LINUX ASSIGNMENT- YUKTI SHARMA
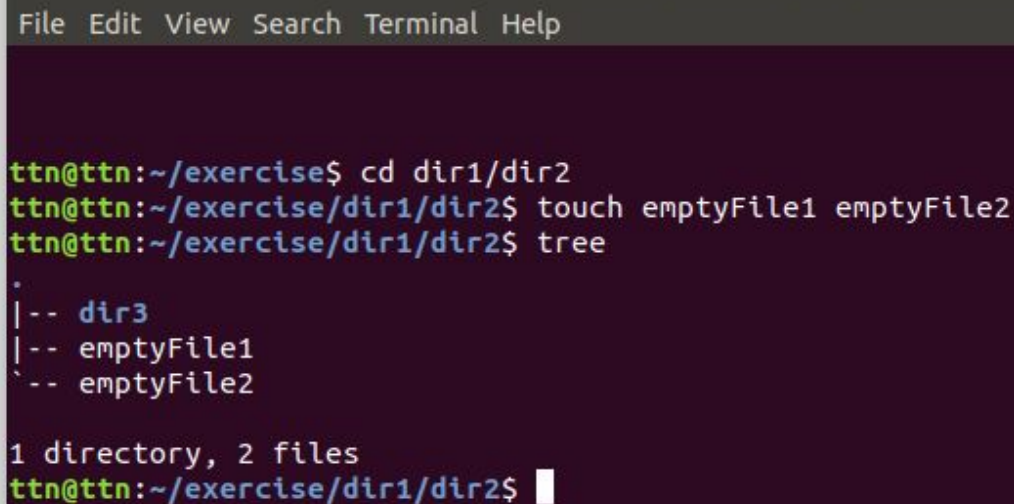
1) **Create a directory "exercise" inside your home directory and create nested(dir1/dir2/dir3) directory structure inside "excerise" with single command.**

```
ttn@ttn:~$ mkdir -p exercise/dir1/dir2/dir3
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ tree
.
`-- dir1
    `-- dir2
        `-- dir3

3 directories, 0 files
ttn@ttn:~/exercise$ 
```

2 Create two empty files inside dir2 directory: emptyFile1,emptyFile2 in single command

```
File  Edit  View  Search  Terminal  Help


ttn@ttn:~/exercise$ cd dir1/dir2
ttn@ttn:~/exercise/dir1/dir2$ touch emptyFile1 emptyFile2
ttn@ttn:~/exercise/dir1/dir2$ tree
.
|-- dir3
|-- emptyFile1
`-- emptyFile2

1 directory, 2 files
ttn@ttn:~/exercise/dir1/dir2$ 
```

3 Create one file file1.txt containing text "hello world" and save it.

```
ttn@ttn:~/exercise$ echo "hello world" > file1.txt
ttn@ttn:~/exercise$ cat file1.txt
hello world
ttn@ttn:~/exercise$ 
```

4) Find a "passwd" file using find command inside /etc. copy this files as passwd_copy and then rename this file as passwd_backup.

```
ttn@ttn:~/exercise$ sudo find /etc -name "passwd"
/etc/passwd
/etc/cron.daily/passwd
/etc/pam.d/passwd
ttn@ttn:~/exercise$ cp /etc/passwd passwd_copy
ttn@ttn:~/exercise$ tree
.
|-- dir1
|   `-- dir2
|       |-- dir3
|       |-- emptyFile1
|       `-- emptyFile2
|-- emptyfile2
|-- file1.txt
|-- passwd_copy
`-- touch

3 directories, 6 files
ttn@ttn:~/exercise$ mv passwd_copy passwd_backup
ttn@ttn:~/exercise$ 
```

