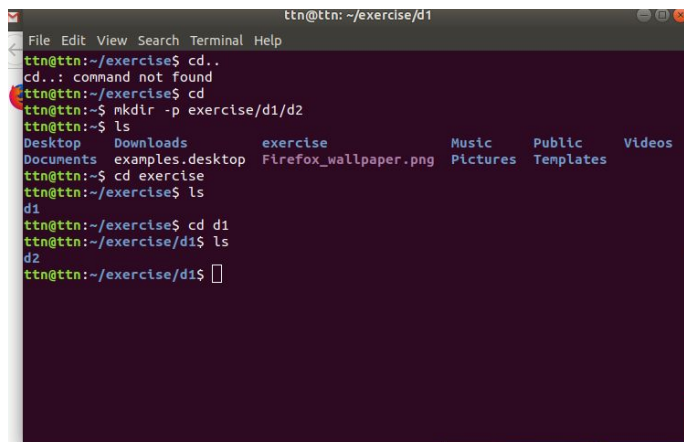
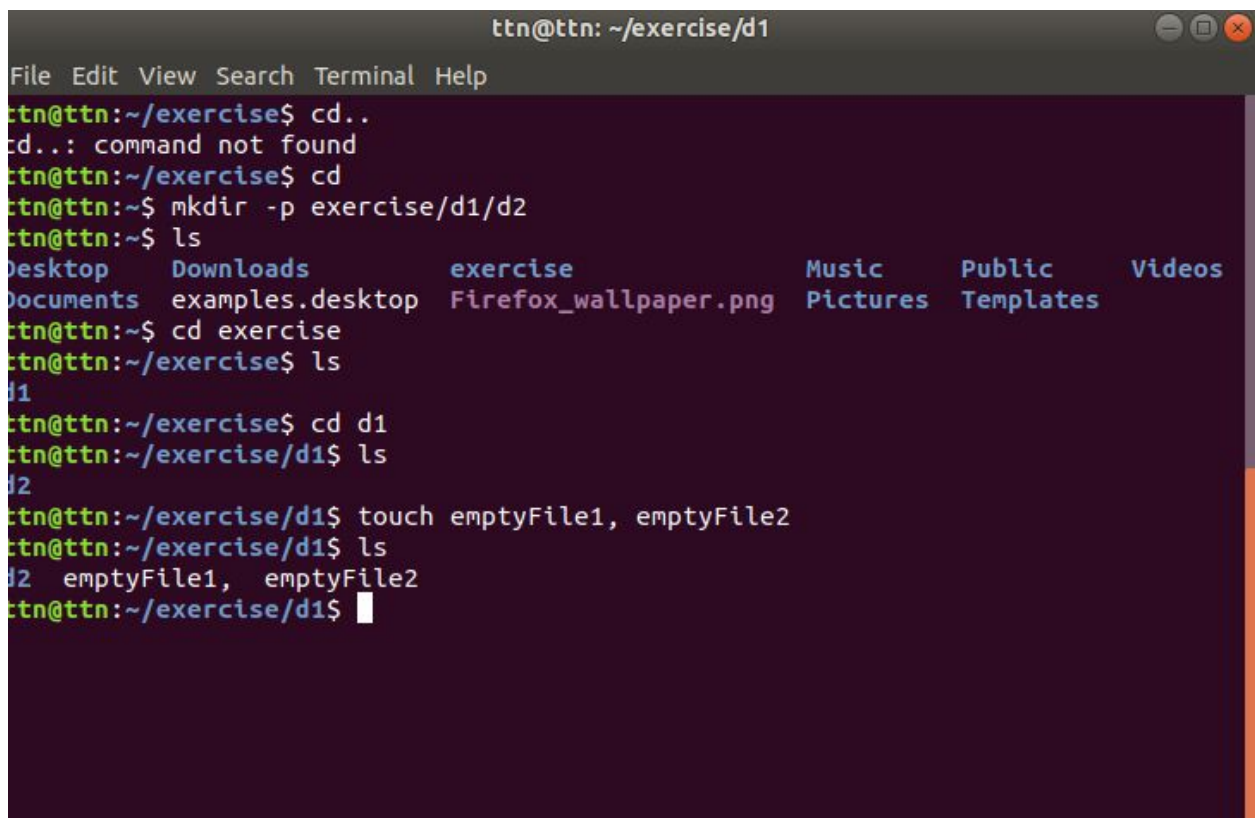


