Title: Linux Command List Assessment

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File and Directory Operations:

ls: List files and directories

```
(azhagu⊛ kali)-[~]
$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
```

cd: Change directory

```
__(azhagu⊛kali)-[~]
$ cd /home/azhagu/Documents
```

pwd: Print working directory

```
(azhagu® kali)-[~/Documents]
    pwd
/home/azhagu/Documents
```

mkdir: Make directory

```
(azhagu⊕ kali)-[~/Documents]
$ mkdir Assignment1

(azhagu⊕ kali)-[~/Documents]
$ ls

Assignment1
```

touch: Create an empty file

```
(azhagu⊗ kali)-[~/Documents]
$\text{touch file1.txt}

(azhagu⊗ kali)-[~/Documents]
$\text{ls}

Assignment1 file1.txt}
```

cp: Copy files and directories

```
(azhagu® kali)-[~/Documents]
$ ls
Assignment1 file1.txt

(azhagu® kali)-[~/Documents]
$ cp file1.txt Assignment1

(azhagu® kali)-[~/Documents]
$ cd Assignment1

(azhagu® kali)-[~/Documents/Assignment1]

$ ls
file1.txt
```

mv: Move or rename files and directories

```
(azhagu⊕ kali)-[~/Documents/Assignment1]
$ ls
file1.txt

(azhagu⊕ kali)-[~/Documents/Assignment1]
$ mv file1.txt newfile.txt

(azhagu⊕ kali)-[~/Documents/Assignment1]
$ ls
newfile.txt
```

rm: Remove files and directories

find: Search for files and directories

```
(azhagu⊕ kali)-[~]

$ cd /home/azhagu/Documents

(azhagu⊕ kali)-[~/Documents]

$ ls

Assignment1 file1.txt

(azhagu⊕ kali)-[~/Documents]

. /Assignment1
./file1.txt

(azhagu⊕ kali)-[~/Documents]
```

File Viewing and Editing:

cat: Concatenate and display file content

```
Assignment1 file1.txt

(azhagu⊕ kali)-[~/Documents]

$ cat > file1.txt

this is azhagu's first assignment
```

less: View file content with pagination

```
(azhagu⊕ kali)-[~/Documents]
$ less file1.txt

thsi is azhagu's first assignment
file1.txt (END)
```

head: Display the beginning of a file

```
(azhagu & kali)-[~/Documents]
this is azhagu's first assignment
tail: Display the end of a file
```

```
(azhagu⊕ kali)-[~/Documents]
$ tail file1.txt
this is azhagu's first assignment
```

nano: Text editor for creating and editing files

```
(azhagu® kali)-[~/Documents]
$ nano file1.txt

WMware To...

File Actions Edit View Help

GNU nano 7.2
this is azhagu's first assignment

File System

WMware To...
```

vi/vim: Powerful text editor for experienced users



File Permissions:

chmod: Change file permissions

```
(azhagu® kali)-[~/Documents]
$ chmod u+rwx file1.txt
```

chown: Change file owner

```
(azhagu% kali)-[~/Documents]
$ chown azhagu file1.txt

(azhagu% kali)-[~/Documents]
$ ls -l file1.txt
-rwxr--r-- 1 azhagu azhagu 33 May 30 12:00 file1.txt
```

chgrp: Change file group

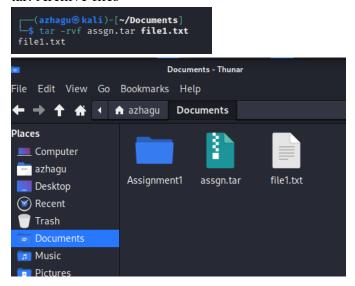
```
(azhagu⊕ kali)-[~/Documents]
$\frac{\sudo}{\sudo} \chappa \text{chappa} \text{ [sudo] password for azhagu:
Sorry, try again.
[sudo] password for azhagu:

(azhagu⊕ kali)-[~/Documents]
$\frac{\subseteq}{\subseteq} \text{ s} - \text{ total 8} \text{ drwxr-xr-x 2 azhagu azhagu 4096 May 30 11:37 Assignment1} -rwxr--r-- 1 azhagu azhagu 33 May 30 12:00 file1.txt

(azhagu⊕ kali)-[~/Documents]
$\frac{\subseteq}{\subseteq} \text{ (azhagu⊕ kali)-[~/Documents]}
```