5) Try reading passwd_backup file in multiple tools: less,more,cat,strings etc and find the difference in their usage.
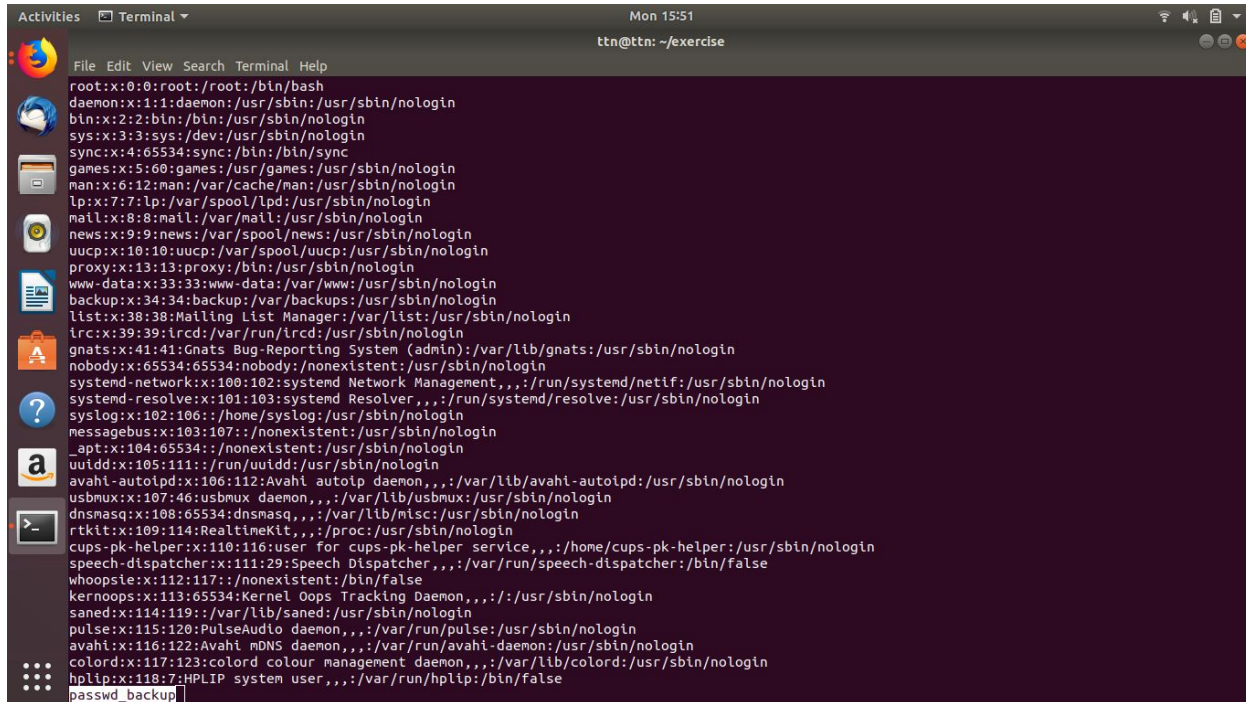
Ans-

more = to view a text file one page at a time, press spacebar to go to the next page

less = similar to more with navigation of the page up/down using the less command and not possible in more command.

