19CS416-CS-Ex-3-Linux-Commands

Linux is an open-source operating system, and its kernel is the heart of the OS, facilitating communication between hardware and software. One of the key advantages of Linux is its customizability; developers can modify the Linux kernel to create their own tailored operating systems.

Linux Commands

Linux commands are executed in the terminal, which is case-sensitive. This guide covers some basic and advanced commands used in Linux.

1. `ls` Command

The `ls` command is used to display a list of contents in a directory.

Syntax:

```
ls
```

Output:

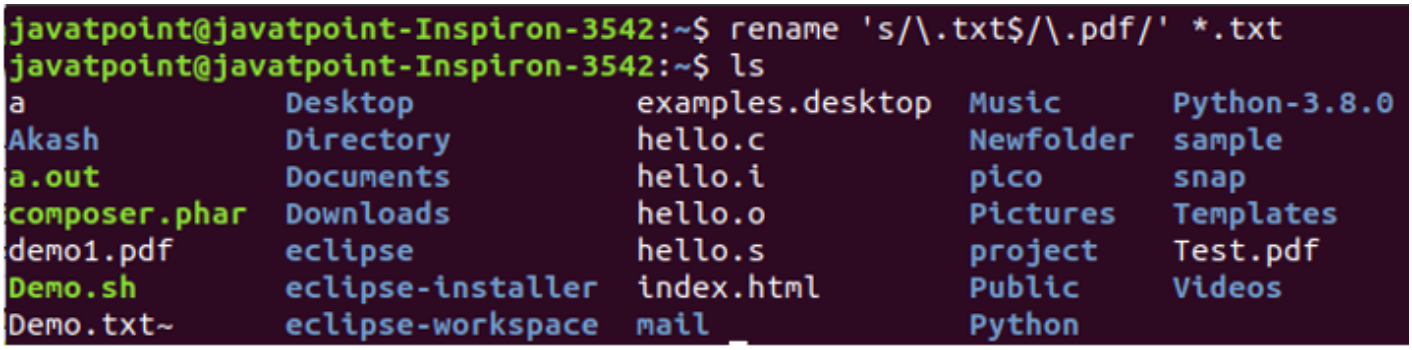
2. `pwd` Command

The `pwd` command displays the location of the current working directory.

Syntax:

```
pwd
```

Output:



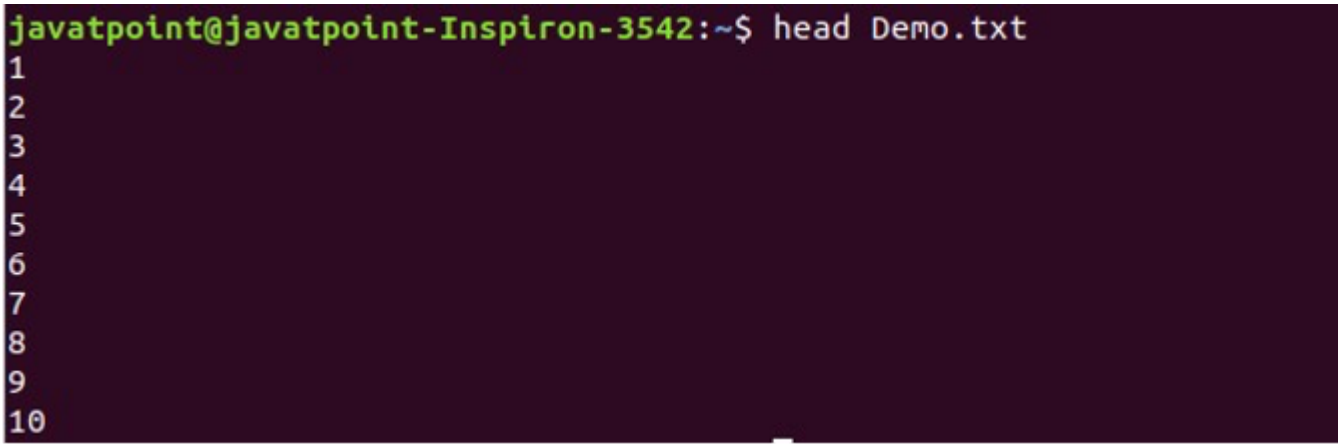
3. mkdir Command

The `mkdir` command is used to create a new directory.

