

Linux Book from Kaniyam Students

None

None

None

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0.1 addgroup

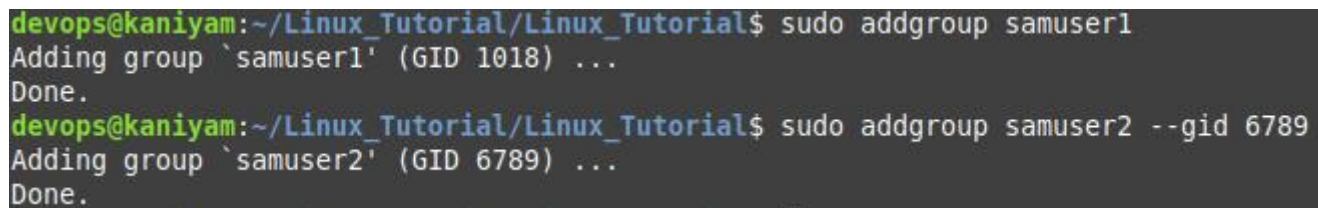
addgroup - add group to the system To add a new group

```
sudo addgroup <group_name>
```

To add a new group with specified group id

```
sudo addgroup group_name --gid 6789
```

0.2 Screenshots



```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo addgroup samuser1
Adding group `samuser1' (GID 1018) ...
Done.
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo addgroup samuser2 --gid 6789
Adding group `samuser2' (GID 6789) ...
Done.
```

1. Cat

cat command is used to concatenate files and print them to the standard output.

To display contents of file

```
cat /etc/group
```

To view contents of multiple files

```
cat file3.txt file4.txt
```

To create a file with cat command

```
cat > file5.txt
```

CTRL+D to save the file

To view cat command with large file size

```
cat /proc/cpuinfo | more cat /proc/cpuinfo | less
```

To display line numbers in file

```
cat -n number.txt
```

1.0.1 Screenshot

```
dhanush@Mint: ~/DHANUSH
dhanush@Mint:~/DHANUSH$ cat /home/dhanush/DHANUSH/code.py
Welcome to Kaniyam

Print("Linux User")
dhanush@Mint:~/DHANUSH$
dhanush@Mint:~/DHANUSH$ cat /home/dhanush/DHANUSH/code.py code_1.py
Welcome to Kaniyam

Print("Linux User")
1.
2.
3.Hello Bruh
4.
5.Wass up!!dhanush@Mint:~/DHANUSH$ cat > code_2.py
-----
Print("Linux is cool, isn't it?")
-----
dhanush@Mint:~/DHANUSH$
dhanush@Mint:~/DHANUSH$ cat /proc/cpuinfo | more^C
dhanush@Mint:~/DHANUSH$
dhanush@Mint:~/DHANUSH$ cat /proc/cpuinfo | less^C
dhanush@Mint:~/DHANUSH$
dhanush@Mint:~/DHANUSH$ cat -n code_1.py
1 1.
2 2.
3 3.Hello Bruh
4 4.
5 5.Wass up!!dhanush@Mint:~/DHANUSH$
dhanush@Mint:~/DHANUSH$ _
```

1.1 cd

cd - change directory A change current directory to /usr/share

```
cd /usr/share/
```

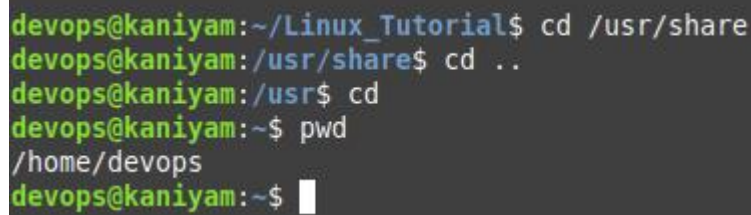
To change current directory to parent directory

```
cd ..
```

To change to home directory

```
cd
```

1.2 Screenshot



```
devops@kaniyam:~/Linux_Tutorial$ cd /usr/share
devops@kaniyam:/usr/share$ cd ..
devops@kaniyam:/usr$ cd
devops@kaniyam:~$ pwd
/home/devops
devops@kaniyam:~$
```


1.3 30. cut

`cut` command extracts and print sections from each line of files

```
cat >cut.txt
```

```
Alpha is first Line Bravo is second Line Charlie is third Line Delta is fourth Line
```

To display 1st character from each line of a file

```
cut -c1 cut.txt
```

To display 2nd character from each line of a file

```
cut -c2 cut.txt
```

To extract first 3 characters of each line from file.txt

```
cut -c1-3 cut.txt
```

To extract 7 characters from the beginning of each line

```
cut -c-7 cut.txt
```

2. Date

Date command is used to display date.

```
date
```

To display the time in GMT/UTC time zone

```
date -u
```

To display past dates

```
date --date="3 year ago" date --date="1 month ago"
```

To display future date

```
date --date="next wed" date --date="next month"
```

To set the system date and time

Note: Need root permission hence use **sudo**.

```
date --set="Wed Apr 27 14:20:55 IST 2022"
```

2.0.1 Screenshot

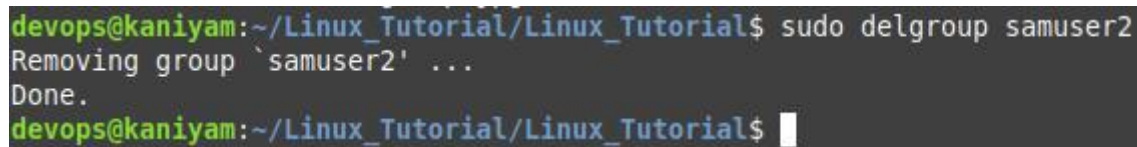
```
dhanush@Mint:~/Linux_Tutorial$ date
Friday 29 September 2023 07:18:23 AM IST
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date -u
Friday 29 September 2023 01:49:04 AM UTC
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date --date="3 year ago"
Tuesday 29 September 2020 07:19:32 AM IST
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date --date="1 month ago"
Tuesday 29 August 2023 07:19:44 AM IST
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date --date="next wed"
Wednesday 04 October 2023 12:00:00 AM IST
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date --date="next month"
Sunday 29 October 2023 07:20:09 AM IST
dhanush@Mint:~/Linux_Tutorial$
dhanush@Mint:~/Linux_Tutorial$ date --set="Wed Apr 27 14:20:55 IST 2022"
date: cannot set date: Operation not permitted
Wednesday 27 April 2022 02:20:55 PM IST
dhanush@Mint:~/Linux_Tutorial$ _
```

