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

```
rishabh@TTNPL-rishabhsagar:~$ mkdir -p ~/exercise/dir1/dir2/dir3
rishabh@TTNPL-rishabhsagar:~$ ls
abc.txt     Downloads  Hello       hello3.text  Music      script     touch
Desktop     exercise   hello1.txt  hello.txt    Pictures   snap       Videos
Documents   grep       hello2.txt  hi           Public     Templates
rishabh@TTNPL-rishabhsagar:~$ cd exercise/dir1/dir2/dir3
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2/dir3$ pwd
/home/rishabh/exercise/dir1/dir2/dir3
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2/dir3$
```

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

```
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ touch emptyFile1.txt emptyFile2.txt
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ ls
dir3   emptyFile1.txt   emptyFile2.txt
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$
```

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

```
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ echo "Hello world">file1.txt
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ cat file1.txt
Hello world
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$
```

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

```
rishabh@TTNPL-rishabhsagar:~$ cd /etc
rishabh@TTNPL-rishabhsagar:/etc$ sudo find passwd
passwd
rishabh@TTNPL-rishabhsagar:/etc$ cp passwd ~/po/passwd_copy
rishabh@TTNPL-rishabhsagar:/etc$ cd ~
rishabh@TTNPL-rishabhsagar:~$ cd po
rishabh@TTNPL-rishabhsagar:~/po$ ls
passwd_copy
rishabh@TTNPL-rishabhsagar:~/po$ mv passwd_copy passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$ ls
passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$ █
```

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


```
rishabh@TTNPL-rishabhsagar:~/po$ cat passwd_backup
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:/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:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
whoopsie:x:117:124::/nonexistent:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
```

Less-

test@TTNPL-rishabhsagar: ~   ×   rishabh@TTNPL-rishabhsagar: ~/po

```
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:/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:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
:
```

String-

test@TTNPL-rishabhsagar: ~   ×   rishabh@TTNPL-rishabhsagar: ~/po

```
rishabh@TTNPL-rishabhsagar:~/po$ strings passwd_backup
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:/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:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
```

More-

```
rishabh@TTNPL-rishabhsagar:~/po$ more passwd_backup
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:/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:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
--More--(67%)
```

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


```
rishabh@TTNPL-rishabhsagar:~/po$ grep -c "/bin/false" passwd_backup
6
rishabh@TTNPL-rishabhsagar:~/po$
```

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

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

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

```
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ ls -l
total 4
drwxrwxr-x 2 rishabh rishabh 4096 Jan 22 17:28 dir3
-rw-rw-r-- 1 rishabh rishabh    0 Jan 22 17:30 emptyFile1.txt
-rw-rw-r-- 1 rishabh rishabh    0 Jan 22 17:30 emptyFile2.txt
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ touch emptyFile1.txt emptyFile2.txt
rishabh@TTNPL-rishabhsagar:~/exercise/dir1/dir2$ ls -l
total 4
drwxrwxr-x 2 rishabh rishabh 4096 Jan 22 17:28 dir3
-rw-rw-r-- 1 rishabh rishabh    0 Jan 22 17:31 emptyFile1.txt
-rw-rw-r-- 1 rishabh rishabh    0 Jan 22 17:31 emptyFile2.txt
rishabh@TTNPL-rishabhsagar:~/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. a) 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 changes b) Make the file editable to the world so that test user can access it. Revert the changes after verification c) Change the ownership to edit the file.