cat = can be used to join multiple files together and print the result on screen (it will not show page by page)
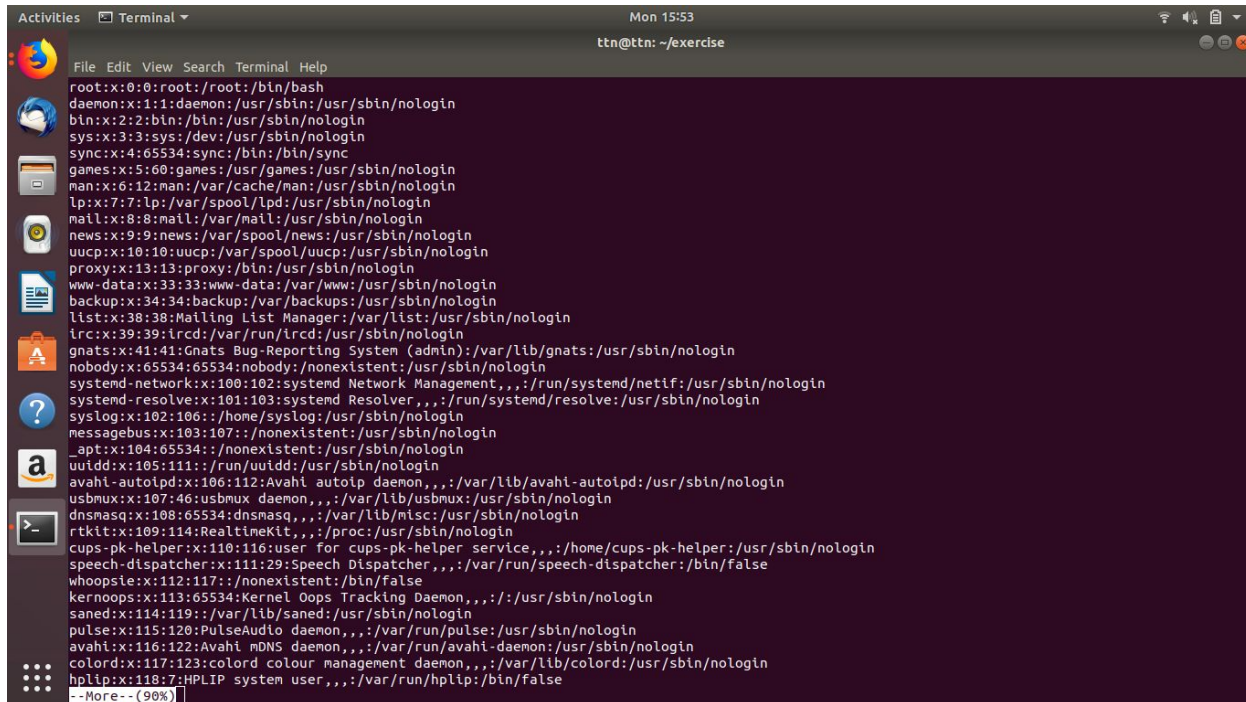
Strings = The **strings command** returns each **string** of printable characters in files. Its main uses are to determine the contents of and to extract text from binary files (i.e., non-text files)

less-


```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/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
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
passwd_backup
```

More-


```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/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
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
--More--(90%)
```

Cat-


```
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
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:119:124::/var/lib/geoclue:/usr/sbin/nologin
gnome-initial-setup:x:120:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:121:125:Gnome Display Manager:/var/lib/gdm3:/bin/false
ttn:x:1000:1000:TTN,,,:/home/ttn:/bin/bash
ttn@ttn:~/exercise$
```

Strings-


```
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
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:119:124::/var/lib/geoclue:/usr/sbin/nologin
gnome-initial-setup:x:120:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:121:125:Gnome Display Manager:/var/lib/gdm3:/bin/false
ttn:x:1000:1000:TTN,,,:/home/ttn:/bin/bash
ttn@ttn:~/exercise$
```

6) Find out the number of line in password_backup containing "/bin/false".

```
ttn@ttn:~/exercise$ grep "/bin/false" passwd_backup | wc -l
5
ttn@ttn:~/exercise$
ttn@ttn:~/exercise$
```

7) Get the first 5 lines of a file "password_backup" and Redirect the output of the above commands into file "output".

```
ttn@ttn:~/exercise$ head -n 5 passwd_backup > output
ttn@ttn:~/exercise$ cat output
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/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
ttn@ttn:~/exercise$
```

8) Create a "test" user,create its password and find out its uid and gid.

```
ttn@ttn:~/exercise$ sudo useradd tests
ttn@ttn:~/exercise$ sudo passwd tests
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
ttn@ttn:~/exercise$ sudo id tests
uid=1002(tests) gid=1002(tests) groups=1002(tests)
ttn@ttn:~/exercise$
```