2.1 delgroup

delgroup - remove a group from the system To remove a group

```
sudo delgroup group_name
```

2.2 Screenshot



```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo delgroup samuser2
Removing group `samuser2' ...
Done.
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$
```

3. deluser

- deluser - remove a user or group from the system

To delete an user account

```
$ sudo deluser user_name
```

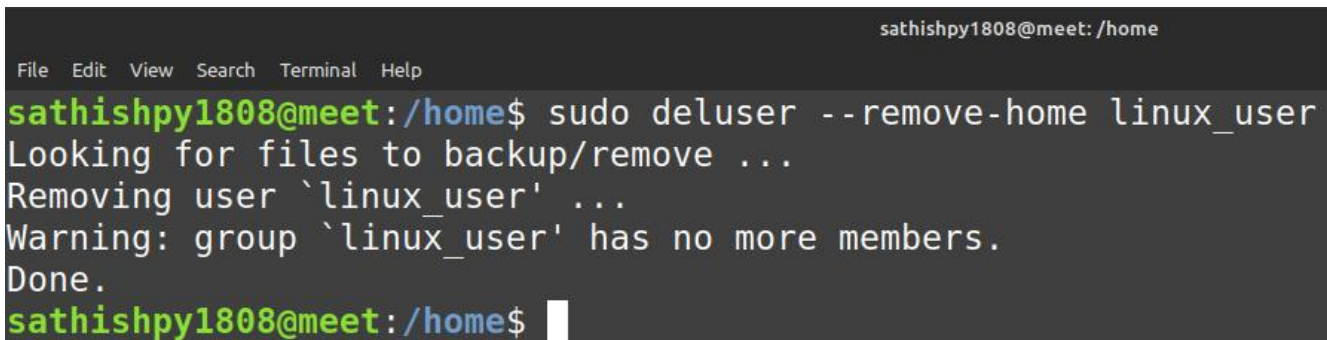
To delete or account including deleting home directory

```
$ sudo deluser --remove-home user_name
```

To delete account even while the user logged in

```
$ sudo deluser --force <user_name>
```

3.1 Screenshot



```
sathishpy1808@meet: /home
File Edit View Search Terminal Help
sathishpy1808@meet:/home$ sudo deluser --remove-home linux_user
Looking for files to backup/remove ...
Removing user `linux_user' ...
Warning: group `linux_user' has no more members.
Done.
sathishpy1808@meet:/home$
```

3.1.1 26. df

df - report file system disk space usage

```
df
```

To display all the file system

```
df -a
```

To display size in human readable format

```
df -h /home/
```

To get complete grand total

```
df -h --total
```

To display file type

```
df -T /home/ilugc
```

To display disk space usage of current dir

```
df -Th
```

4. echo

echo - display a line of text

```
echo [string]
```

with double quotes

```
echo "Welcome to Linux"
```

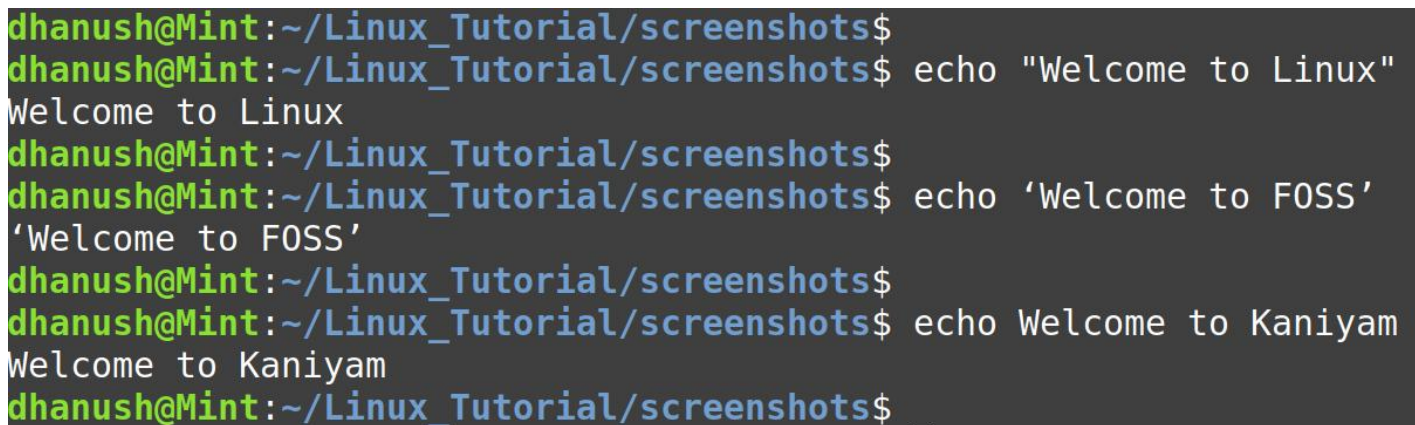
with single quotes

```
echo 'Welcome to FOSS'
```

without quotes

```
echo Welcome to Kaniyam
```

4.1 Screenshot



```
dhanush@Mint:~/Linux_Tutorial/screenshots$  
dhanush@Mint:~/Linux_Tutorial/screenshots$ echo "Welcome to Linux"  
Welcome to Linux  
dhanush@Mint:~/Linux_Tutorial/screenshots$  
dhanush@Mint:~/Linux_Tutorial/screenshots$ echo 'Welcome to FOSS'  
'Welcome to FOSS'  
dhanush@Mint:~/Linux_Tutorial/screenshots$  
dhanush@Mint:~/Linux_Tutorial/screenshots$ echo Welcome to Kaniyam  
Welcome to Kaniyam  
dhanush@Mint:~/Linux_Tutorial/screenshots$ _
```

4.1.1 24. env

env - runs a program in a modified environment To print out a list of all environment variables `env`

env

4.1.2 25. export

export - It is used to mark variables and functions to be passed on to child processes To display all exported variables

```
export
```

To view all exported variables on the current shell

```
export -p
```

Lets assign the variable 'community' with the value 'ilugc' and export it

```
community=ilugc
```

```
export community
```

check with command

```
printenv community
```


4.2 23. find

find - search for files in a particular directory hierarchical level.

