KGiSL Microcollege,Coimbatore.

Software Programming

Linux Commands

The following are the top Linux commands:

Linux Directory Commands

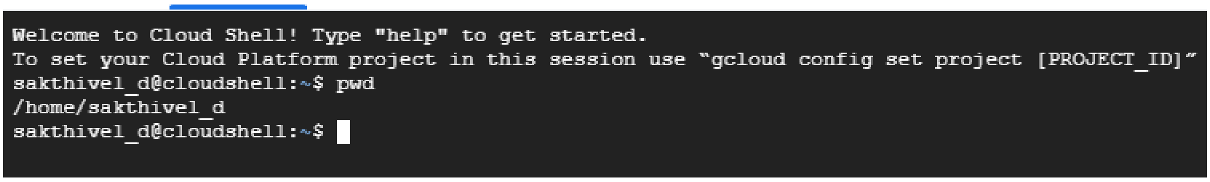
1. pwd Command

The pwd command is used to display the location of the current working directory.

Syntax:

1. pwd

Output:



```
Welcome to Cloud Shell! Type "help" to get started.
To set your Cloud Platform project in this session use "gcloud config set project [PROJECT_ID]"
sakthivel_d@cloudshell:~$ pwd
/home/sakthivel_d
sakthivel_d@cloudshell:~$
```

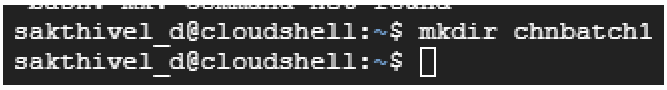
2. mkdir Command

The mkdir command is used to create a new directory under any directory.

Syntax:

1. mkdir <directory name>

Output:



```
sakthivel_d@cloudshell:~$ mkdir chnbatch1
sakthivel_d@cloudshell:~$
```

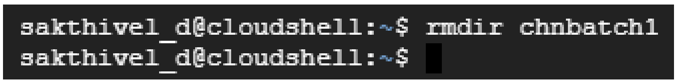
3. rmdir Command

The rmdir command is used to delete a directory.

Syntax:

1. rmdir <directory name>

Output:



```
sakthivel_d@cloudshell:~$ rmdir chnbatch1
sakthivel_d@cloudshell:~$
```

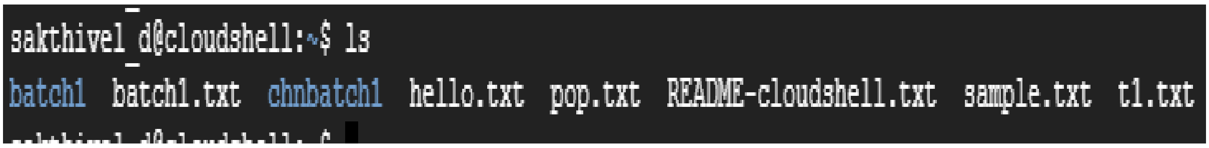
4. ls Command

The ls command is used to display a list of content of a directory.

Syntax:

1. ls

Output:



```
sakthivel_d@cloudshell:~$ ls
batch1  batch1.txt  chnbatch1  hello.txt  pop.txt  README-cloudshell.txt  sample.txt  t1.txt
sakthivel_d@cloudshell:~$
```

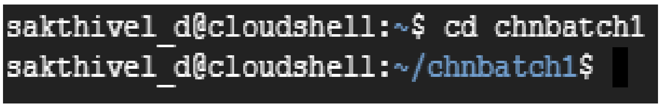
5. cd Command

The cd command is used to change the current directory.

Syntax:

1. cd **<directory** name>

Output:



```
sakthivel_d@cloudshell:~$ cd chnbatch1
sakthivel_d@cloudshell:~/chnbatch1$
```

Linux File commands

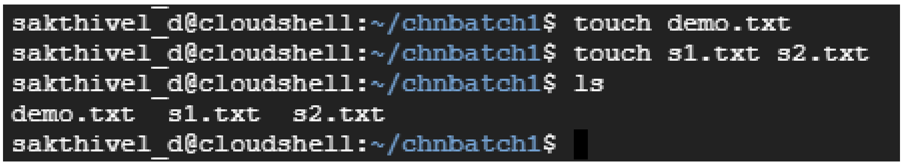
6. touch Command

The touch command is used to create empty files. We can create multiple empty files by executing it once.

Syntax:

1. touch **<file** name>
2. touch **<file1> <file2>** ....

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ touch demo.txt
sakthivel_d@cloudshell:~/chnbatch1$ touch s1.txt s2.txt
sakthivel_d@cloudshell:~/chnbatch1$ ls
demo.txt  s1.txt  s2.txt
sakthivel_d@cloudshell:~/chnbatch1$
```

7. cat Command

The cat command is a multi-purpose utility in the Linux system. It can be used to create a file, display content of the file, copy the content of one file to another file, and more.

Syntax:

1. cat [OPTION]... [FILE]..

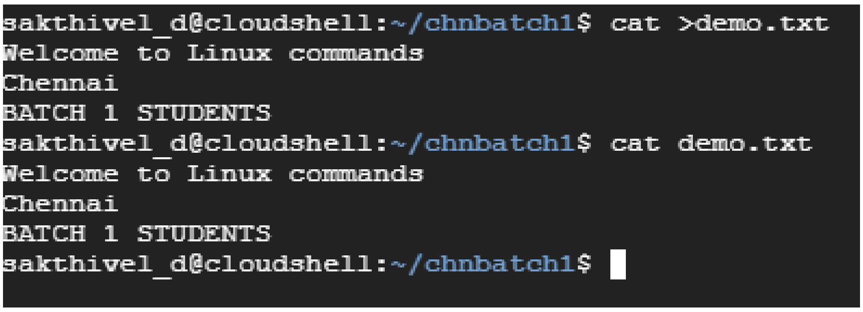
To create a file, execute it as follows:

1. cat > <file name>
2. // Enter file content

Press "**CTRL+ D**" keys to save the file. To display the content of the file, execute it as follows:

1. cat <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cat >demo.txt
Welcome to Linux commands
Chennai
BATCH 1 STUDENTS
sakthivel_d@cloudshell:~/chnbatch1$ cat demo.txt
Welcome to Linux commands
Chennai
BATCH 1 STUDENTS
sakthivel_d@cloudshell:~/chnbatch1$
```

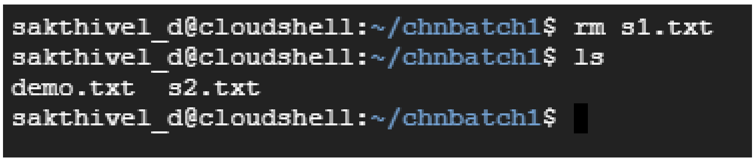
8. rm Command

The rm command is used to remove a file.