9) Change the timestamp of emptyFile1,emptyFile2 which are exist in dir2

```
ttn@ttn:~/exercise$ cd dir1/dir2
ttn@ttn:~/exercise/dir1/dir2$ ls -l
total 4
drwxr-xr-x 2 ttn ttn 4096 Feb  4 14:57 dir3
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:25 emptyFile1
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:25 emptyFile2
ttn@ttn:~/exercise/dir1/dir2$ touch emptyFile1 emptyFile2
ttn@ttn:~/exercise/dir1/dir2$ ls -l
total 4
drwxr-xr-x 2 ttn ttn 4096 Feb  4 14:57 dir3
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:26 emptyFile1
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:26 emptyFile2
ttn@ttn:~/exercise/dir1/dir2$
```

10) Login as test user and edit the "output" file created above. Since the permission wont allow you to save the changes. Configure such that test user can edit it.

i) Add group owner of the "output" file as the secondary group of testuser and check/change the "output" file permission if it is editable by group. Once done revert the change

ii) Make the file editable to the world so that test user can access it. Revert the changes after verification

iii) Change the ownership to edit the file.

```
                              ttn@TTN: ~
File  Edit  View  Search  Terminal  Help
ttn@TTN:~$ sudo usermod -G root test
ttn@TTN:~$
```

```
qw
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/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
```

```
test@TTN:/home/ttn$ vim output
```

```
test@TTN:/home/ttn$ sudo chmod 777 output
test@TTN:/home/ttn$
```

```
test@TTN:/home/ttn$ sudo chown :test output
test@TTN:/home/ttn$ ls -l
total 212
drwxr-xr-x 3 ttn  ttn   4896 Feb  4 11:33 a
-rw-r--r-- 1 ttn  ttn     18 Feb  4 12:38 ab
-rw-r--r-- 1 ttn  ttn     25 Feb  4 12:39 abcd
-rw-r--r-- 1 ttn  ttn      5 Feb  4 11:29 abc.txt
-rw-r--r-- 1 ttn  ttn  83531 Feb  4 14:19 cal
drwxr-xr-x 2 ttn  ttn   4896 Feb  4 16:36 Desktop
-rw-rw-r-- 1 ttn  ttn  17212 Apr 17  2617 DESKTOP
drwxr-xr-x 2 ttn  ttn   4096 Feb  1 10:32 Documents
drwxr-xr-x 2 ttn  ttn   4096 Feb  4 16:52 Downloads
-rw-r--r-- 1 ttn  ttn   8980 Feb  1 10:21 examples.desktop
drwxr-xr-x 3 ttn  ttn   4096 Feb  4 14:02 excercise
-rw-r--r-- 1 ttn  ttn     12 Feb  4 14:10 file1.txt
drwxr-xr-x 2 ttn  ttn   4096 Feb  1 10:32 Music
-rwxrwxrwx 1 ttn  test   194 Feb  4 21:36 output
-rw-r--r-- 1 ttn  ttn   2444 Feb  4 14:36 passwd_backup
drwxr-xr-x 2 ttn  ttn   4896 Feb  4 21:37 Pictures
drwxr-xr-x 2 ttn  ttn   4896 Feb  1 10:32 Public
drwxr-xr-x 2 ttn  ttn   4896 Feb  1 10:32 Templates
-rw-rw-r-- 1 ttn  ttn  18248 Feb  4 16:32 test.tar
drwxrwxr-x 3 ttn  ttn   4896 Feb  4 20:37 tnp
drwxr-xr-x 2 ttn  ttn   4096 Feb  1 10:32 Videos
-rw-rw-r-- 1 ttn  ttn    331 Feb  4 16:20 wget-log
-rw-rw-r-- 1 ttn  ttn    331 Feb  4 16:21 wget-log.1
-rw-rw-r-- 1 ttn  ttn    331 Feb  4 16:22 wget-log.2
test@TTN:/home/ttn$
```

```
test@TTN:/home/ttn$ id test
uid=1001(test) gid=1001(test) groups=1001(test),0(root),27(sudo)
test@TTN:/home/ttn$ sudo gpasswd -d test root
Removing user test from group root
test@TTN:/home/ttn$ id test
uid=1001(test) gid=1001(test) groups=1001(test),27(sudo)
test@TTN:/home/ttn$
```