Syntax:

```
mkdir <directory_name>
```

Output:



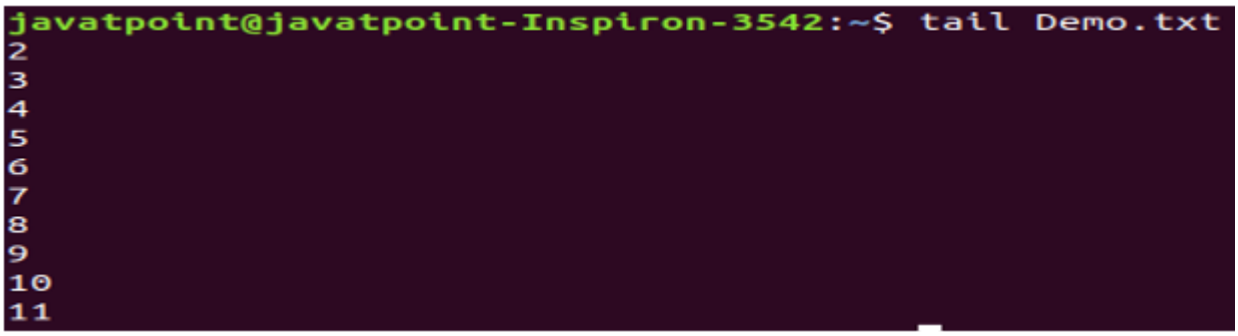
4. rmdir Command

The `rmdir` command is used to delete a directory.

Syntax:

```
rmdir <directory_name>
```

Output:



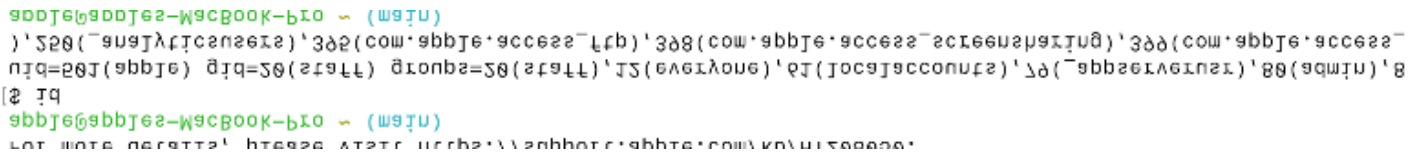
5. cd Command

The `cd` command is used to change the current directory.

Syntax:

```
cd <directory_name>
```

Output:



6. cat Command

The `cat` command is used to create, display, and concatenate files.

Syntax:

```
cat [OPTION]... [FILE]...
```

Output:

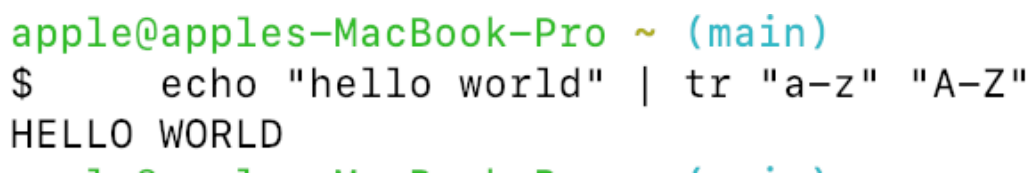
7. cp Command

The `cp` command is used to copy files or directories.

Syntax:

```
cp <source_file> <destination_file>
```

Output:



8. gedit Command

`gedit` is a general-purpose text editor used to create and edit text files.

Syntax:

```
gedit <file_name>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$      chmod 755 script.sh
```

9. su Command

The `su` command provides administrative access to another user.

Syntax:

```
su <username>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$      tar -xvf archive.tar
```

10. mv Command

The `mv` command is used to move a file or directory from one location to another.

Syntax:

```
mv <file_name> <directory_path>
```

Output:

```
[$ chown apple sample.txt
 apple@apples-MacBook-Pro ~ (main)
[$ ls -l sample.txt
 -rw-r--r--  1 apple  staff  30 Apr 26 13:41 sample.txt
 apple@apples-MacBook-Pro ~ (main)
```

11. rename Command

The `rename` command is used to rename files.

Syntax:

```
rename 's/old-name/new-name/' <files>
```

Output:

```
javatpoint@javatpoint-Inspiron-3542:~/project$ make
echo "Hello World!"
Hello World!
```

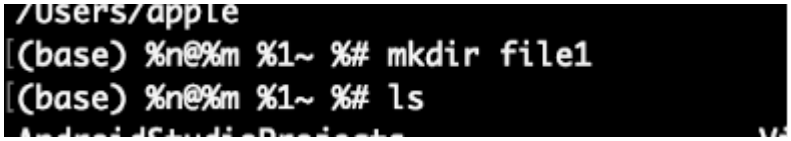
12. head Command

The `head` command displays the first 10 lines of a file.