Syntax:

rm <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ rm s1.txt
sakthivel_d@cloudshell:~/chnbatch1$ ls
demo.txt  s2.txt
sakthivel_d@cloudshell:~/chnbatch1$
```

9. cp Command

The cp command is used to copy a file or directory.

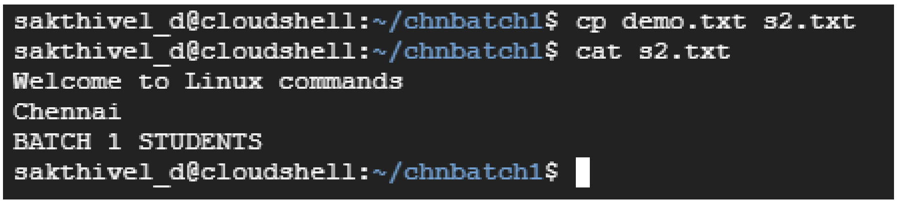
Syntax:

To copy in the same directory:

1. cp <existing file name> <new file name>

To copy in a different directory:

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cp demo.txt s2.txt
sakthivel_d@cloudshell:~/chnbatch1$ cat s2.txt
Welcome to Linux commands
Chennai
BATCH 1 STUDENTS
sakthivel_d@cloudshell:~/chnbatch1$
```

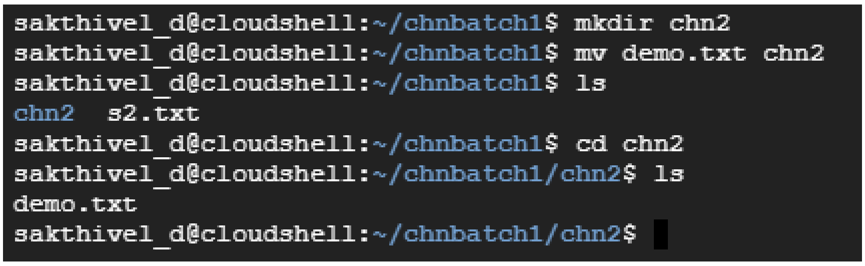
10. mv Command

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

Syntax:

1. mv <file name> <directory path>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ mkdir chn2
sakthivel_d@cloudshell:~/chnbatch1$ mv demo.txt chn2
sakthivel_d@cloudshell:~/chnbatch1$ ls
chn2  s2.txt
sakthivel_d@cloudshell:~/chnbatch1$ cd chn2
sakthivel_d@cloudshell:~/chnbatch1/chn2$ ls
demo.txt
sakthivel_d@cloudshell:~/chnbatch1/chn2$
```

11. rename Command

The rename command is used to rename files. It is useful for renaming a large group of files.

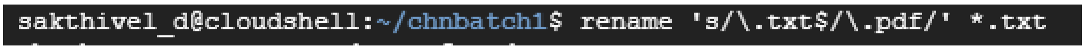
Syntax:

1. rename 's/old-name/new-name/' files

For example, to convert all the text files into pdf files, execute the below command:

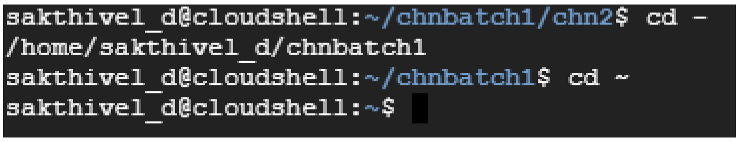
1. rename 's/\.txt$/\.pdf/' *.txt

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ rename 's/\.txt$/\.pdf/' *.txt
```

Exit from Directory



```
sakthivel_d@cloudshell:~/chnbatch1/chn2$ cd -
/home/sakthivel_d/chnbatch1
sakthivel_d@cloudshell:~/chnbatch1$ cd ~
sakthivel_d@cloudshell:~$
```

Linux File Content Commands

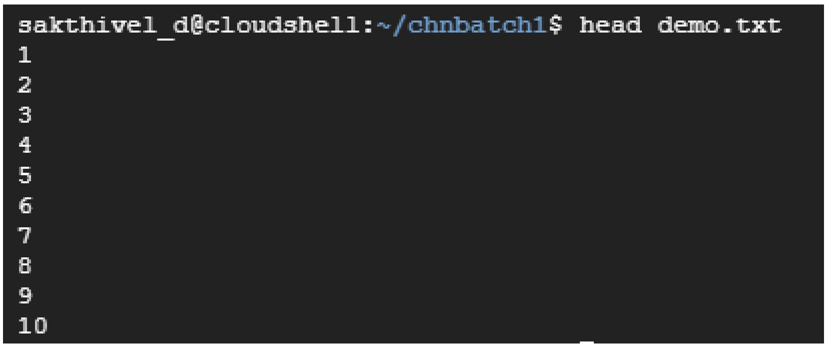
12. head Command

The head command is used to display the content of a file. It displays the first 10 lines of a file.

Syntax:

1. head <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ head demo.txt
1
2
3
4
5
6
7
8
9
10
```

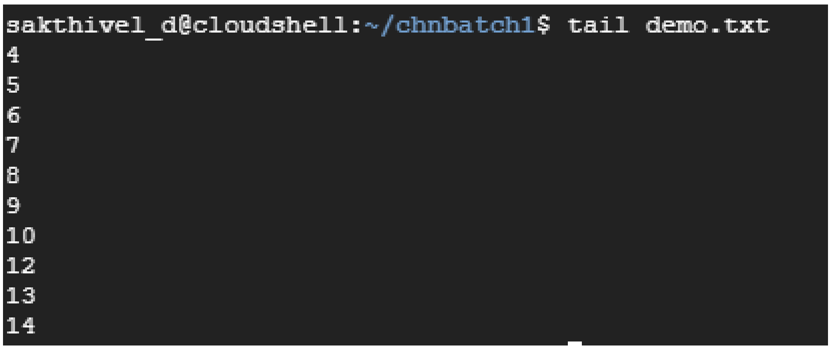
13. tail Command

The tail command is similar to the head command. The difference between both commands is that it displays the last ten lines of the file content. It is useful for reading the error message.

Syntax:

1. tail <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ tail demo.txt
4
5
6
7
8
9
10
12
13
14
```