11) Create alias with your name so that it creates a file as "/tmp/aliastesting".

```
ttn@ttn:~/exercise/dir1/dir2$ alias yukti='mkdir -p tmp/aliastesting'
ttn@ttn:~/exercise/dir1/dir2$ yukti
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3  emptyFile1  emptyFile2  tmp
ttn@ttn:~/exercise/dir1/dir2$ tree
.
|-- dir3
|-- emptyFile1
|-- emptyFile2
`-- tmp
    `-- aliastesting

3 directories, 2 files
ttn@ttn:~/exercise/dir1/dir2$
```

12) Edit ~/.bashrc file such that when you change to "test" user it should clear the screen and print "Welcome".

su test
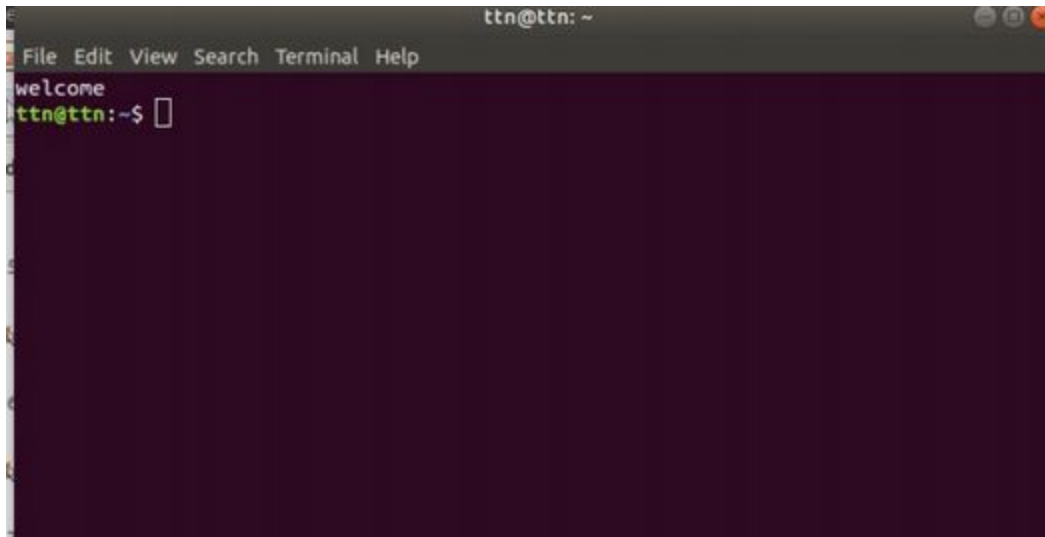
Vim ~/.bashrc

Enter welcome in file

Su ttn

Su test

13) Install "zip" package.


```
ttn@ttn:~/exercise$ sudo apt-get install zip
Reading package lists... Done
Building dependency tree
Reading state information... Done
zip is already the newest version (3.0-11build1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ttn@ttn:~/exercise$
```

14) Compress "output" and "password_backup" files into a tar ball. List the files present inside the tar created.

```
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ ls
dir1          emptyFile2  output              touch  wget-log
emptyfile2  file1.txt   passwd_backup  wc
ttn@ttn:~/exercise$ tar -cvf test.tar output passwd_backup
output
passwd_backup
ttn@ttn:~/exercise$ ls
dir1          emptyFile2  output              test.tar  wc
emptyfile2  file1.txt   passwd_backup  touch      wget-log
ttn@ttn:~/exercise$ tar -tf test.tar
output
passwd_backup
ttn@ttn:~/exercise$ 
```

15) scp this file to test user

```
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ sudo scp /home/ttn/exercise/test.tar tests@localhost:/home/tests/
[sudo] password for ttn:
ssh: connect to host localhost port 22: Connection refused
lost connection
ttn@ttn:~/exercise$ 
```