To find all the files whose name is secret.txt in current working directory. (Notice "." period symbol after find which denotes to search in present/current directory/folder.

```
find . -name secret.txt
```

To find files in home directory

```
find /home -name secret.txt
```

To find all python files in a directory

```
find . -type f -name "*.py"
```

4.2.1 Screenshot

find

4.2.2 fmt

fmt - simple optimal text formatter Reformat each paragraph in the files, writing to standard output

```
cat fmt.txt
```

4.3 screenshots

fmt

4.4 grep

grep - print lines that match patterns

```
cat grep_example.txt This is line number one this is line number two THIS is line number three this is line 4 This is line 5
```

To search for the given string in a single file

```
grep "this" grep_example.txt
```

To check for the given string in multiple files

```
grep "this" grep_example.txt file2.txt
```

To search case insensitive using grep -i

```
grep -i "4" grep_example.txt
```

To count the number of matches using grep -c

```
grep -c this grep_example.txt
```

To show line number while displaying the output using grep -n

```
grep -n "this" grep_example.txt 56
```

4.4.1 Screenshot

```
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ cat grep_example.txt
This is line number one
this is line number two
THIS is line number three
this is line 4
This is line 5
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ grep "this" grep_example.txt
this is line number two
this is line 4
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ grep -i "4" grep_example.txt
this is line 4
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ grep -c this grep_example.txt
2
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ grep -n "this" grep_example.txt
2:this is line number two
4:this is line 4
shrini@shrini-OptiPlex-9010:~/Documents/kaniyam/devops-class/Linux_Tutorial/sample_files$ █
```

4.5 groupadd

groupadd - create a new group To create a group

```
sudo groupadd group_name
```

To create a group with specific groupid

```
sudo groupadd <group_name> -g 1234
```

4.6 Screenshots

A terminal window screenshot showing two commands being executed. The first command is 'sudo groupadd test2' and the second is 'sudo groupadd test3 -g 1234'. The prompt is 'devops@kaniyam:~/Linux_Tutorial/screenshots\$'.

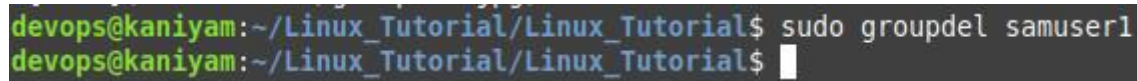
```
devops@kaniyam:~/Linux_Tutorial/screenshots$ sudo groupadd test2
devops@kaniyam:~/Linux_Tutorial/screenshots$ sudo groupadd test3 -g 1234
```

4.7 groupdel

groupdel - delete a group To delete a group

```
sudo groupdel group_name
```

4.8 Screenshots



```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo groupdel samuser1
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$
```

4.9 groups

groups - print the groups a user is in

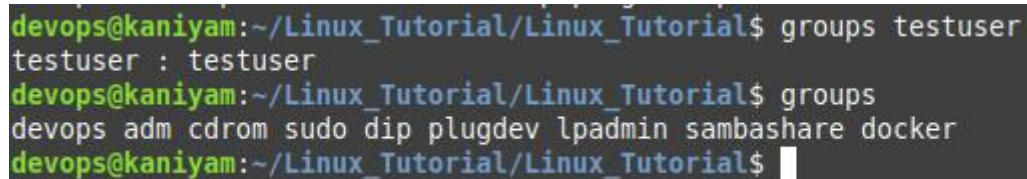
```
groups [username]
```

To display group membership for the current user

```
groups
```

To find groups of root

4.10 Screenshot



```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ groups testuser
testuser : testuser
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ groups
devops adm cdrom sudo dip plugdev lpadmin sambashare docker
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$
```


4.11 id

id - print real and effective user and group IDs To print your own id without any options

```
id
```

To find a specific users id

```
id -u <user_name>
```

To find a specific users GID

```
id -g <user_name>
```

To find out UID and all groups associated with a username

```
id <user_name>
```

4.12 Screenshot

```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ id
uid=1000(devops) gid=1000(devops) groups=1000(devops),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),115(lpadmin),136(sambashare),139(docker)
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ id -u devops
1000
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ id -g devops
1000
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ id devops
uid=1000(devops) gid=1000(devops) groups=1000(devops),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),115(lpadmin),136(sambashare),139(docker)
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$
```

4.13 jobs

jobs - used to list the jobs running in the background

To run some jobs in background

```
ping google.com ctrl + z
```

```
man ls ctrl + z
```

To lists jobs running in background

```
jobs
```

To display jobs with process id

```
jobs -l
```

To display the process ID or jobs for the job whose name begins with “p” and “m”

```
jobs %p jobs %m
```

To display PIDs only

```
jobs -p
```

4.13.1 Screenshot

```
shrini@shrini-OptiPlex-9010:~$ ping google.com
PING google.com (142.251.32.78) 56(84) bytes of data.
64 bytes from yyz12s07-in-f14.1e100.net (142.251.32.78): icmp_seq=1 ttl=117 time=6.59 ms
64 bytes from yyz12s07-in-f14.1e100.net (142.251.32.78): icmp_seq=2 ttl=117 time=4.82 ms
^Z
[1]+  Stopped                  ping google.com
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ man ls

[2]+  Stopped                  man ls
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ jobs
[1]-  Stopped                  ping google.com
[2]+  Stopped                  man ls
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ jobs -l
[1]- 236328 Stopped            ping google.com
[2]+ 236330 Stopped            man ls
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ jobs %p
[1]-  Stopped                  ping google.com
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ jobs %m
[2]+  Stopped                  man ls
shrini@shrini-OptiPlex-9010:~$
shrini@shrini-OptiPlex-9010:~$ jobs -p
236328
236330
shrini@shrini-OptiPlex-9010:~$ █
```

5. kill

which is used to send a SIGNAL to a process

To display all the available signals

```
$kill -l
```

To use PID with the kill command

```
$kill PID
```

To kill multiple processes at once

```
$kill <pid1> <pid2> <pid3>
```

To forcefully kill single process

```
$ kill -9 <pid>
```

To forcefully kill multiple process

```
$ kill -9 <pid1> <pid2>
```

To find signal name

```
$ kill -l 3 $ kill -l 9 $ kill -l 15
```

5.1 Screenshot

```
sathishpy1808@meet: ~/Linux_Tutorial
File Edit View Search Terminal Help
sathishpy1808@meet:~/Linux_Tutorial$ kill -l
 1) SIGHUP      2) SIGINT      3) SIGQUIT     4) SIGILL      5) SIGTRAP
 6) SIGABRT     7) SIGBUS     8) SIGFPE      9) SIGKILL     10) SIGUSR1
11) SIGSEGV    12) SIGUSR2    13) SIGPIPE     14) SIGALRM     15) SIGTERM
16) SIGSTKFLT  17) SIGCHLD    18) SIGCONT     19) SIGSTOP     20) SIGTSTP
21) SIGTTIN    22) SIGTTOU    23) SIGURG      24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM  27) SIGPROF    28) SIGWINCH    29) SIGIO        30) SIGPWR
31) SIGSYS     34) SIGRTMIN    35) SIGRTMIN+1  36) SIGRTMIN+2  37) SIGRTMIN+3
38) SIGRTMIN+4 39) SIGRTMIN+5 40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8
43) SIGRTMIN+9 44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6 59) SIGRTMAX-5 60) SIGRTMAX-4 61) SIGRTMAX-3 62) SIGRTMAX-2
63) SIGRTMAX-1 64) SIGRTMAX
sathishpy1808@meet:~/Linux_Tutorial$ kill 13932
sathishpy1808@meet:~/Linux_Tutorial$
```