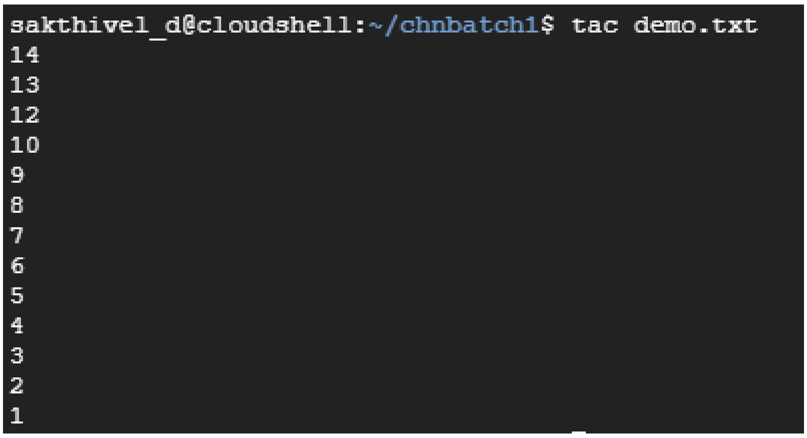
14. tac Command

The tac command is the reverse of cat command, as its name specified. It displays the file content in reverse order (from the last line).

Syntax:

1. tac <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ tac demo.txt
14
13
12
10
9
8
7
6
5
4
3
2
1
```

15. more command

The more command is quite similar to the cat command, as it is used to display the file content in the same way that the cat command does. The only difference between both commands is that, in case of larger files, the more command displays screenful output at a time.

In more command, the following keys are used to scroll the page:

ENTER key: To scroll down page by line.

Space bar: To move to the next page.

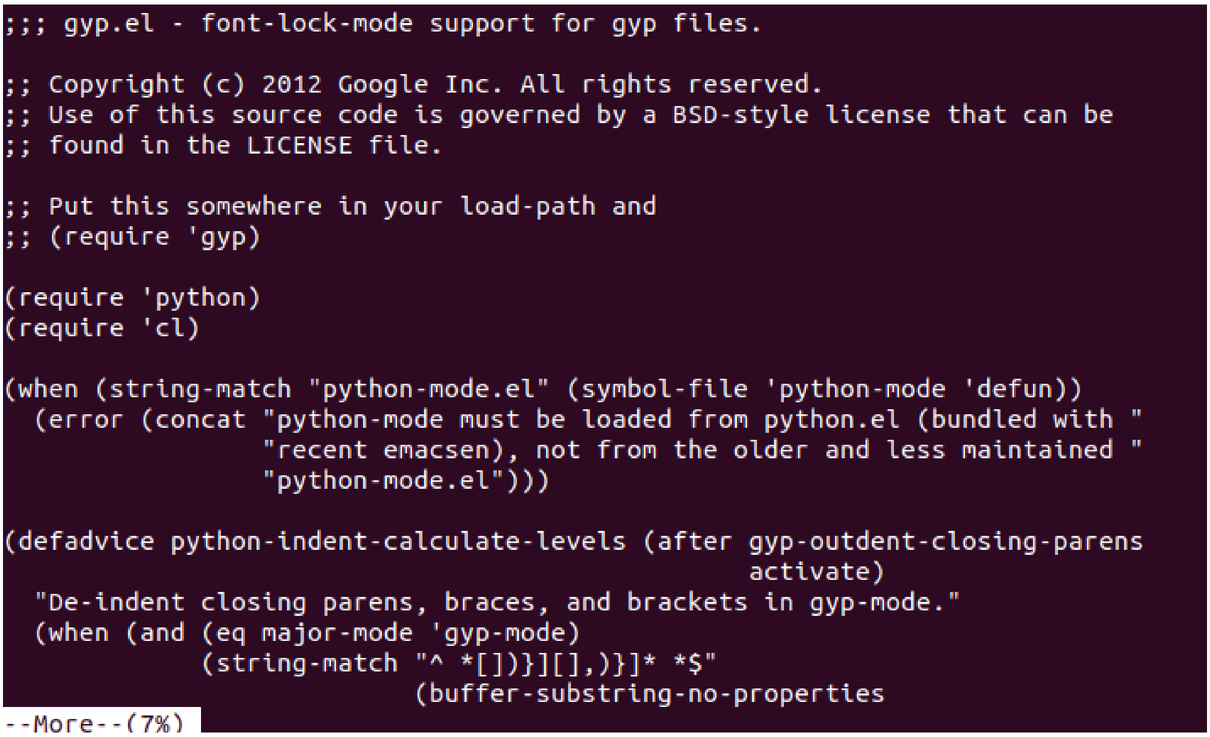
b key: To move to the previous page.

/ key: To search the string.

Syntax:

1. more <file name>

Output:



```
;;; gyp.el - font-lock-mode support for gyp files.

;; Copyright (c) 2012 Google Inc. All rights reserved.
;; Use of this source code is governed by a BSD-style license that can be
;; found in the LICENSE file.

;; Put this somewhere in your load-path and
;; (require 'gyp)

(require 'python)
(require 'cl)

(when (string-match "python-mode.el" (symbol-file 'python-mode 'defun))
  (error (concat "python-mode must be loaded from python.el (bundled with "
                 "recent emacsen), not from the older and less maintained "
                 "python-mode.el")))