Ques 1 Create a directory "exercise" inside your home directory and create nested(dir1/dir2/dir3) directory structure inside "exercise" with single command.



```
ttn@ttn: ~/exercise/d1
File Edit View Search Terminal Help
ttn@ttn:~/exercise$ cd..
cd.: command not found
ttn@ttn:~/exercise$ cd
ttn@ttn:~$ mkdir -p exercise/d1/d2
ttn@ttn:~$ ls
Desktop  Downloads  exercise  Music  Public  Videos
Documents  examples.desktop  Firefox_wallpaper.png  Pictures  Templates
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ ls
d1
ttn@ttn:~/exercise$ cd d1
ttn@ttn:~/exercise/d1$ ls
d2
ttn@ttn:~/exercise/d1$
```

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



```
ttn@ttn: ~/exercise/d1
File Edit View Search Terminal Help
ttn@ttn:~/exercise$ cd..
cd.: command not found
ttn@ttn:~/exercise$ cd
ttn@ttn:~$ mkdir -p exercise/d1/d2
ttn@ttn:~$ ls
Desktop  Downloads  exercise  Music  Public  Videos
Documents  examples.desktop  Firefox_wallpaper.png  Pictures  Templates
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ ls
d1
ttn@ttn:~/exercise$ cd d1
ttn@ttn:~/exercise/d1$ ls
d2
ttn@ttn:~/exercise/d1$ touch emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$ ls
d2 emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$
```

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

```
File Edit View Search Terminal Help
ttn@ttn:~$ mkdir -p exercise/d1/d2
ttn@ttn:~$ ls
Desktop  Downloads      exercise      Music      Public      Videos
Documents examples.desktop Firefox_wallpaper.png Pictures  Templates
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ ls
d1
ttn@ttn:~/exercise$ cd d1
ttn@ttn:~/exercise/d1$ ls
d2
ttn@ttn:~/exercise/d1$ touch emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$ ls
d2 emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$ cd
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ cat > file1.txt
hello world^C
ttn@ttn:~/exercise$ cat file1.txt
ttn@ttn:~/exercise$ cat > file1.txt
hello world
^C
ttn@ttn:~/exercise$ cat file1.txt
hello world
ttn@ttn:~/exercise$
```

Ques 4 Find a "passwd" file using find command inside /etc. copy this files as passwd\_copy and then rename this file as passwd\_backup.

```
File Edit View Search Terminal Help
ttn@ttn:~/exercise
ttn@ttn:~/exercise$ find /etc/passwd
/etc/passwd
ttn@ttn:~/exercise$ cp /etc/passwd passwd_copy
ttn@ttn:~/exercise$ mv passwd_copy passwd_backup
ttn@ttn:~/exercise$ 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:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
n
```



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

#### A. Cat

```
ttn@ttn: ~/exercise
File Edit View Search Terminal Help
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ ls
d1 file1.txt passwd_backup
ttn@ttn:~/exercise$ 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:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/
n
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
```

#### B. Less

```
ttn@ttn: ~/exercise
File Edit View Search Terminal Help
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uidd:x:105:111::/run/uidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/
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-h
:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:
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/nologi
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sb
login
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
(END)
```



## C. More

```
File Edit View Search Terminal Help
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
--More--(43%)
```

```
File Edit View Search Terminal Help
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
--More--(95%)
```

## D. Strings

```
ttn@ttn: ~/exercise
File Edit View Search Terminal Help
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 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:/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
```

Ques 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$
```

Ques 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 -5 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
ttn@ttn:~/exercise$ head -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$
```



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

```
root@ttn:~/exercise# adduser test
Adding user `test' ...
Adding new group `test' (1001) ...
Adding new user `test' (1001) with group `test' ...
Creating home directory `/home/test' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for test
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n]
root@ttn:~/exercise# id -u test
1001
root@ttn:~/exercise# id -g test
1001
root@ttn:~/exercise#
```

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

```
ttn@ttn:~/exercise/d1$ ls
d2 emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$ ls -l
total 4
drwxr-xr-x 2 ttn ttn 4096 Feb  4 15:30 d2
-rw-r--r-- 1 ttn ttn    0 Feb  4 15:37 emptyFile1,
-rw-r--r-- 1 ttn ttn    0 Feb  4 15:37 emptyFile2
ttn@ttn:~/exercise/d1$ touch emptyFile1, emptyFile2
ttn@ttn:~/exercise/d1$ ls -l
total 4
drwxr-xr-x 2 ttn ttn 4096 Feb  4 15:30 d2
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:34 emptyFile1,
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:34 emptyFile2
ttn@ttn:~/exercise/d1$
```

Ques 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.

