Exercise 1 - Introduction to Linux

Q.1

```
ttn@ttn: ~/exercise/dir1/dir2/dir3

File  Edit  View  Search  Terminal  Help

ttn@ttn:~$ pwd
/home/ttn
ttn@ttn:~$ mkdir -p exercise/dir1/dir2/dir3
ttn@ttn:~$ ls
Desktop      Downloads           exercise  Pictures  Templates
Documents    examples.desktop    Music     Public    Videos
ttn@ttn:~$ cd exercise
ttn@ttn:~/exercise$ cd dir1/dir2/dir3
ttn@ttn:~/exercise/dir1/dir2/dir3$ ls
ttn@ttn:~/exercise/dir1/dir2/dir3$ pwd
/home/ttn/exercise/dir1/dir2/dir3
ttn@ttn:~/exercise/dir1/dir2/dir3$ □
```

Q2.

```
ttn@ttn: ~/exercise/dir1/dir2

File  Edit  View  Search  Terminal  Help

ttn@ttn:~/exercise/dir1/dir2$ pwd
/home/ttn/exercise/dir1/dir2
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3
ttn@ttn:~/exercise/dir1/dir2$ touch emptyFile{1..2}
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3  emptyFile1  emptyFile2
ttn@ttn:~/exercise/dir1/dir2$ █
```

Q3.

```
ttn@ttn: ~/exercise/dir1/dir2

File  Edit  View  Search  Terminal  Help

ttn@ttn:~/exercise/dir1/dir2$ echo "hello world" >> file1.txt
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3  emptyFile1  emptyFile2  file1.txt
ttn@ttn:~/exercise/dir1/dir2$ cat file1.txt
hello world
ttn@ttn:~/exercise/dir1/dir2$
```

Q4.

```
ttn@ttn: ~

File  Edit  View  Search  Terminal  Help

ttn@ttn:~$ cd ..
ttn@ttn:/home$ cd ..
ttn@ttn:/$ sudo find /etc/ -name "passwd"
[sudo] password for ttn:
/etc/cron.daily/passwd
/etc/pam.d/passwd
/etc/passwd
ttn@ttn:/$ cp /etc/passwd /home/ttn/passwd_copy
ttn@ttn:/$ cd ~
ttn@ttn:~$ ls
Desktop    Downloads        exercise  passwd_copy  Public     Videos
Documents  examples.desktop  Music     Pictures     Templates
ttn@ttn:~$ mv passwd_copy passwd_backup
ttn@ttn:~$ ls
Desktop    Downloads        exercise  passwd_backup  Public     Videos
Documents  examples.desktop  Music     Pictures       Templates
ttn@ttn:~$
```

Q5. Difference between less, more, cat, strings.

1) more = to view a text file one page at a time, press spacebar to go to the next page and press enter to go to next line.
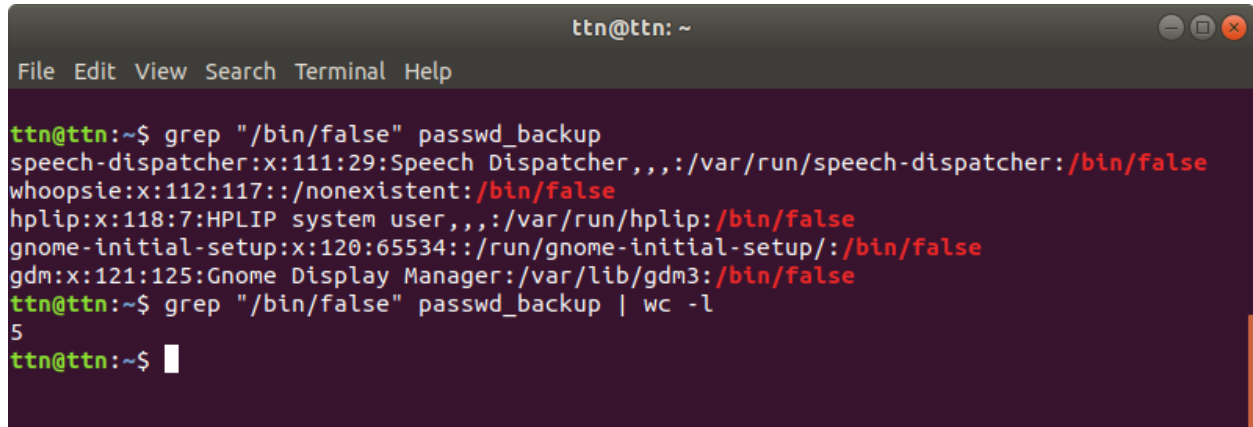
2) less = You can navigate the page up/down using the less command and not possible in more command.

3) head = It displays the first ten lines of a file, and can be specified.