(defadvice python-indent-calculate-levels (after gyp-outdent-closing-parens
                                                  activate)
  "De-indent closing parens, braces, and brackets in gyp-mode."
  (when (and (eq major-mode 'gyp-mode)
             (string-match "^ *[])}][],)}]* *$"
                           (buffer-substring-no-properties
--More--(7%)
```

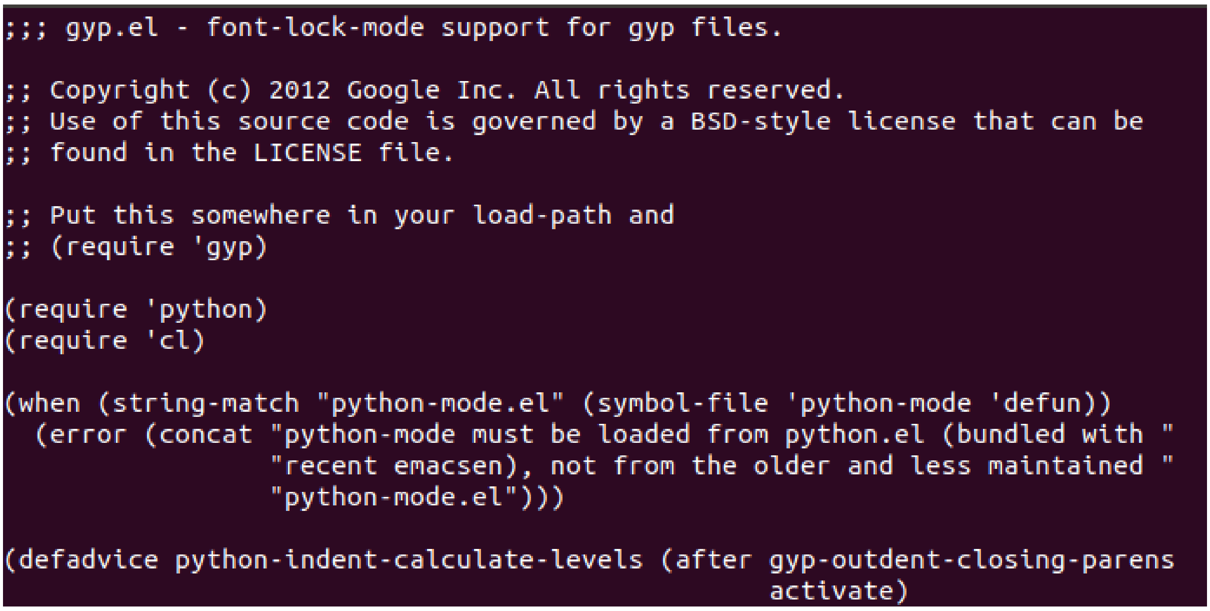
16. less Command

The less command is similar to the more command. It also includes some extra features such as 'adjustment in width and height of the terminal.' Comparatively, the more command cuts the output in the width of the terminal.

Syntax:

```
1. less <file name>
```

Output:



```
;;; gyp.el - font-lock-mode support for gyp files.

;; Copyright (c) 2012 Google Inc. All rights reserved.
;; Use of this source code is governed by a BSD-style license that can be
;; found in the LICENSE file.

;; Put this somewhere in your load-path and
;; (require 'gyp)

(require 'python)
(require 'cl)

(when (string-match "python-mode.el" (symbol-file 'python-mode 'defun))
  (error (concat "python-mode must be loaded from python.el (bundled with "
                 "recent emacsen), not from the older and less maintained "
                 "python-mode.el")))

(defadvice python-indent-calculate-levels (after gyp-outdent-closing-parens
                                                  activate)
```

Linux User Commands

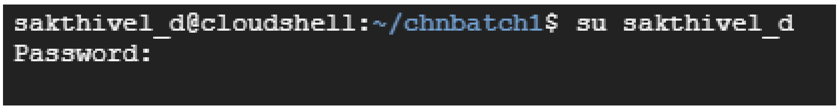
17. su Command

The su command provides administrative access to another user. In other words, it allows access of the Linux shell to another user.

Syntax:

1. su <user name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ su sakthivel_d
Password:
```

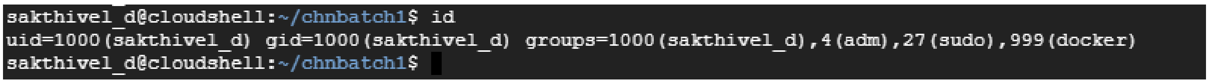
18. id Command

The id command is used to display the user ID (UID) and group ID (GID).

Syntax:

1. id

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ id
uid=1000(sakthivel_d) gid=1000(sakthivel_d) groups=1000(sakthivel_d),4(adm),27(sudo),999(docker)
sakthivel_d@cloudshell:~/chnbatch1$
```

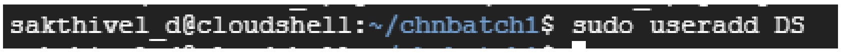
19. useradd Command

The useradd command is used to add or remove a user on a Linux server.

Syntax:

1. useradd username

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ sudo useradd DS
```

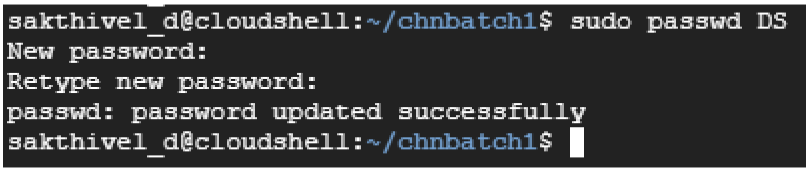
20. passwd Command

The passwd command is used to create and change the password for a user.

Syntax:

1. passwd <username>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ sudo passwd DS
New password:
Retype new password:
passwd: password updated successfully
sakthivel_d@cloudshell:~/chnbatch1$
```

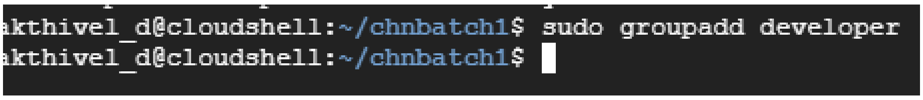
21. groupadd Command

The groupadd command is used to create a user group.

Syntax:

1. groupadd <group name>

Output:



```
akthivel_d@cloudshell:~/chnbatch1$ sudo groupadd developer
akthivel_d@cloudshell:~/chnbatch1$ 
```

Linux Filter Commands

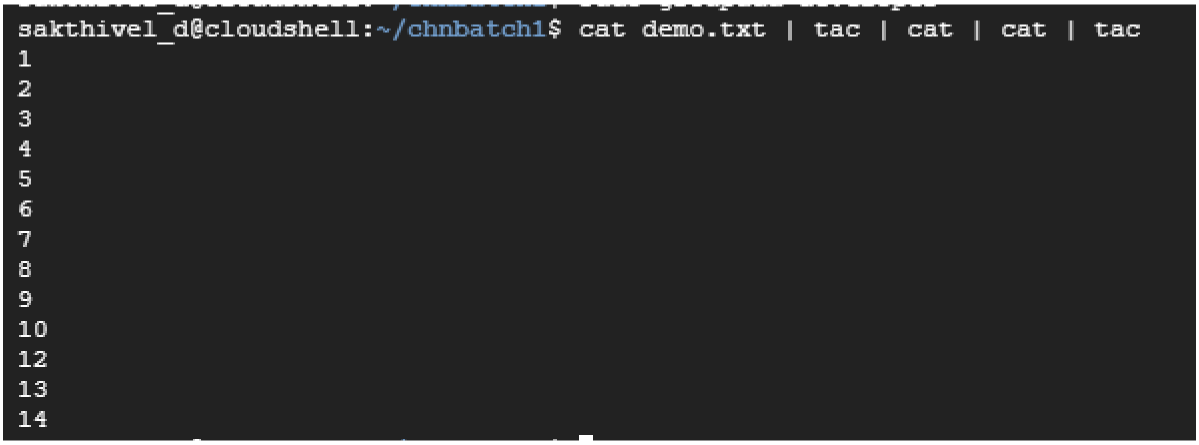
22. cat Command

The cat command is also used as a filter. To filter a file, it is used inside pipes.

Syntax:

1. cat <fileName> | cat or tac | cat or tac |. . .

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cat demo.txt | tac | cat | cat | tac
1
2
3
4
5
6
7
8
9
10
12
13
14
```

