

CLOUD COMPUTING AND DEVOPS

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Assignment 1: This assignment is related to Linux commands. Please upload the pdf or doc which consists of 1) Name of the command 2) Description 3) screenshot of the output. the reference material is attached with this email.

1. ls: list files

Syntax: ls

Syntax: ls <file>: lists the information of that file

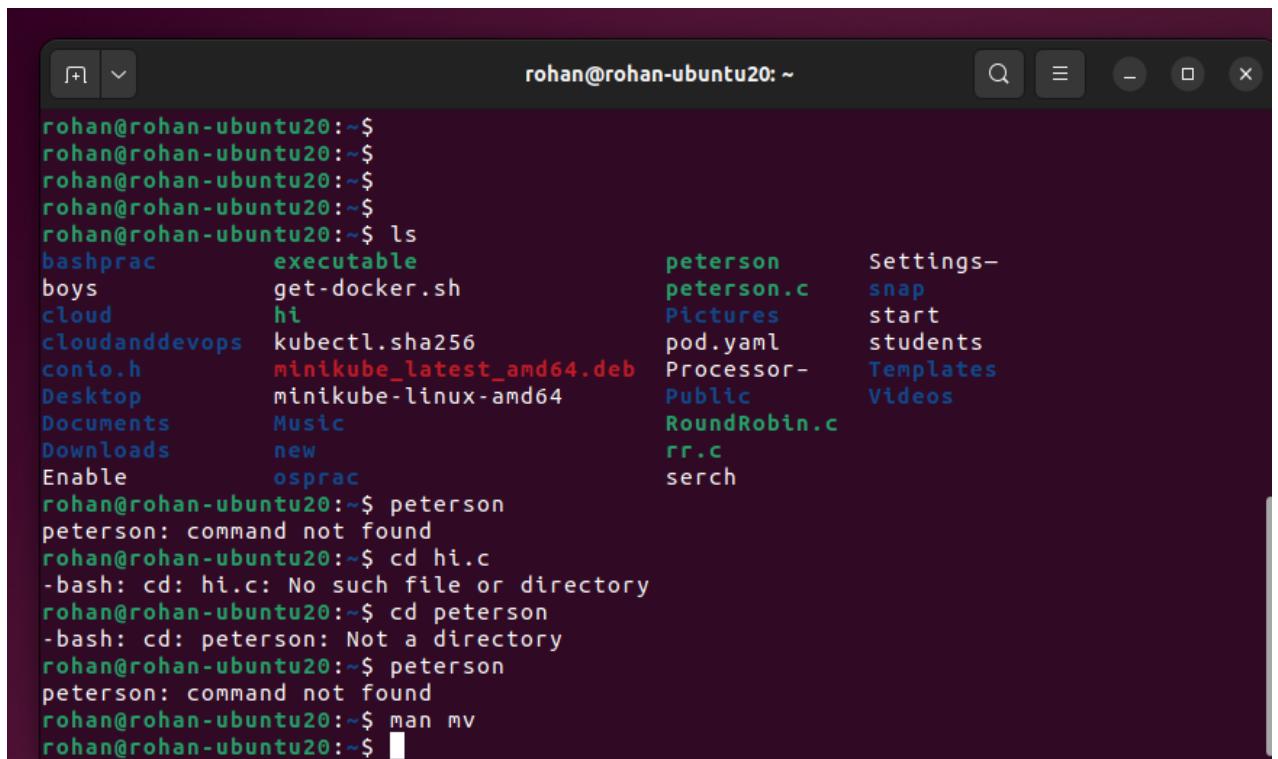
Description:

The contents of the current directory are listed.

using the -l flag, you can list the permissions of the files and directories as well as other attributes such as folder names, file and directory sizes, and modified date and time.

Hidden files can be seen by using option a.

Screenshot:



A screenshot of a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal shows the following session:

```
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$ ls  
bashprac      executable          peterson      Settings-  
boys          get-docker.sh       peterson.c    snap  
cloud          hi                Pictures       start  
cloudanddevops kubectl.sha256   pod.yaml     students  
conio.h        minikube_latest_amd64.deb Processor- Templates  
Desktop        minikube-linux-amd64  Public       Videos  
Documents      Music              RoundRobin.c  
Downloads      new               rr.c  
Enable         osprac            serch  
rohan@rohan-ubuntu20:~$ peterson  
peterson: command not found  
rohan@rohan-ubuntu20:~$ cd hi.c  
-bash: cd: hi.c: No such file or directory  
rohan@rohan-ubuntu20:~$ cd peterson  
-bash: cd: peterson: Not a directory  
rohan@rohan-ubuntu20:~$ peterson  
peterson: command not found  
rohan@rohan-ubuntu20:~$ man mv  
rohan@rohan-ubuntu20:~$ █
```

:

2. pwd: print working directory

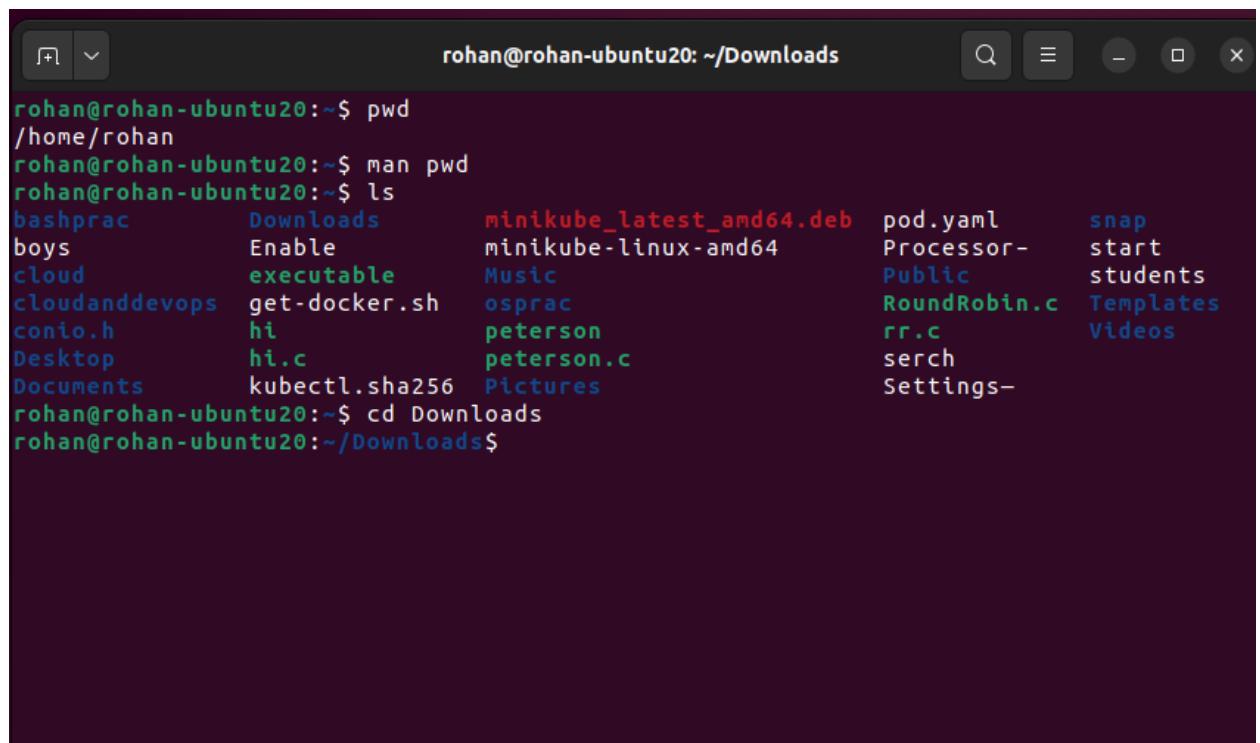
Syntax: pwd

Description:

Prints the name of the current or working directory.

- l logical option used to print the logical links too.
- P physical option is used to avoid logical links while printing.
- v version to get the output version.

Screenshot:



The screenshot shows a terminal window with a dark theme. The title bar reads "rohan@rohan-ubuntu20: ~/Downloads". The terminal content is as follows:

```
rohan@rohan-ubuntu20:~$ pwd
/home/rohan
rohan@rohan-ubuntu20:~$ man pwd
rohan@rohan-ubuntu20:~$ ls
bashprac      Downloads      minikube_latest_amd64.deb  pod.yaml      snap
boys          Enable        minikube-linux-amd64       Processor-    start
cloud          executable   Music                  Public       students
cloudanddevops get-docker.sh  osprac                RoundRobin.c Templates
conio.h        hi           peterson              rr.c         Videos
Desktop        hi.c         peterson.c            serch
Documents     kubectl.sha256 Pictures              Settings-
rohan@rohan-ubuntu20:~$ cd Downloads
rohan@rohan-ubuntu20:~/Downloads$
```

3. cd: change directory

Syntax: cd

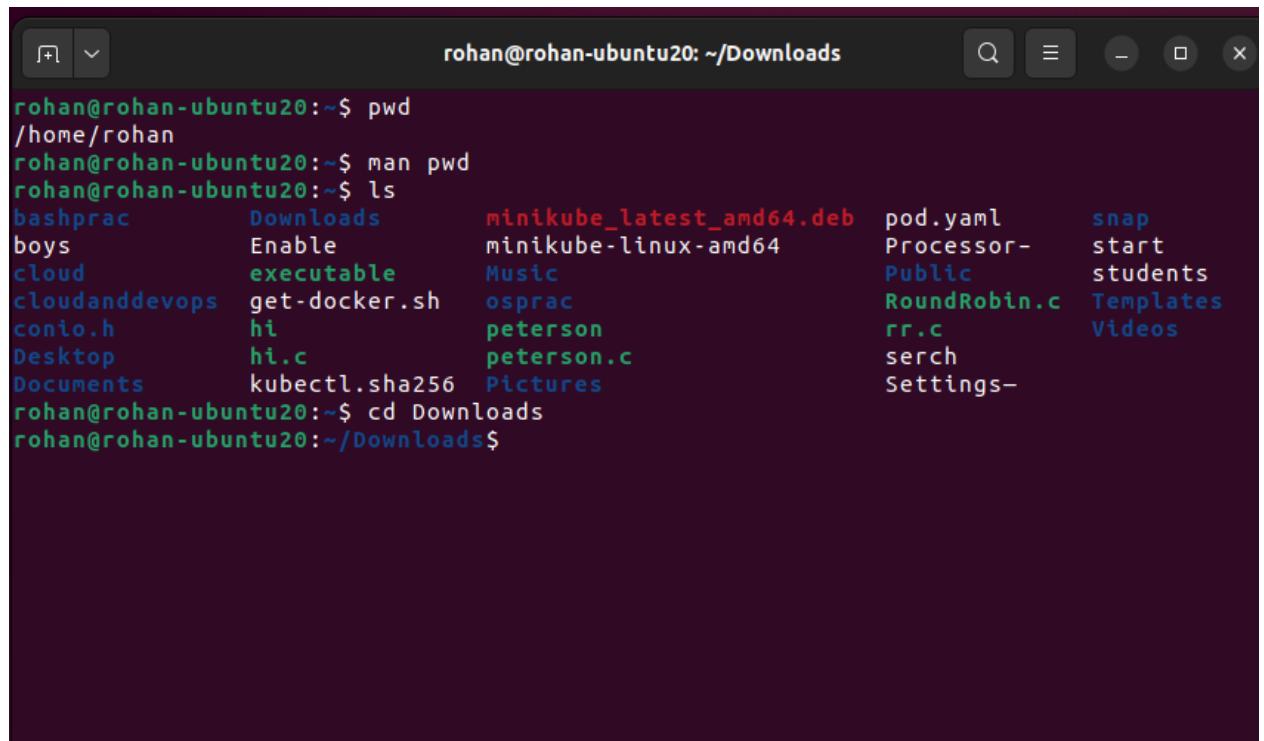
Description:

It is used to change the current directory.

/ option is to get to the home directory.

The .. option is used to get to the parent directory of the current directory.

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~/Downloads". The terminal displays the following commands and output:

```
rohan@rohan-ubuntu20:~$ pwd
/home/rohan
rohan@rohan-ubuntu20:~$ man pwd
rohan@rohan-ubuntu20:~$ ls
bashprac      Downloads      minikube_latest_amd64.deb  pod.yaml      snap
boys          Enable        minikube-linux-amd64       Processor-    start
cloud          executable   Music                  Public       students
cloudanddevops get-docker.sh osprac      RoundRobin.c  Templates
conio.h        hi           peterson      rr.c         Videos
Desktop        hi.c         peterson.c    serch
Documents      kubectl.sha256 Pictures      Settings-
rohan@rohan-ubuntu20:~$ cd Downloads
rohan@rohan-ubuntu20:~/Downloads$
```

4. mkdir: make directory

Syntax: `mkdir <directory>`

Description:

It used to create a directory

`mkdir --mode`: sets file mode

`mkdir -p`: makes parent directory as needed

Screenshot:

5. mv: rename files (move)

Syntax: mv source destination

Description:

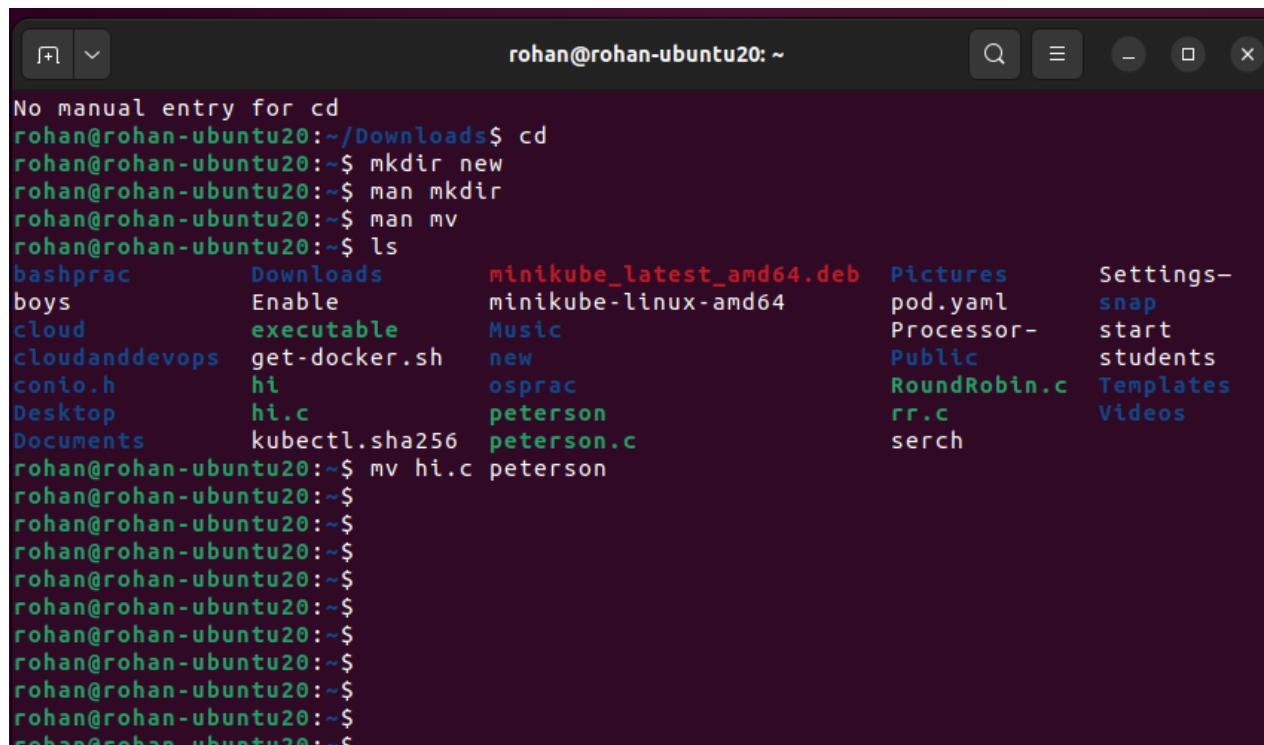
Rename source file to destination file

The i command is used to get confirmation from users

The -f option prompts overwriting

The – n option prevents a file from being overwritten

Screenshot:



A screenshot of a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal shows the following session:

```
No manual entry for cd
rohan@rohan-ubuntu20:~/Downloads$ cd
rohan@rohan-ubuntu20:~$ mkdir new
rohan@rohan-ubuntu20:~$ man mkdir
rohan@rohan-ubuntu20:~$ man mv
rohan@rohan-ubuntu20:~$ ls
bashprac      Downloads      minikube_latest_amd64.deb  Pictures      Settings-
boys          Enable        minikube-linux-amd64       pod.yaml    snap
cloud          executable   Music                  Processor-
cloudanddevops get-docker.sh  new                   Public      start
conio.h        hi           osprac                RoundRobin.c Templates
Desktop        hi.c         peterson               rr.c        Videos
Documents     kubectl.sha256 peterson               serch
rohan@rohan-ubuntu20:~$ mv hi.c peterson
rohan@rohan-ubuntu20:~$
```

6. cp: copy

Description:

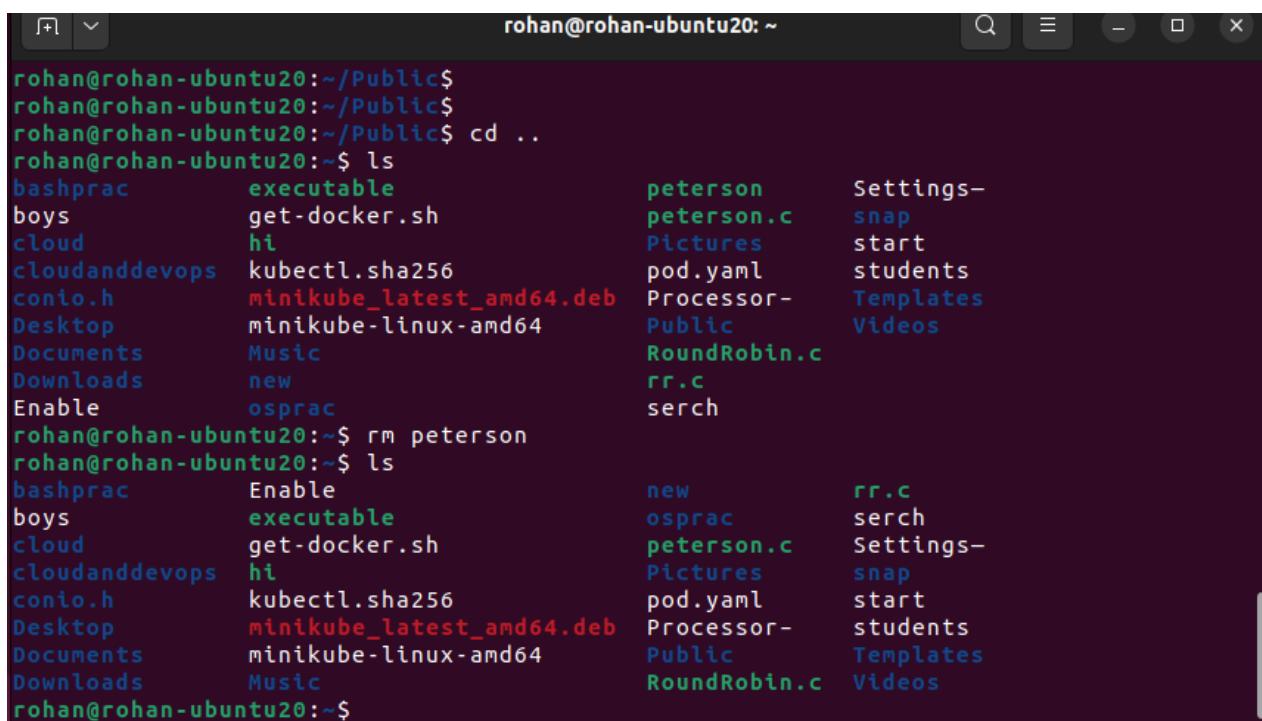
To copy files

- attributes only: does not copy the attributes, just the data

- b: makes backup of each destination file

Syntax: cp <source> <destination>

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The user has run several commands to demonstrate the cp command:

```
rohan@rohan-ubuntu20:~/Public$  
rohan@rohan-ubuntu20:~/Public$  
rohan@rohan-ubuntu20:~/Public$ cd ..  
rohan@rohan-ubuntu20:~$ ls  
bashprac      executable      peterson      Settings-  
boys          get-docker.sh  peterson.c    snap  
cloud          hi             Pictures       start  
cloudanddevops kubectl.sha256 pod.yaml     students  
conio.h        minikube_latest_amd64.deb Processor-  
Desktop        minikube-linux-amd64 Public       Templates  
Documents      Music          RoundRobin.c Videos  
Downloads      new            rr.c          serch  
Enable         osprac        settings-  
rohan@rohan-ubuntu20:~$ rm peterson  
rohan@rohan-ubuntu20:~$ ls  
bashprac      Enable        new           rr.c  
boys          executable   osprac        serch  
cloud          get-docker.sh peterson.c  Settings-  
cloudanddevops hi          Pictures     snap  
conio.h        kubectl.sha256 pod.yaml     start  
Desktop        minikube_latest_amd64.deb Processor-  
Documents      minikube-linux-amd64 Public       Templates  
Downloads      Music          RoundRobin.c Videos  
rohan@rohan-ubuntu20:~$
```

