.sh  
Sum is 125  
tcsc@tcsc-VirtualBox: ~$
```

"lin.sh" 3 lines, 46 characters

```
tcsc@tcsc-VirtualBox:~$ vi lin.sh
tcsc@tcsc-VirtualBox:~$ chmod 777 lin.sh
tcsc@tcsc-VirtualBox:~$ ./lin.sh 50 70
sum is:120
tcsc@tcsc-VirtualBox:~$ █
```

~~program to find sum of two numbers (value passed during
execution)~~

Sed

Sed command or stream editor is very powerful used by Linux system. It is mainly used for text substitution, replacement, etc. It can perform other text manipulation like insertion, deletion, search, etc. With sed, we can edit a file without actually having to open it.

Consider the following text file:

1) Displaying Partial Text of a file.

With Sed, we can view only part of a file rather than whole file.

subjects covered in cs
datastructure
database management
linux
python
green tech.
softskill
stats
calculus
computer basic.

:wq

```
tcsc@tcsc-VirtualBox:~$ sed 's/cs/computer/' cs.txt
subjects offered in computer :
datastructure
database management
linux
python
green tech
softskill
stats
calclus
computer basic
```

∴ Display all except searching.
To display all content
use option 'd' ∴ file except for some portion,

3) Deleting a line
To delete a line, use line number followed by 'd'

a) Search and Replacing a set string:
~~'s' option is for searching a word.~~

To add a new line & with some content before over
Pattern match, use option ':i'

subjects offered in CS

this is Linux"

datastructure

database management

linux

python

green tech

softskill

stats

atclus

computer basic

```
tcsc@tcsc-VirtualBox:~$
```

```
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:~$
```

ttscatc-virtualbox: ~ sed -e

Thanks subjects offered in cs

Thanks datastructure

Thanks database management

Thanks linux

Thanks python

Thanks green tech

Thanks softskill

Thanks stats

Thanks calculus

Thanks computer basic

To change a whole line with matched pattern:
To change a whole line to a new line when a search
pattern matches, use option 'r'.
pattern matches, use option 'r'.

Repeating lines with some content before every line that had
over and 2 to following -

~~150
210~~