```
rishabh@TTNPL-rishabhsagar:~$ sudo chgrp test output
[sudo] password for rishabh:
rishabh@TTNPL-rishabhsagar:~$ sudo chmod g+w output
rishabh@TTNPL-rishabhsagar:~$ ls -l | grep output
-rw-rw-rw- 1 rishabh test        424 Jan 22 21:09 output
rishabh@TTNPL-rishabhsagar:~$ su - test
Password:
```
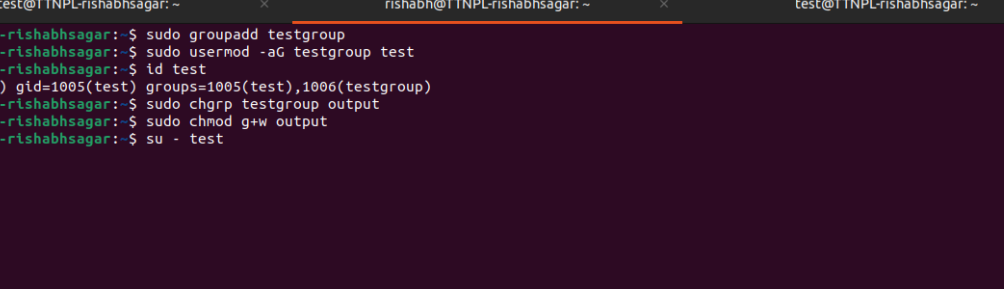
```
test@TTNPL-rishabhsagar:~$ nano output
```

| test@TTNPL-rishabhsagar: ~ × | rishabh@TTNPL-rishabhsagar: ~ × | test@TTNPL-rishabhsagar: ~ × |

```
  GNU nano 6.2                              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
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
changes made
```

```
^G Help      ^O Write Out   ^W Where Is   ^K Cut       ^T Execute   ^C Location    M-U Undo   M-A Set Mark   M-] To Bracket
^X Exit      ^R Read File   ^\ Replace    ^U Paste     ^J Justify   ^/ Go To Line  M-E Redo   M-6 Copy       ^Q Where Was
```

10A).

| test@TTNPL-rishabhsagar: ~ × | rishabh@TTNPL-rishabhsagar: ~ × | test@TTNPL-rishabhsagar: ~ × |

```
rishabh@TTNPL-rishabhsagar:~$ sudo groupadd testgroup
rishabh@TTNPL-rishabhsagar:~$ sudo usermod -aG testgroup test
rishabh@TTNPL-rishabhsagar:~$ id test
uid=1003(test) gid=1005(test) groups=1005(test),1006(testgroup)
rishabh@TTNPL-rishabhsagar:~$ sudo chgrp testgroup output
rishabh@TTNPL-rishabhsagar:~$ sudo chmod g+w output
rishabh@TTNPL-rishabhsagar:~$ su - test
Password:
```

test@TTNPL-rishabhsagar:~$ nano output

```
  GNU nano 6.2                                    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
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
change mades
```

| ^G Help | ^O Write Out | ^W Where Is | ^K Cut | ^T Execute | ^C Location | M-U Undo | M-A Set Mark | M-] To Bracket |
| ^X Exit | ^R Read File | ^\ Replace | ^U Paste | ^J Justify | ^/ Go To Line | M-E Redo | M-6 Copy | ^Q Where Was |

```
rishabh@TTNPL-rishabhsagar:~$ ls -l | grep output
-rw-rw-rw- 1 rishabh testgroup  424 Jan 22 21:09 output
rishabh@TTNPL-rishabhsagar:~$ sudo chgrp rishabh output
[sudo] password for rishabh:
rishabh@TTNPL-rishabhsagar:~$ ls -l | grep output
-rw-rw-rw- 1 rishabh rishabh    424 Jan 22 21:09 output
rishabh@TTNPL-rishabhsagar:~$ sudo chmod g-w output
rishabh@TTNPL-rishabhsagar:~$ sudo chmod g-w output
rishabh@TTNPL-rishabhsagar:~$ ls -l | grep output
-rw-r--rw- 1 rishabh rishabh    424 Jan 22 21:09 output
rishabh@TTNPL-rishabhsagar:~$
```

10B).