16) Unzip this tar bar by logging into the remote server

```
ttn@ttn:~/exercise$ tar czv test.tar| ssh tests@localhost 'cat | tar xz -C /tests'
test.tar
ssh: connect to host localhost port 22: Connection refused
ttn@ttn:~/exercise$ 
```

17) Download any image from web and move to desktop

```
ttn@ttn:~/exercise$ wget https://upload.wikimedia.org/wikipedia/commons/f/f9/Phoenicopterus_ruber_in_S%C3%A3o_Paulo_Zoo.jpg
--2019-02-04 22:23:22--  https://upload.wikimedia.org/wikipedia/commons/f/f9/Phoenicopterus_ruber_in_S%C3%A3o_Paulo_Zoo.jpg
Resolving upload.wikimedia.org (upload.wikimedia.org)... 2001:df2:e500:ed1a::2:b, 103.102.166.240
Connecting to upload.wikimedia.org (upload.wikimedia.org)|2001:df2:e500:ed1a::2:b|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3780414 (3.6M) [image/jpeg]
Saving to: 'Phoenicopterus_ruber_in_São_Paulo_Zoo.jpg'

Phoenicopterus_ruber_in_São_Paulo_Z 100%[===================================================================>]   3.60M  96.3KB/s    in 44s

2019-02-04 22:24:07 (84.0 KB/s) - 'Phoenicopterus_ruber_in_São_Paulo_Zoo.jpg' saved [3780414/3780414]

ttn@ttn:~/exercise$ mv ^C
ttn@ttn:~/exercise$ mv Phoenicopterus_ruber_in_São_Paulo_Z /home/ttn/Desktop
mv: cannot stat 'Phoenicopterus_ruber_in_São_Paulo_Z': No such file or directory
ttn@ttn:~/exercise$ ls
dir1  emptyfile2  emptyFile2  file1.txt  output  passwd_backup  Phoenicopterus_ruber_in_São_Paulo_Zoo.jpg  test.tar  touch  wc  wget-log
ttn@ttn:~/exercise$ mv Phoenicopterus_ruber_in_São_Paulo_Zoo.jpg /home/ttn/Desktop
ttn@ttn:~/exercise$ cd /home/ttn/Desktop
ttn@ttn:~/Desktop$ ls
Phoenicopterus_ruber_in_São_Paulo_Zoo.jpg
ttn@ttn:~/Desktop$ 
```
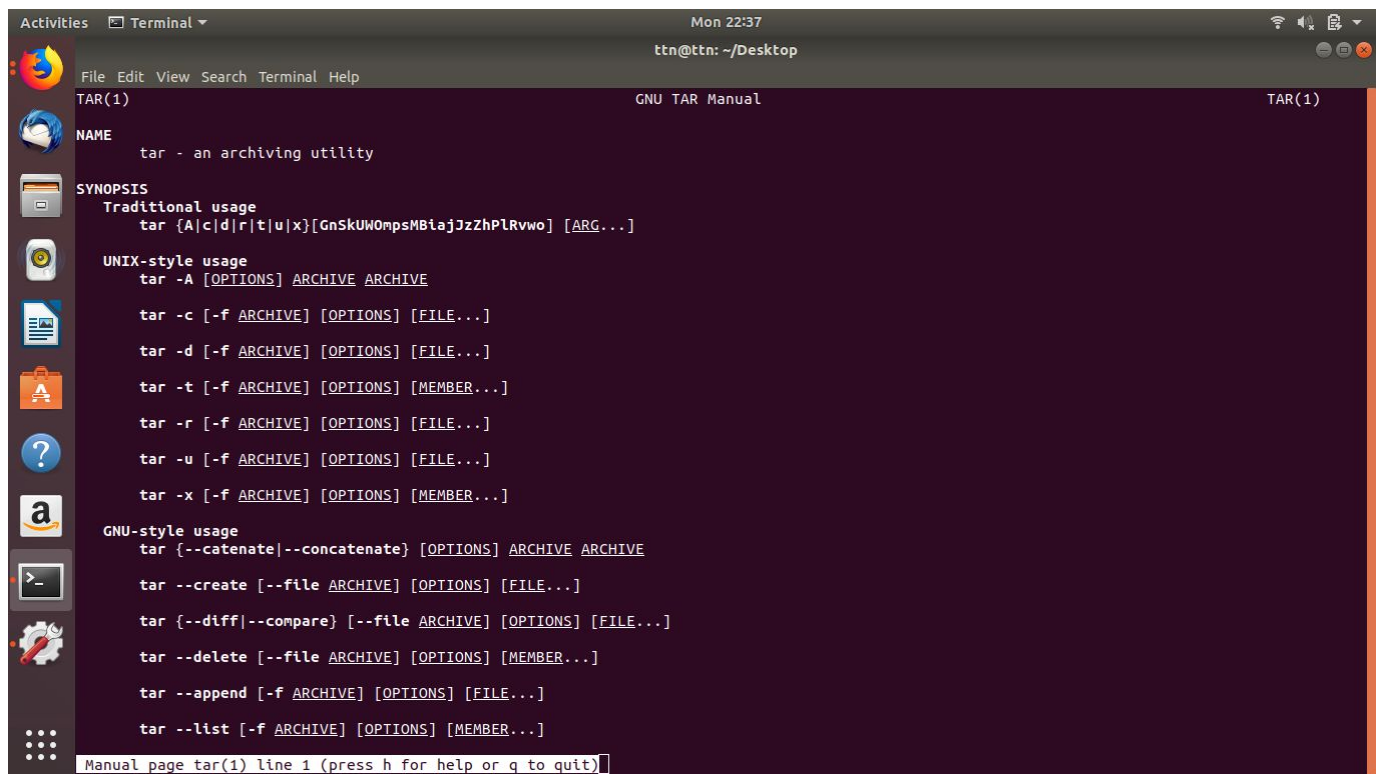
18) How to get help of commands usages.