7. rm: remove/delete

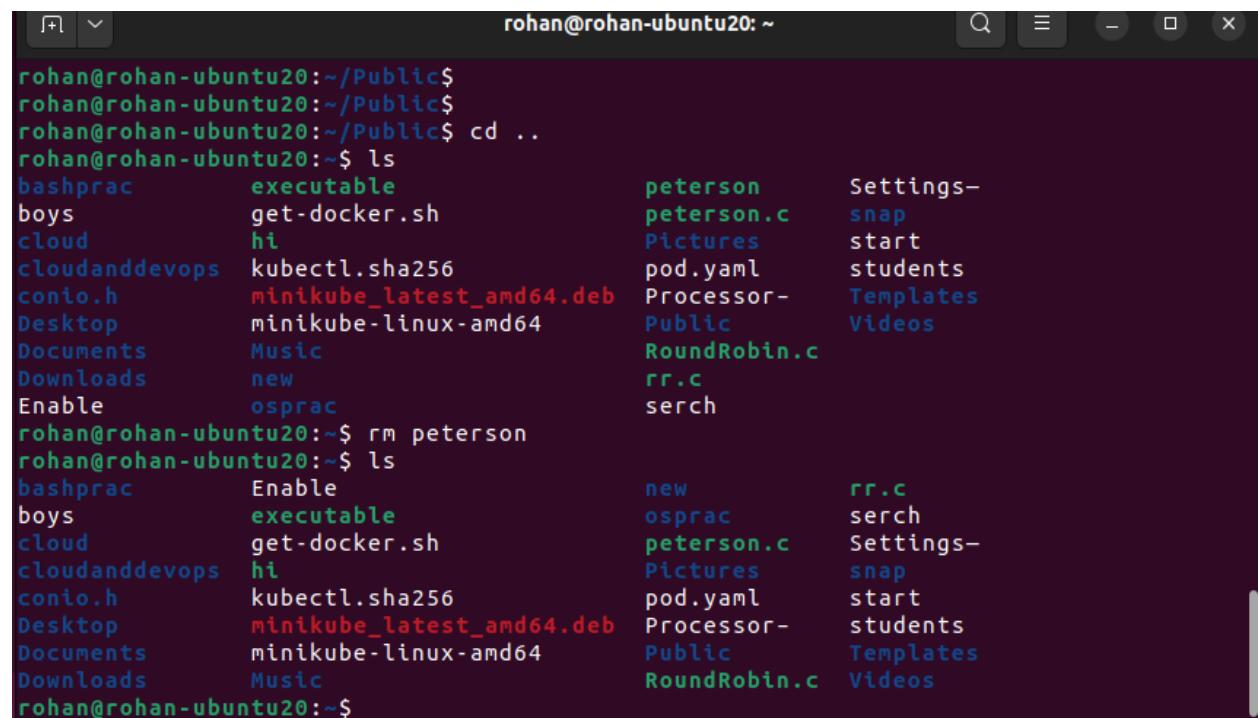
Syntax: rm <file>

Description:

used to delete directories

-f prompts force deletion

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal history is as follows:

```
rohan@rohan-ubuntu20:~/Public$  
rohan@rohan-ubuntu20:~/Public$  
rohan@rohan-ubuntu20:~/Public$ cd ..  
rohan@rohan-ubuntu20:~$ ls  
bashprac      executable          peterson      Settings-  
boys          get-docker.sh       peterson.c    snap  
cloud          hi                Pictures       start  
cloudanddevops kubectl.sha256   pod.yaml     students  
conio.h        minikube_latest_amd64.deb Processor- Templates  
Desktop        minikube-linux-amd64 Public       Videos  
Documents      Music              RoundRobin.c  
Downloads      new               rr.c          serch  
Enable         osprac            peterson.c    Settings-  
rohan@rohan-ubuntu20:~$ rm peterson  
rohan@rohan-ubuntu20:~$ ls  
bashprac      Enable             new           rr.c  
boys          executable         osprac        serch  
cloud          get-docker.sh     peterson.c    Settings-  
cloudanddevops hi               Pictures       snap  
conio.h        kubectl.sha256   pod.yaml     start  
Desktop        minikube_latest_amd64.deb Processor- students  
Documents      minikube-linux-amd64 Public       Templates  
Downloads      Music             RoundRobin.c Videos  
rohan@rohan-ubuntu20:~$
```

7.2. touch

Syntax: touch <filename>

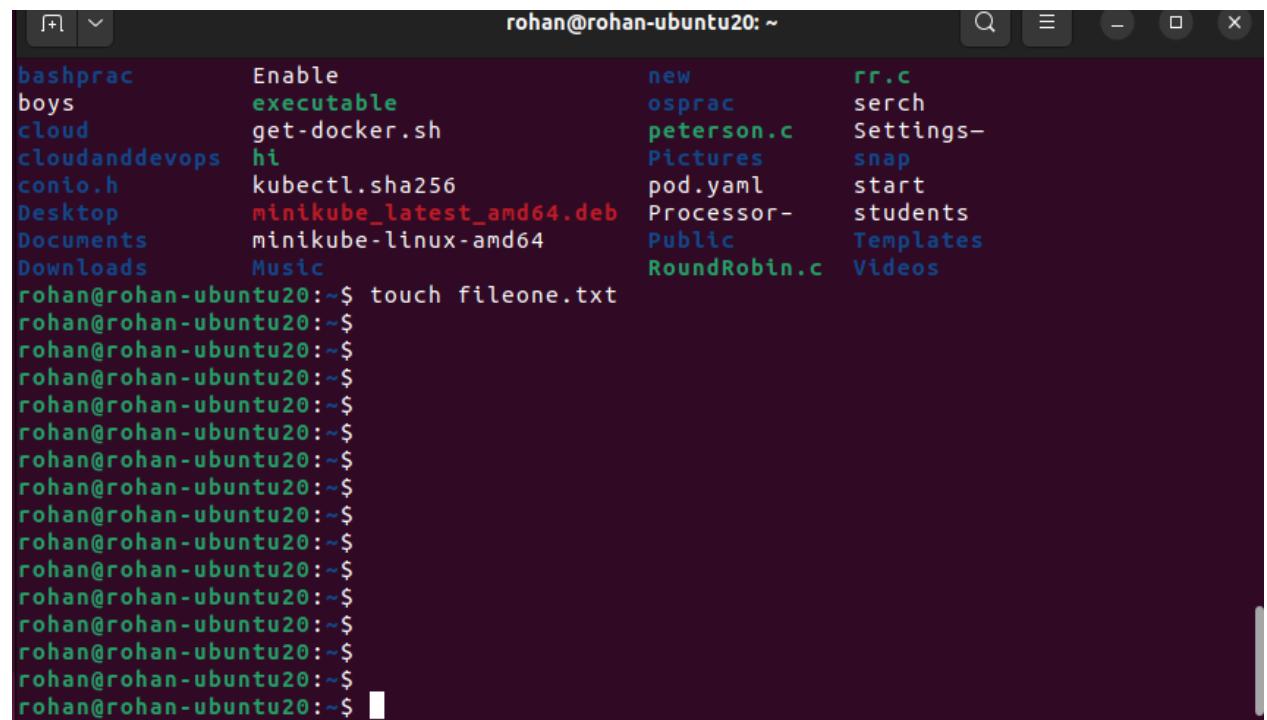
Description: create blank/empty files

-a option is used to change access time

- c option is used to check if file is created or not

- m is used to change modification

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays a list of files in the current directory, followed by the command "touch fileone.txt" being entered and its execution.

```
rohan@rohan-ubuntu20:~$ touch fileone.txt
```

7.3. ln: link

Syntax: ln -s <file> <link>

Description:

create symbolic links for other files, -s represents symbolic link

ls-l shows all hard links

ln -s <filename> linkname

Screenshot:

```
rohan@rohan-ubuntu20:~$ ls -l r.c
lrwxrwxrwx 1 rohan rohan 4 Jan 22 11:08 r.c -> rr.c
```

The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays the user's home directory with various files and folders. The user runs the command "ls -l r.c", which outputs the file's permissions (lrwxrwxrwx) and its symbolic link target ("rr.c").

8. cat: concatenate

Syntax: cat <filename>

Description:

Reads data from file and displays it

displays file contents on the screen

cat <oldfile> <newfile> so content can be copied from one file to another

Screenshot:

```
rohan@rohan-ubuntu20:~$ ls
bashprac      Downloads      minikube_latest_amd64.deb  pod.yaml      Settings-
boys          Enable        minikube-linux-amd64       Processor-
cloud         executable    Music                  Public       snap
cloudanddevops fileone.txt  new                   r.c          start
conio.h        get-docker.sh osprac     peterson.c   RoundRobin.c Templates
Desktop        hi           Pictures    rr.c          Videos
Documents      kubectl.sha256 Pictures    serch
rohan@rohan-ubuntu20:~$ cat pod.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx
  labels:
    app: frontend
    tier: frontend

spec:
  containers:
    - name: nginx
      image: nginx

rohan@rohan-ubuntu20:~$
```

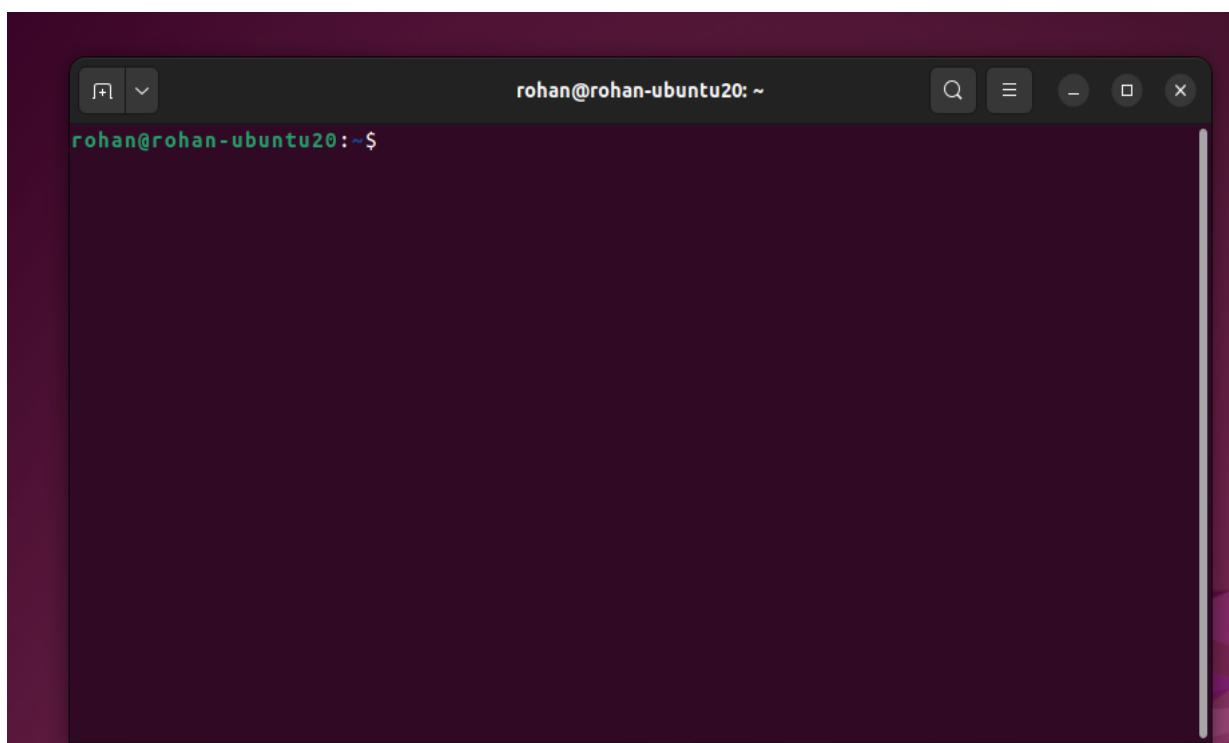
9. clear

Syntax: clear

Description:

clears the terminal screen

Screenshot:



10. echo

Syntax: echo <text>

Description:

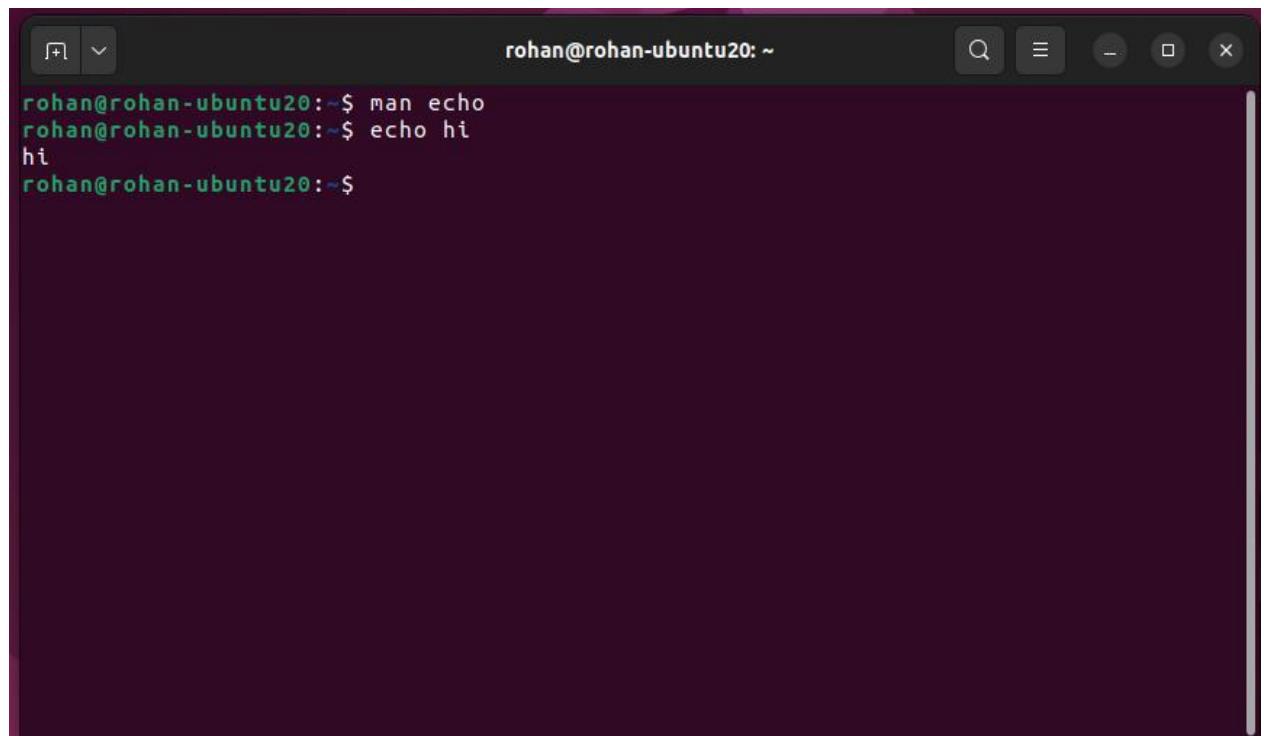
displays a line of text

echo \b: removes all spaces between text

echo \c: continues without exiting new line

echo \n: creates new line

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The window contains the following text:

```
rohan@rohan-ubuntu20:~$ man echo
rohan@rohan-ubuntu20:~$ echo hi
hi
rohan@rohan-ubuntu20:~$
```

11. less:

Syntax: less <file>

Description:

opposite of more, displays paged output
dsmg | less: reads less contents of the file

Screenshot:

12. man: manual

Syntax: man <command>

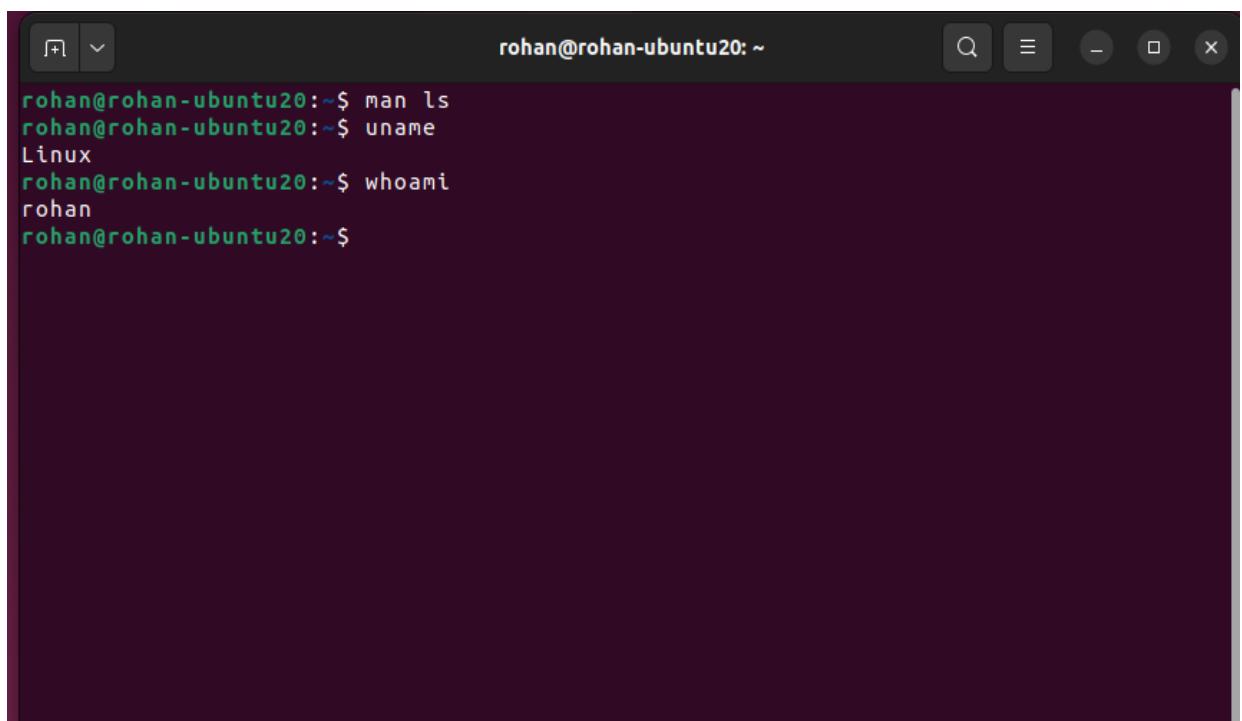
Description:

Access manual pages for all Linux commands

Sections in manual: man <section-name>

We can use man to get the documentation of any command

Screenshot:



The screenshot shows a terminal window with a dark theme. The title bar reads "rohan@rohan-ubuntu20: ~". The window contains the following text:

```
rohan@rohan-ubuntu20:~$ man ls
rohan@rohan-ubuntu20:~$ uname
Linux
rohan@rohan-ubuntu20:~$ whoami
rohan
rohan@rohan-ubuntu20:~$
```

13. uname

Syntax: uname

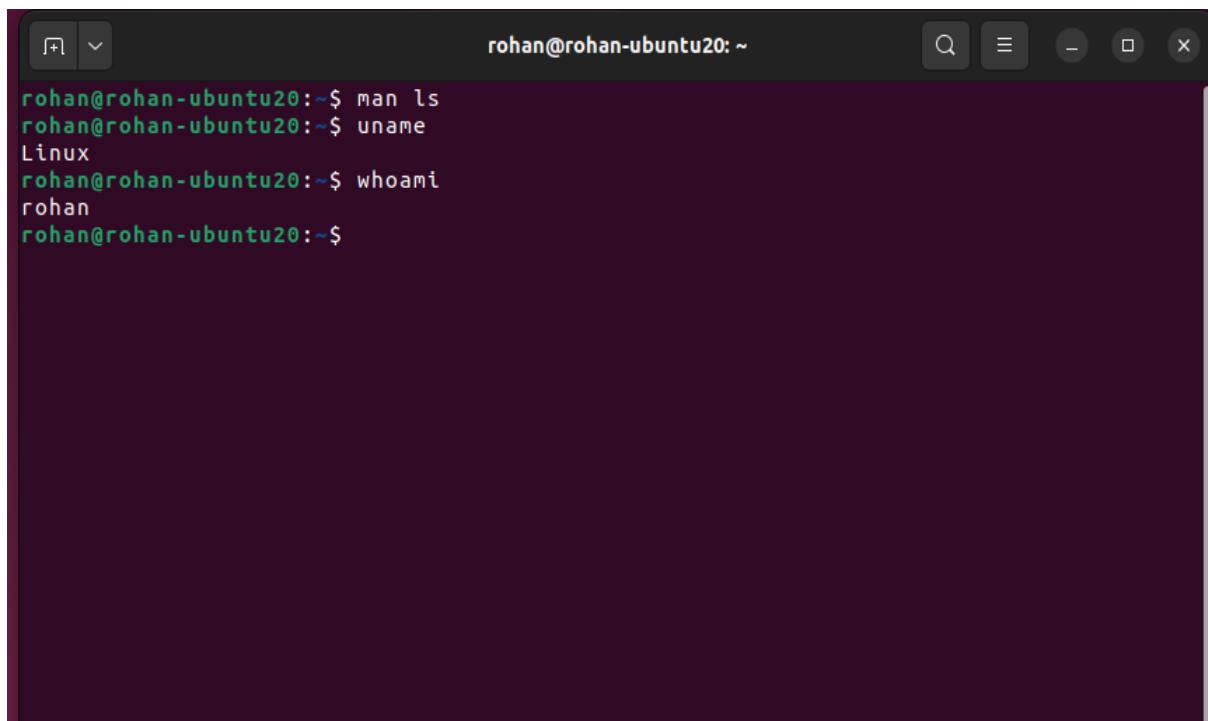
Description:

command used to get basic information of OS

For printing information in order: uname -a

To print kernel name: uname -s

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The window title is "rohan@rohan-ubuntu20: ~". The terminal prompt is "rohan@rohan-ubuntu20:~\$". The user has run several commands:
1. "man ls" (which lists the contents of the current directory)
2. "uname" (which prints the system's hardware configuration)
3. "whoami" (which prints the effective user name)
The output of "uname" is "Linux". The output of "whoami" is "rohan". The terminal ends with another prompt "rohan@rohan-ubuntu20:~\$".