```
rishabh@TTNPL-rishabhsagar:~$ sudo chmod o+w output
rishabh@TTNPL-rishabhsagar:~$ ls -l | grep output
-rw-r--rw- 1 rishabh rishabh    424 Jan 22 21:09 output
rishabh@TTNPL-rishabhsagar:~$ su - test
Password:
```

```
test@TTNPL-rishabhsagar:~$ nano output
```

```
  GNU nano 6.2                              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
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
change mades
```

```
^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute     ^C Location    M-U Undo       M-A Set Mark   M-] To Bracket
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify     ^/ Go To Line  M-E Redo       M-6 Copy       ^Q Where Was
```

10C).

```
test@TTNPL-rishabhsagar:~$ nano output
```

```
  GNU nano 6.2                                    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
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
change mades
```

```
^G Help      ^O Write Out   ^W Where Is   ^K Cut      ^T Execute    ^C Location    M-U Undo   M-A Set Mark   M-] To Bracket
^X Exit      ^R Read File   ^\ Replace    ^U Paste    ^J Justify    ^/ Go To Line  M-E Redo   M-6 Copy       ^Q Where Was
```

11.Create alias with your name so that it creates a file as "/tmp/aliastesting".
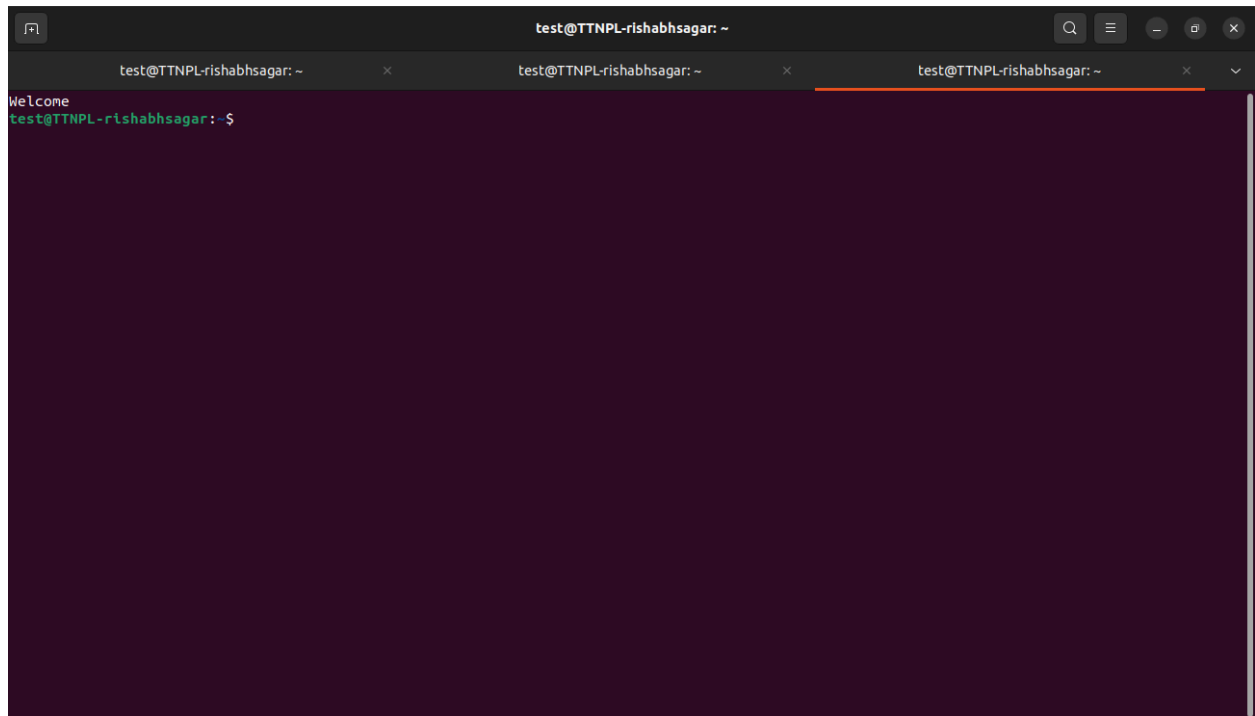
12.Edit ~/.bashrc file such that when you change to "test" user it should clear the screen and print "Welcome".