Syntax:

```
head <file_name>
```

Output:



13. tail Command

The `tail` command displays the last 10 lines of a file.

Syntax:

```
tail <file_name>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ ifconfig
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
        options=1203<RXCSUM,TXCSUM,TXSTATUS,SW_TIMESTAMP>
        inet 127.0.0.1 netmask 0xff000000
        inet6 ::1 prefixlen 128
        inet6 fe80::1%lo0 prefixlen 64 scopeid 0x1
        nd6 options=201<PERFORMNUD,DAD>
gif0: flags=8010<POINTOPOINT,MULTICAST> mtu 1280
stf0: flags=0<> mtu 1280
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST>
```

14. id Command

The `id` command displays the user ID (UID) and group ID (GID).

Syntax:

```
id
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ host www.tutorpoint.com
www.tutorpoint.com has address 185.53.177.53
www.tutorpoint.com has IPv6 address 64:ff9b::b935:b135
www.tutorpoint.com mail is handled by 5 mail.h-email.net.
apple@apples-MacBook-Pro ~ (main)
```

15. grep Command

The `grep` command is used to search for a pattern within files.

Syntax:

```
command | grep <search_word>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ gzip sample.txt sample1.txt
sample.txt.gz already exists -- do you wish to overwrite (y or n)? y
sample1.txt.gz already exists -- do you wish to overwrite (y or n)? y
```

16. tr Command

The `tr` command is used to translate or delete characters.

Syntax:

```
command | tr <old> <new>
```

Output:

```
javatpoint@javatpoint-Inspiron-3542:~$ sort marks.txt
alen-70
alex-50
carry-85
celena-90
jon-75
justin-80
```

17. chmod Command

The `chmod` command is used to change the access mode (permissions) of a file.

Syntax:

```
chmod <options> <permissions> <file_name>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ cal
     April 2025
Su Mo Tu We Th Fr Sa
        1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
```

18. `tar` Command

The `tar` command is used to create or extract archive files.

Syntax:

```
tar [options] [archive-file] [files_to_archive]
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ clear
```

19. `chown` Command

The `chown` command is used to change the ownership of a file.

Syntax:

```
chown <owner_name> <file_name>
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$     echo "This is the body of the email." | mail -s "Subject of the email" recipient@example.com
apple@apples-MacBook-Pro ~ (main)
$
```

20. `make` Command

The `make` command is used to build and maintain groups of programs.

Syntax:

```
make [-f makefile] [options] [targets]
```

Output:

```
apple@apples-MacBook-Pro ~ (main)
$ df
Filesystem     512-blocks      Used Available Capacity iused      ifree %iused  Mounted on
/dev/disk1s5s1  489562928  30115992 242630288    12%  502388 1213151440    0%   /
devfs                 385       385         0   100%     667          0  100%   /dev
/dev/disk1s4    489562928   2099240 242630288     1%       2 1213151440    0%   /System/Volumes/VM
/dev/disk1s2    489562928    647864 242630288     1%    1469 1213151440    0%   /System/Volumes/Preboot
/dev/disk1s6    489562928     12024 242630288     1%      95 1213151440    0%   /System/Volumes/Update
/dev/disk1s1    489562928 211594336 242630288    47% 1178709 1213151440    0%   /System/Volumes/Data
map auto_home           0         0         0   100%       0          0  100%   /System/Volumes/Data/home
You have mail in /var/mail/apple
```

21. `ifconfig` Command

The `ifconfig` command is used to configure network interfaces.

Syntax:

```
ifconfig [options] [interface]
```

Output:

```
To update your account to use zsh, please run  chsh -s /bin/zsh .
For more details, please visit https://support.apple.com/kb/HT208050.
(base) %n@%m %1~ %# find sample.txt /Users/apple/sample
sample.txt
/Users/apple/sample
/Users/apple/sample/sample.txt
(base) %n@%m %1~ %#
```

22. `host` Command

The `host` command is used to display the IP address for a given domain name.

Syntax:

```
host <domain_name> or <ip_address>
```

Output:

```
(base) %n@%m %1~ %# rmdir file1
(base) %n@%m %1~ %#
```

23. `gzip` Command

The `gzip` command is used to compress files, replacing the original file with a compressed one with a `.gz` extension.