5.2 27. less

less is used to read the contents inside a text file on terminal without opening the file with one page(one screen) at a time To read the text output in to the terminal of a file

```
less filename
```

```
less /proc/cpuinfo
```

5.3 ln

ln - creates the hard and symbolic links between the files. To create hard link with the name sample_link_file.txt

```
ln sample_file.txt sample_hardlink_file1.txt
```

```
ln sample_file.txt sample_hardlink_file2.txt
```

```
ln sample_file.txt sample_hardlink_file3.txt
```

even the original file name sample_file.txt is deleted we can access the file with sample_hardlink_file1.txt, sample_hardlink_file2.txt, sample_hardlink_file3.txt To create symbolic or soft link to a file

```
ln -s /home/venus/Documents/file.txt softlink_file.txt ls -al softlink_file.txt
```

To create symbolic or soft link to a directory

```
ln -s /home/venus/music/ music ls -al music
```

5.4 Screenshot

```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln sample_file.txt sample_hardlink_file1.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln sample_file.txt sample_hardlink_file2.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln sample_file.txt sample_hardlink_file3.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln -s /home/devops/file1.txt softlink_file.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ls -al softlink_file.txt
lrwxrwxrwx 1 devops devops 22 Oct  2 14:30 softlink_file.txt -> /home/devops/file1.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln -s /home/devops/file2.txt file2
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ls -al file2
lrwxrwxrwx 1 devops devops 22 Oct  2 14:31 file2 -> /home/devops/file2.txt
```

5.5 locate

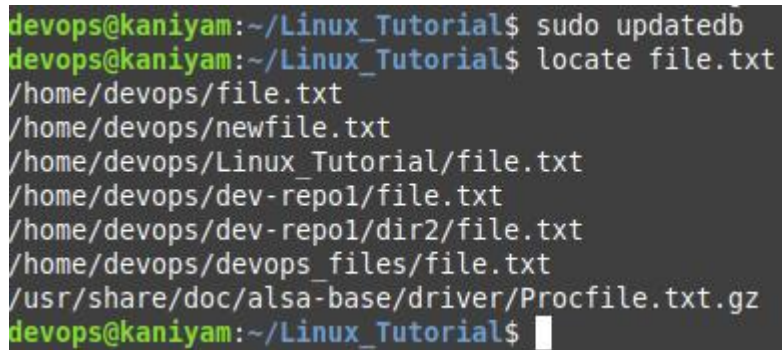
locate - find files by name, quickly To locate a file name

```
sudo updatedb
```

locate file_name create a file secret.txt in somewhere in system

```
locate secret.txt
```

5.6 Screenshot

A terminal window screenshot showing a user named devops at a machine named kaniyam. The user is in the directory ~/Linux_Tutorial. They run 'sudo updatedb' and then 'locate file.txt'. The output lists several files: /home/devops/file.txt, /home/devops/newfile.txt, /home/devops/Linux_Tutorial/file.txt, /home/devops/dev-repo1/file.txt, /home/devops/dev-repo1/dir2/file.txt, /home/devops/devops_files/file.txt, and /usr/share/doc/alsa-base/driver/Procfile.txt.gz. The prompt returns to the user.

```
devops@kaniyam:~/Linux_Tutorial$ sudo updatedb
devops@kaniyam:~/Linux_Tutorial$ locate file.txt
/home/devops/file.txt
/home/devops/newfile.txt
/home/devops/Linux_Tutorial/file.txt
/home/devops/dev-repo1/file.txt
/home/devops/dev-repo1/dir2/file.txt
/home/devops/devops_files/file.txt
/usr/share/doc/alsa-base/driver/Procfile.txt.gz
devops@kaniyam:~/Linux_Tutorial$
```

6. ls

ls command is used to view the list of directory contents.

```
ls
```

To view the long listing of files

```
ls -l
```

To view the hidden files

```
ls -a
```

To view the list of files with human readable format

```
ls -lh
```

To view the list of Subdirectories recursively

```
ls -R
```

To view sorted files by file size

```
ls -ls
```

To view the order files based on last modified time

```
ls -lt
```


6.1 Screenshot

```
dhanush@Mint: ~/my_web_app
dhanush@Mint:~/my_web_app$ ls -l
total 24
-rwxrwxr-x 1 dhanush dhanush 1098 Sep 27 08:17 build_run.sh
-rw-rw-r-- 1 dhanush dhanush 237 Sep 25 20:59 Dockerfile
-rw-rw-r-- 1 dhanush dhanush 1478 Sep 28 19:09 index.html
-rw-rw-r-- 1 dhanush dhanush 87 Oct 3 07:01 log.file
drwxrwxr-x 3 dhanush dhanush 4096 Sep 28 19:32 my_web_app
-rw-rw-r-- 1 dhanush dhanush 51 Sep 28 19:09 README.md
dhanush@Mint:~/my_web_app$
dhanush@Mint:~/my_web_app$ ls -a
. .. build_run.sh Dockerfile .git index.html log.file my_web_app README.md
dhanush@Mint:~/my_web_app$ ls -lh
total 24K
-rwxrwxr-x 1 dhanush dhanush 1.1K Sep 27 08:17 build_run.sh
-rw-rw-r-- 1 dhanush dhanush 237 Sep 25 20:59 Dockerfile
-rw-rw-r-- 1 dhanush dhanush 1.5K Sep 28 19:09 index.html
-rw-rw-r-- 1 dhanush dhanush 87 Oct 3 07:28 log.file
drwxrwxr-x 3 dhanush dhanush 4.0K Sep 28 19:32 my_web_app
-rw-rw-r-- 1 dhanush dhanush 51 Sep 28 19:09 README.md
dhanush@Mint:~/my_web_app$ ls -R
.:
build_run.sh Dockerfile index.html log.file my_web_app README.md

./my_web_app:
dhanush@Mint:~/my_web_app$ ls -ls
total 24
drwxrwxr-x 3 dhanush dhanush 4096 Sep 28 19:32 my_web_app
-rw-rw-r-- 1 dhanush dhanush 1478 Sep 28 19:09 index.html
-rwxrwxr-x 1 dhanush dhanush 1098 Sep 27 08:17 build_run.sh
-rw-rw-r-- 1 dhanush dhanush 237 Sep 25 20:59 Dockerfile
-rw-rw-r-- 1 dhanush dhanush 87 Oct 3 07:29 log.file
-rw-rw-r-- 1 dhanush dhanush 51 Sep 28 19:09 README.md
dhanush@Mint:~/my_web_app$ ls -lt
total 24
-rw-rw-r-- 1 dhanush dhanush 87 Oct 3 07:31 log.file
drwxrwxr-x 3 dhanush dhanush 4096 Sep 28 19:32 my_web_app
-rw-rw-r-- 1 dhanush dhanush 1478 Sep 28 19:09 index.html
-rw-rw-r-- 1 dhanush dhanush 51 Sep 28 19:09 README.md
-rwxrwxr-x 1 dhanush dhanush 1098 Sep 27 08:17 build_run.sh
-rw-rw-r-- 1 dhanush dhanush 237 Sep 25 20:59 Dockerfile
dhanush@Mint:~/my_web_app$ _
```