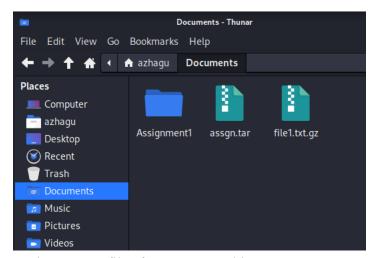
File Compression and Archiving:

tar: Archive files

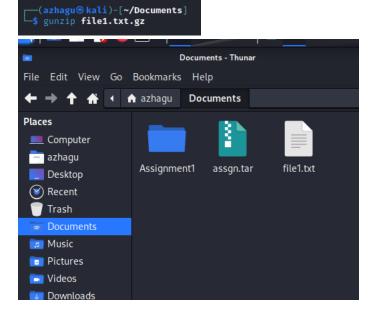


gzip: Compress files

```
(azhagu@ kali)-[~/Documents]
$ gzip file1.txt
```



unzip: Extract files from a ZIP archive



Process Management:

ps: List running processes

top: Display real-time system information and processes

```
-(azhagu®kali)-[~/Documents]
top - 12:22:32 up 54 min, 1 user, load average: 0.11, 0.12, 0.09
Tasks: 183 total, 1 running, 182 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.5 us, 1.3 sy, 0.0 ni, 98.0 id, 0.0 wa, 0.0 hi, 0.2 si, 0.
MiB Mem: 5896.0 total, 4569.7 free, 1035.0 used, 547.7 buff/cache
                                                                                         0.0 st
MiB Swap:
               975.0 total,
                                   975.0 free,
                                                        0.0 used.
                                                                       4860.9 avail Mem
    PID USER
                     PR NI VIRT RES
                                                   SHR S %CPU %MEM
                                                                                TIME+ COMMAND
    819 root
1459 azhagu
                                                                              0:08.53 panel-15-genmon
0:11.87 xfwm4
    1158 azhagu
                                                  33716
                                                               0.3
                                                                      0.8
  1457 azhagu
21127 azhagu
                      20
20
                               352548
                                                                              0:11.50 panel-13-cpugra
                               445136 108700
                                                  89028 S
                                                               0.3
                                                                              0:01.62 qterminal
                      20
                                                                             0:00.01 kworker/0:1-ata_sff
  27347 root
                                     0
                                              Ø
                                                       0 T
                                                               0.3
                                                                      0.0
                                                                             0:01.04 systemd
0:00.00 kthreadd
       1 root
2 root
                      20
                               102120
                                                    9028 S
                                                               0.0
                                                                      0.2
                                                                      0.0
                                                               0.0
                                                                              0:00.00 rcu_gp
                                                                      0.0
                                                                      0.0
       4 root
                                                               0.0
                                                                              0:00.00 rcu_par_gp
                                                                              0:00.00 slub_flushwq
       6 root
                                      0
                                              0
                                                       0 I
                                                               0.0
                                                                      0.0
                                                                              0:00.00 netns
                                                                             0:00.00 mm_percpu_wq
      10 root
                       0 -20
                                      0
                                              0
                                                       0 I
                                                               0.0
                                                                      0.0
                                                                             0:00.00 rcu_tasks_kthread
0:00.00 rcu_tasks_rude_kthread
0:00.00 rcu_tasks_trace_kthread
                                                       0 I
      11 root
                                     0
                                              0
                                                               0.0
                                                                      0.0
      12 root
                                                       0 I
                                                               0.0
                                                                      0.0
      13 root
                                                               0.0
                                                                      0.0
                                                                      0.0
                                                                              0:00.15 ksoftirqd/0
      15 root
                                      0
                                                               0.0
                                                                             0:01.86 rcu_preempt
      16 root
                                     0
                                              0
                                                       0 S
                                                               0.0
                                                                      0.0
                                                                             0:00.02 migration/0
      18 root
                      20
                                     0
                                                       0 S
                                                               0.0
                                                                      0.0
                                                                             0:00.00 cpuhp/0
                                                                             0:00.00 cpuhp/1
0:00.12 migration/1
      19 root
                      20
                                     0
                                              0
                                                       0 S
                                                               0.0
                                                                      0.0
                                                       0 S
                                                               0.0
                                                                      0.0
      20 root
                                                                              0:00.16 ksoftirqd/1
                                                               0.0
                                                                      0.0
      23 root
                                                                      0.0
                                                                              0:00.00 kworker/1:0H-events_highp
      26 root
                                      0
                                              0
                                                       0 S
                                                               0.0
                                                                      0.0
                                                                             0:00.00 kdevtmpfs
      27 root
                      0 -20
                                     0
                                                       0 I
                                                               0.0
                                                                      0.0
                                                                             0:00.00 inet_frag_wq
                         0
                                                                             0:00.00 kauditd
      28 root
                                     0
                                                       0 S
                                                               0.0
                                                                      0.0
                                                                              0:00.00 khungtaskd
                                                       0 S
                      20
                                     0
                                              0
                                                               0.0
      30 root
                                                                      0.0
                      20
                                                       0 S
                                                               0.0
                                                                      0.0
                                                                              0:00.00 oom_reaper
      31 root
                                                                              0:00.00 writeback
                                                               0.0
                                                                      0.0
                                                                              0:00.20 kcompactd0
                                                                             0:00.00 ksmd
0:00.23 khugepaged
      35 root
                                      0
                                                               0.0
                                                                      0.0
      36 root
                                      0
                                              0
                                                       0 S
                                                              0.0
                                                                      0.0
      37 root
                       0 -20
                                      0
                                              0
                                                       0 I
                                                              0.0
                                                                      0.0
                                                                             0:00.00 kintegrityd
                                                                             0:00.00 kblockd
0:00.00 blkcg_punt_bio
                                                       0 I
0 I
      38 root
                       0 -20
                                                               0.0
                                                                      0.0
```