1. 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

2. Make the file editable to the world so that test user can access it. Revert the changes after verification
3. Change the ownership to edit the file.

```
test@ttn:/home/ttn/exercise$ cat > output
bash: output: Permission denied
test@ttn:/home/ttn/exercise$ su ttn
Password:
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rw-r--rwx 1 ttn ttn  189 Feb  4 16:25 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
```

```
ttn@ttn:~/exercise$
ttn@ttn:~/exercise$ sudo chmod g= rwx output
chmod: cannot access 'rwx': No such file or directory
ttn@ttn:~/exercise$ sudo chmod g=rwx output
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rw-rwxrwx 1 ttn ttn  189 Feb  4 16:25 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
ttn@ttn:~/exercise$ su test
Password:
test@ttn:/home/ttn/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rw-rwxrwx 1 ttn ttn  189 Feb  4 16:25 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
test@ttn:/home/ttn/exercise$ cat > output
1
^C
test@ttn:/home/ttn/exercise$ cat output
1
test@ttn:/home/ttn/exercise$
```

```

test@ttn:/home/ttn/exercise$ su ttn
Password:
ttn@ttn:~/exercise$ sudo chmod g-wx output
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rw-r--rwx 1 ttn ttn   2 Feb  4 17:19 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
ttn@ttn:~/exercise$ sudo chmod a=rwx output
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rwxrwxrwx 1 ttn ttn   2 Feb  4 17:19 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
ttn@ttn:~/exercise$ cat > output
2
^C
ttn@ttn:~/exercise$ cat output
2
ttn@ttn:~/exercise$ su test
Password:
test@ttn: /home/ttn/exercise$ ls -l

```

```

test@ttn:/home/ttn/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rwxrwxrwx 1 ttn ttn   2 Feb  4 17:26 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
test@ttn:/home/ttn/exercise$ cat > output
newtext
^C
test@ttn:/home/ttn/exercise$ cat output
newtext
test@ttn:/home/ttn/exercise$

```

```

ttn@ttn:~/exercise$ su ttn
Password:
ttn@ttn:~/exercise$ sudo chown test:test output
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rwxrwxrwx 1 test test  8 Feb  4 17:27 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
ttn@ttn:~/exercise$

```



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

```
ttn@ttn:~/exercise$ alias divya='touch /tmp/aliastesting'
ttn@ttn:~/exercise$ divya
ttn@ttn:~/exercise$ ls -l
total 16
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:37 d1
-rw-r--r-- 1 ttn ttn  12 Feb  4 15:42 file1.txt
-rwxrwxrwx 1 test test  8 Feb  4 17:27 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:48 passwd_backup
ttn@ttn:~/exercise$ ls /tmp
aliastesting
config-err-T5d69z
lu3098q5rcgv.tmp
DSL_PIPE_1000_SingleOfficeIPC_cfa729fc67be8cf99063327bc0904361
ssh-Es7N32bqFG0H
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-bolt.service-JVxrCi
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-colord.service-ZSSG8t
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-fwupd.service-10uqBR
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-rtkit-daemon.service-B4nIr7
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-systemd-resolved.service-Lueuh7
systemd-private-fddf8b495dcf431aa4fad9fd18efaac6-systemd-timesyncd.service-qE9tv
e
Temp-9e4b6a32-b723-45c6-9688-0280ccf3b993
ttn@ttn:~/exercise$
```

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

```
File Edit View Search Terminal Help
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples

## If not running interactively, don't do anything
case $- in
  *i*) ;;
  *) return;;
esac

# don't put duplicate lines or lines starting with space in the history.
# See bash(1) for more options
HISTCONTROL=ignoreboth

# append to the history file, don't overwrite it
shopt -s histappend

# for setting history length see HISTSIZE and HISTFILESIZE in bash(1)
HISTSIZE=1000
HISTFILESIZE=2000

# check the window size after each command and, if necessary,
# update the values of LINES and COLUMNS.
".bashrc" 117 lines, 3771 characters
```



Ques 13. Install “zip” package.

```
ttn@ttn:~/exercise$ sudo apt 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$
```

Ques 14. Compress "output" and "password\_backup" files into a tar ball. List the files present inside the tar created.

```
ttn@ttn:~/exercise$ tar -czvf archive.tar.gz output passwd_backup
output
passwd_backup
ttn@ttn:~/exercise$ tar -tvf archive.tar.gz
-rwxrwxrwx test/test          8 2019-02-04 17:27 output
-rw-r--r-- ttn/ttn          2398 2019-02-04 15:48 passwd_backup
ttn@ttn:~/exercise$
```

Ques 15. scp this file to test user

```
File Edit View Search Terminal Tabs Help
```

```
ttn@TTN: ~ × test@TTN: /home/ttn × ttn@TTN: ~ ×
```

```
ttn@TTN:~$ scp /etc/ball.tar test@localhost:~/  
The authenticity of host 'localhost (127.0.0.1)' can't be established.  
ECDSA key fingerprint is SHA256:rWCXk/Hh4K7hy0oalkYgY5y5850G2EHTJskPuQQzHGUs.  
Are you sure you want to continue connecting (yes/no)? y  
Please type 'yes' or 'no': yes  
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.  
test@localhost's password:  
ball.tar                               100%   10KB   35.4MB/s   00:00  
ttn@TTN:~$
```



