Title: Linux Command List Assessment

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File and Directory Operations:

ls: List files and directories

```
(sankypanky09@ kali)-[~]
$ ls
192.168.201.129 192.168.201.239 Desktop Documents Downloads Helloworld laboratory Music Pictures Public Templates Videos
```

cd: Change directory

```
(sankypanky09⊕ kali)-[~]

$ cd /home/sankypanky09/Documents
```

pwd: Print working directory

```
(sankypanky09® kali)-[~/Documents]
$\frac{1}{2}\text{pwd}
$\text{home/sankypanky09/Documents}
```

mkdir: Make directory

```
(sankypanky09® kali)-[~/Documents]

$ mkdir Assignment1

(sankypanky09® kali)-[~/Documents]

$ |s

Assignment1
```

touch: Create an empty file

```
(sankypanky09⊕ kali)-[~/Documents]
$ touch file1.txt

(sankypanky09⊕ kali)-[~/Documents]
$ ls

Assignment1 file1.txt
```

cp: Copy files and directories

```
(sankypanky09@ kali)-[~/Documents]
$ ls
Assignment1 file1.txt

(sankypanky09@ kali)-[~/Documents]
$ cp file1.txt Assignment1

(sankypanky09@ kali)-[~/Documents]
$ cd Assignment1

(sankypanky09@ kali)-[~/Documents/Assignment1]
$ ls
file1.txt
```

mv: Move or rename files and directories

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ ls

file1.txt

(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ mv file1.txt newfile.txt

(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ ls

newfile.txt
```

rm: Remove files and directories

find: Search for files and directories

File Viewing and Editing:

cat: Concatenate and display file content

```
(sankypanky09® kali)-[~/Documents]
$ cat file1.txt
this is sankalpa's first assignment
```

less: View file content with pagination

```
(sankypanky09⊕ kali)-[~/Documents]
$ less file1.txt 
this is sankalpa's first assignment
file1.txt (END)
```

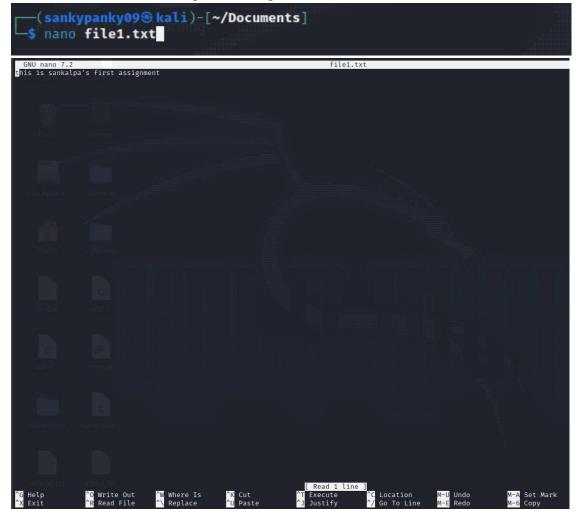
head: Display the beginning of a file

```
____(sankypanky09⊕ kali)-[~/Documents]
$ head file1.txt
this is sankalpa's first assignment
```

tail: Display the end of a file

```
___(sankypanky09⊕ kali)-[~/Documents]
$\frac{1}{2}$ tail file1.txt
this is sankalpa's first assignment
```

nano: Text editor for creating and editing files



vi/vim: Powerful text editor for experienced users

```
VIM - Vi IMproved

VIM - Vi IMproved

vertion 9.8 1309

p dram declarate at al.

Modified by team-vimbtracker-debian.org

Vin is pon source and freely distributable

Spensor Vin development!

type :help spensorscatter> for information

type :qcfmter> to exit

type :help:Enters or of 515 for on-line help

type :help:Enters or of 515 for on-lin
```

File Permissions:

chmod: Change file permissions

```
___(sankypanky09⊕ kali)-[~/Documents/Assignment1]
$ chmod u+rwx file1.txt
```

chown: Change file owner

```
(sankypanky09® kali)-[~/Documents/Assignment1]
$ chown sankypanky09® file1.txt