Kill: Terminate processes

```
(azhagu@ kali)-[~/Documents]
$\frac{1}{5} \text{kill} - \text{ Hup int bus fpe kill usr1 segv usr2 pipe alrm term stkflt chld cont stop tstp ttin ttou urg xcpu xfsz vtalrm prof winch poll pwr sys
```

bg: Run processes in the background

```
(azhagu⊕ kali)-[~/Documents]

$ bg
bg: no current job
```

fg: Bring background processes to the foreground

```
(azhagu® kali)-[~/Documents]
$ fg
fg: no current job
```

System Information:

uname: Print system information

```
—(azhagu⊕ kali)-[~/Documents]
$ uname
Linux
```

df: Display disk space usage

```
      (azhagu® kali)-[~/Documents]

      $ df

      Filesystem
      1K-blocks
      Used Available Use% Mounted on udev
      2978184
      0 2978184
      0% /dev

      tmpfs
      603752
      1408
      602344
      1% /run

      /dev/sda1
      23608428
      12650276
      9733552
      57% /

      tmpfs
      3018740
      0
      3018740
      0% /dev/shm

      tmpfs
      5120
      0
      5120
      0% /run/lock

      tmpfs
      603748
      88
      603660
      1% /run/user/1000

(azhagu® kali)-[~/Documents]
```

free: Display memory usage

```
      (azhagu® kali)-[~/Documents]

      $ free
      total
      used
      free
      shared
      buff/cache
      available

      Mem:
      6037484
      1076348
      4662856
      31848
      566620
      4961136

      Swap:
      998396
      0
      998396
```

uptime: Show system uptime

```
(azhagu⊛ kali)-[~/Documents]
$\prescript{$\text{uptime}$}$
12:27:18 up 59 min, 1 user, load average: 0.18, 0.11, 0.09}
```

who: Display logged-in users

w: Display logged-in users and their activities

```
      (azhagu⊕ kali)-[~/Documents]

      $ w

      12:27:23 up 59 min, 1 user, load average: 0.17, 0.11, 0.09

      USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT azhagu tty7 :0

      11:28 58:59 35.70s 0.27s xfce4-session
```

Networking:

ifconfig: Configure network interfaces

```
(azhagu® kali)-[~]

$ ifconfig

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.245.128 netmask 255.255.255.0 broadcast 192.168.245.255
    inet6 fe80::20c:29ff:fe5e:707d prefixlen 64 scopeid 0×20<link>
    ether 00:0c:29:5e:70:7d txqueuelen 1000 (Ethernet)
    RX packets 166 bytes 17091 (16.6 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 59 bytes 6902 (6.7 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0×10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 4 bytes 240 (240.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 240 (240.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

(azhagu® kali)-[~]
```