```
test@TTNPL-rishabhsagar:~$ nano .bashrc
test@TTNPL-rishabhsagar:~$ source .bashrc
```
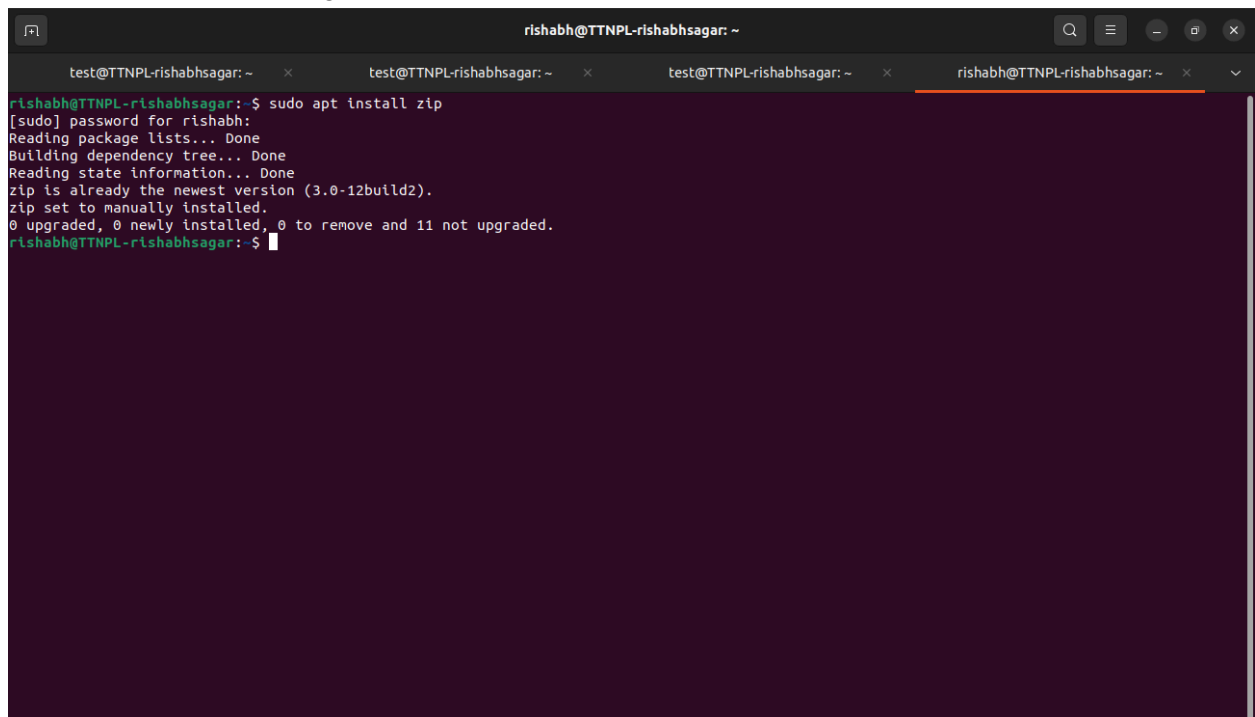
```
  GNU nano 6.2                              /home/test/.bashrc

# some more ls aliases
alias ll='ls -alF'
alias la='ls -A'
alias l='ls -CF'

# Add an "alert" alias for long running commands.  Use like so:
#   sleep 10; alert
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/>

# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi
clear
echo "Welcome"

^G Help       ^O Write Out   ^W Where Is   ^K Cut      ^T Execute    ^C Location   M-U Undo    M-A Set Mark   M-] To Bracket
^X Exit       ^R Read File   ^\ Replace    ^U Paste    ^J Justify    ^/ Go To Line M-E Redo    M-6 Copy       ^Q Where Was
```

13. Install the "zip" package.

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