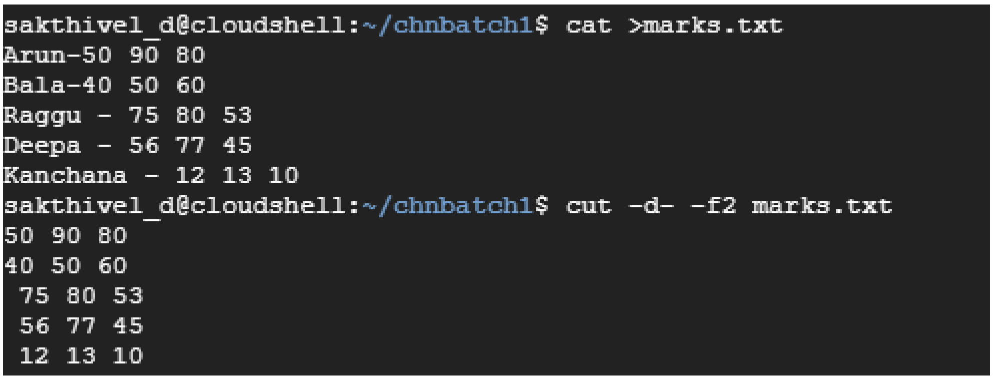
23. cut Command

The cut command is used to select a specific column of a file. The '-d' option is used as a delimiter, and it can be a space (' '), a slash (/), a hyphen (-), or anything else. And, the '-f' option is used to specify a column number.

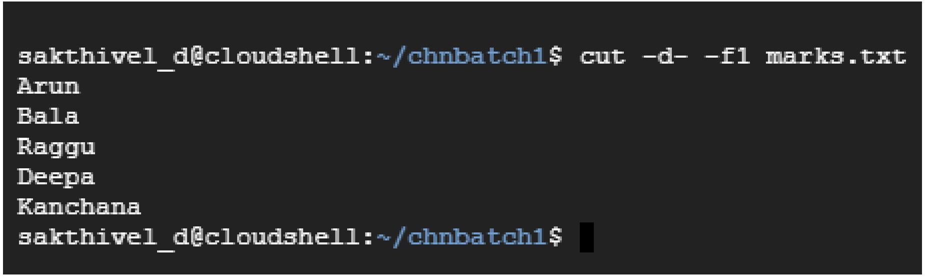
Syntax:

1. cut -d(delimiter) -f(columnNumber) <fileName>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cat >marks.txt
Arun-50 90 80
Bala-40 50 60
Raggu - 75 80 53
Deepa - 56 77 45
Kanchana - 12 13 10
sakthivel_d@cloudshell:~/chnbatch1$ cut -d- -f2 marks.txt
50 90 80
40 50 60
 75 80 53
 56 77 45
 12 13 10
```



```
sakthivel_d@cloudshell:~/chnbatch1$ cut -d- -f1 marks.txt
Arun
Bala
Raggu
Deepa
Kanchana
sakthivel_d@cloudshell:~/chnbatch1$
```

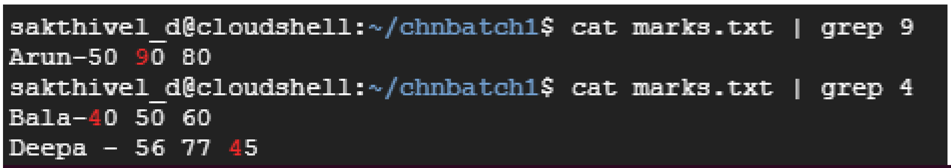
24. grep Command

The grep is the most powerful and used filter in a Linux system. The 'grep' stands for "**global regular expression print**." It is useful for searching the content from a file. Generally, it is used with the pipe.

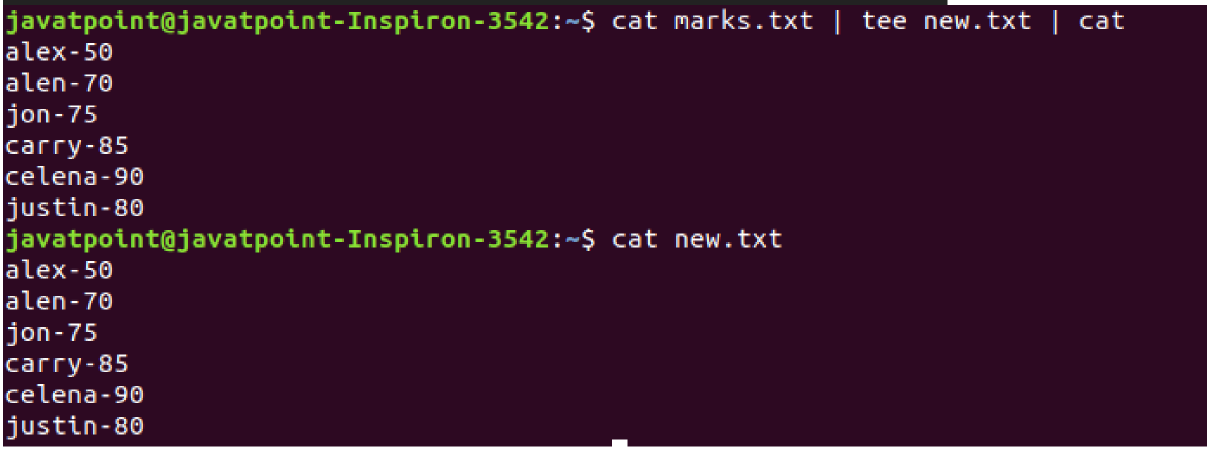
Syntax:

1. command | grep <searchWord>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cat marks.txt | grep 9
Arun-50 90 80
sakthivel_d@cloudshell:~/chnbatch1$ cat marks.txt | grep 4
Bala-40 50 60
Deepa - 56 77 45
```



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

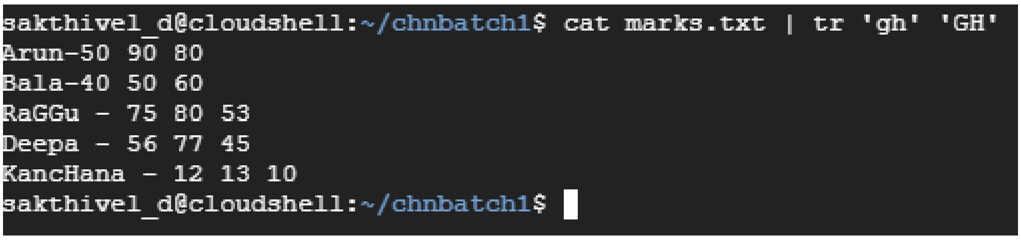
25. tr Command

The tr command is used to translate the file content like from lower case to upper case.