Syntax:

```
gzip <file1> <file2> <file3>...
```

Output:

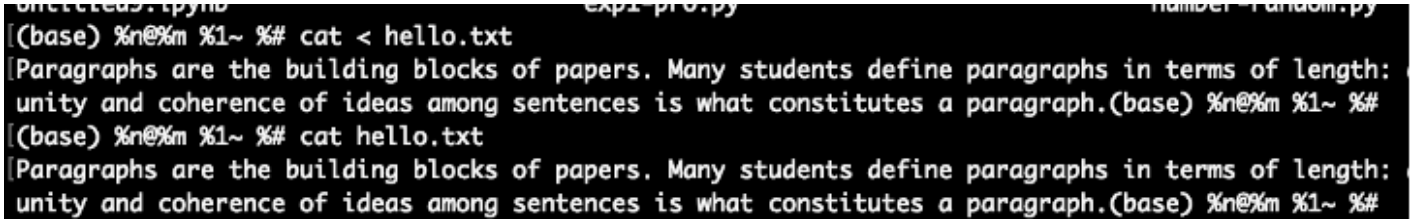
24. `sort` Command

The `sort` command is used to sort the contents of a file alphabetically.

Syntax:

```
sort <file_name>
```

Output:



25. `cal` Command

The `cal` command displays the current month's calendar with the current date highlighted.

Syntax:

```
cal
```

Output:

26. `clear` Command

The `clear` command clears the terminal screen.

Syntax:

```
clear
```

Output:

27. `mail` Command

The `mail` command is used to send emails from the command line.

Syntax:

```
mail
```

Output:

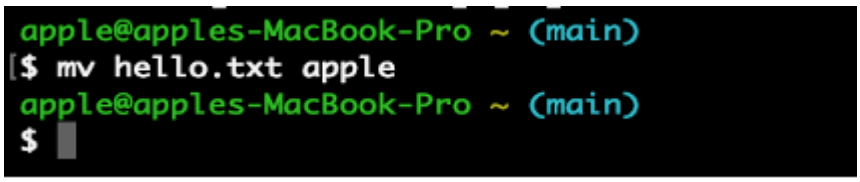
28. `df` Command

The `df` command displays the disk space usage of file systems.

Syntax:

```
df
```

Output:



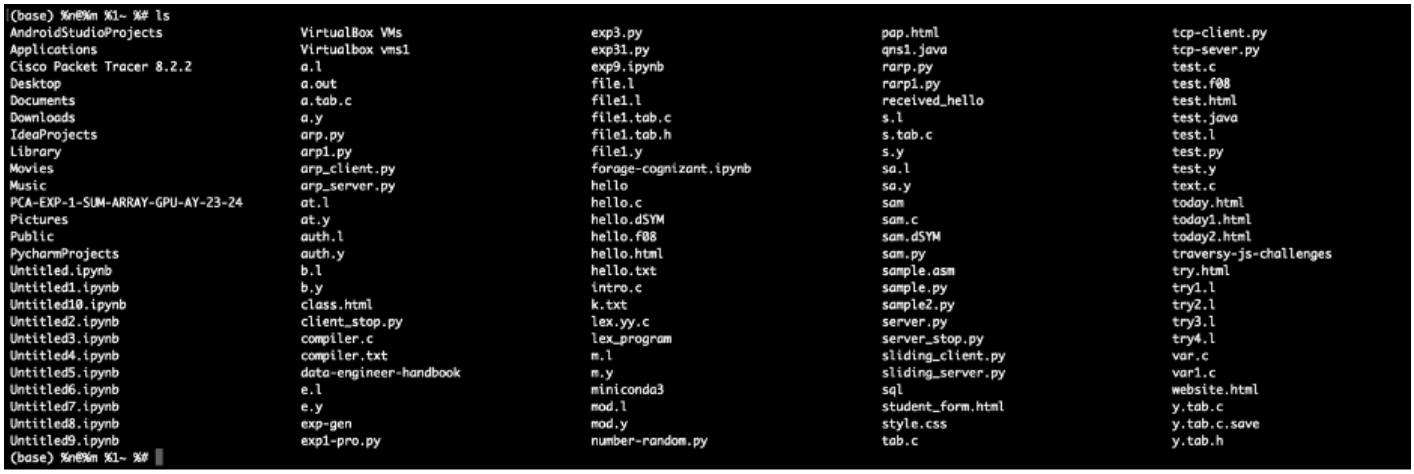
29. `find` Command

The `find` command is used to search for files in a directory hierarchy.

Syntax:

```
find <directory> -name <file_name>
```

Output:



Result

All basic and advanced operations were successfully performed through appropriate Linux commands, with the system responding accurately to each, confirming correct execution and expected behavior, thereby demonstrating the effectiveness and reliability of the Linux command-line interface for comprehensive system management.