6.2 man

man - an interface to the system reference manuals

`man df man du man uptime`

6.3 Screenshot

```
DU(1)
NAME
    du - estimate file space usage

SYNOPSIS
    du [OPTION]... [FILE]...
    du [OPTION]... --files0-from=F

DESCRIPTION
    Summarize disk usage of the set of FILES, recursively for directories.

    Mandatory arguments to long options are mandatory for short options too.

    -0, --null
        end each output line with NUL, not newline

    -a, --all
        write counts for all files, not just directories

    --apparent-size
        print apparent sizes, rather than disk usage; although the apparent size i

    -B, --block-size=SIZE
        scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in unit
```

6.4 mkdir

mkdir - make directories

To create a directory

```
mkdir dir1
```

To display verbose message for every directory created.

```
mkdir -v directory_1 directory_2 directory_3
```

To create multiple directories

```
mkdir {dir1,dir2,dir3}
```

To create parent directories

```
mkdir -p /dir_1/dir_2/dir_3 mkdir -p -v /dir_1/dir_2/dir_3
```

To set permissions for the directories

```
mkdir -m a=rwx [directory_name] mkdir -m777 dir_1 mkdir -m755 dir_2 mkdir -m766 dir_3
```

6.5 Screenshot

```
devops@kaniyam:~/Linux_Tutorial$ mkdir s1
devops@kaniyam:~/Linux_Tutorial$ mkdir sam1 sam2 sam3
devops@kaniyam:~/Linux_Tutorial$ mkdir {sampl1,sampl2,sampl3}
devops@kaniyam:~/Linux_Tutorial$ mkdir -p /sa1/sa2/sa3
devops@kaniyam:~/Linux_Tutorial$ mkdir -p sa1/sa2/sa3
devops@kaniyam:~/Linux_Tutorial$ mkdir -p -v sa1/sa2/sa3
devops@kaniyam:~/Linux_Tutorial$ ls s*
s1:

sa1:
sa2

sam1:

sam2:

sam3:

sampl1:

sampl2:

sampl3:
```


7. nice

Run a program with modified scheduling priority

- ‘nicer’ processes require fewer resources
- Nice value ranges from +19(very nice) to −20 (not very nice)
- Non-root users can only specify values from 1 to 19
- the root user can specify the full range of values

To check all nice values of all processes

```
$ top
```

To check the nice value of htop process

```
$ ps -el | grep htop
```

To set the priority of a process

```
$ nice -n <number><process name> $ nice -10 htop
```

To set the negative priority for a process

```
$ sudo nice --n <number><process name> $ sudo nice --10 htop
```

7.1 Screenshot

nice

8. passwd

- passwd - change user password

To change system user's password

```
$ passwd
```

To change password for root

```
$ sudo passwd root
```

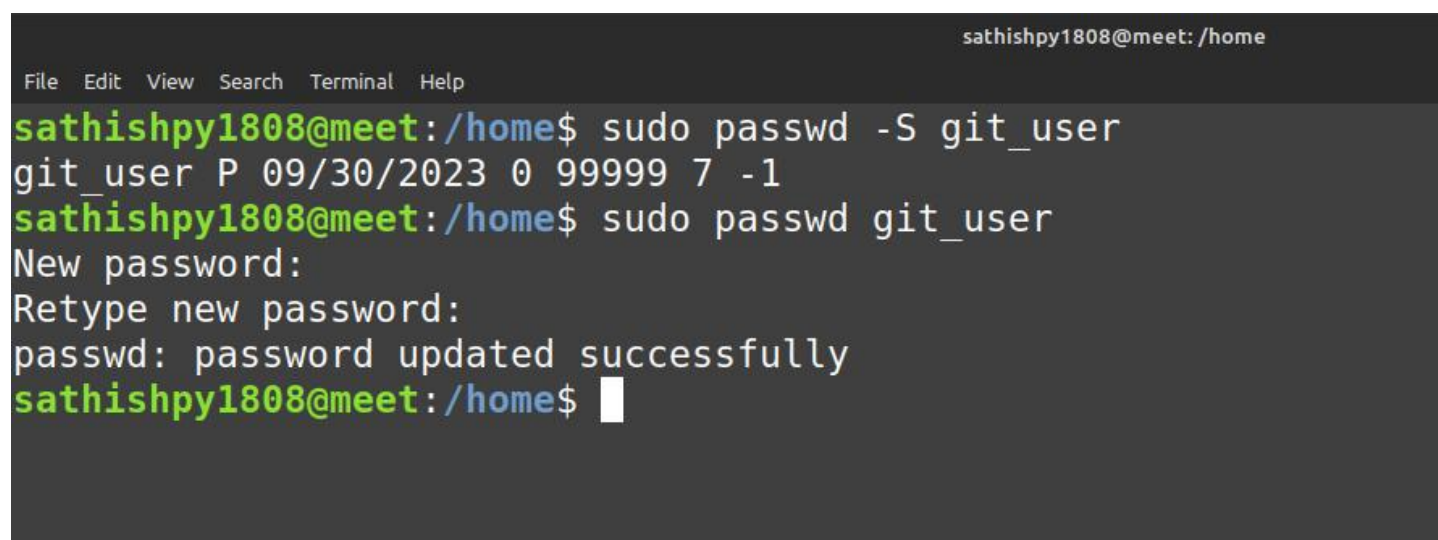
To display user status Information

```
$ sudo passwd -S <user_name>
```