14. whoami

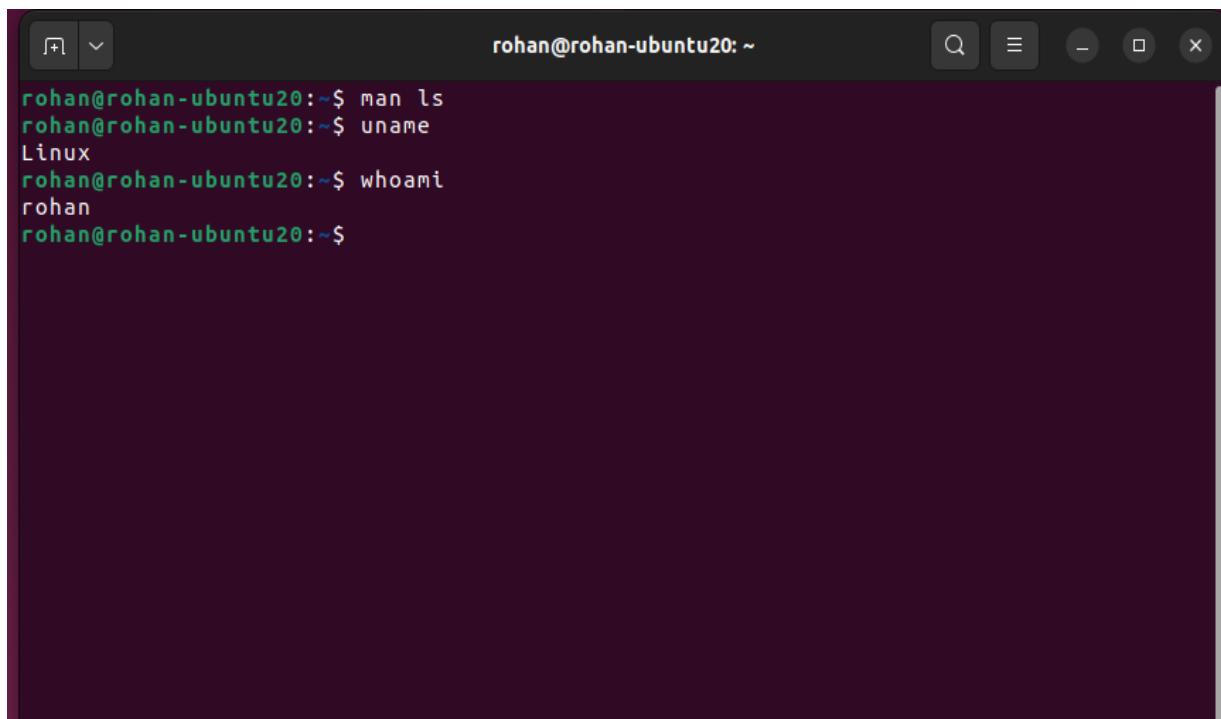
Syntax: whoami

Description:

Gives the active username

Get to know who has logged in

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The window title is "rohan@rohan-ubuntu20: ~". The terminal prompt is "rohan@rohan-ubuntu20:~\$". The user has run several commands: "man ls", "uname", which outputs "Linux", and "whoami", which outputs "rohan". The terminal ends with another prompt "rohan@rohan-ubuntu20:~\$".

```
rohan@rohan-ubuntu20:~$ man ls
rohan@rohan-ubuntu20:~$ uname
Linux
rohan@rohan-ubuntu20:~$ whoami
rohan
rohan@rohan-ubuntu20:~$
```

15. tar

Syntax: tar [options] [archive-file][file or directory to be archived]

Description:

Command to extract and compress files in Linux

To create archive: -c

To exit archive: -e

To create archive within file name: -f

Screenshot:

16. grep

Syntax: grep [options] pattern [files]

Description:

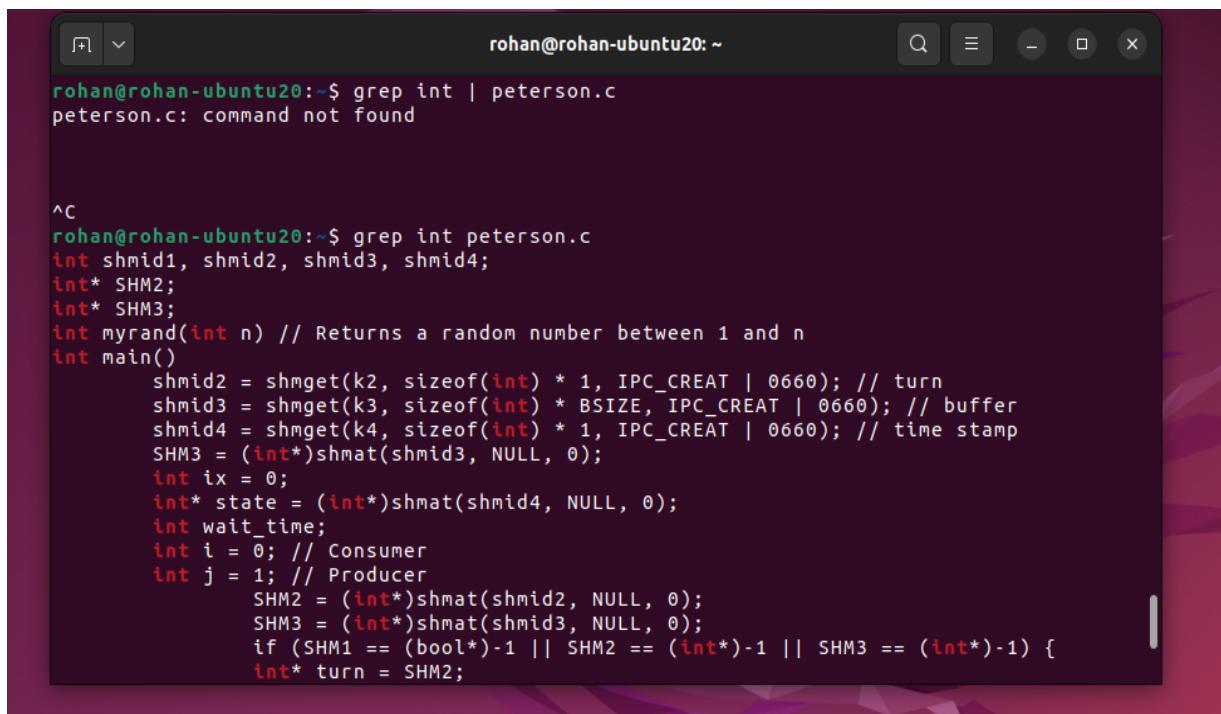
To search a string within a file

-c: counts the number of lines that match the word

-h: displays the matched lines

-i: ignores the matched lines

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar says "rohan@rohan-ubuntu20: ~". The command entered was "grep int | peterson.c", which resulted in the error message "peterson.c: command not found". Below this, the user typed "ctrl-C" to interrupt the command. The terminal then displayed the contents of the "peterson.c" file, which is a C program. The code includes declarations for shared memory identifiers (shmid1, shmid2, shmid3, shmid4), pointers to shared memory (SHM2, SHM3), and functions for generating random numbers (myrand) and main program logic. The code uses standard C syntax with comments explaining its purpose.

```
rohan@rohan-ubuntu20:~$ grep int | peterson.c
peterson.c: command not found

^C
rohan@rohan-ubuntu20:~$ grep int peterson.c
int shmid1, shmid2, shmid3, shmid4;
int* SHM2;
int* SHM3;
int myrand(int n) // Returns a random number between 1 and n
int main()
    shmid2 = shmget(k2, sizeof(int) * 1, IPC_CREAT | 0660); // turn
    shmid3 = shmget(k3, sizeof(int) * BSIZE, IPC_CREAT | 0660); // buffer
    shmid4 = shmget(k4, sizeof(int) * 1, IPC_CREAT | 0660); // time stamp
    SHM3 = (int*)shmat(shmid3, NULL, 0);
    int ix = 0;
    int* state = (int*)shmat(shmid4, NULL, 0);
    int wait_time;
    int i = 0; // Consumer
    int j = 1; // Producer
        SHM2 = (int*)shmat(shmid2, NULL, 0);
        SHM3 = (int*)shmat(shmid3, NULL, 0);
        if (SHM1 == (bool*)-1 || SHM2 == (int*)-1 || SHM3 == (int*)-1) {
            int* turn = SHM2;
```

17. head

Syntax: head <file>

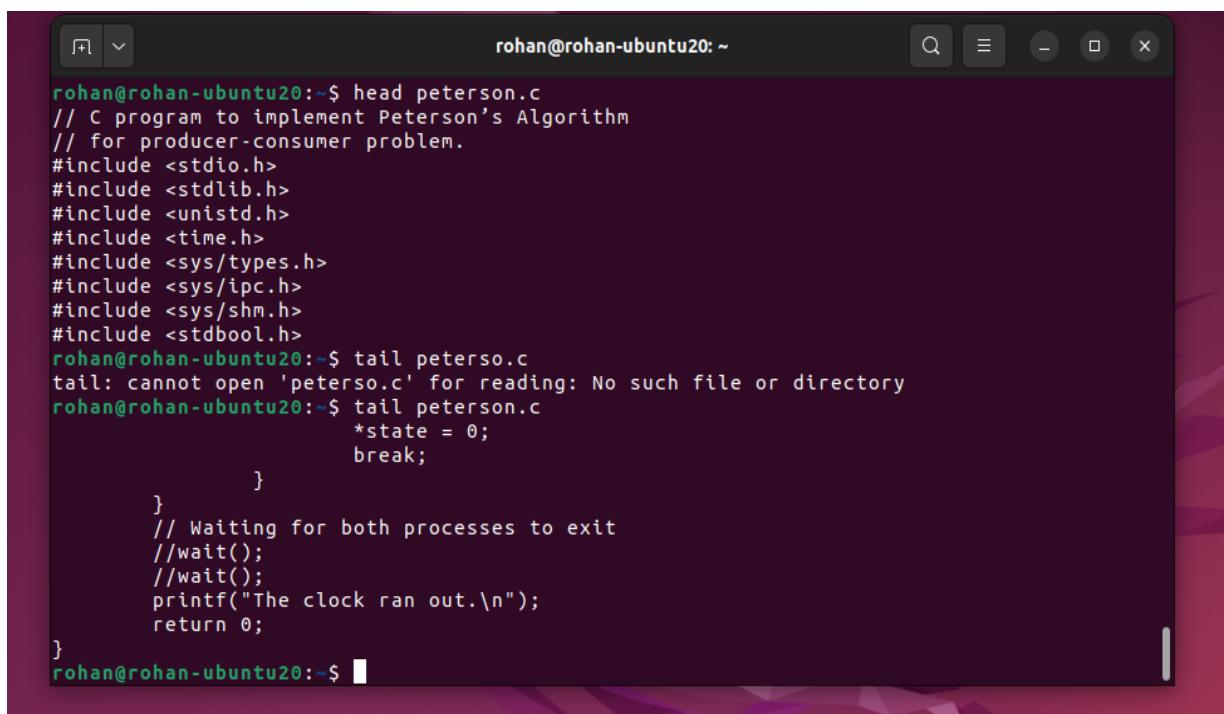
Description:

Return the specified number of lines from the top

-c num: prints the number of bytes from specified file

-v: data from the file is preceded by file name

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20:~". The user has run the command "head peterson.c" which displays the first few lines of a C program. The program is a Peterson's algorithm implementation. The user then attempts to run "tail peterso.c" but receives an error message: "tail: cannot open 'peterso.c' for reading: No such file or directory". Finally, the user runs "tail peterson.c" which outputs the last few lines of the program, indicating that the file was found.

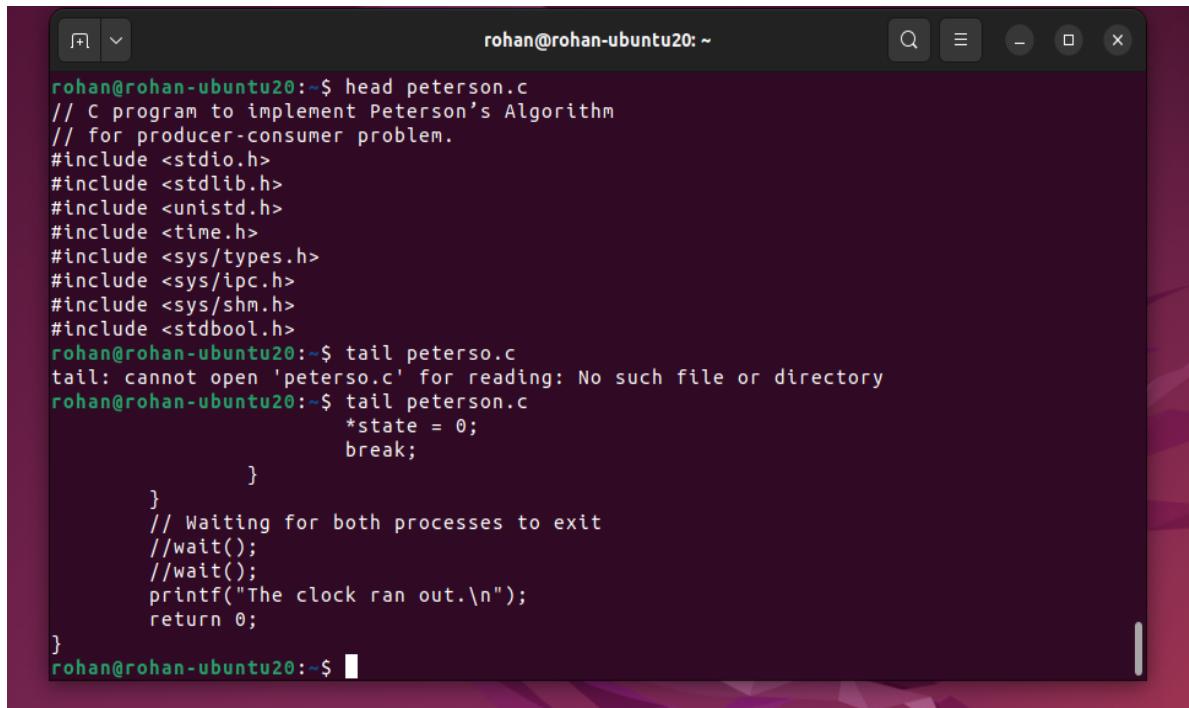
```
rohan@rohan-ubuntu20:~$ head peterson.c
// C program to implement Peterson's Algorithm
// for producer-consumer problem.
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <time.h>
#include <sys/types.h>
#include <sys/IPC.h>
#include <sys/shm.h>
#include <stdbool.h>
rohan@rohan-ubuntu20:~$ tail peterso.c
tail: cannot open 'peterso.c' for reading: No such file or directory
rohan@rohan-ubuntu20:~$ tail peterson.c
        *state = 0;
        break;
    }
}
// Waiting for both processes to exit
//wait();
//wait();
printf("The clock ran out.\n");
return 0;
}
rohan@rohan-ubuntu20:~$
```

18. tail

Syntax: tail <file>

Description: returns the number of files specified from bottom

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays the following session:

```
rohan@rohan-ubuntu20:~$ head peterson.c
// C program to implement Peterson's Algorithm
// for producer-consumer problem.
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <time.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <stdbool.h>
rohan@rohan-ubuntu20:~$ tail peterso.c
tail: cannot open 'peterso.c' for reading: No such file or directory
rohan@rohan-ubuntu20:~$ tail peterson.c
        *state = 0;
        break;
    }
}
// Waiting for both processes to exit
//wait();
//wait();
printf("The clock ran out.\n");
return 0;
}
rohan@rohan-ubuntu20:~$
```

19. diff

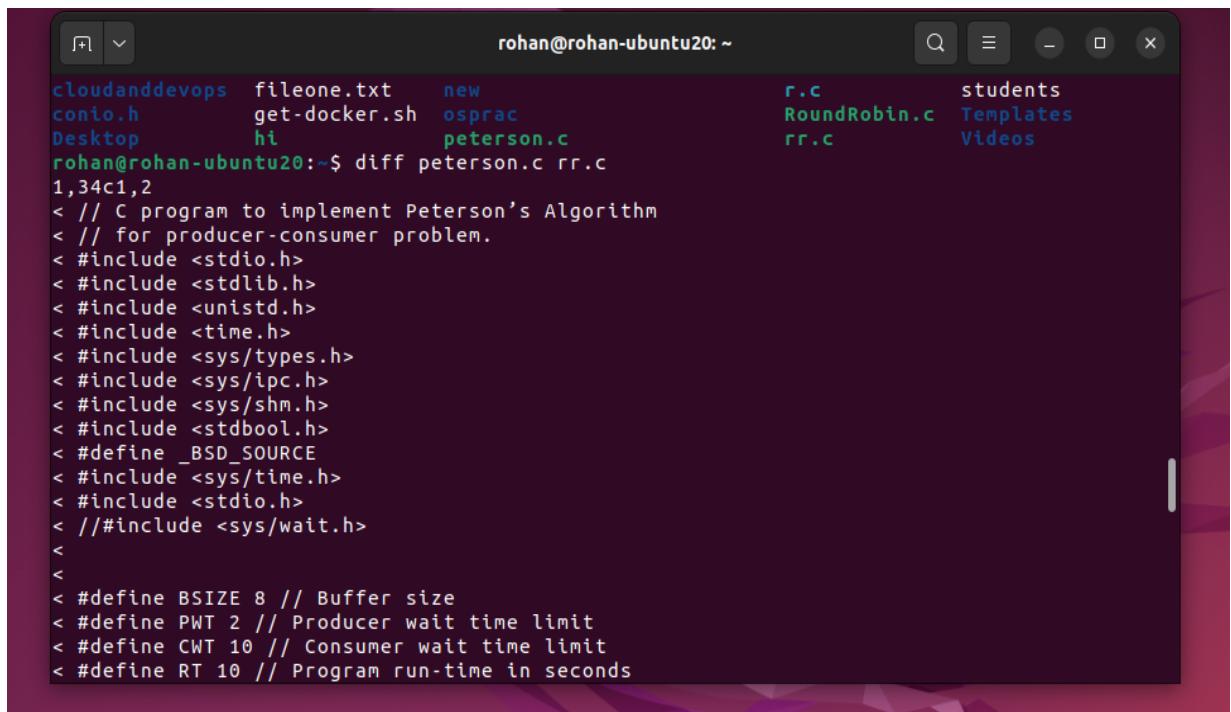
Syntax: diff <file1> <file2>

Description: finds the difference between 2 files

-c: to view differences in context mode

-u: to view difference in unified mode

Screenshot:



```
rohan@rohan-ubuntu20:~
```

```
rohan@rohan-ubuntu20:~$ diff peterson.c rr.c
1,34c1,2
< // C program to implement Peterson's Algorithm
< // for producer-consumer problem.
< #include <stdio.h>
< #include <stdlib.h>
< #include <unistd.h>
< #include <time.h>
< #include <sys/types.h>
< #include <sys/ipc.h>
< #include <sys/shm.h>
< #include <stdbool.h>
< #define _BSD_SOURCE
< #include <sys/time.h>
< #include <stdio.h>
< // #include <sys/wait.h>
<
<
< #define BSIZE 8 // Buffer size
< #define PWT 2 // Producer wait time limit
< #define CWT 10 // Consumer wait time limit
< #define RT 10 // Program run-time in seconds
```