Syntax:

1. command | tr <'old'> <'new'>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ cat marks.txt | tr 'gh' 'GH'
Arun-50 90 80
Bala-40 50 60
RaGGu - 75 80 53
Deepa - 56 77 45
KancHana - 12 13 10
sakthivel_d@cloudshell:~/chnbatch1$
```

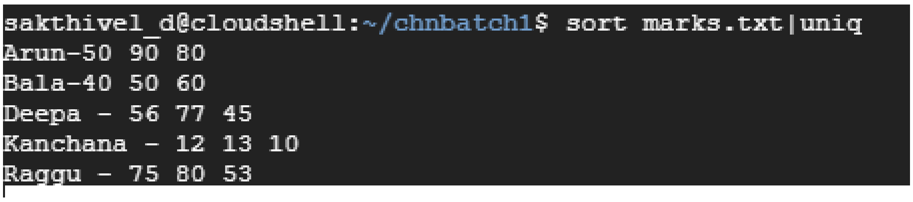
26. uniq Command

The uniq command is used to form a sorted list in which every word will occur only once.

Syntax:

1. command <fileName> | uniq

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ sort marks.txt|uniq
Arun-50 90 80
Bala-40 50 60
Deepa - 56 77 45
Kanchana - 12 13 10
Raggu - 75 80 53
```

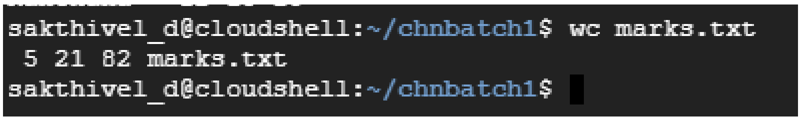
27. wc Command

The wc command is used to count the lines, words, and characters in a file.

Syntax:

1. wc <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ wc marks.txt
 5 21 82 marks.txt
sakthivel_d@cloudshell:~/chnbatch1$
```

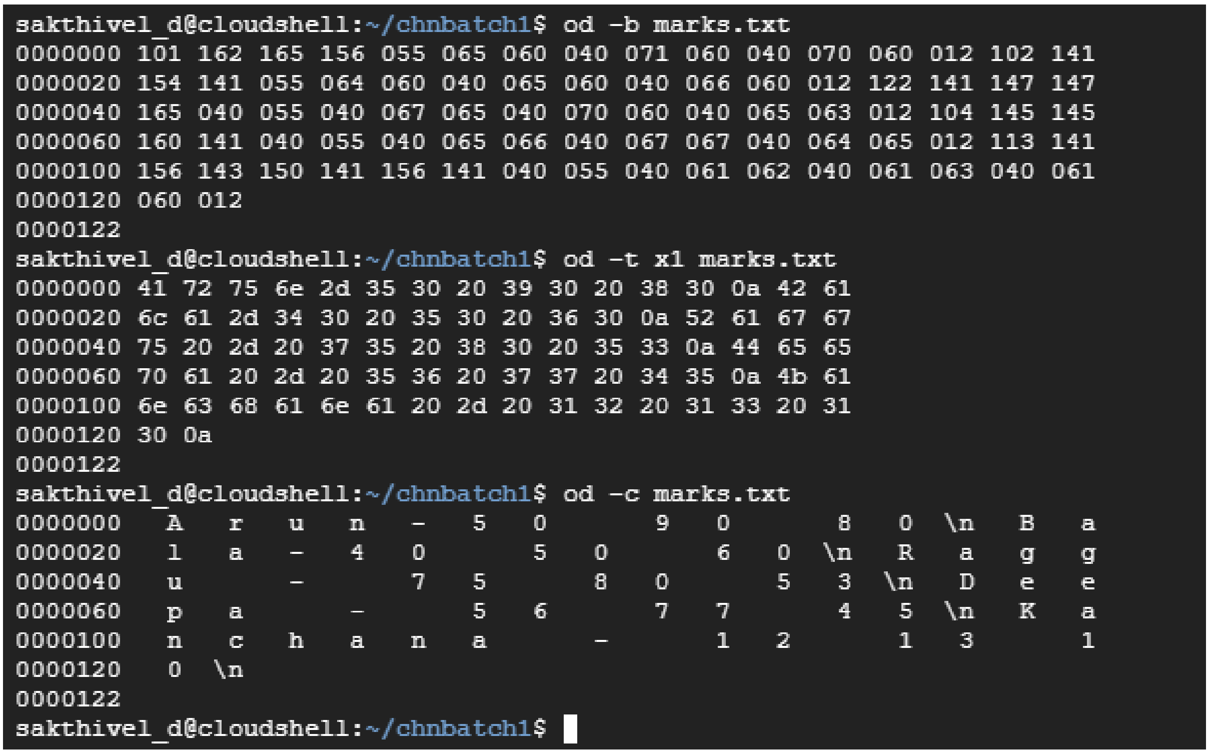
28. od Command

The od command is used to display the content of a file in different s, such as hexadecimal, octal, and ASCII characters.

Syntax:

1. od -b <fileName>   // Octal format
2. od -t x1 <fileName>   // Hexa decimal format
3. od -c <fileName>   // ASCII character format

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ od -b marks.txt
0000000 101 162 165 156 055 065 060 040 071 060 040 070 060 012 102 141
0000020 154 141 055 064 060 040 065 060 040 066 060 012 122 141 147 147
0000040 165 040 055 040 067 065 040 070 060 040 065 063 012 104 145 145
0000060 160 141 040 055 040 065 066 040 067 067 040 064 065 012 113 141
0000100 156 143 150 141 156 141 040 055 040 061 062 040 061 063 040 061
0000120 060 012
0000122
sakthivel_d@cloudshell:~/chnbatch1$ od -t x1 marks.txt
0000000 41 72 75 6e 2d 35 30 20 39 30 20 38 30 0a 42 61
0000020 6c 61 2d 34 30 20 35 30 20 36 30 0a 52 61 67 67
0000040 75 20 2d 20 37 35 20 38 30 20 35 33 0a 44 65 65
0000060 70 61 20 2d 20 35 36 20 37 37 20 34 35 0a 4b 61
0000100 6e 63 68 61 6e 61 20 2d 20 31 32 20 31 33 20 31
0000120 30 0a
0000122
sakthivel_d@cloudshell:~/chnbatch1$ od -c marks.txt
0000000   A   r   u   n   -   5   0       9   0       8   0  \n   B   a
0000020   l   a   -   4   0       5   0       6   0  \n   R   a   g   g
0000040   u       -       7   5       8   0       5   3  \n   D   e   e
0000060   p   a       -       5   6       7   7       4   5  \n   K   a
0000100   n   c   h   a   n   a       -       1   2       1   3       1
0000120   0  \n
0000122
sakthivel_d@cloudshell:~/chnbatch1$
```