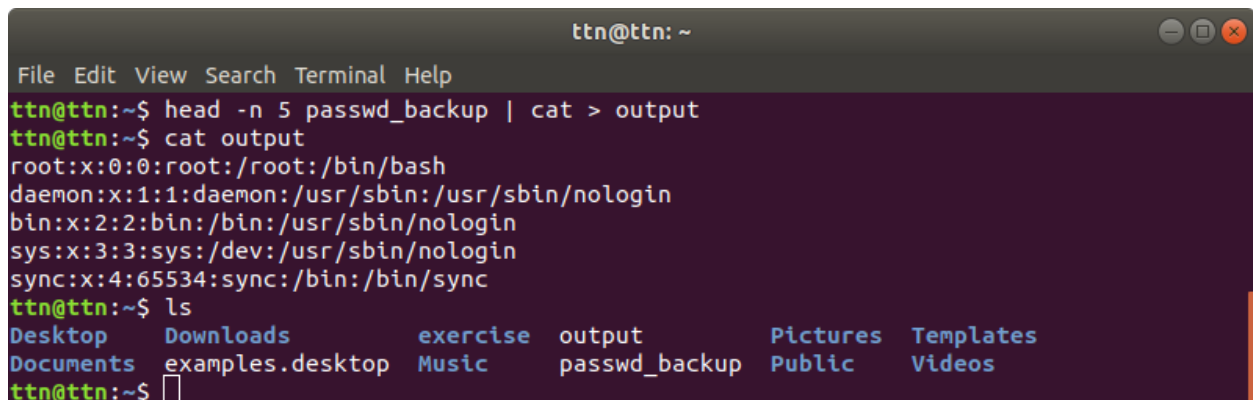**4) tail =** It display the last part of a file, and can be specified.

5) cat = It can be used to join multiple files together and print the result on screen (it will not show page by page).

Q6.

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

ttn@ttn:~$ grep "/bin/false" passwd_backup
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
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@ttn:~$ grep "/bin/false" passwd_backup | wc -l
5
ttn@ttn:~$ 
```

Q7.

```
ttn@ttn: ~
File  Edit  View  Search  Terminal  Help
ttn@ttn:~$ head -n 5 passwd_backup | cat > output
ttn@ttn:~$ 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:~$ ls
Desktop    Downloads         exercise  output         Pictures  Templates
Documents  examples.desktop  Music     passwd_backup  Public    Videos
ttn@ttn:~$ 
```

Q8.

```
                              ttn@ttn: ~

File  Edit  View  Search  Terminal  Help

ttn@ttn:~$ sudo su
root@ttn:/home/ttn# adduser test
Adding user `test' ...
Adding new group `test' (1001) ...
Adding new user `test' (1001) with group `test' ...
The home directory `/home/test' already exists.  Not copying 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 []: Test
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@ttn:/home/ttn# id -u test
1001
root@ttn:/home/ttn# id -g test
1001
root@ttn:/home/ttn# exit
ttn@ttn:~$
```

Q9.

```
                       ttn@ttn: ~/exercise/dir1/dir2

File  Edit  View  Search  Terminal  Help

ttn@ttn:~$ cd exercise/dir1/dir2/
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3  emptyFile1  emptyFile2  file1.txt
ttn@ttn:~/exercise/dir1/dir2$ ls -l
total 8
drwxr-xr-x 2 ttn ttn 4096 Feb  4 15:10 dir3
-rw-r--r-- 1 ttn ttn    0 Feb  4 15:16 emptyFile1
-rw-r--r-- 1 ttn ttn    0 Feb  4 15:16 emptyFile2
-rw-r--r-- 1 ttn ttn   12 Feb  4 15:19 file1.txt
ttn@ttn:~/exercise/dir1/dir2$ touch emptyFile1
ttn@ttn:~/exercise/dir1/dir2$ touch emptyFile2
ttn@ttn:~/exercise/dir1/dir2$ ls
dir3  emptyFile1  emptyFile2  file1.txt
ttn@ttn:~/exercise/dir1/dir2$ ls -l
total 8
drwxr-xr-x 2 ttn ttn 4096 Feb  4 15:10 dir3
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:06 emptyFile1
-rw-r--r-- 1 ttn ttn    0 Feb  4 16:06 emptyFile2
-rw-r--r-- 1 ttn ttn   12 Feb  4 15:19 file1.txt
ttn@ttn:~/exercise/dir1/dir2$
```

Q10.

Q11.