To display information of all users

```
$ sudo passwd -Sa
```

8.1 Screenshot

A screenshot of a terminal window with a dark background. The title bar at the top right says 'sathishpy1808@meet: /home'. The terminal has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The prompt is 'sathishpy1808@meet:/home\$'. The user enters 'sudo passwd -S git_user', and the output is 'git_user P 09/30/2023 0 99999 7 -1'. Then the user enters 'sudo passwd git_user', and the prompts 'New password:' and 'Retype new password:' are shown. The output is 'passwd: password updated successfully'. The prompt returns to 'sathishpy1808@meet:/home\$' with a cursor.

```
sathishpy1808@meet:/home$ sudo passwd -S git_user
git_user P 09/30/2023 0 99999 7 -1
sathishpy1808@meet:/home$ sudo passwd git_user
New password:
Retype new password:
passwd: password updated successfully
sathishpy1808@meet:/home$
```

9. pidof

find the process ID of a running program

To find the PID of any service

```
$pidof chrome $pidof firefox $pidof top
```

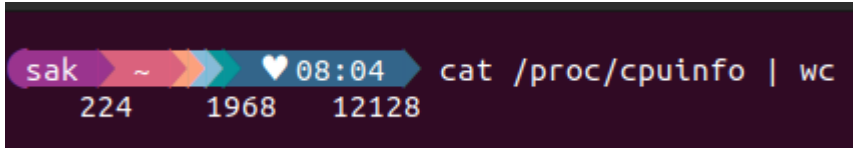
9.1 Screenshot

pidof

1. | piping To find wc of file /proc/cpuinfo

```
cat /proc/cpuinfo | wc
```

9.1.1 Screenshot



A terminal window with a dark purple background. The prompt is 'sak ~' followed by a heart icon and the time '08:04'. The command 'cat /proc/cpuinfo | wc' has been executed, and the output '224 1968 12128' is displayed on the next line.

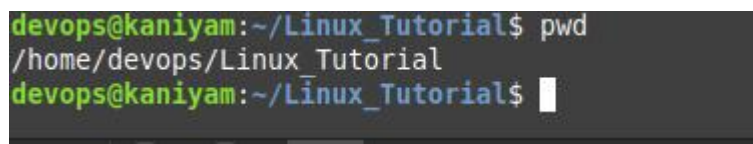
9.2 pwd

pwd - print name of current/working directory

To get working directory path

```
pwd
```

9.3 Screenshot



```
devops@kaniyam:~/Linux_Tutorial$ pwd
/home/devops/Linux_Tutorial
devops@kaniyam:~/Linux_Tutorial$
```


9.4 rmdir

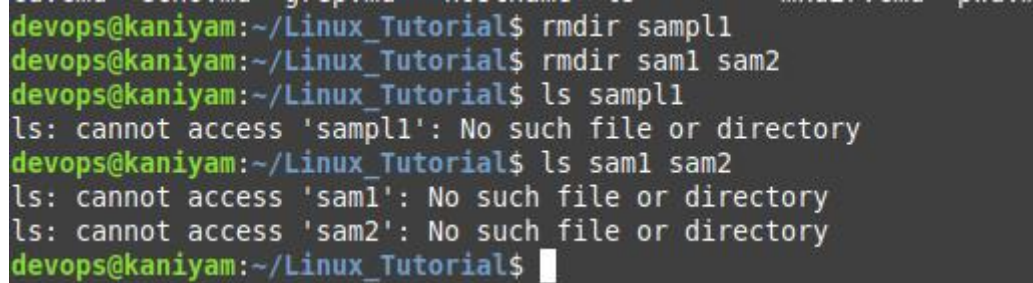
rmdir - remove empty directories To remove a single empty directory

```
rmdir sample_dir1
```

To remove multiple directories using rmdir

```
rmdir sample_dir1 sample_dir2
```

9.5 Screenshot



```
devops@kaniyam:~/Linux_Tutorial$ rmdir sampl1
devops@kaniyam:~/Linux_Tutorial$ rmdir sam1 sam2
devops@kaniyam:~/Linux_Tutorial$ ls sampl1
ls: cannot access 'sampl1': No such file or directory
devops@kaniyam:~/Linux_Tutorial$ ls sam1 sam2
ls: cannot access 'sam1': No such file or directory
ls: cannot access 'sam2': No such file or directory
devops@kaniyam:~/Linux_Tutorial$
```

9.5.1 28. sort

sort command is used to sort the text inside a file and printing the records in a particular order

```
cat >unordered.txt
```

Paste the below texts in terminal after typing above command

```
assam tamilnadu chattisgarh delhi gujarat delhi himachal pradesh kerala bihar
```

To print the output of unordered.txt file sorted in alphabetical order

```
sort unordered.txt
```

To Save the output printed on terminal to a file

```
sort unordered.txt > ordered_output.txt
```

To Sort Multiple Files

```
sort file1.txt file2.txt
```

To Sort in Reverse Order

```
sort -r unordered.txt
```

To Remove Duplicate Entries

```
sort -u unordered.txt
```

9.6 stat

stat - display file or file system status To view the file details

```
stat file.txt
```

To Show only octal file permissions

```
stat -c %a file.txt stat --format="%a %n" file.txt
```

To Show the owner and group of a file

```
stat --format="%U %G" file.txt
```

9.7 Screenshot

```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ stat uname.md
  File: uname.md
  Size: 338          Blocks: 8          IO Block: 4096   regular file
Device: 805h/2053d  Inode: 3191234    Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/   devops)   Gid: ( 1000/   devops)
Access: 2023-10-02 11:46:51.326038245 -0400
Modify: 2023-10-02 11:46:19.941679692 -0400
Change: 2023-10-02 11:46:19.941679692 -0400
 Birth: 2023-10-02 11:45:12.260879279 -0400
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ stat -c %a uname.md
664
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ stat --format ="%a %n" uname.md
=664 uname.md
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ stat --format="%U %G" uname.md
devops devops
```

9.8 uname

uname - print system information

To print uname without options

```
uname
```

To print all information

```
uname -a
```

9.9 Screenshot`

```
devops@kaniyam:~$ uname
Linux
devops@kaniyam:~$ uname -a
Linux kaniyam.hashlabs.in 5.15.0-83-generic #92-Ubuntu SMP Mon Aug 14 09:30:42 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux
devops@kaniyam:~$ uname -s
Linux
devops@kaniyam:~$ uname -r
5.15.0-83-generic
devops@kaniyam:~$
```