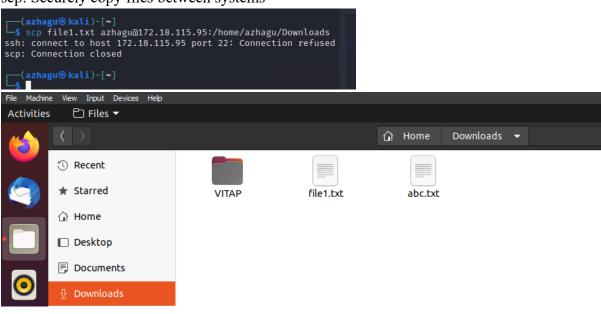
ping: Send ICMP echo requests to a network host

```
$ ping 172.18.115.95
PING 172.18.115.95 (172.18.115.95) 56(84) bytes of data.
64 bytes from 172.18.115.95: icmp_seq=1 ttl=128 time=1.43 ms
64 bytes from 172.18.115.95: icmp_seq=2 ttl=128 time=1.26 ms
64 bytes from 172.18.115.95: icmp_seq=3 ttl=128 time=1.28 ms
64 bytes from 172.18.115.95: icmp_seq=3 ttl=128 time=0.873 ms
64 bytes from 172.18.115.95: icmp_seq=5 ttl=128 time=1.34 ms
64 bytes from 172.18.115.95: icmp_seq=6 ttl=128 time=1.29 ms
64 bytes from 172.18.115.95: icmp_seq=6 ttl=128 time=1.29 ms
64 bytes from 172.18.115.95: icmp_seq=7 ttl=128 time=1.33 ms
64 bytes from 172.18.115.95: icmp_seq=8 ttl=128 time=1.40 ms
64 bytes from 172.18.115.95: icmp_seq=9 ttl=128 time=1.08 ms
64 bytes from 172.18.115.95: icmp_seq=9 ttt=128 time=1.08 ms
64 bytes from 172.18.115.95: icmp_seq=10 ttl=128 time=1.27 ms
64 bytes from 172.18.115.95: icmp_seq=11 ttl=128 time=1.39 ms
64 bytes from 172.18.115.95: icmp_seq=12 ttl=128 time=1.39 ms
64 bytes from 172.18.115.95: icmp_seq=13 ttl=128 time=1.41 ms
64 bytes from 172.18.115.95: icmp_seq=14 ttl=128 time=1.50 ms
64 bytes from 172.18.115.95: icmp_seq=15 ttl=128 time=1.40 ms
64 bytes from 172.18.115.95: icmp_seq=15 ttl=128 time=1.40 ms
64 bytes from 172.18.115.95: icmp_seq=16 ttl=128 time=1.05 ms
64 bytes from 172.18.115.95: icmp_seq=17 ttl=128 time=1.10 ms
64 bytes from 172.18.115.95: icmp_seq=18 ttl=128 time=1.36 ms
64 bytes from 172.18.115.95: icmp_seq=19 ttl=128 time=1.37 ms
64 bytes from 172.18.115.95: icmp_seq=20 ttl=128 time=1.33 ms
64 bytes from 172.18.115.95: icmp_seq=21 ttl=128 time=1.09 ms
64 bytes from 172.18.115.95: icmp_seq=22 ttl=128 time=1.33 ms
64 bytes from 172.18.115.95: icmp_seq=23 ttl=128 time=1.38 ms
64 bytes from 172.18.115.95: icmp_seq=24 ttl=128 time=1.44 ms
64 bytes from 172.18.115.95: icmp_seq=25 ttl=128 time=1.29 ms
64 bytes from 172.18.115.95: icmp_seq=26 ttl=128 time=1.34 ms
64 bytes from 172.18.115.95: icmp_seq=27 ttl=128 time=1.35 ms
64 bytes from 172.18.115.95: icmp_seq=28 ttl=128 time=1.23 ms
                        172.18.115.95: icmp_seq=29 ttl=128 time=1.01 ms
64 bytes from
     bytes from
                        172.18.115.95: icmp_seq=30 ttl=128 time=1.37 ms
     bytes from 172.18.115.95: icmp_seq=31 ttl=128 time=1.04 ms
```

```
-(azhagu⊛kali)-[~]
        ping google.com
PING google.com (142.250.193.142) 56(84) bytes of data.
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=1 ttl=128 time=18.1 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=3 ttl=128 time=19.0 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=4 ttl=128 time=58.2 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=5 ttl=128 time=71.4 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=6 ttl=128 time=71.4 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=6 ttl=128 time=12.6 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=8 ttl=128 time=13.0 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=9 ttl=128 time=38.7 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142):
                                                                                                                                                          icmp_seq=10 ttl=128 time=57.2 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=11 ttl=128 time=70.0 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=12 ttl=128 time=12.9 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=13 ttl=128 time=24.6 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=14 ttl=128 time=46.0 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=15 ttl=128 time=69.5 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=16 ttl=128 time=14.5 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142):
                                                                                                                                                          icmp_seq=17 ttl=128 time=11.2
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=18 ttl=128 time=31.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=20 ttl=128 time=62.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=21 ttl=128 time=12.6 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=22 ttl=128 time=14.4 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=23 ttl=128 time=28.7 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=24 ttl=128 time=68.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142):
                                                                                                                                                          icmp_seq=25 ttl=128 time=61.6 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=27 ttl=128 time=12.7 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=27 ttl=128 time=20.7 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=30 ttl=128 time=20.7 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=30 ttl=128 time=44.1 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=31 ttl=128 time=62.1 ms 64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=31 ttl=128 time=61.8 ms
        bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=34 ttl=128 time=12.6 ms
```