(sankypanky09® kali)-[~/Documents/Assignment1]
$ ls -l file1.txt

-rwxr--r-- 1 sankypanky09 sankypanky09 36 May 28 16:53 file1.txt
```

chgrp: Change file group

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]

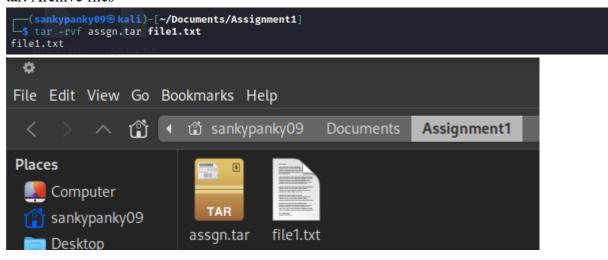
$ sudo chgrp sankypanky09 file1.txt
[sudo] password for sankypanky09:

(sankypanky09⊕ kali)-[~/Documents/Assignment1]

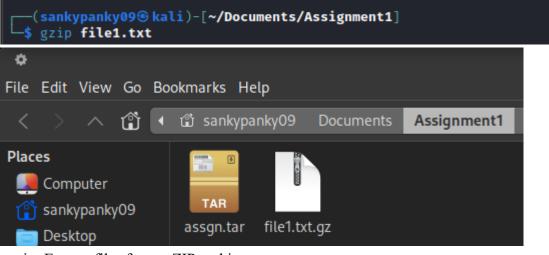
$ ls -l
total 4
-rwxr--r-- 1 sankypanky09 sankypanky09 36 May 28 16:53 file1.txt
```

File Compression and Archiving:

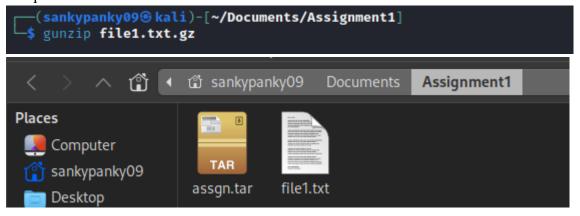
tar: Archive files



gzip: Compress files



unzip: Extract files from a ZIP archive



Process Management:

ps: List running processes

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ ps
PID TTY TIME CMD
7585 pts/0 00:00:00 zsh
9676 pts/0 00:00:00 ps
```

top: Display real-time system information and processes

Kill: Terminate processes

```
(sankypanky09® kali)-[~/Documents/Assignment1]
$\frac{\squares}{kill} -l$

HUP INT QUIT ILL TRAP IOT 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

```
| (sankypanky09⊕ kali)-[~/Documents/Assignment1]
| $ bg |
| bg: no current job
```

fg: Bring background processes to the foreground

System Information:

uname: Print system information

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]
$\text{uname}
Linux
```

df: Display disk space usage

```
-(sankypanky09@kali)-[~/Documents/Assignment1]
Filesystem
                1K-blocks
                              Used Available Use% Mounted on
                 1973192
402332
                               0 1973192 0%/dev
udev
                402332 1072 401260 1% /run
49835576 22583992 24687644 48% /
tmpfs
/dev/sda1
                                      2011656 0% /dev/shm
5120 0% /run/lock
                  2011656 0
5120 0
tmpfs '
tmpfs
tmpfs
                   402328
                                 84
                                        402244 1% /run/user/1000
```

free: Display memory usage

```
-(sankypanky09% kali)-[~/Documents/Assignment1]
                                                                        available
                                         free
                                                   shared buff/cache
               total
                            used
                                     1309124
                                                              1496084
                                                                          2503124
Mem:
             4023316
                         1218108
                                                    15044
              998396
                                      998396
Swap:
                               0
```

uptime: Show system uptime

who: Display logged-in users

w: Display logged-in users and their activities

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ W

17:02:59 up 34 min, 1 user, load average: 0.17, 0.09, 0.09

USER TTY FROM LOGIN⊕ IDLE JCPU PCPU WHAT

sankypan tty7 :0 16:30 34:40 10.84s 0.46s xfce4-session
```

Networking:

^c

google.com ping statistics —

7 packets transmitted, 7 received, 0% packet loss, time 6046ms

rtt min/avg/max/mdev = 49.910/51.632/52.773/1.078 ms

ifconfig: Configure network interfaces

```
—(sankypanky09⊛kali)-[~]
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
       inet 192.168.35.4 netmask 255.255.255.0 broadcast 192.168.35.255
       inet6 fe80::a00:27ff:fe45:64a9 prefixlen 64 scopeid 0×20<link>
       inet6 fd17:625c:f037:2:a00:27ff:fe45:64a9 prefixlen 64 scopeid 0×0<global>
       inet6 fd17:625c:f037:2:97db:982d:54b4:2f35 prefixlen 64 scopeid 0×0<global>
       ether 08:00:27:45:64:a9 txqueuelen 1000 (Ethernet)
       RX packets 7176 bytes 10415234 (9.9 MiB)
       RX errors 0 dropped 0 overruns 0 frame 0
       TX packets 1861 bytes 134053 (130.9 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 324 bytes 22339 (21.8 KiB)
       RX errors 0 dropped 0 overruns 0 frame 0
       TX packets 324 bytes 22339 (21.8 KiB)
       TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

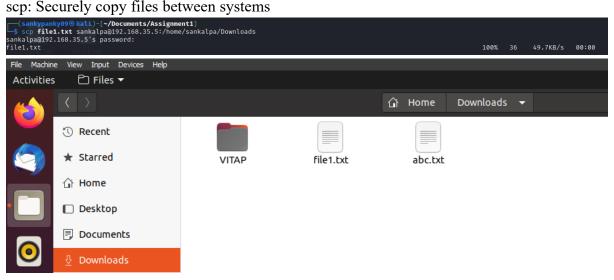
ping: Send ICMP echo requests to a network host