20. cmp

Syntax: cmp <file1> <file2>

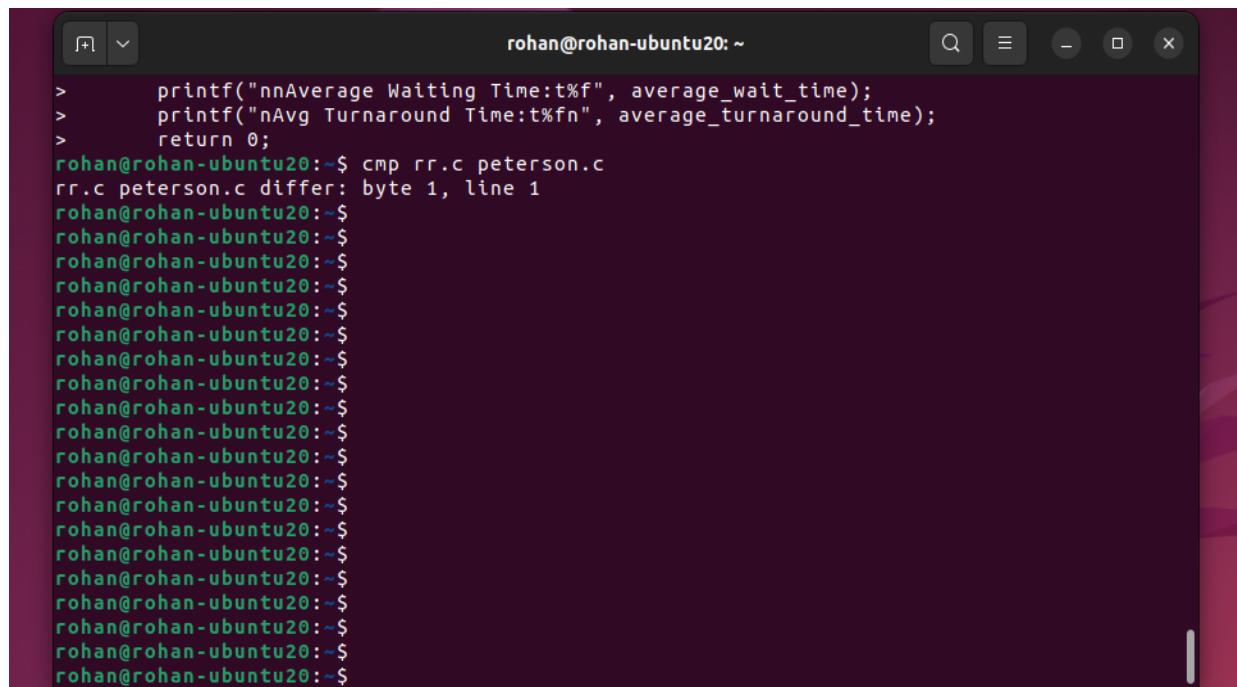
Description:

allows you to check if 2 files are identical

-b: print differing bytes

-n: number of bytes to be compared

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The user has run the command "cmp rr.c peterson.c". The output indicates that the files differ at byte 1, line 1. The terminal window has a dark background and light-colored text. It includes standard Linux terminal icons for window control and search.

```
>     printf("nAverage Waiting Time:t%f", average_wait_time);
>     printf("nAvg Turnaround Time:t%fn", average_turnaround_time);
>     return 0;
rohan@rohan-ubuntu20:~$ cmp rr.c peterson.c
rr.c peterson.c differ: byte 1, line 1
rohan@rohan-ubuntu20:~$
```

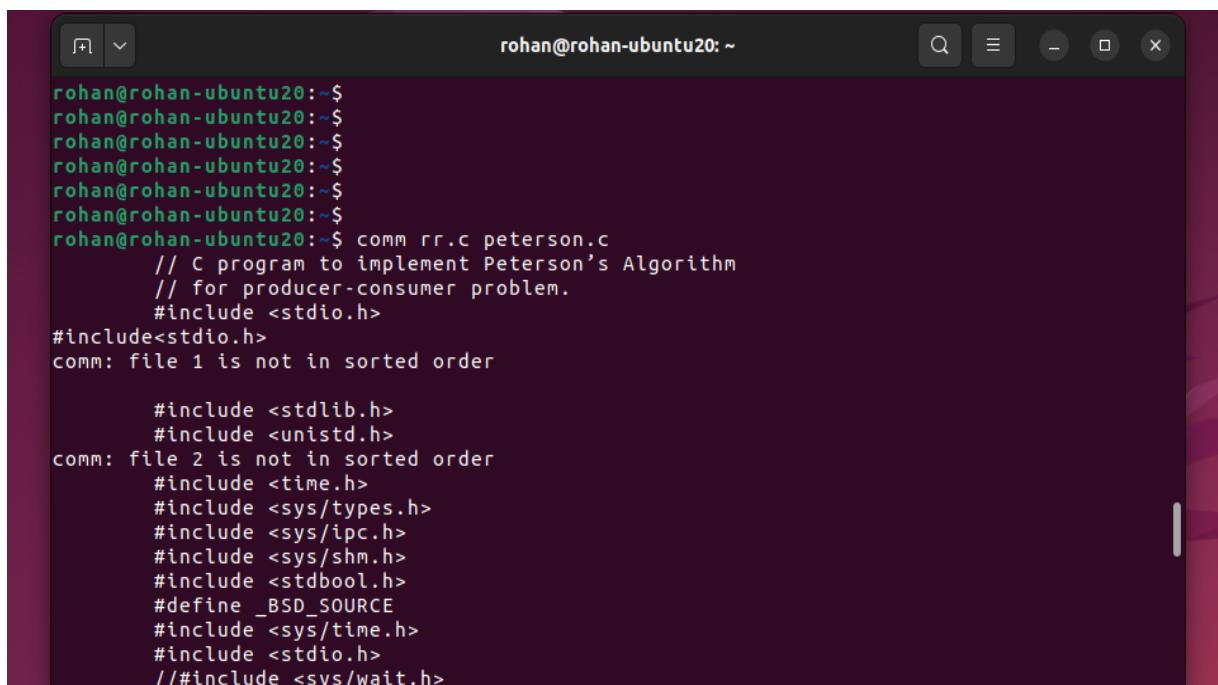
21. comm

Syntax: comm <file1> <file2>

Description:

Combines the functionality of cmp and diff

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays the following command and its output:

```
rohan@rohan-ubuntu20:~$ comm rr.c peterson.c
// C program to implement Peterson's Algorithm
// for producer-consumer problem.
#include <stdio.h>
#include<stdio.h>
comm: file 1 is not in sorted order

#include <stdlib.h>
#include <unistd.h>
comm: file 2 is not in sorted order
#include <time.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#include <stdbool.h>
#define _BSD_SOURCE
#include <sys/time.h>
#include <stdio.h>
//#include <sys/wait.h>
```

22. sort

Syntax: sort <filename>

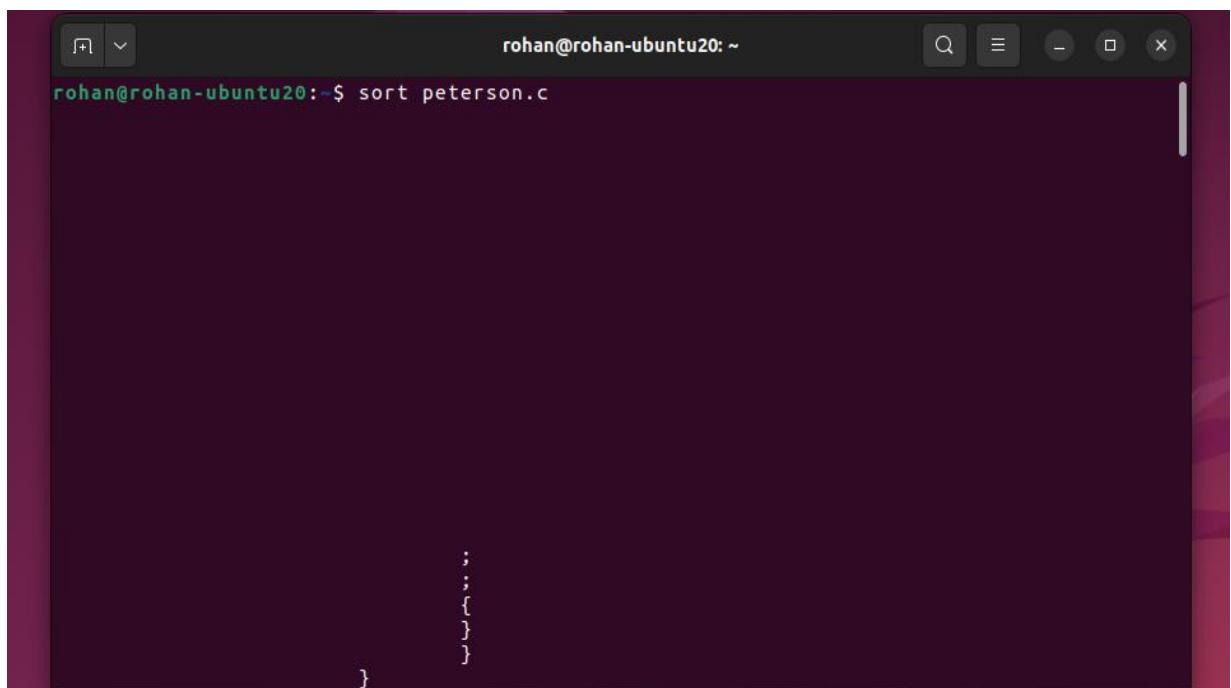
Description:

Linux command to sort the content of a file while outputting

-b : ignore leading blanks

-d: dictionary order

Screenshot:



A screenshot of a terminal window titled "rohan@rohan-ubuntu20: ~". The command "sort peterson.c" is entered at the prompt. The output shows several semicolons and braces, indicating the sorted content of the file.

```
rohan@rohan-ubuntu20:~$ sort peterson.c
;
;
{
}
}
```

```
rohan@rohan-ubuntu20:~
```

```
struct timeval t;
t1 = t.tv_sec;
          t2 = t.tv_sec;
time_t t;
time_t t1, t2;
          *turn = i;
          *turn = j;
//wait();
//wait();
// Waiting for both processes to exit
          wait_time = myrand(CWT);
          wait_time = myrand(PWT);
while (1) {
          while (flag[i] == true && *turn == i)
          while (flag[j] == true && *turn == j)
          while (index < BSIZE)
          while (index < BSIZE)
          while (index < BSIZE) {
          while (index < BSIZE) // Shifting remaining jobs for
ward
          while (ix < BSIZE) // Initializing buffer
          while (*state == 1) {
          while (*state == 1) {
rohan@rohan-ubuntu20:~$
```

23. export

Syntax: zip <filename>

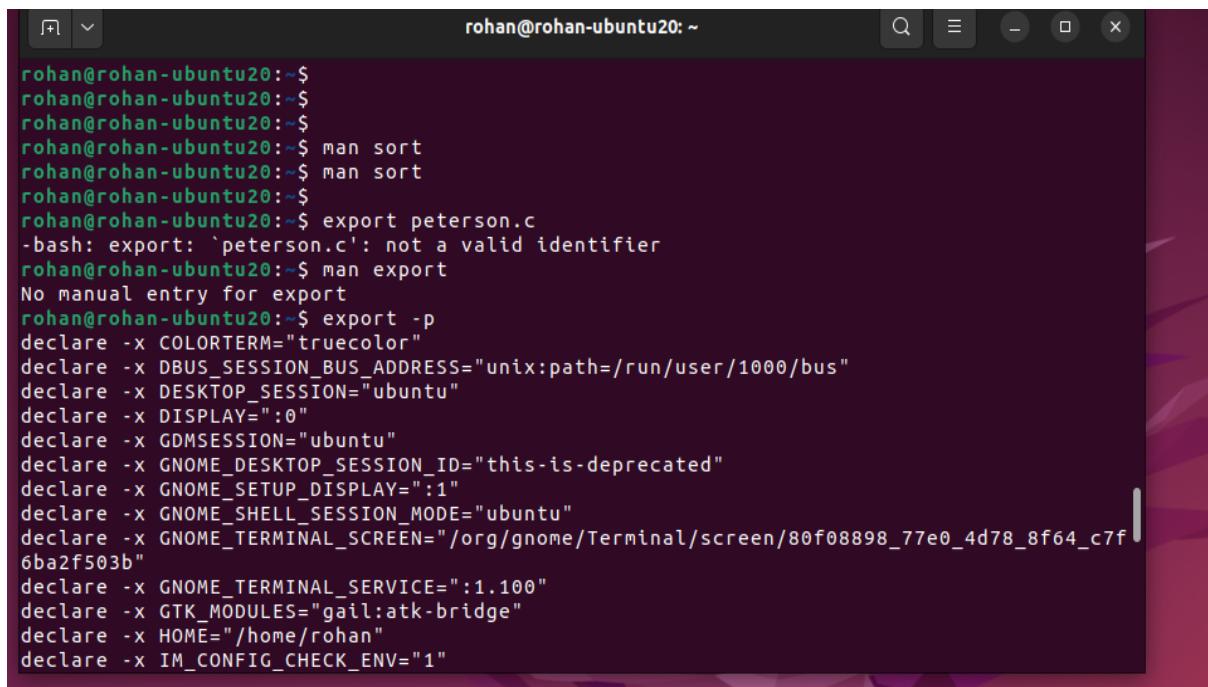
Description:

Export environment variables in Linux

Environment variables are set every session

Export -p: to view exported variables

Screenshot:



```
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ man sort
rohan@rohan-ubuntu20:~$ man sort
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ export peterson.c
-bash: export: `peterson.c': not a valid identifier
rohan@rohan-ubuntu20:~$ man export
No manual entry for export
rohan@rohan-ubuntu20:~$ export -p
declare -x COLORTERM="truecolor"
declare -x DBUS_SESSION_BUS_ADDRESS="unix:path=/run/user/1000/bus"
declare -x DESKTOP_SESSION="ubuntu"
declare -x DISPLAY=:0"
declare -x GDMSESSION="ubuntu"
declare -x GNOME_DESKTOP_SESSION_ID="this-is-deprecated"
declare -x GNOME_SETUP_DISPLAY=:1"
declare -x GNOME_SHELL_SESSION_MODE="ubuntu"
declare -x GNOME_TERMINAL_SCREEN="/org/gnome/Terminal/screen/80f08898_77e0_4d78_8f64_c7f
6ba2f503b"
declare -x GNOME_TERMINAL_SERVICE=:1.100"
declare -x GTK_MODULES="gail:atk-bridge"
declare -x HOME="/home/rohan"
declare -x IM_CONFIG_CHECK_ENV="1"
```

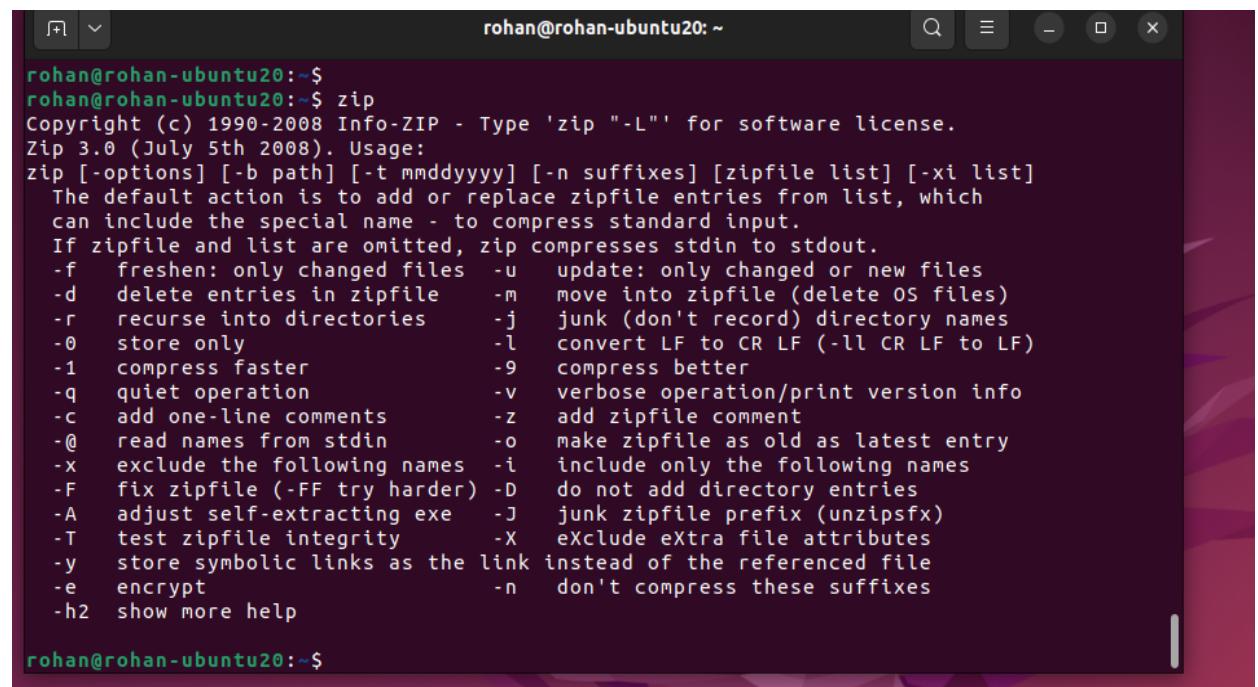
24. zip

Syntax: zip <filename>

Description: — Zip files in Linux

Used to zip a file

Screenshot:



The screenshot shows a terminal window with a dark purple background. The title bar says "rohan@rohan-ubuntu20: ~". The terminal displays the usage information for the "zip" command, which includes options for adding, replacing, compressing, and manipulating ZIP files. The text is white and clearly legible against the dark background.

```
rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ zip
Copyright (c) 1990-2008 Info-ZIP - Type 'zip "-L"' for software license.
Zip 3.0 (July 5th 2008). Usage:
zip [-options] [-b path] [-t mmddyyyy] [-n suffixes] [zipfile list] [-xi list]
      The default action is to add or replace zipfile entries from list, which
      can include the special name - to compress standard input.
      If zipfile and list are omitted, zip compresses stdin to stdout.
      -f  freshen: only changed files   -u  update: only changed or new files
      -d  delete entries in zipfile   -m  move into zipfile (delete OS files)
      -r  recurse into directories    -j  junk (don't record) directory names
      -o  store only                 -l  convert LF to CR LF (-ll CR LF to LF)
      -1  compress faster           -9  compress better
      -q  quiet operation          -v  verbose operation/print version info
      -c  add one-line comments     -z  add zipfile comment
      -@  read names from stdin     -o  make zipfile as old as latest entry
      -x  exclude the following names -i  include only the following names
      -F  fix zipfile (-FF try harder) -D  do not add directory entries
      -A  adjust self-extracting exe  -J  junk zipfile prefix (unzipsfx)
      -T  test zipfile integrity     -X  eXclude extra file attributes
      -y  store symbolic links as the link instead of the referenced file
      -e  encrypt                   -n  don't compress these suffixes
      -h2 show more help
```