```
                                ttn@ttn: ~
File  Edit  View  Search  Terminal  Help
    alias egrep='egrep --color=auto'
fi

# colored GCC warnings and errors
#export GCC_COLORS='error=01;31:warning=01;35:note=01;36:caret=01;32:locus=01:qu
ote=01'

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

# 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/[;&|]\s*alert$//'\'
')"'

# 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.
-- INSERT --                                           98,24              84%
```

```
                                ttn@ttn: ~
File  Edit  View  Search  Terminal  Help
ttn@ttn:~$ yvtesting
total 56
drwxr-xr-x 2 ttn ttn 4096 Feb  4 10:58 Desktop
drwxr-xr-x 2 ttn ttn 4096 Jan 29 16:56 Documents
drwxr-xr-x 2 ttn ttn 4096 Feb  4 11:53 Downloads
-rw-r--r-- 1 ttn ttn 8980 Jan 29 11:16 examples.desktop
drwxr-xr-x 3 ttn ttn 4096 Feb  4 15:10 exercise
drwxr-xr-x 2 ttn ttn 4096 Jan 29 16:56 Music
-rwxrwxrwx 1 ttn ttn  189 Feb  4 15:57 output
-rw-r--r-- 1 ttn ttn 2398 Feb  4 15:41 passwd_backup
drwxr-xr-x 2 ttn ttn 4096 Feb  4 21:34 Pictures
drwxr-xr-x 2 ttn ttn 4096 Jan 29 16:56 Public
drwxr-xr-x 2 ttn ttn 4096 Jan 29 16:56 Templates
drwxr-xr-x 2 ttn ttn 4096 Jan 29 16:56 Videos
ttn@ttn:~$ 
```

Q12.

Q13.

```
                              ttn@ttn: ~

File  Edit  View  Search  Terminal  Help
ttn@ttn:~$  sudo apt install zip
[sudo] password for ttn:
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:~$
```

Q14.

```
                              ttn@ttn: ~

File  Edit  View  Search  Terminal  Help
ttn@ttn:~$ tar -czvf archive.tar.gz output passwd_backup
output
passwd_backup
ttn@ttn:~$ ls
archive.tar.gz   Downloads        Music         Pictures     Videos
Desktop          examples.desktop output        Public
Documents        exercise         passwd_backup Templates
ttn@ttn:~$ tar -xzvf archive.tar.gz
output
passwd_backup
ttn@ttn:~$
```

Q15.

Q16.

Q17.

```
ttn@ttn:~$ pwd
/home/ttn
ttn@ttn:~$ cd Desktop/
ttn@ttn:~/Desktop$ wget https://media.glassdoor.com/sqll/1011609/to-the-new-digital-squarelogo-1470739470715.png
--2019-02-04 22:29:38--  https://media.glassdoor.com/sqll/1011609/to-the-new-digital-squarelogo-1470739470715.png
Resolving media.glassdoor.com (media.glassdoor.com)... 104.16.234.151, 104.16.232.151, 104.16.231.151, ...
Connecting to media.glassdoor.com (media.glassdoor.com)|104.16.234.151|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 27054 (26K) [image/png]
Saving to: 'to-the-new-digital-squarelogo-1470739470715.png'

to-the-new-digital- 100%[====================>]  26.42K  --.-KB/s    in 0.001s

2019-02-04 22:29:38 (28.1 MB/s) - 'to-the-new-digital-squarelogo-1470739470715.png' saved [27054/27054]

ttn@ttn:~/Desktop$ ls
to-the-new-digital-squarelogo-1470739470715.png
ttn@ttn:~/Desktop$
```

Q18.

- **By Using "man" pages. "man" is a bash command through which we can learn about Name, synopsis, description, options, etc. of other bash commands.**
- **For eg: $ man ls**

```
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  speci-
       fied.

       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
 Manual page ls(1) line 1/237 8% (press h for help or q to quit)
```

Q19.

```
ttn@ttn:~$ ln -s /etc/services /tmp/ports-info
ttn@ttn:~$ cd ..
ttn@ttn:/home$ cd ..
ttn@ttn:/$ cd /tmp
ttn@ttn:/tmp$ ls
config-err-mnYLwl
ports-info
ssh-OZFf7S5w9HEa
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-bolt.service-LNNpbF
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-colord.service-9cAkvx
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-fwupd.service-kBzG1Q
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-rtkit-daemon.service-TBBiQf
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-systemd-resolved.service-9Q8HZk
systemd-private-2b4984d5c564421e8bc1e93555e3e4bb-systemd-timesyncd.service-t69XfE
ttn@ttn:/tmp$ 
```

Q20.


```
ttn@ttn:~$ which ls
/bin/ls
ttn@ttn:~$ which man
/usr/bin/man
ttn@ttn:~$ which cp
/bin/cp
ttn@ttn:~$ which mv
/bin/mv
ttn@ttn:~$ which mkdir
/bin/mkdir
ttn@ttn:~$ which rmdir
/bin/rmdir
ttn@ttn:~$ 
```