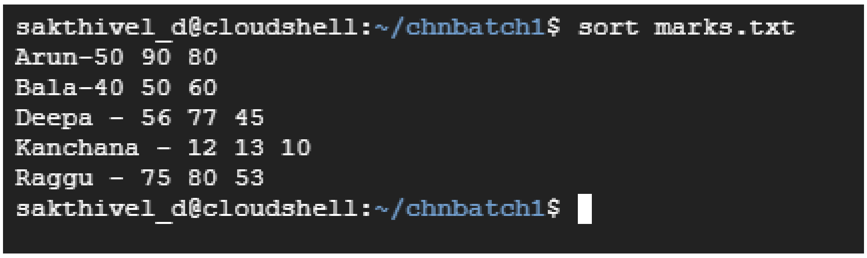
29. sort Command

The sort command is used to sort files in alphabetical order.

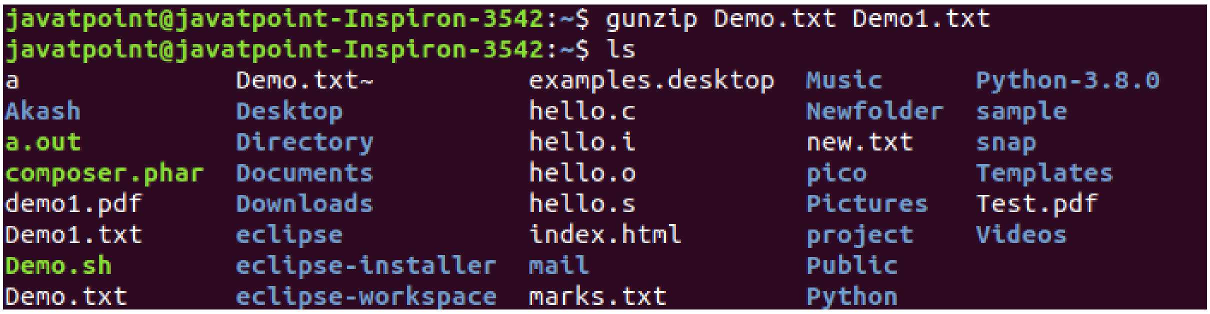
Syntax:

1. sort <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ sort marks.txt
Arun-50 90 80
Bala-40 50 60
Deepa - 56 77 45
Kanchana - 12 13 10
Raggu - 75 80 53
sakthivel_d@cloudshell:~/chnbatch1$
```



```
javatpoint@javatpoint-Inspiron-3542:~$ gunzip Demo.txt Demo1.txt
javatpoint@javatpoint-Inspiron-3542:~$ ls
a              Demo.txt~           examples.desktop  Music      Python-3.8.0
Akash          Desktop             hello.c           Newfolder  sample
a.out          Directory           hello.i           new.txt    snap
composer.phar  Documents           hello.o           pico       Templates
demo1.pdf      Downloads           hello.s           Pictures   Test.pdf
Demo1.txt      eclipse             index.html        project    Videos
Demo.sh        eclipse-installer   mail              Public
Demo.txt       eclipse-workspace   marks.txt         Python
```

Linux Utility Commands

30. find Command

The find command is used to find a particular file within a directory. It also supports various options to find a file such as byname, by type, by date, and more.

The following symbols are used after the find command:

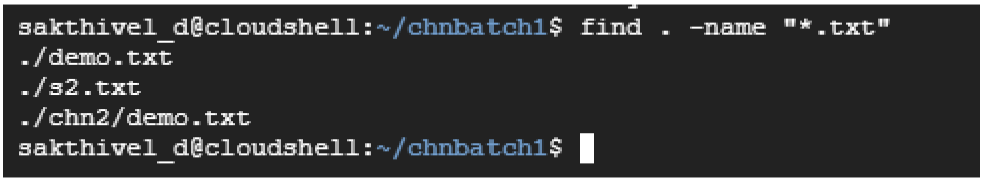
(.) : For current directory name

(/) : For root

Syntax:

1. find . -name "*.pdf"

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ find . -name "*.txt"
./demo.txt
./s2.txt
./chn2/demo.txt
sakthivel_d@cloudshell:~/chnbatch1$
```

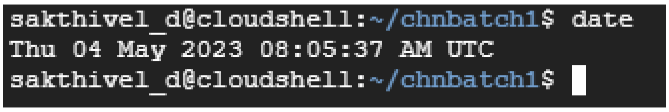
31. date Command

The date command is used to display date, time, time zone, and more.

Syntax:

1. date

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ date
Thu 04 May 2023 08:05:37 AM UTC
sakthivel_d@cloudshell:~/chnbatch1$
```

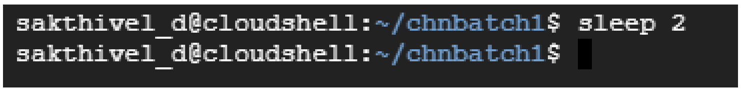
32. sleep Command

The sleep command is used to hold the terminal by the specified amount of time. By default, it takes time in seconds.

Syntax:

1. sleep **<time>**

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ sleep 2
sakthivel_d@cloudshell:~/chnbatch1$
```

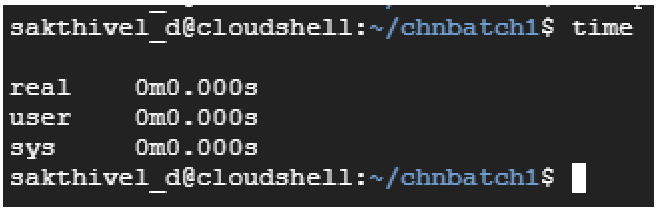
33. time Command

The time command is used to display the time to execute a command.