9.9.1 29. uniq

`uniq` is used to print or filter out repeated values in a file.

```
cat raw.txt
```

copy and paste the below text after printing above command into the terminal

```
redhat debian ubuntu ubuntu centos fedora fedora fedora fedora
```

To print or filter out for repeated or duplicate texts

```
uniq uniq.txt
```

To only print unique non-repeated lines or text

```
uniq -u uniq.txt
```

To count the number of occurrences of a value/text

```
uniq -c uniq.txt
```

To only print duplicate lines with their number of occurrence

```
uniq -d uniq.txt
```

To print all duplicate lines/text values alone

```
uniq -D demo.txt
```


9.10 unlink

unlink - call the unlink function to remove the specified file

syntax

```
unlink filename unlink dir_name
```

To create hard link with the name sample_link_file.txt

```
ln sample_file.txt sample_hardlink_file1.txt
```

To delete the hardlink

```
unlink sample_hardlink_file1.txt
```

To create symbolic or soft link to a file

```
ln -s /home/venus/Documents/file.txt softlink_file.txt
```

To delete the symbolic link

```
unlink softlink_file.txt
```

To delete the symbolic link for directory

```
ln -s /home/venus/music/ music unlink music
```

9.11 Screenshot

```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ unlink sample_hardlink_file2.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln sample_file.txt sample_hardlink_file1.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ unlink sample_hardlink_file1.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln -s /home/venus/Documents/file3.txt softlink_file3.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ unlink softlink_file3.txt
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ ln -s /home/venus/music1/ music1
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ unlink music1
```

9.12 uptime

uptime -It tells how long the system has been running

uptime command without any options

```
uptime
```

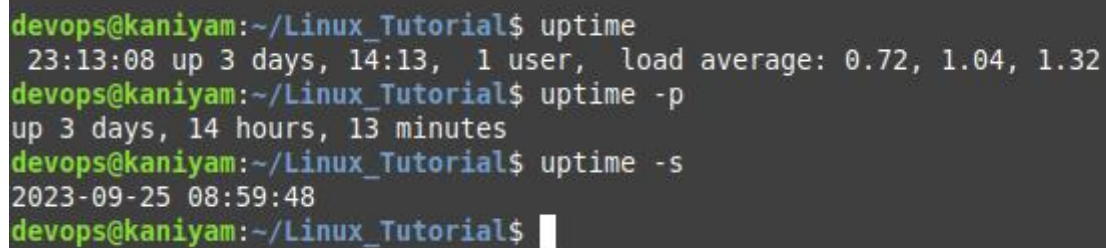
To show uptime in pretty format

```
uptime -p
```

To display the date/time since when the system has been running

```
uptime -s
```

9.13 Screenshot



```
devops@kaniyam:~/Linux_Tutorial$ uptime
 23:13:08 up 3 days, 14:13,  1 user,  load average: 0.72, 1.04, 1.32
devops@kaniyam:~/Linux_Tutorial$ uptime -p
up 3 days, 14 hours, 13 minutes
devops@kaniyam:~/Linux_Tutorial$ uptime -s
2023-09-25 08:59:48
devops@kaniyam:~/Linux_Tutorial$
```