```
s ping 192.168.35.5
PING 192.168.35.5 (192.168.35.5) 56(84) bytes of data.
64 bytes from 192.168.35.5: icmp_seq=1 ttl=64 time=0.552 ms
64 bytes from 192.168.35.5: icmp_seq=2 ttl=64 time=0.318 ms
64 bytes from 192.168.35.5: icmp_seq=3 ttl=64 time=0.409 ms
64 bytes from 192.168.35.5: icmp_seq=4 ttl=64 time=0.298 ms
64 bytes from 192.168.35.5: icmp_seq=5 ttl=64 time=0.259 ms
64 bytes from 192.168.35.5: icmp_seq=6 ttl=64 time=0.248 ms
64 bytes from 192.168.35.5: icmp_seq=7 ttl=64 time=0.522 ms
64 bytes from 192.168.35.5: icmp_seq=8 ttl=64 time=0.406 ms
64 bytes from 192.168.35.5: icmp_seq=9 ttl=64 time=0.361 ms
64 bytes from 192.168.35.5: icmp_seq=10 ttl=64 time=0.417 ms
64 bytes from 192.168.35.5: icmp_seq=11 ttl=64 time=0.352 ms
64 bytes from 192.168.35.5: icmp_seq=12 ttl=64 time=0.363 ms
  - 192.168.35.5 ping statistics
12 packets transmitted, 12 received, 0% packet loss, time 11239ms
rtt min/avg/max/mdev = 0.248/0.375/0.552/0.089 ms
__(sankypanky09⊕ kali)-[~]
$ ping google.com
PING google.com (172.217.166.46) 56(84) bytes of data.
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=1 ttl=110 time=51.3 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=2 ttl=110 time=50.2 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=3 ttl=110 time=52.5 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=4 ttl=110 time=52.5 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=5 ttl=110 time=52.2 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=6 ttl=110 time=52.8 ms
64 bytes from bom07s18-in-f14.1e100.net (172.217.166.46): icmp_seq=7 ttl=110 time=49.9 ms
```

ssh: Securely connect to a remote system

```
-(sankypanky09® kali)-[~]
ssh sankalpa@192.168.35.5
The authenticity of host '192.168.35.5 (192.168.35.5)' can't be established.
ED25519 key fingerprint is SHA256:7ocpgy6BaW+VILqUImS2eSX05T3apWagZjA4Ssse4kU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.35.5' (ED25519) to the list of known hosts.
sankalpa@192.168.35.5's password:
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.13.0-35-generic x86_64)
 * Documentation: https://help.ubuntu.com
 * Management:
                  https://landscape.canonical.com
 * Support:
                   https://ubuntu.com/advantage
 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.
   https://ubuntu.com/engage/secure-kubernetes-at-the-edge
641 updates can be installed immediately.
421 of these updates are security updates.
To see these additional updates run: apt list -- upgradable
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
Your Hardware Enablement Stack (HWE) is supported until April 2025.
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
sankalpa@sankalpa-VirtualBox:~$
```

scp: Securely copy files between systems



wget: Download files from the web

System Administration:

sudo: Execute commands with superuser privileges

```
(sankypanky09@ kali)-[~/Documents/Assignment1]

$ sudo
usage: sudo -h | -k | -k | -V
usage: sudo -v [-ABKNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -v [-ABKNnS] [-g group] [-h host] [-p prompt] [-U user] [-u user] [command [arg ...]]
usage: sudo [-ABBEHKNnPS] [-r role] [-t type] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-T timeout] [-u user] [VAR-value]
[-i | -s] [command [arg ...]]
usage: sudo -e [-ABKNnS] [-r role] [-t type] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-T timeout] [-u user] file ...
```

apt-get: Package management for Debian-based distributions

```
-(sankypanky09@kali)-[~/Documents/Assignment1]
_s apt-get
apt 2.6.0 (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.
```

yum: Package management for Red Hat-based distributions

```
(sankypanky09® kali)-[~/Documents/Assignment1]
$ yum
Command 'yum' not found, did you mean:
  command 'uum' from deb freewnn-jserver
  command 'zum' from deb perforate
  command 'sum' from deb coreutils
  command 'num' from deb quickcal
Try: sudo apt install <deb name>
```

systemctl: Manage system services

crontab: Schedule recurring tasks

```
(sankypanky09⊕ kali)-[~/Documents/Assignment1]

$ crontab -l

no crontab for sankypanky09
```

useradd: Add a new user

```
(sankypanky09% kali)-[~/Documents/Assignment1]

$ sudo useradd kali
[sudo] password for sankypanky09:
```

passwd: Change user password

```
(sankypanky09@ kali)-[~/Documents/Assignment1]
$ passwd
Changing password for sankypanky09.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```