i) By using **man** command

Eg- man tar

ii) By --help command

iii) by **info** command

19) Create a symlink of /etc/services into /tmp/ports-info

```
ttn@ttn:~/exercise$ ln -s /etc/services /tmp/ports-info
ttn@ttn:~/exercise$ ls
dir1          emptyFile2  output              test.tar  wc
emptyfile2  file1.txt    passwd_backup  touch      wget-log
ttn@ttn:~/exercise$ cd /tmp
ttn@ttn:/tmp$ ls
config-err-sTpuTz
mozilla_ttn0
ports-info
ssh-EU2PY9jXmbfe
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-bolt.service-aVYDWZ
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-colord.service-11rCaO
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-fwupd.service-HHde1j
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-rtkit-daemon.service-tCHIAF
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-systemd-resolved.service-Gu4bC2
systemd-private-b0ef45fd8eb8422a809fbbe391b229bb-systemd-timesyncd.service-p5DSJE
Temp-f0db66f0-5c29-48d6-8453-e68957c929de
ttn@ttn:/tmp$ 
```

20) You are appointed as a Software/DevOps Engineer in ABC media services. On your first day you need to troubleshoot a problem. There is a command "xyz" somewhere installed in that linux system. But as a new joinee you do not have any idea about where is that Installed. How can you check that?

Ans- By using "whereis" command it can be known where xyz is installed in linux system.

Eg- whereis xyz

```
ttn@ttn:/tmp$ whereis ls
ls: /bin/ls /usr/share/man/man1/ls.1.gz
ttn@ttn:/tmp$ whereis tar
tar: /usr/lib/tar /bin/tar /usr/share/man/man1/tar.1.gz
ttn@ttn:/tmp$ whereis cd
cd:
ttn@ttn:/tmp$ whereis mkdir
mkdir: /bin/mkdir /usr/share/man/man1/mkdir.1.gz
ttn@ttn:/tmp$ whereis xyz
xyz:
ttn@ttn:/tmp$
```