Ques 16. Unzip this tar bar by logging into the remote server

```
File Edit View Search Terminal Tabs Help
ttn@TTN: ~ x test@TTN: /... x ttn@TTN: ~ x test@TTN: ~ x ttn@TTN: ~ x
ttn@TTN:~$ ssh test@localhost
test@localhost's password: 
```

```
File Edit View Search Terminal Tabs Help
ttn@TTN: ~ x test@TTN: /... x ttn@TTN: ~ x test@TTN: ~ x test@TTN: ~ x
welcome

test@TTN:~$ ls -l | grep ball
-rw-r--r-- 1 test test 10240 Feb  4 17:49 ball.tar
test@TTN:~$ tar xvf ball.tar
output
passwd_backup
test@TTN:~$ ls -l
total 32
-rw-r--r-- 1 test test 10240 Feb  4 17:49 ball.tar
-rw-r--r-- 1 test test  8980 Feb  4 17:27 examples.desktop
-rw-r--r-- 1 test test   189 Feb  4 15:21 output
-rw-r--r-- 1 test test  2398 Feb  4 15:05 passwd_backup
test@TTN:~$ 
```

Ques 17. Download any image from web and move to desktop

```
ttn@ttn:~$ wget https://www.gnom-gnom.com/wp-content/uploads/2018/06/Gluten-Free
-Paleo-Keto-Chocolate-Cake-by-Gnom-Gnom-1-500x375.jpg -O ~/Desktop/cake.jpg
--2019-02-04 23:18:52-- https://www.gnom-gnom.com/wp-content/uploads/2018/06/Gl
uten-Free-Paleo-Keto-Chocolate-Cake-by-Gnom-Gnom-1-500x375.jpg
Resolving www.gnom-gnom.com (www.gnom-gnom.com)... 192.124.249.113
Connecting to www.gnom-gnom.com (www.gnom-gnom.com)|192.124.249.113|:443... conn
ected.
HTTP request sent, awaiting response... 200 OK
Length: 41709 (41K) [image/jpeg]
Saving to: '/home/ttn/Desktop/cake.jpg'

/home/ttn/Desktop/c 100%[=====>] 40.73K 189KB/s in 0.2s

2019-02-04 23:18:53 (189 KB/s) - '/home/ttn/Desktop/cake.jpg' saved [41709/41709
]

ttn@ttn:~$ ls -l ~/Desktop/
total 48
-rw-rw-r-- 1 ttn ttn 41709 Oct 24 20:32 cake.jpg
ttn@ttn:~$ 
```

Ques 18. How to get help of commands usages.

```
PWD(1)                                User Commands                                PWD(1)

NAME
    pwd - print name of current/working directory

SYNOPSIS
    pwd [OPTION]...

DESCRIPTION
    Print the full filename of the current working directory.

    -L, --logical
        use PWD from environment, even if it contains symlinks

    -P, --physical
        avoid all symlinks

    --help display this help and exit

    --version
        output version information and exit

    If no option is specified, -P is assumed.
Manual page pwd(1) line 1 (press h for help or q to quit)
```

```
ttn@ttn:~$ man pwd
ttn@ttn:~$ pwd --help
pwd: pwd [-LP]
    Print the name of the current working directory.

Options:
  -L      print the value of $PWD if it names the current working
          directory
  -P      print the physical directory, without any symbolic links

By default, 'pwd' behaves as if '-L' were specified.

Exit Status:
Returns 0 unless an invalid option is given or the current directory
cannot be read.
ttn@ttn:~$
```



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

```
ttn@ttn:~$ ln -s /etc/services /tmp/ports-info
ttn@ttn:~$ ls -l /tmp
total 32
-rw----- 1 ttn ttn 0 Feb 4 21:34 config-err-zDPCQb
lrwxrwxrwx 1 ttn ttn 13 Feb 4 23:24 ports-info -> /etc/services
drwx----- 2 ttn ttn 4096 Feb 4 21:34 ssh-g9ZcRoES997w
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-bolt.service-sYaKKo
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-colord.service-eMUGOT
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-fwupd.service-htwBV8
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-rtkit-daemon.service-caMm6B
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-systemd-resolved.service-8StoIG
drwx----- 3 root root 4096 Feb 4 21:34 systemd-private-10f6206a510f42e19de0c83
f4ef65613-systemd-timesyncd.service-blXjV4
drwx----- 2 ttn ttn 4096 Feb 4 21:43 Temp-9e4b6a32-b723-45c6-9688-0280ccf3b9
93
ttn@ttn:~$
```

Ques 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?

```
ttn@ttn:~$ which / pwd
/bin/pwd
ttn@ttn:~$
```