Syntax:

1. time

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ time

real    0m0.000s
user    0m0.000s
sys     0m0.000s
sakthivel_d@cloudshell:~/chnbatch1$
```

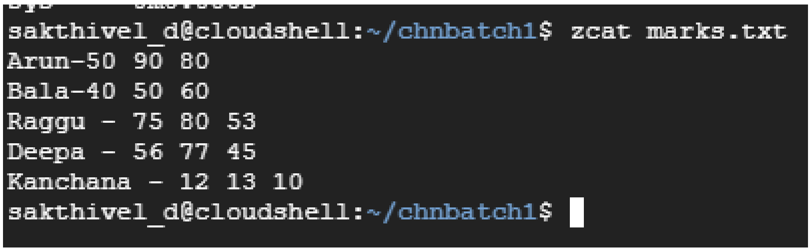
34. zcat Command

The zcat command is used to display the compressed files.

Syntax:

1. zcat <file name>

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ zcat marks.txt
Arun-50 90 80
Bala-40 50 60
Raggu - 75 80 53
Deepa - 56 77 45
Kanchana - 12 13 10
sakthivel_d@cloudshell:~/chnbatch1$
```

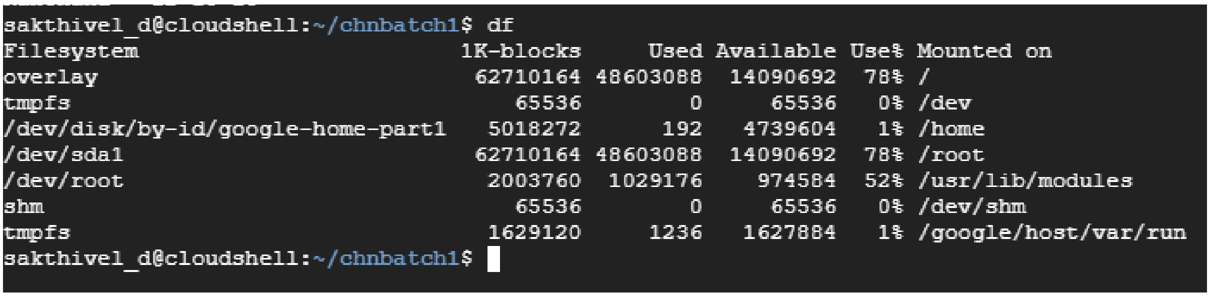
35. df Command

The df command is used to display the disk space used in the file system. It displays the output as in the number of used blocks, available blocks, and the mounted directory.

Syntax:

1. df

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ df
Filesystem                         1K-blocks     Used Available Use% Mounted on
overlay                             62710164 48603088  14090692  78% /
tmpfs                                  65536        0     65536   0% /dev
/dev/disk/by-id/google-home-part1    5018272      192   4739604   1% /home
/dev/sda1                           62710164 48603088  14090692  78% /root
/dev/root                            2003760  1029176    974584  52% /usr/lib/modules
shm                                    65536        0     65536   0% /dev/shm
tmpfs                                1629120     1236   1627884   1% /google/host/var/run
sakthivel_d@cloudshell:~/chnbatch1$
```

46 exit Command

Linux exit command is used to exit from the current shell. It takes a parameter as a number and exits the shell with a return of status number.

Syntax:

1. exit

After pressing the ENTER key, it will exit the terminal.

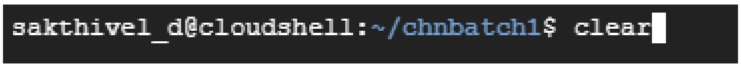
37. clear Command

Linux **clear** command is used to clear the terminal screen.

Syntax:

1. clear

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ clear
```

After pressing the ENTER key, it will clear the terminal screen.

Linux Networking Commands

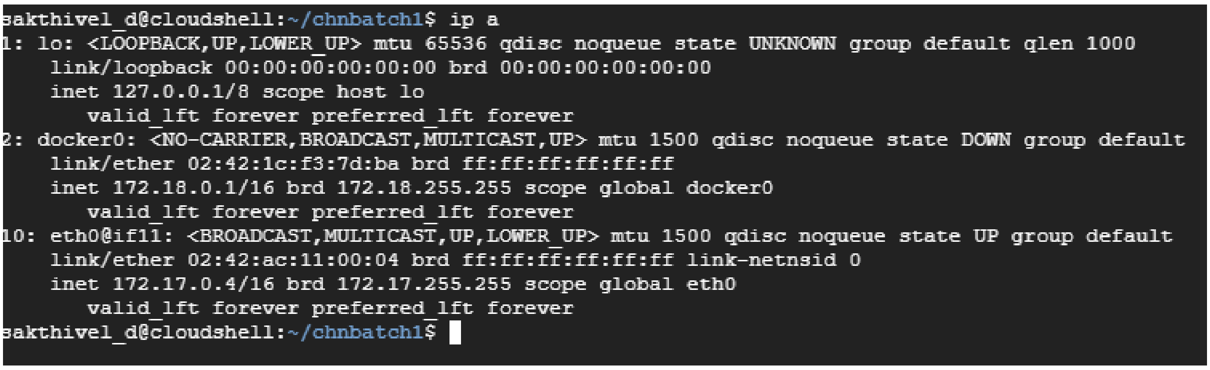
38. ip Command

Linux ip command is an updated version of the ipconfig command. It is used to assign an IP address, initialize an interface, disable an interface.

Syntax:

1. ip a or ip addr

Output:



```
sakthivel_d@cloudshell:~/chnbatch1$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
2: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:1c:f3:7d:ba brd ff:ff:ff:ff:ff:ff
    inet 172.18.0.1/16 brd 172.18.255.255 scope global docker0
       valid_lft forever preferred_lft forever
10: eth0@if11: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
    link/ether 02:42:ac:11:00:04 brd ff:ff:ff:ff:ff:ff link-netnsid 0
    inet 172.17.0.4/16 brd 172.17.255.255 scope global eth0
       valid_lft forever preferred_lft forever
sakthivel_d@cloudshell:~/chnbatch1$
```

39. ping Command

The ping command is used to check the connectivity between two nodes, that is whether the server is connected. It is a short form of "Packet Internet Groper."

Syntax:

1. ping **<destination>**

40. host Command

The host command is used to display the IP address for a given domain name and vice versa. It performs the DNS lookups for the DNS Query.

Syntax:

```
1. host <domain name> or <ip address>
```