ssh: Securely connect to a remote system

scp: Securely copy files between systems



wget: Download files from the web

```
(azhagu⊕ kali)-[~]

$ wget https://downloads.configserver.com/csf.tgz
--2023-05-30 12:53:16-- https://downloads.configserver.com/csf.tgz
Resolving downloads.configserver.com (downloads.configserver.com)... failed: Name or service not known.

wget: unable to resolve host address 'downloads.configserver.com'

(azhagu⊕ kali)-[~]
```

System Administration:

sudo: Execute commands with superuser privileges

```
(azhagu@kali)-[~]
usage: sudo -h | -K | -k | -V
usage: sudo -h | -K | -k | -V
usage: sudo - V [-ABKHNS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABKHNS] [-g group] [-h host] [-p prompt] [-u user] [-u user] [-u user] [-u user] [-u user] [-n user] [
```

apt-get: Package management for Debian-based distributions

```
apt 2.5.6 (amd64)
Usage: apt-get [options] command
apt-get [options] install|remove pkg1 [pkg2 ...]
apt-get [options] source pkg1 [pkg2 ...]
apt-get is a command line interface for retrieval of packages
and information about them from authenticated sources and
for installation, upgrade and removal of packages together
with their dependencies.
Most used commands:
   update - Retrieve new lists of packages
   upgrade - Perform an upgrade
install - Install new packages (pkg is libc6 not libc6.deb)
reinstall - Reinstall packages (pkg is libc6 not libc6.deb)
   remove - Remove packages
   purge - Remove packages and config files
autoremove - Remove automatically all unused packages
   dist-upgrade - Distribution upgrade, see apt-get(8)
dselect-upgrade - Follow dselect selections
   build-dep - Configure build-dependencies for source packages
satisfy - Satisfy dependency strings
clean - Erase downloaded archive files
   autoclean - Erase old downloaded archive files
   check - Verify that there are no broken dependencies
source - Download source archives
download - Download the binary package into the current directory
changelog - Download and display the changelog for the given package
See apt-get(8) for more information about the available commands.
Configuration options and syntax is detailed in apt.conf(5).

Information about how to configure sources can be found in sources.list(5).
Package and version choices can be expressed via apt_preferences(5). Security details are available in apt-secure(8).
                                                                This APT has Super Cow Powers.
__(azhagu⊛kali)-[~]
$ ■
```

yum: Package management for Red Hat-based distributions

```
This APT

(azhagu® kali)-[~]

$ vum

Command 'vum' not found, did you mean:
command 'vvm' from deb atfs
command 'vvm' from deb vim-addon-manager
command 'vum' from deb freewnn-jserver
command 'vum' from deb perforate
command 'vum' from deb perforate
command 'vum' from deb mgetty-voice
command 'sum' from deb coreutils
command 'vym' from deb vym
command 'num' from deb quickcal
Try: sudo apt install <deb name>

(azhagu® kali)-[~]
```

systemctl: Manage system services

crontab: Schedule recurring tasks

```
(azhagu@kali)-[~/Documents]
specific crontab -l
no crontab for azhagu
```

useradd: Add a new user

```
(azhagu@ kali)-[~/Documents/Assignment1]

$ sudo useradd kali
[sudo] password for azhagu:

(azhagu@ kali)-[~/Documents/Assignment1]
```

passwd: Change user password

```
(azhagu® kali)-[~/Documents/Assignment1]

$\text{current password}$ for azhagu.

Current password:

New password:

Retype new password:

passwd: password updated successfully

$\text{azhagu® kali}$-[~/Documents/Assignment1]$
```