```
rishabh@TTNPL-rishabhsagar:~/po$ ls
output  passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$ tar -cvf file.tar output passwd_backup
output
passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$ tar -tvf file.tar
-rw-rw-rw- rishabh/rishabh 424 2025-01-22 20:35 output
-rw-r--r-- rishabh/rishabh 3031 2025-01-22 17:47 passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$
```

15.scp this file to test user


```
rishabh@TTNPL-rishabhsagar:~$ cd po
rishabh@TTNPL-rishabhsagar:~/po$ ls
file.tar  output  passwd_backup
rishabh@TTNPL-rishabhsagar:~/po$ scp file.tar test@localhost:/home/test/
test@localhost's password:
file.tar                    100%   10KB  42.1MB/s   00:00
rishabh@TTNPL-rishabhsagar:~/po$
```

16.Unzip this tar file by logging into the remote server

17.Download any image from web and move to desktop

18.How to get help with commands usages.

man-

```
LS(1)                      User Commands                      LS(1)

NAME
       ls - list directory contents

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

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

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

       -a, --all
              do not ignore entries starting with .

       -A, --almost-all
              do not list implied . and ..

       --author
              with -l, print the author of each file

       -b, --escape
              print C-style escapes for nongraphic characters

       --block-size=SIZE
              with -l, scale sizes by SIZE when printing them; e.g.,
              '--block-size=M'; see SIZE format below

       -B, --ignore-backups
              do not list implied entries ending with ~
 Manual page ls(1) line 1 (press h for help or q to quit)
```

Whatis-


```
rishabh@TTNPL-rishabhsagar:~$ whatis ls
ls (1)                 - list directory contents
rishabh@TTNPL-rishabhsagar:~$
```

--help-

```
rishabh@TTNPL-rishabhsagar:~$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILEs (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
  -a, --all                  do not ignore entries starting with .
  -A, --almost-all           do not list implied . and ..
      --author               with -l, print the author of each file
  -b, --escape               print C-style escapes for nongraphic characters
      --block-size=SIZE      with -l, scale sizes by SIZE when printing them;
                               e.g., '--block-size=M'; see SIZE format below
  -B, --ignore-backups       do not list implied entries ending with ~
  -c                         with -lt: sort by, and show, ctime (time of last
                               modification of file status information);
                               with -l: show ctime and sort by name;
                               otherwise: sort by ctime, newest first
  -C                         list entries by columns
      --color[=WHEN]         colorize the output; WHEN can be 'always' (default
                               if omitted), 'auto', or 'never'; more info below
  -d, --directory            list directories themselves, not their contents
  -D, --dired                generate output designed for Emacs' dired mode
  -f                         do not sort, enable -aU, disable -ls --color
  -F, --classify             append indicator (one of */=>@|) to entries
      --file-type            likewise, except do not append '*'
      --format=WORD          across -x, commas -m, horizontal -x, long -l,
                               single-column -1, verbose -l, vertical -C
      --full-time            like -l --time-style=full-iso
  -g                         like -l, but do not list owner
      --group-directories-first
                             group directories before files;
                               can be augmented with a --sort option, but any
                               use of --sort=none (-U) disables grouping
  -G, --no-group             in a long listing, don't print group names
  -h, --human-readable       with -l and -s, print sizes like 1K 234M 2G etc.
      --si                   likewise, but use powers of 1000 not 1024
```

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


```
rishabh@TTNPL-rishabhsagar:~$ ln -s /etc/services /tmp/ports-info
rishabh@TTNPL-rishabhsagar:~$ ls -l /tmp/ports-info
lrwxrwxrwx 1 rishabh rishabh 13 Jan 22 22:19 /tmp/ports-info -> /etc/services
rishabh@TTNPL-rishabhsagar:~$
```

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. Some of the ways to check the 'xyz' command -

       A.find- sudo find -name xyz

       B.locate- locate xyz (if the updatedb is previously used)

       C.whereis- whereis xyz

       D.which- which xyz