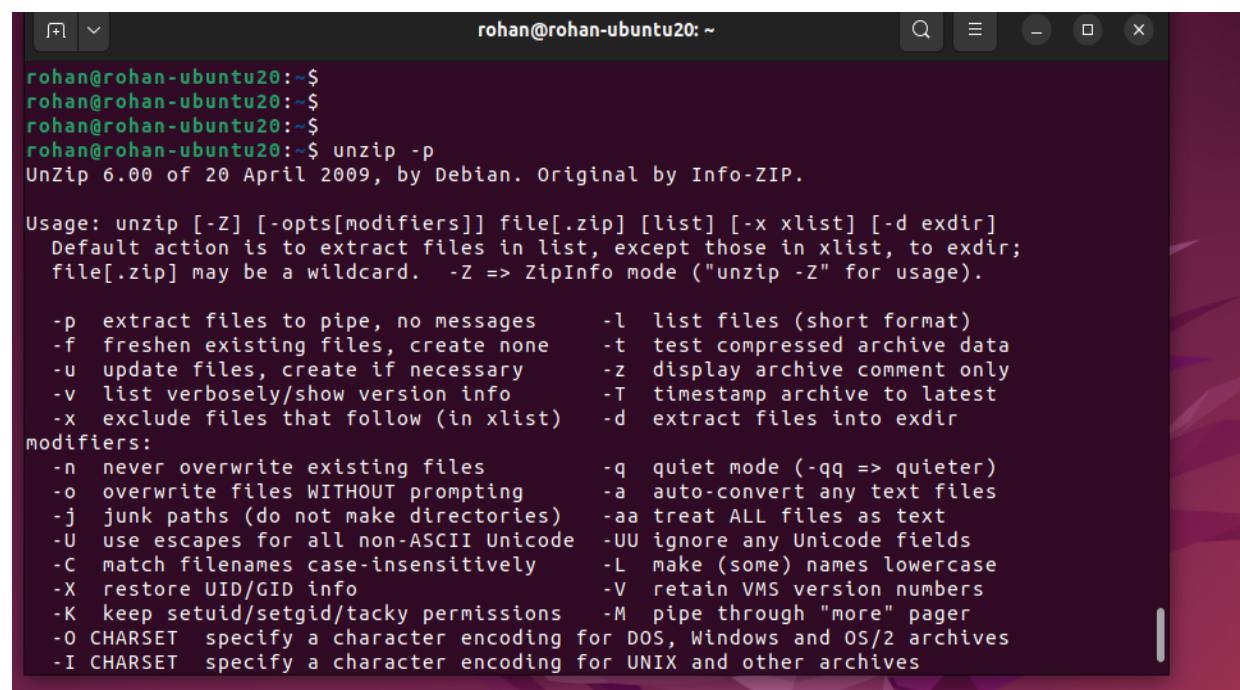
25. unzip —

Syntax: `unzip <filename>`

Description: Unzip files in Linux

Unzip -p: extract files from pipe

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The user has run the command `unzip -p`, which outputs the help documentation for the `unzip` command. The output includes the version information "UnZip 6.00 of 20 April 2009, by Debian. Original by Info-ZIP.", usage instructions, and a detailed list of options and modifiers.

```
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ unzip -p
UnZip 6.00 of 20 April 2009, by Debian. Original by Info-ZIP.

Usage: unzip [-Z] [-opts[modifiers]] file[.zip] [list] [-x xlist] [-d exdir]
  Default action is to extract files in list, except those in xlist, to exdir;
  file[.zip] may be a wildcard.  -Z => ZipInfo mode ("unzip -Z" for usage).

  -p  extract files to pipe, no messages      -l  list files (short format)
  -f  freshen existing files, create none     -t  test compressed archive data
  -u  update files, create if necessary       -z  display archive comment only
  -v  list verbosely/show version info        -T  timestamp archive to latest
  -x  exclude files that follow (in xlist)    -d  extract files into exdir

  modifiers:
    -n  never overwrite existing files         -q  quiet mode (-qq => quieter)
    -o  overwrite files WITHOUT prompting       -a  auto-convert any text files
    -j  junk paths (do not make directories)   -aa treat ALL files as text
    -U  use escapes for all non-ASCII Unicode   -UU ignore any Unicode fields
    -C  match filenames case-insensitively     -L  make (some) names lowercase
    -X  restore UID/GID info                   -V  retain VMS version numbers
    -K  keep setuid/setgid/tacky permissions    -M  pipe through "more" pager
    -O CHARSET specify a character encoding for DOS, Windows and OS/2 archives
    -I CHARSET specify a character encoding for UNIX and other archives
```

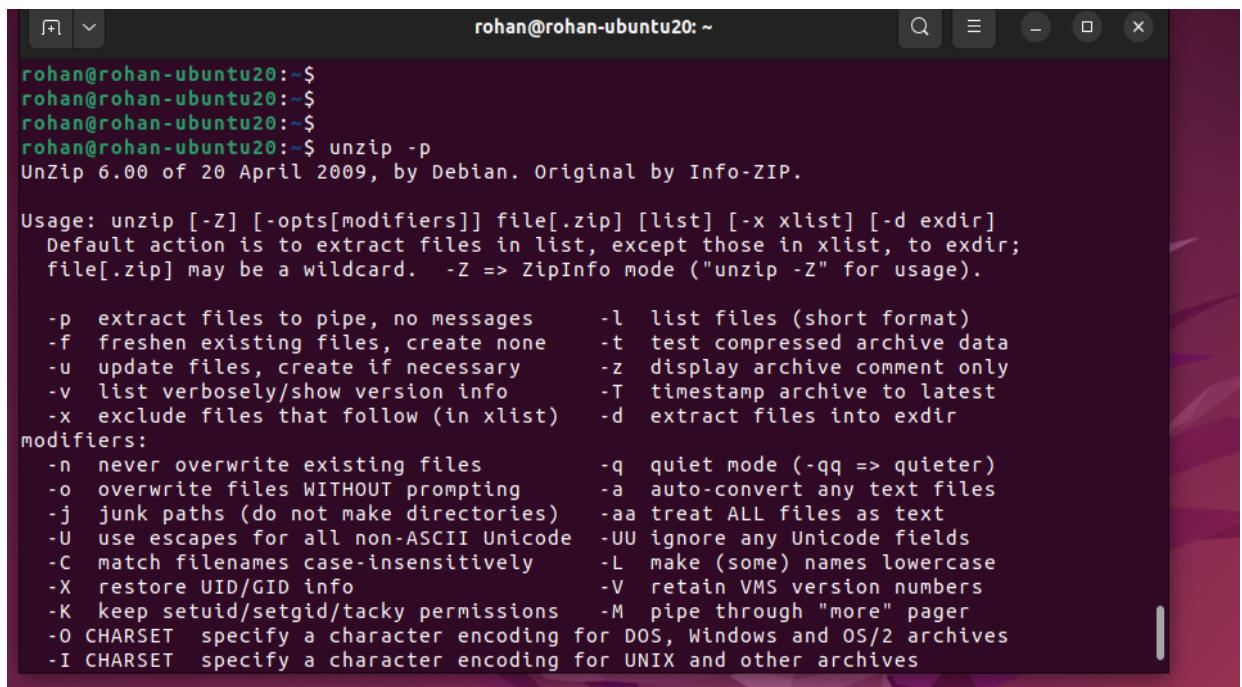
26. ssh — Secure Shell command in Linux

Syntax: ssh-keygen

Description:

- open ssh login client
- 4: ipv4 addresses only
- 6: ipv6 addresses only

Screenshot:



```
rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ unzip -p
UnZip 6.00 of 20 April 2009, by Debian. Original by Info-ZIP.

Usage: unzip [-Z] [-opts[modifiers]] file[.zip] [list] [-x xlist] [-d exdir]
Default action is to extract files in list, except those in xlist, to exdir;
file[.zip] may be a wildcard. -Z => ZipInfo mode ("unzip -Z" for usage).

-p  extract files to pipe, no messages      -l  list files (short format)
-f  freshen existing files, create none    -t  test compressed archive data
-u  update files, create if necessary     -z  display archive comment only
-v  list verbosely/show version info      -T  timestamp archive to latest
-x  exclude files that follow (in xlist)   -d  extract files into exdir

modifiers:
-n  never overwrite existing files        -q  quiet mode (-qq => quieter)
-o  overwrite files WITHOUT prompting     -a  auto-convert any text files
-j  junk paths (do not make directories)  -aa treat ALL files as text
-U  use escapes for all non-ASCII Unicode  -UU ignore any Unicode fields
-C  match filenames case-insensitively   -L  make (some) names lowercase
-X  restore UID/GID info                 -V  retain VMS version numbers
-K  keep setuid/setgid/tacky permissions  -M  pipe through "more" pager
-O CHARSET specify a character encoding for DOS, Windows and OS/2 archives
-I CHARSET specify a character encoding for UNIX and other archives
```

27. service —

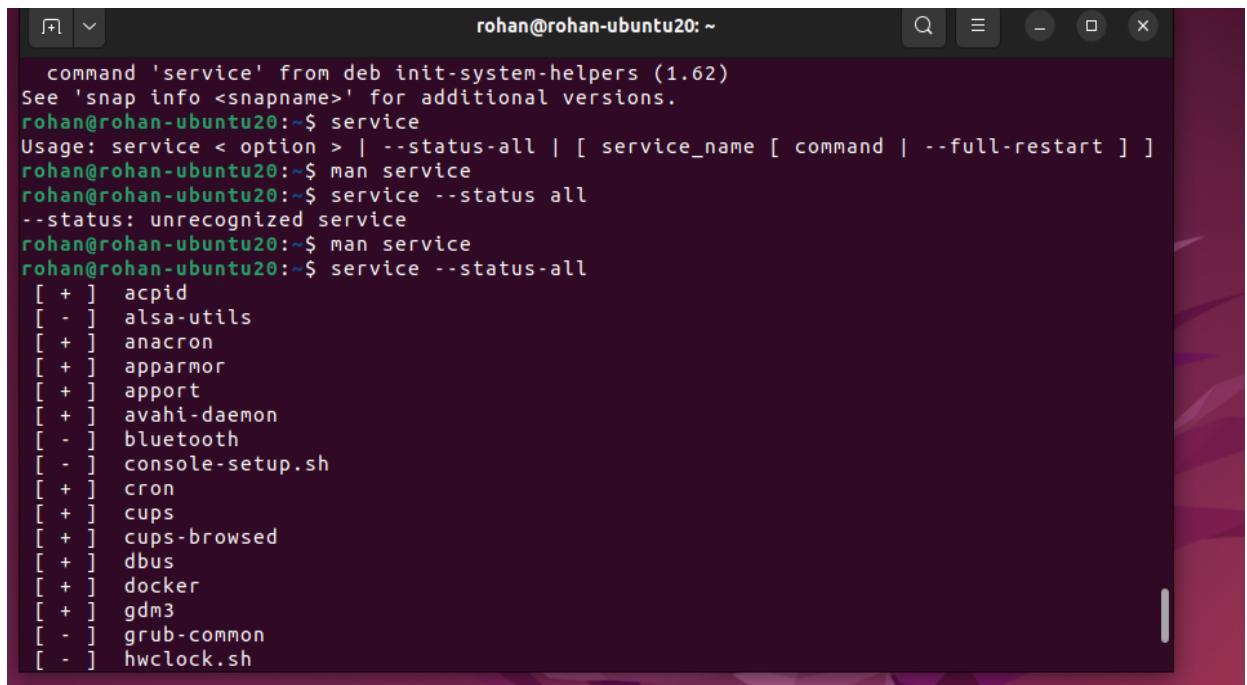
Syntax: service –status-all

Description:

Linux command to start and stop services

Runs a system v init script

Screenshot:



```
rohan@rohan-ubuntu20:~
```

```
command 'service' from deb init-system-helpers (1.62)
See 'snap info <snapname>' for additional versions.
rohan@rohan-ubuntu20:~$ service
Usage: service < option > | --status-all | [ service_name [ command | --full-restart ] ]
rohan@rohan-ubuntu20:~$ man service
rohan@rohan-ubuntu20:~$ service --status all
--status: unrecognized service
rohan@rohan-ubuntu20:~$ man service
rohan@rohan-ubuntu20:~$ service --status-all
[ + ] acpid
[ - ] alsa-utils
[ + ] anacron
[ + ] apparmor
[ + ] apport
[ + ] avahi-daemon
[ - ] bluetooth
[ - ] console-setup.sh
[ + ] cron
[ + ] cups
[ + ] cups-browsed
[ + ] dbus
[ + ] docker
[ + ] gdm3
[ - ] grub-common
[ - ] hwclock.sh
```

28. ps —

syntax: ps

Description: Display active processes

Ps -a: all processes display

Screenshot:

```
[ + ] ufw
[ + ] unattended-upgrades
[ - ] uuidd
[ + ] virtualbox
[ - ] whoopsie
[ - ] x11-common
rohan@rohan-ubuntu20:~$ ps
  PID TTY      TIME CMD
 3001 pts/0    00:00:00 bash
 5756 pts/0    00:00:00 ps
rohan@rohan-ubuntu20:~$
```

29. kill and killall —

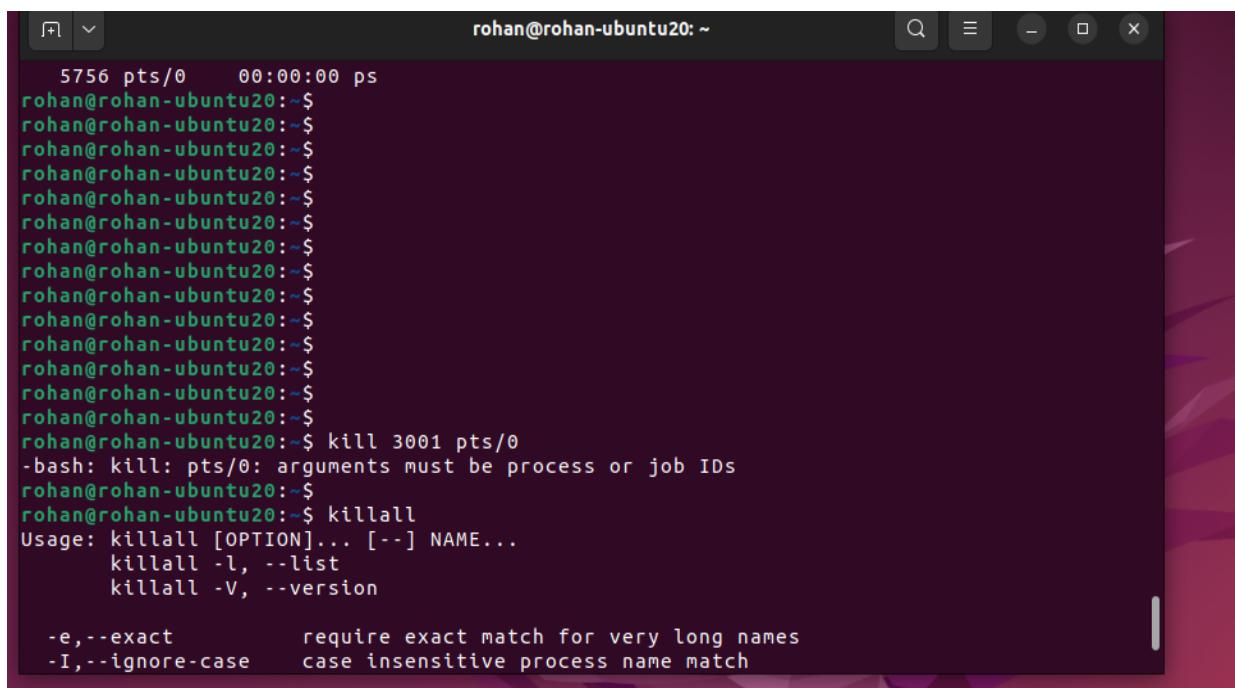
syntax: kill <pid>

Description: Kill active processes by process ID or name

Kill pid is used to kill a single process

Kill all: kills all process

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays the following session:

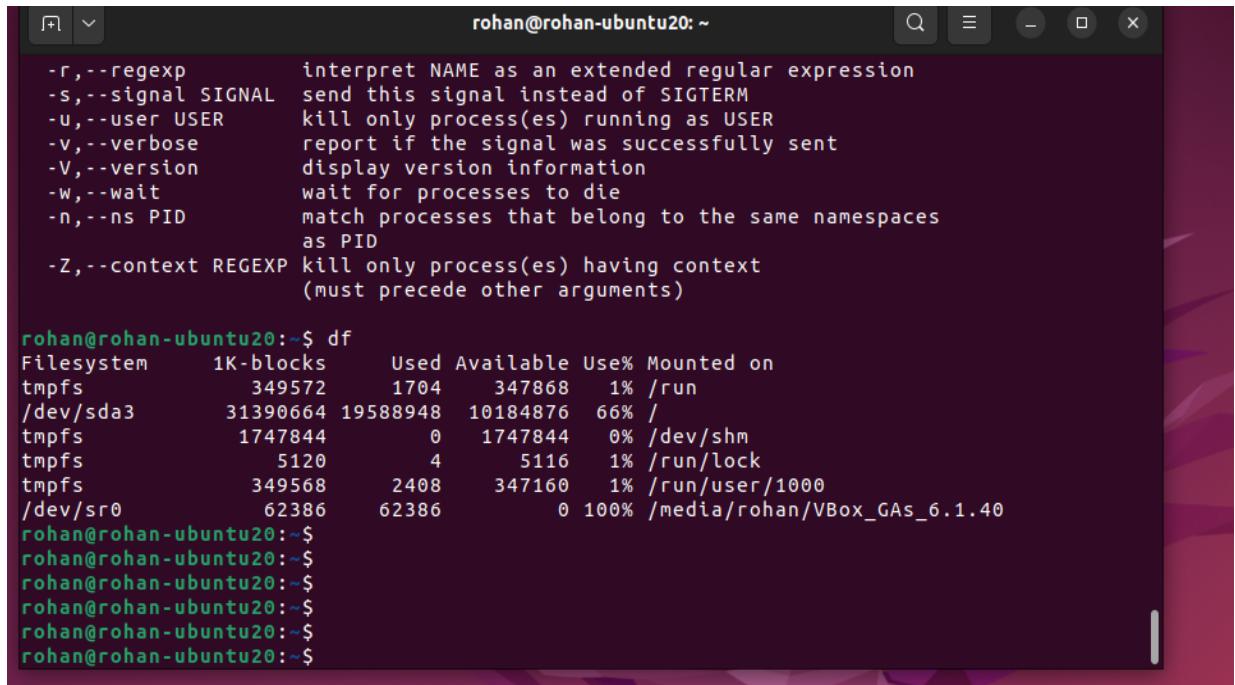
```
5756 pts/0    00:00:00 ps
rohan@rohan-ubuntu20:~$ kill 3001 pts/0
-bash: kill: pts/0: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ killall
Usage: killall [OPTION]... [--] NAME...
      killall -l, --list
      killall -V, --version
-e,--exact      require exact match for very long names
-I,--ignore-case  case insensitive process name match
```

30. df —

Syntax: df

Description: Display disk filesystem information

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The window displays the help text for the "df" command followed by a table of disk usage statistics. The help text includes options for regular expressions, signals, users, verbosity, version, waiting, namespaces, and contexts. The table lists file systems with their 1K-blocks, used space, available space, usage percentage, and mount point. The "/dev/sda3" file system is the largest, while the "/dev/sr0" file system is mounted at "/media/rohan/VBox_GAs_6.1.40".

```
-r,--regexp      interpret NAME as an extended regular expression
-s,--signal SIGNAL send this signal instead of SIGTERM
-u,--user USER   kill only process(es) running as USER
-v,--verbose     report if the signal was successfully sent
-V,--version     display version information
-w,--wait        wait for processes to die
-n,--ns PID      match processes that belong to the same namespaces
                  as PID
-Z,--context REGEXP kill only process(es) having context
                  (must precede other arguments)

rohan@rohan-ubuntu20:~$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
tmpfs            349572     1704    347868   1% /run
/dev/sda3       31390664  19588948  10184876  66% /
tmpfs            1747844      0    1747844   0% /dev/shm
tmpfs             5120       4     5116   1% /run/lock
tmpfs            349568    2408    347160   1% /run/user/1000
/dev/sr0          62386    62386      0  100% /media/rohan/VBox_GAs_6.1.40
rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$ rohan@rohan-ubuntu20:~$
```

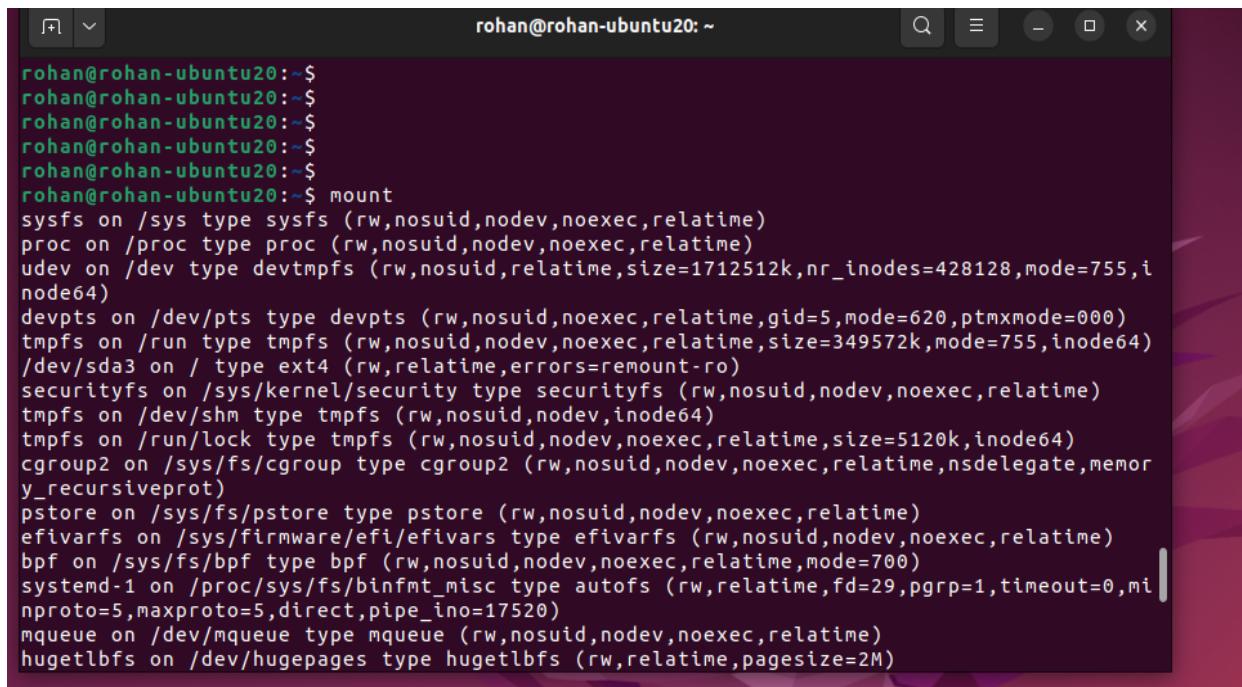
31. mount

syntax: mount

Description: Mount file systems in Linux

Mounting various discs

Screenshot:



```
rohan@rohan-ubuntu20:~$ mount
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
udev on /dev type devtmpfs (rw,nosuid,relatime,size=1712512k,nr_inodes=428128,mode=755,inode64)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,gid=5,mode=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,noexec,relatime,size=349572k,mode=755,inode64)
/dev/sda3 on / type ext4 (rw,relatime,errors=remount-ro)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,inode64)
tmpfs on /run/lock type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k,inode64)
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,nsdelegate,memor
y_recursiveprot)
pstree on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
efivarfs on /sys/firmware/efi/efivars type efivarfs (rw,nosuid,nodev,noexec,relatime)
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=29,pgrp=1,timeout=0,mi
nproto=5,maxproto=5,direct,pipe_ino=17520)
mqueue on /dev/mqueue type mqueue (rw,nosuid,nodev,noexec,relatime)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,pagesize=2M)
```

32. chmod

Syntax: chmod options

Description:— Command to change file permissions

To execute cpp file we have to give it executable permission.