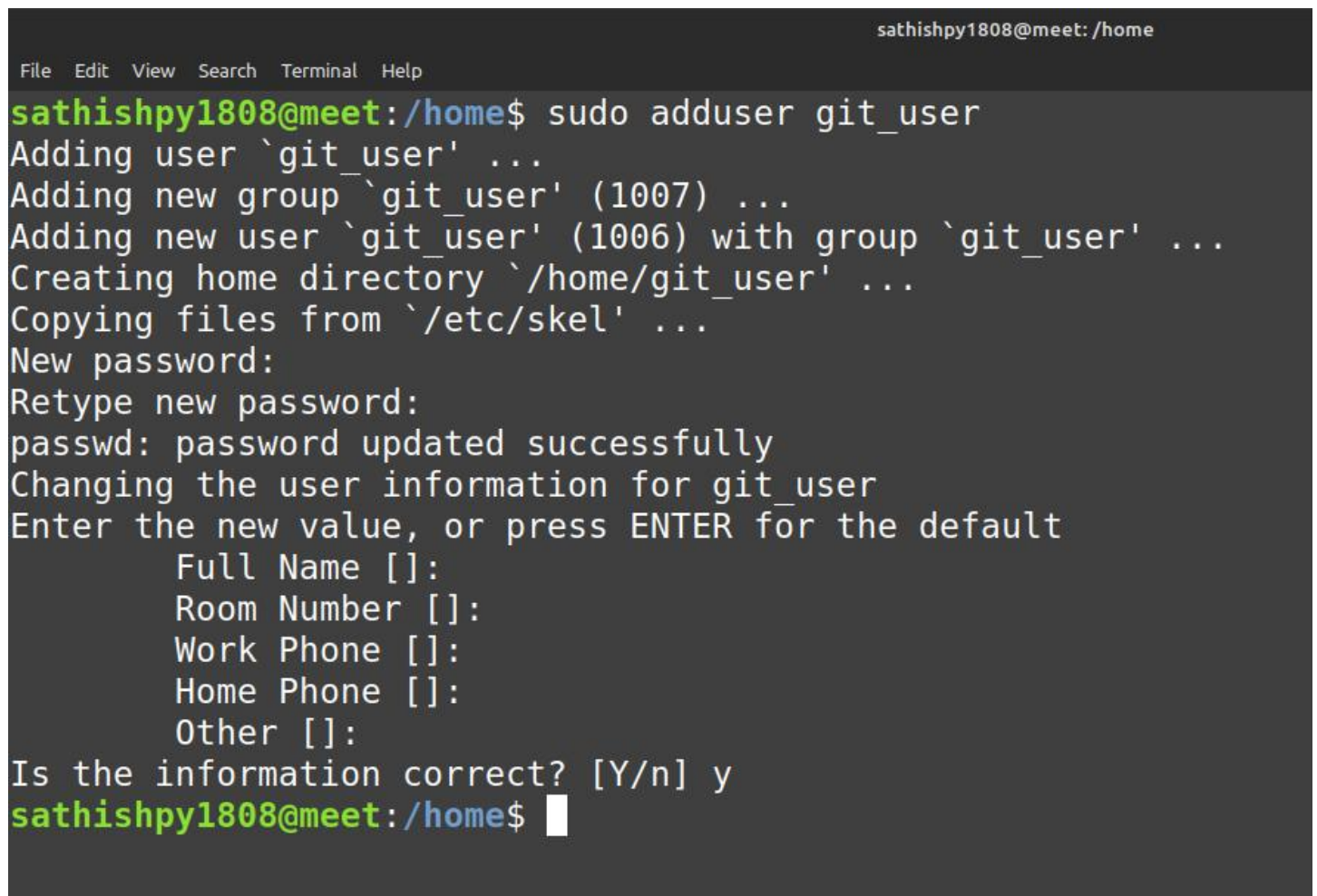
10. adduser

- add a user to the system

To add a new user

```
$ adduser user_name
```

10.1 Screenshot



```
sathishpy1808@meet: /home
File Edit View Search Terminal Help
sathishpy1808@meet:/home$ sudo adduser git_user
Adding user `git_user' ...
Adding new group `git_user' (1007) ...
Adding new user `git_user' (1006) with group `git_user' ...
Creating home directory `/home/git_user' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for git_user
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
sathishpy1808@meet:/home$
```

11. userdel

- userdel - delete a user account and related files

To delete a user account

```
$ sudo userdel user_name
```

To remove the user's home directory and mail spool

```
$ sudo userdel -r user_name
```

To forcefully remove the user account

```
$ sudo userdel -f user_name
```

11.1 Screenshot



```
sathishpy1808@meet: /home
File Edit View Search Terminal Help
sathishpy1808@meet:/home$ sudo userdel -r git_user
userdel: git_user mail spool (/var/mail/git_user) not found
sathishpy1808@meet:/home$ sudo userdel -r dev_ops
userdel: dev_ops mail spool (/var/mail/dev_ops) not found
sathishpy1808@meet:/home$ sudo userdel dev_ops
userdel: user 'dev_ops' does not exist
sathishpy1808@meet:/home$ sudo userdel git_user
userdel: user 'git_user' does not exist
sathishpy1808@meet:/home$
```

11.2 usermod

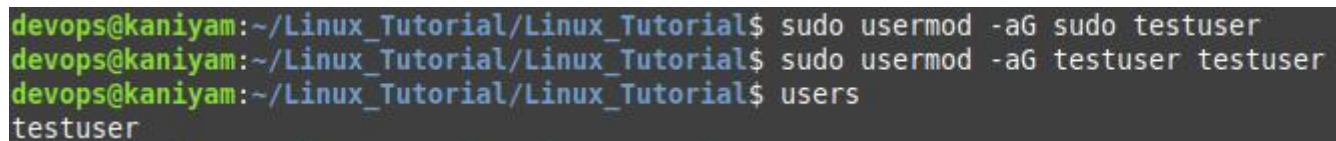
usermod - modify a user account To add a user to sudo group

```
sudo usermod -aG sudo <user_name>
```

To add group to an existing user

```
sudo usermod -aG group_name user_name
```

11.3 Screenshot



```
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo usermod -aG sudo testuser
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ sudo usermod -aG testuser testuser
devops@kaniyam:~/Linux_Tutorial/Linux_Tutorial$ users
testuser
```

11.4 22 vim - Vi IMproved, a programmer's text editor

To create a file from your terminal, type

```
vim filename
```

Vim has two mode "visual" & "editing" mode

To go into insert/editing mode press key "i"

Once in insert/edit mode, start writing the content in the file. when done editing, press "Esc" Key to bring back to visual mode.

Then, press keys in order `:wq!` to save and exit the file or (simple alternate keys to save & exit) after switching to visual mode type `:x`

To quit from the file without saving, after switching to visual mode `:q!`

11.4.1 Screenshot

vim

11.5 wc

wc - print newline, word, and byte counts for each file wc without options will display (number of lines),(number of words) and (number of bytes) of the file

```
wc file.txt
```

To Count Number of Lines

```
wc -l file.txt
```

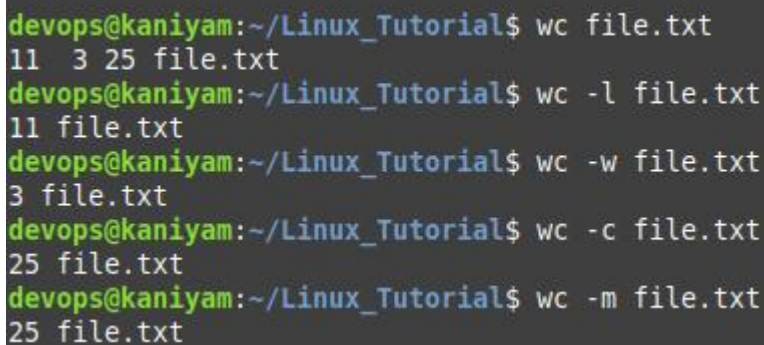
To Display Number of Words

```
wc -w file.txt
```

To Count Number of Bytes and Characters

```
wc -c file.txt wc -m file.txt
```

11.6 Screenshot



```
devops@kaniyam:~/Linux_Tutorial$ wc file.txt
11  3 25 file.txt
devops@kaniyam:~/Linux_Tutorial$ wc -l file.txt
11 file.txt
devops@kaniyam:~/Linux_Tutorial$ wc -w file.txt
3 file.txt
devops@kaniyam:~/Linux_Tutorial$ wc -c file.txt
25 file.txt
devops@kaniyam:~/Linux_Tutorial$ wc -m file.txt
25 file.txt
```

11.7 who

who - show who is logged on To print who command output without options

```
who
```

To print same as -b -d --login -p -r -t -T -u

```
who -a
```

To check the current runlevel

```
who -r
```

To view the time of last system boot

```
who -b
```

11.8 Screenshot

```
devops@kaniyam:~/Linux_Tutorial$ who
testuser tty7          2023-09-28 21:32 (:0)
devops@kaniyam:~/Linux_Tutorial$ who -a
      system boot  2023-09-25 08:59
LOGIN      tty1    2023-09-25 09:00          1062 id=tty1
      run-level 5  2023-09-25 09:00
testuser +  tty7    2023-09-28 21:32  old          132257 (:0)
      pts/2       2023-09-25 22:23          14581 id=ts/2  term=0 exit=0
      pts/0       2023-09-28 00:08          93569 id=ts/0  term=0 exit=0
      pts/1       2023-09-28 23:15          140820 id=ts/1  term=0 exit=0
devops@kaniyam:~/Linux_Tutorial$ who -r
      run-level 5  2023-09-25 09:00
devops@kaniyam:~/Linux_Tutorial$ who -b
      system boot  2023-09-25 08:59
```