Chmod +x: to give executable permission

Screenshot:

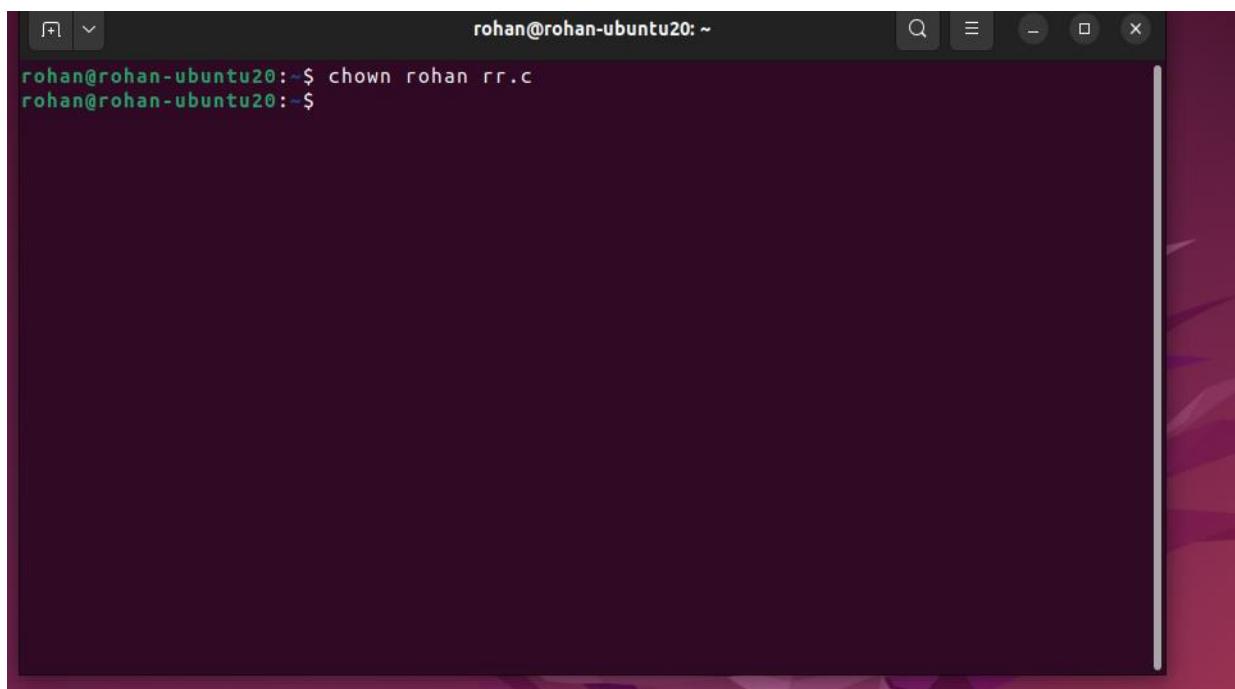
33. chown

syntax: chown user <filename>

Description:— Command for granting ownership of files or folders

Read , write , execute permissions can be given to different files which are protected.

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The window contains the command "chown rohan rr.c" followed by a new line. The background of the terminal is dark, and the text is white. The window has a standard Linux-style title bar and a scroll bar on the right side.

```
rohan@rohan-ubuntu20:~$ chown rohan rr.c
rohan@rohan-ubuntu20:~$
```

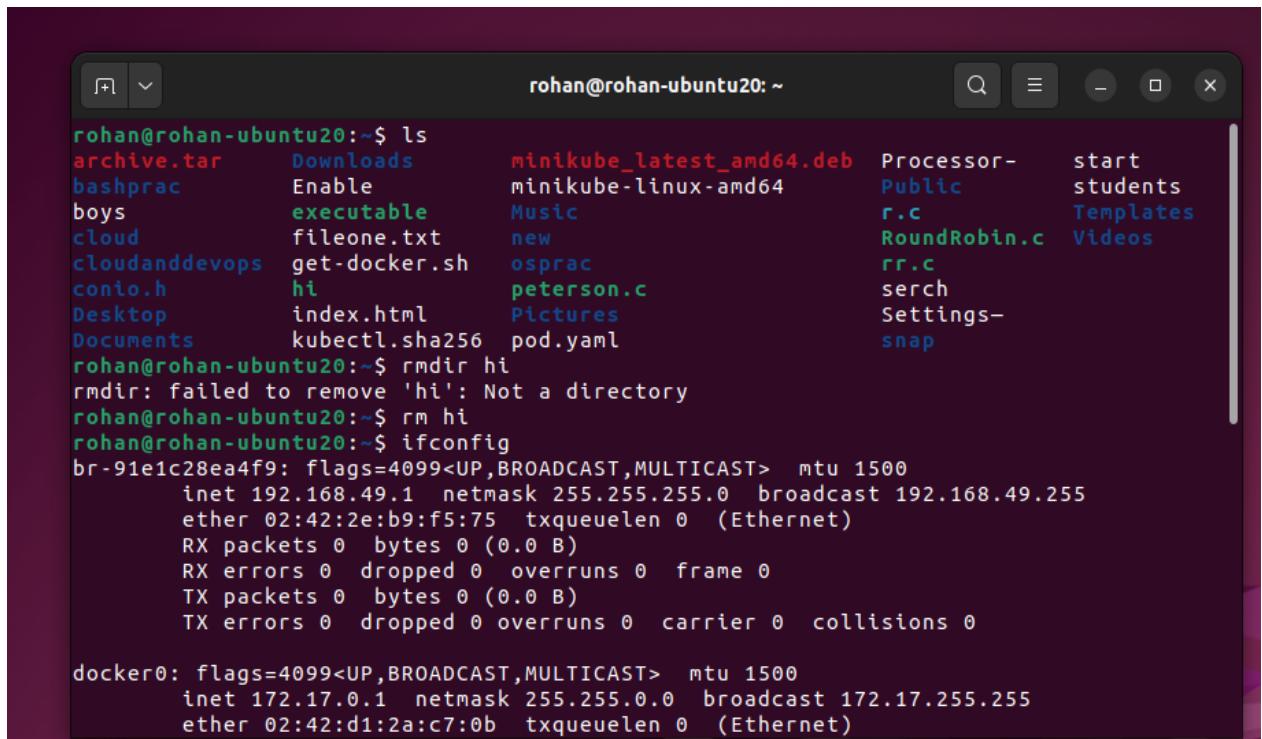
34. ifconfig —

Syntax: ifconfig

Description:

Display network interfaces and IP addresses

Screenshot:



```
rohan@rohan-ubuntu20:~$ ls
archive.tar      Downloads      minikube_latest_amd64.deb  Processor-
bashprac        Enable        minikube-linux-amd64          Public      start
boys            executable    Music                  r.c          students
cloud           fileone.txt   new                   RoundRobin.c Templates
cloudanddevops  get-docker.sh osprac                rr.c
conio.h         hi           peterson.c             serch
Desktop         index.html   Pictures               Settings-
Documents       kubectl.sha256 pod.yaml             snap

rohan@rohan-ubuntu20:~$ rm -r hi
rm: failed to remove 'hi': Not a directory
rohan@rohan-ubuntu20:~$ rm hi
rohan@rohan-ubuntu20:~$ ifconfig
br-91e1c28ea4f9: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
                  inet 192.168.49.1  netmask 255.255.255.0  broadcast 192.168.49.255
                                ether 02:42:2e:b9:f5:75  txqueuelen 0  (Ethernet)
                                RX packets 0  bytes 0 (0.0 B)
                                RX errors 0  dropped 0  overruns 0  frame 0
                                TX packets 0  bytes 0 (0.0 B)
                                TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

docker0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.17.0.1  netmask 255.255.0.0  broadcast 172.17.255.255
          ether 02:42:d1:2a:c7:0b  txqueuelen 0  (Ethernet)
```

35. traceroute

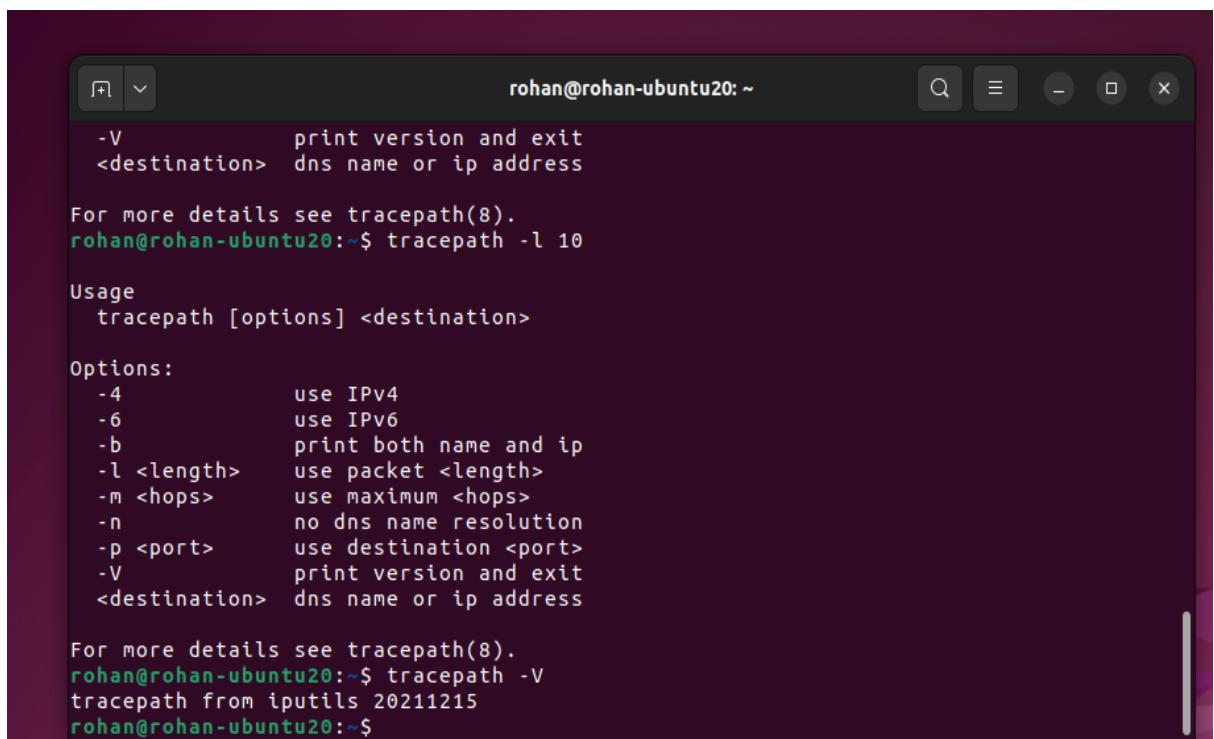
Syntax: tracepath

Description: —

Trace all the network hops to reach the destination

Tracepath -m <hops> gives the destination after a number of hops

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20: ~". The window contains the following text:

```
-V           print version and exit
<destination> dns name or ip address

For more details see tracepath(8).
rohan@rohan-ubuntu20:~$ tracepath -l 10

Usage
  tracepath [options] <destination>

Options:
  -4           use IPv4
  -6           use IPv6
  -b           print both name and ip
  -l <length>  use packet <length>
  -m <hops>    use maximum <hops>
  -n           no dns name resolution
  -p <port>    use destination <port>
  -V           print version and exit
  <destination> dns name or ip address

For more details see tracepath(8).
rohan@rohan-ubuntu20:~$ tracepath -V
tracepath from iputils 20211215
rohan@rohan-ubuntu20:~$
```

36. wget

Syntax: wget <url>

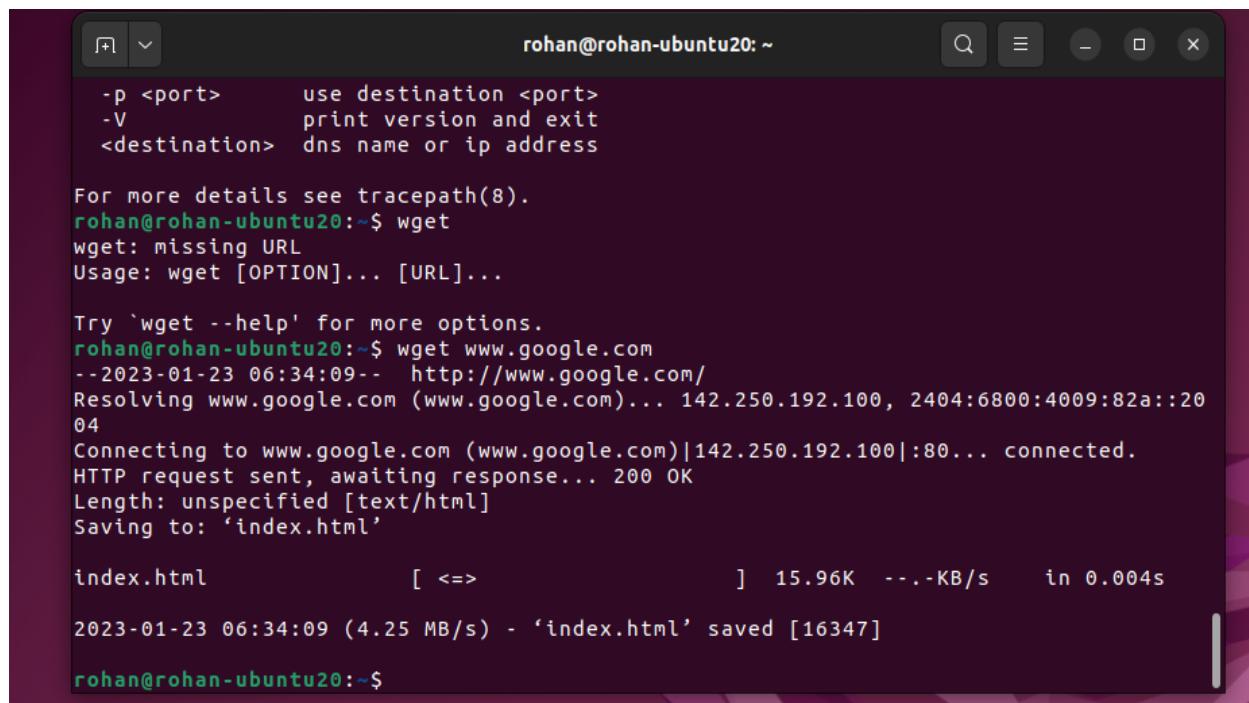
Description:

Direct download files from the internet

--a : accept list

--r: reject list

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The terminal displays the help documentation for the wget command, followed by a usage error message, and finally the process of downloading the Google homepage. The output is as follows:

```
-p <port>      use destination <port>
-V              print version and exit
<destination> dns name or ip address

For more details see tracepath(8).
rohan@rohan-ubuntu20:~$ wget
wget: missing URL
Usage: wget [OPTION]... [URL]...

Try `wget --help' for more options.
rohan@rohan-ubuntu20:~$ wget www.google.com
--2023-01-23 06:34:09-- http://www.google.com/
Resolving www.google.com (www.google.com)... 142.250.192.100, 2404:6800:4009:82a::20
04
Connecting to www.google.com (www.google.com)|142.250.192.100|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: 'index.html'

index.html          [ =>                               ]  15.96K  ---KB/s   in 0.004s

2023-01-23 06:34:09 (4.25 MB/s) - 'index.html' saved [16347]

rohan@rohan-ubuntu20:~$
```

37. ufw —

Syntax: ufw enable

Description:

Firewall command

To enable firewall ufw enable

To disable firewall ufw disable

Screenshot:

The screenshot shows a terminal window with a dark background and light-colored text. The title bar indicates the session is run as root on a Ubuntu 20 system. The terminal displays the help documentation for the ufw command, which includes a list of available commands and their descriptions. At the bottom, several command-line examples are shown, illustrating how to use ufw to manage the firewall.

```
route delete RULE|NUM          delete route RULE
route insert NUM RULE          insert route RULE at NUM
reload                         reload firewall
reset                          reset firewall
status                         show firewall status
status numbered                show firewall status as numbered list of RULES
status verbose                 show verbose firewall status
show ARG                       show firewall report
version                        display version information

Application profile commands:
app list                        list application profiles
app info PROFILE                show information on PROFILE
app update PROFILE              update PROFILE
app default ARG                 set default application policy

rohan@rohan-ubuntu20:~$ ufw enable
ERROR: You need to be root to run this script
rohan@rohan-ubuntu20:~$ sudo su
root@rohan-ubuntu20:/home/rohan# sudo enable
sudo: enable: command not found
root@rohan-ubuntu20:/home/rohan# ufw enable
Firewall is active and enabled on system startup
root@rohan-ubuntu20:/home/rohan#
```

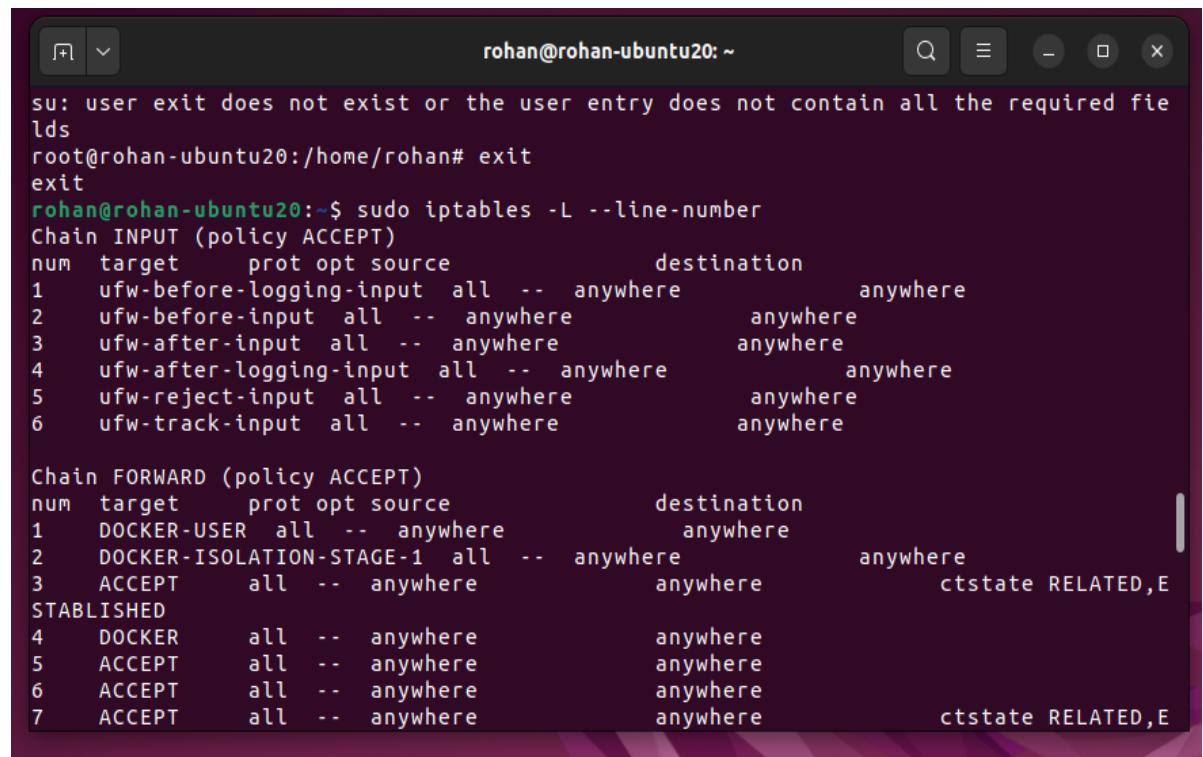
38. iptables

Syntax: sudo iptables -L --line-number

Description:

Base firewall for all other firewall utilities to interface with

Screenshot:



```
rohan@rohan-ubuntu20: ~
su: user exit does not exist or the user entry does not contain all the required file
lds
root@rohan-ubuntu20:/home/rohan# exit
exit
rohan@rohan-ubuntu20:~$ sudo iptables -L --line-number
Chain INPUT (policy ACCEPT)
num  target     prot opt source          destination
1    ufw-before-logging-input  all  --  anywhere       anywhere
2    ufw-before-input   all  --  anywhere       anywhere
3    ufw-after-input   all  --  anywhere       anywhere
4    ufw-after-logging-input all  --  anywhere       anywhere
5    ufw-reject-input  all  --  anywhere       anywhere
6    ufw-track-input   all  --  anywhere       anywhere

Chain FORWARD (policy ACCEPT)
num  target     prot opt source          destination
1    DOCKER-USER  all  --  anywhere       anywhere
2    DOCKER-ISOLATION-STAGE-1 all  --  anywhere       anywhere
3    ACCEPT      all  --  anywhere       anywhere           ctstate RELATED,ESTABLISHED
4    DOCKER      all  --  anywhere       anywhere
5    ACCEPT      all  --  anywhere       anywhere
6    ACCEPT      all  --  anywhere       anywhere           ctstate RELATED,E
7    ACCEPT      all  --  anywhere       anywhere
```

39. apt, pacman, yum, rpm —

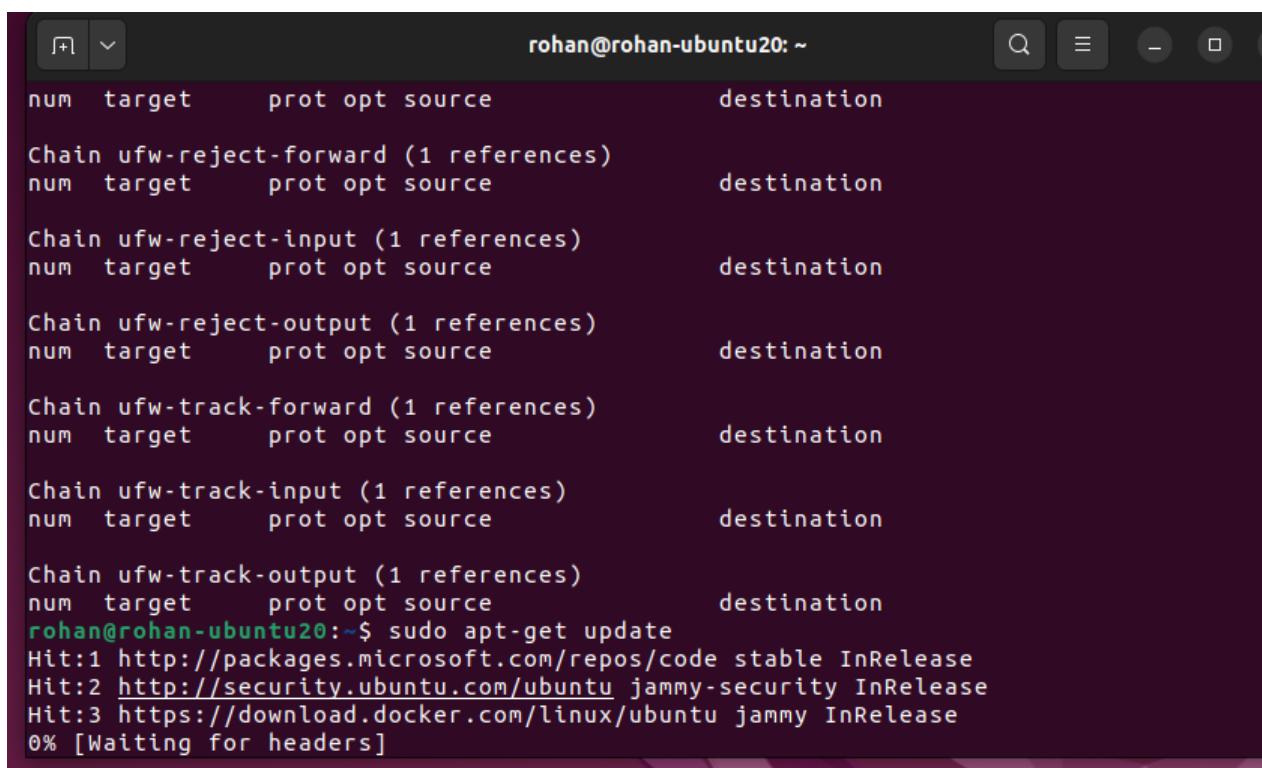
syntax for ubuntu: sudo apt-get update

Description:

Package managers depending on the distro

Apt is a package manager for ubuntu

Screenshot:



```
rohan@rohan-ubuntu20: ~
num  target      prot opt source          destination
Chain ufw-reject-forward (1 references)
num  target      prot opt source          destination
Chain ufw-reject-input (1 references)
num  target      prot opt source          destination
Chain ufw-reject-output (1 references)
num  target      prot opt source          destination
Chain ufw-track-forward (1 references)
num  target      prot opt source          destination
Chain ufw-track-input (1 references)
num  target      prot opt source          destination
Chain ufw-track-output (1 references)
num  target      prot opt source          destination
rohan@rohan-ubuntu20:~$ sudo apt-get update
Hit:1 http://packages.microsoft.com/repos/code stable InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:3 https://download.docker.com/linux/ubuntu jammy InRelease
0% [Waiting for headers]
```

40. sudo : super user do

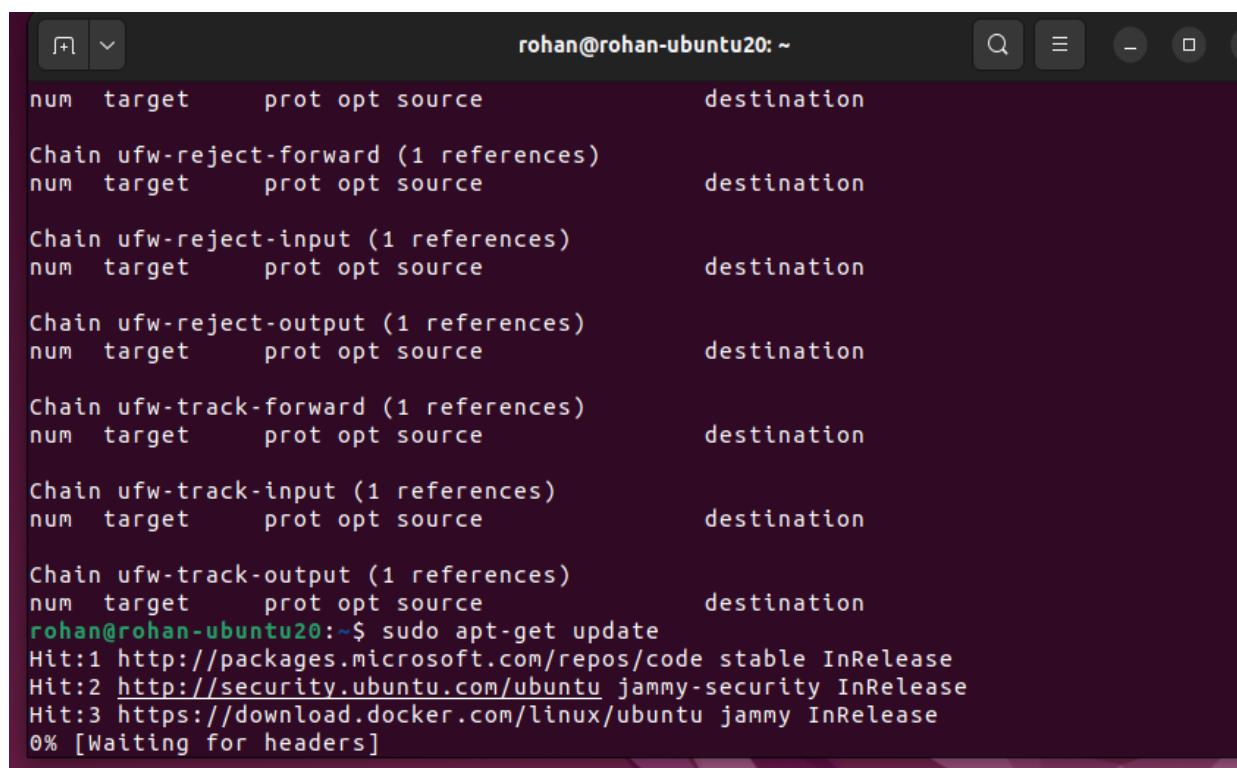
Syntax: eg: sudo apt-get update

Description:—

Command to escalate privileges in Linux

Root user privileges are granted

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20: ~". The window contains the following text:

```
num target      prot opt source          destination
Chain ufw-reject-forward (1 references)
num target      prot opt source          destination
Chain ufw-reject-input (1 references)
num target      prot opt source          destination
Chain ufw-reject-output (1 references)
num target      prot opt source          destination
Chain ufw-track-forward (1 references)
num target      prot opt source          destination
Chain ufw-track-input (1 references)
num target      prot opt source          destination
Chain ufw-track-output (1 references)
num target      prot opt source          destination
rohan@rohan-ubuntu20:~$ sudo apt-get update
Hit:1 http://packages.microsoft.com/repos/code stable InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:3 https://download.docker.com/linux/ubuntu jammy InRelease
0% [Waiting for headers]
```

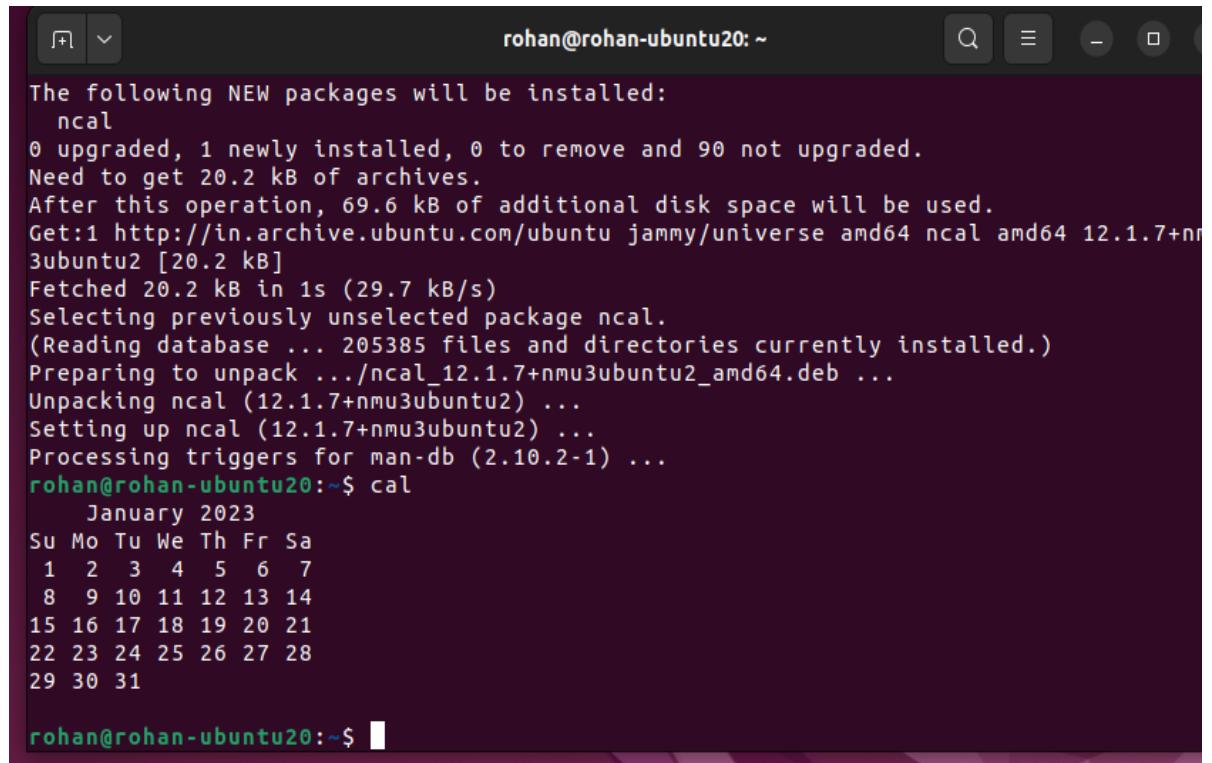
41. cal — calendar

Syntax: sudo apt install cal
Cal

Description:

View a command-line calendar

Screenshot:



```
The following NEW packages will be installed:  
  ncal  
0 upgraded, 1 newly installed, 0 to remove and 90 not upgraded.  
Need to get 20.2 kB of archives.  
After this operation, 69.6 kB of additional disk space will be used.  
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 ncal amd64 12.1.7+nmu3ubunt  
3ubuntu2 [20.2 kB]  
Fetched 20.2 kB in 1s (29.7 kB/s)  
Selecting previously unselected package ncal.  
(Reading database ... 205385 files and directories currently installed.)  
Preparing to unpack .../ncal_12.1.7+nmu3ubuntu2_amd64.deb ...  
Unpacking ncal (12.1.7+nmu3ubuntu2) ...  
Setting up ncal (12.1.7+nmu3ubuntu2) ...  
Processing triggers for man-db (2.10.2-1) ...  
rohan@rohan-ubuntu20:~$ cal  
January 2023  
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 31  
rohan@rohan-ubuntu20:~$
```

42. alias

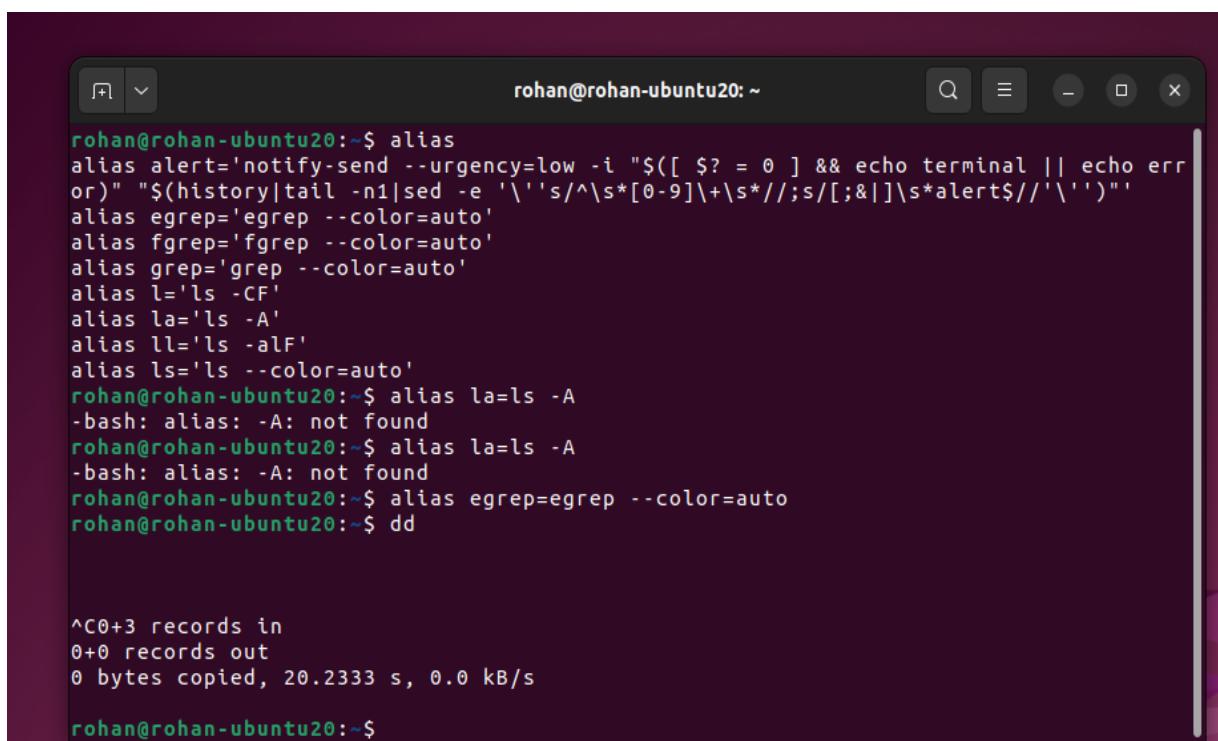
Syntax: alias egrep color=auto

Description:—

Create custom shortcuts for your regularly used commands

It is a string value that replaces a command

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20:~". The terminal displays the following session:

```
rohan@rohan-ubuntu20:~$ alias
alias alert='notify-send --urgency=low -i "$( [ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\\s*[0-9]\\+\\s*//;s/[;&|]\\s*alert$//'\''"
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
rohan@rohan-ubuntu20:~$ alias la=ls -A
-bash: alias: -A: not found
rohan@rohan-ubuntu20:~$ alias la=ls -A
-bash: alias: -A: not found
rohan@rohan-ubuntu20:~$ alias egrep=egrep --color=auto
rohan@rohan-ubuntu20:~$ dd

^C0+3 records in
0+0 records out
0 bytes copied, 20.2333 s, 0.0 kB/s

rohan@rohan-ubuntu20:~$
```

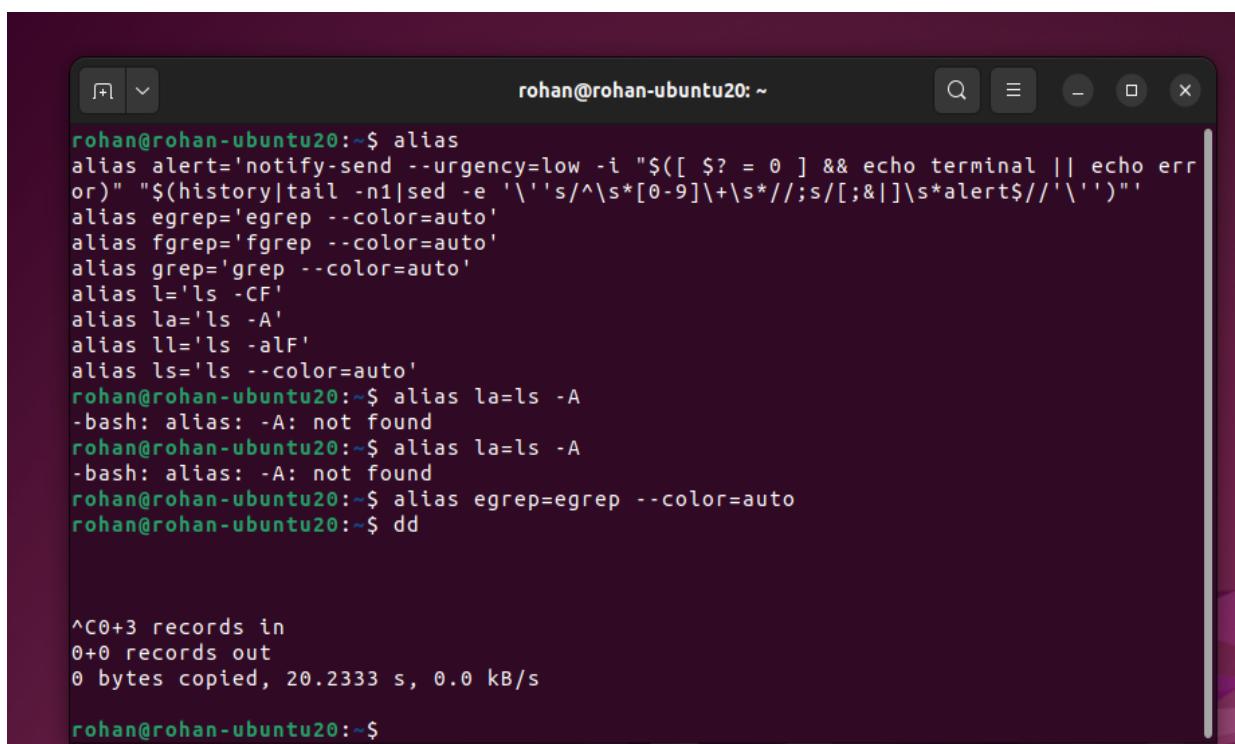
43. dd —

Syntax: dd

Description:

Majorly used for creating bootable USB sticks

Screenshot:



The screenshot shows a terminal window titled "rohan@rohan-ubuntu20:~". The user has run several alias commands to define "alert", "egrep", "fgrep", "grep", "l", "la", "ll", and "ls". Then, they attempt to run "alias la=ls -A" and "alias la=ls -A" again, both resulting in "not found" errors. Finally, they run "alias egrep=egrep --color=auto" and "dd". The output of the dd command shows it copied 0 bytes in 20.2333 seconds.

```
rohan@rohan-ubuntu20:~$ alias
alias alert='notify-send --urgency=low -i "$( [ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e "'\''s/^[\s*][0-9]+\+[\s*//;s/[;&|]\s*alert$/'\''')'"
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
rohan@rohan-ubuntu20:~$ alias la=ls -A
-bash: alias: -A: not found
rohan@rohan-ubuntu20:~$ alias la=ls -A
-bash: alias: -A: not found
rohan@rohan-ubuntu20:~$ alias egrep=egrep --color=auto
rohan@rohan-ubuntu20:~$ dd

^C0+3 records in
0+0 records out
0 bytes copied, 20.2333 s, 0.0 kB/s

rohan@rohan-ubuntu20:~$
```

44. whereis

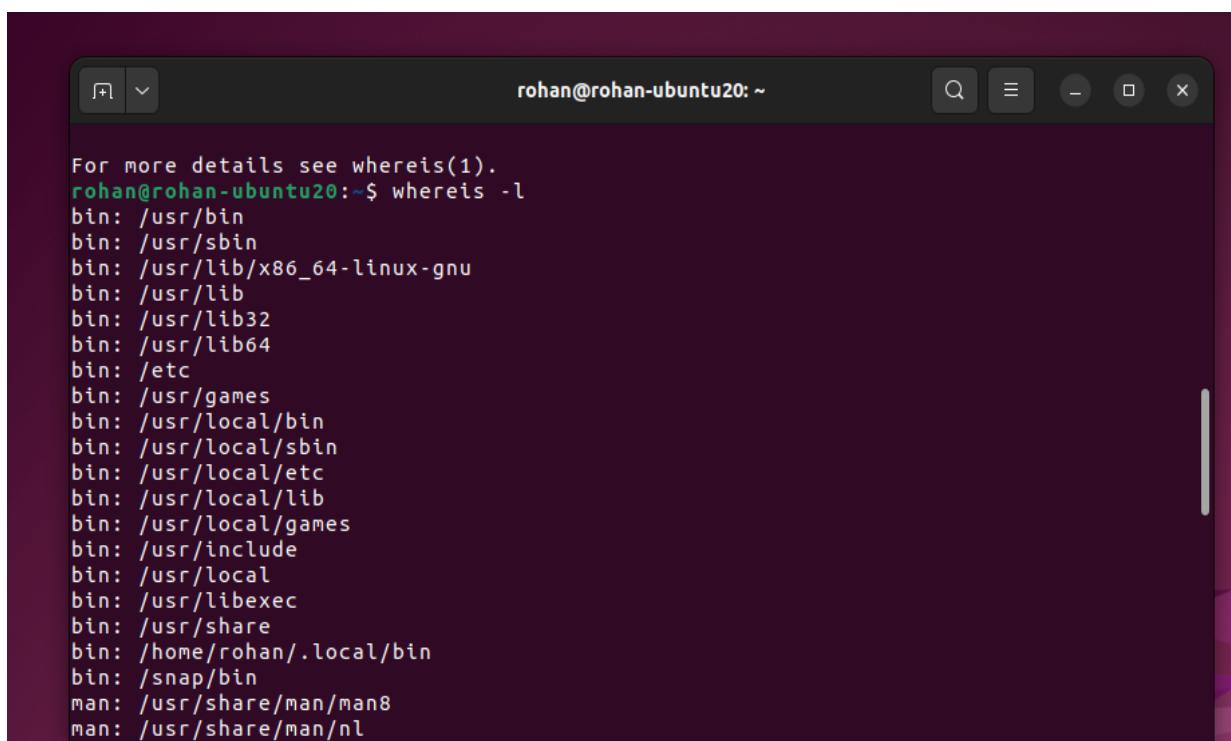
Syntax: wherein <option>

Description:

Locate the binary, source, and manual pages for a command

Wherein -l: for effective lookup paths

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20: ~". The command "whereis -l" is run, and the output lists various file paths under the categories "bin" and "man".

```
For more details see whereis(1).
rohan@rohan-ubuntu20:~$ whereis -l
bin: /usr/bin
bin: /usr/sbin
bin: /usr/lib/x86_64-linux-gnu
bin: /usr/lib
bin: /usr/lib32
bin: /usr/lib64
bin: /etc
bin: /usr/games
bin: /usr/local/bin
bin: /usr/local/sbin
bin: /usr/local/etc
bin: /usr/local/lib
bin: /usr/local/games
bin: /usr/include
bin: /usr/local
bin: /usr/libexec
bin: /usr/share
bin: /home/rohan/.local/bin
bin: /snap/bin
man: /usr/share/man/man8
man: /usr/share/man/nl
```

45. whatis

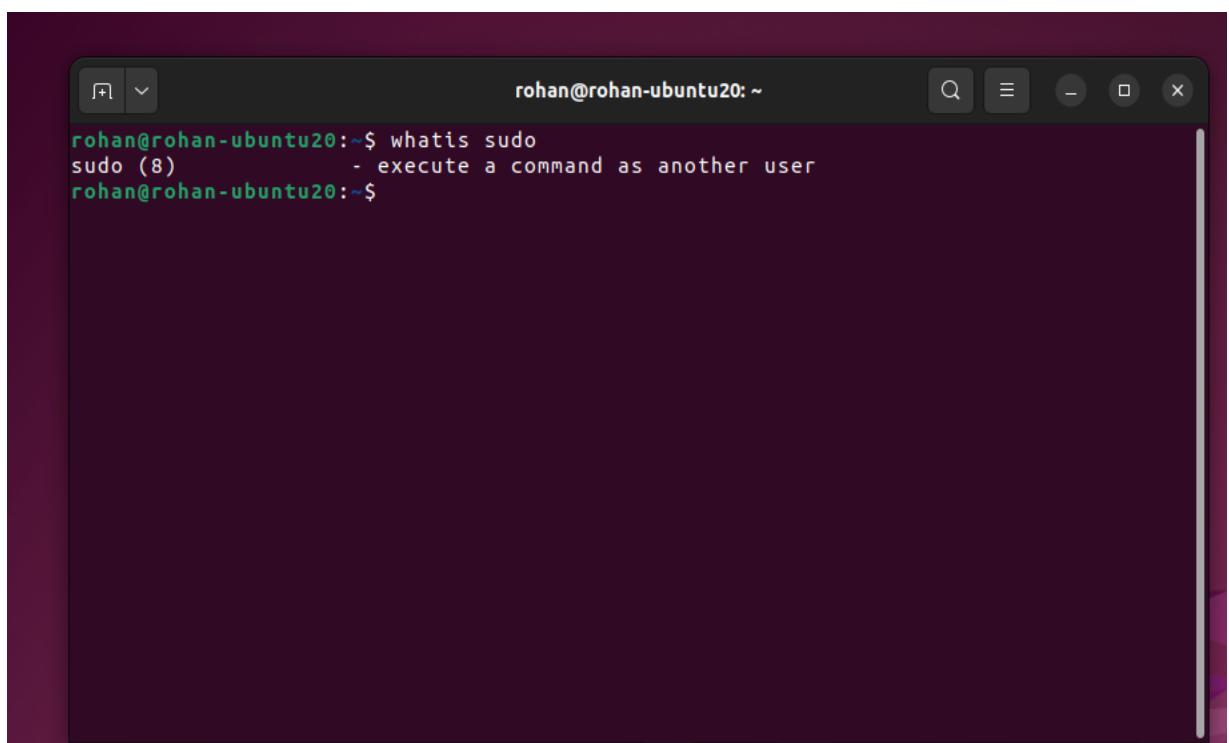
Syntax: whatis <command>

Description: — Find what a command is used for

Eg: whatis sudo

Whatis su

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The window title bar reads "rohan@rohan-ubuntu20: ~". The terminal prompt is "rohan@rohan-ubuntu20:~\$". The user has run the command "whatis sudo", which outputs the following information:

```
rohan@rohan-ubuntu20:~$ whatis sudo
sudo (8)           - execute a command as another user
rohan@rohan-ubuntu20:~$
```

46. top

syntax: top

Description: — View active processes live with their system usage

Screenshot:

The screenshot shows a terminal window titled "rohan@rohan-ubuntu20:~". The terminal displays the output of the "top" command. The output includes system statistics like CPU usage and memory, followed by a detailed process list.

```
rohan@rohan-ubuntu20:~$ top
top - 09:14:59 up 2:49, 1 user, load average: 0.65, 0.51, 0.53
Tasks: 227 total, 1 running, 226 sleeping, 0 stopped, 0 zombie
%CPU(s): 1.2 us, 5.1 sy, 0.0 ni, 93.1 id, 0.1 wa, 0.0 hi, 0.5 si, 0.0 st
MiB Mem : 3413.8 total, 134.8 free, 1754.1 used, 1524.9 buff/cache
MiB Swap: 448.4 total, 442.2 free, 6.3 used. 1414.3 avail Mem

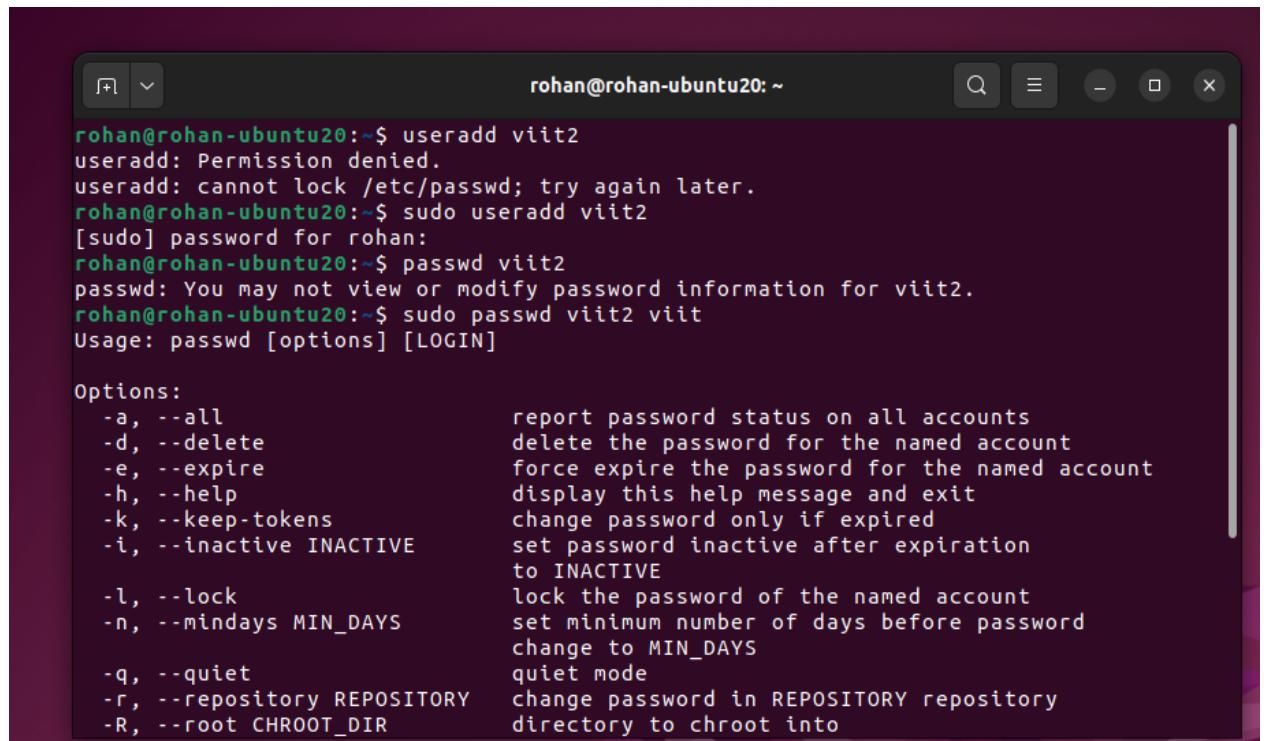
      PID USER      PR  NI    VIRT    RES    SHR S %CPU %MEM     TIME+ COMMAND
  2276 rohan    20   0 4464600 258972 115716 S  9.3   7.4  6:26.51 gnome-shell
  829 mysql    20   0 2446124 391736 33676 S  7.9  11.2 13:38.77 mysqld
  5555 rohan    20   0 819544 53200 40284 S  3.3   1.5  0:21.12 gnome-terminal
  6242 rohan    20   0 2847248 298316 113932 S  2.3   8.5  5:50.49 Isolated Web
  5664 rohan    20   0 11.9g 473796 176532 S  1.7  13.6 7:15.61 firefox
 10246 rohan    20   0 2417032 74312 60104 S  1.3   2.1  0:00.51 Isolated Session
  421 systemd+  20   0 14824 6144 5352 S  0.7   0.2  0:55.42 systemd-oomd
  622 root      20   0 1421868 41660 30248 S  0.7   1.2  0:37.63 containerd
  14 root      20   0      0      0      0 I  0.3   0.0  0:16.64 rcu_sched
 2312 rohan    20   0 315192 8060 7020 S  0.3   0.2  0:06.75 gvfs-afc-volume-monitor
 2438 rohan    20   0 314836 11856 7020 S  0.3   0.3  0:30.29 ibus-daemon
 5849 rohan    20   0 223020 34896 26548 S  0.3   1.0  0:00.30 Socket Program
 6046 rohan    20   0 2441936 86884 66756 S  0.3   2.5  0:04.46 WebExtension
 8860 root      20   0      0      0      0 I  0.3   0.0  0:03.04 kworker/u8:+
```

47. useradd and usermod

syntax: useradd <username>

Description:— Add new user or change existing users data

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20: ~". The terminal displays the following command-line session:

```
rohan@rohan-ubuntu20:~$ useradd viit2
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
rohan@rohan-ubuntu20:~$ sudo useradd viit2
[sudo] password for rohan:
rohan@rohan-ubuntu20:~$ passwd viit2
passwd: You may not view or modify password information for viit2.
rohan@rohan-ubuntu20:~$ sudo passwd viit2 viit
Usage: passwd [options] [LOGIN]

Options:
-a, --all           report password status on all accounts
-d, --delete        delete the password for the named account
-e, --expire        force expire the password for the named account
-h, --help          display this help message and exit
-k, --keep-tokens   change password only if expired
-i, --inactive INACTIVE set password inactive after expiration
                      to INACTIVE
-l, --lock           lock the password of the named account
-n, --mindays MIN_DAYS set minimum number of days before password
                      change to MIN_DAYS
-q, --quiet          quiet mode
-r, --repository REPOSITORY change password in REPOSITORY repository
-R, --root CHROOT_DIR directory to chroot into
```

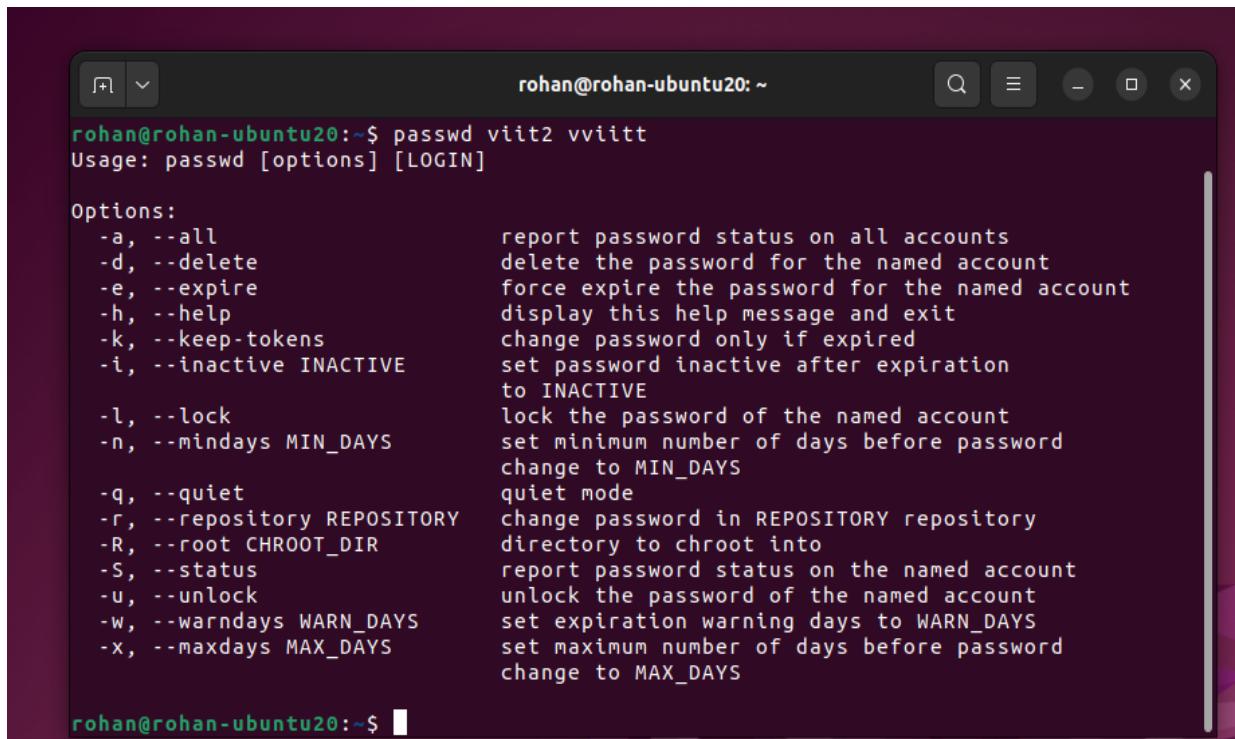
48. passwd —

-a: add all

-p: password

Description: Create or update passwords for existing users

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20:~". The command entered is "passwd viit2 vviitt". The output is the usage information for the passwd command, which includes options for account management, password expiration, and repository handling.

```
rohan@rohan-ubuntu20:~$ passwd viit2 vviitt
Usage: passwd [options] [LOGIN]

Options:
-a, --all          report password status on all accounts
-d, --delete       delete the password for the named account
-e, --expire       force expire the password for the named account
-h, --help         display this help message and exit
-k, --keep-tokens  change password only if expired
-i, --inactive INACTIVE
                  set password inactive after expiration
                  to INACTIVE
-l, --lock          lock the password of the named account
-n, --mindays MIN_DAYS
                  set minimum number of days before password
                  change to MIN_DAYS
-q, --quiet         quiet mode
-r, --repository REPOSITORY
-R, --root CHROOT_DIR
-S, --status        report password status on the named account
-u, --unlock        unlock the password of the named account
-w, --warndays WARN_DAYS
-x, --maxdays MAX_DAYS
                  set expiration warning days to WARN_DAYS
                  set maximum number of days before password
                  change to MAX_DAYS

rohan@rohan-ubuntu20:~$
```

49. ls -l | wc -l

Description:

Command to get the count of the files present into directory.

Screenshot:

The screenshot shows a terminal window with a dark background and light-colored text. The title bar reads "rohan@rohan-ubuntu20: ~". The window contains the following text:

```
-e, --expire          force expire the password for the named account
-h, --help            display this help message and exit
-k, --keep-tokens    change password only if expired
-i, --inactive INACTIVE
                     set password inactive after expiration
                     to INACTIVE
-l, --lock            lock the password of the named account
-n, --mindays MIN_DAYS
                     set minimum number of days before password
                     change to MIN_DAYS
-q, --quiet           quiet mode
-r, --repository REPOSITORY
-R, --root CHROOT_DIR
-S, --status          report password status on the named account
-u, --unlock          unlock the password of the named account
-w, --warndays WARN_DAYS
-x, --maxdays MAX_DAYS
                     set maximum number of days before password
                     change to MAX_DAYS

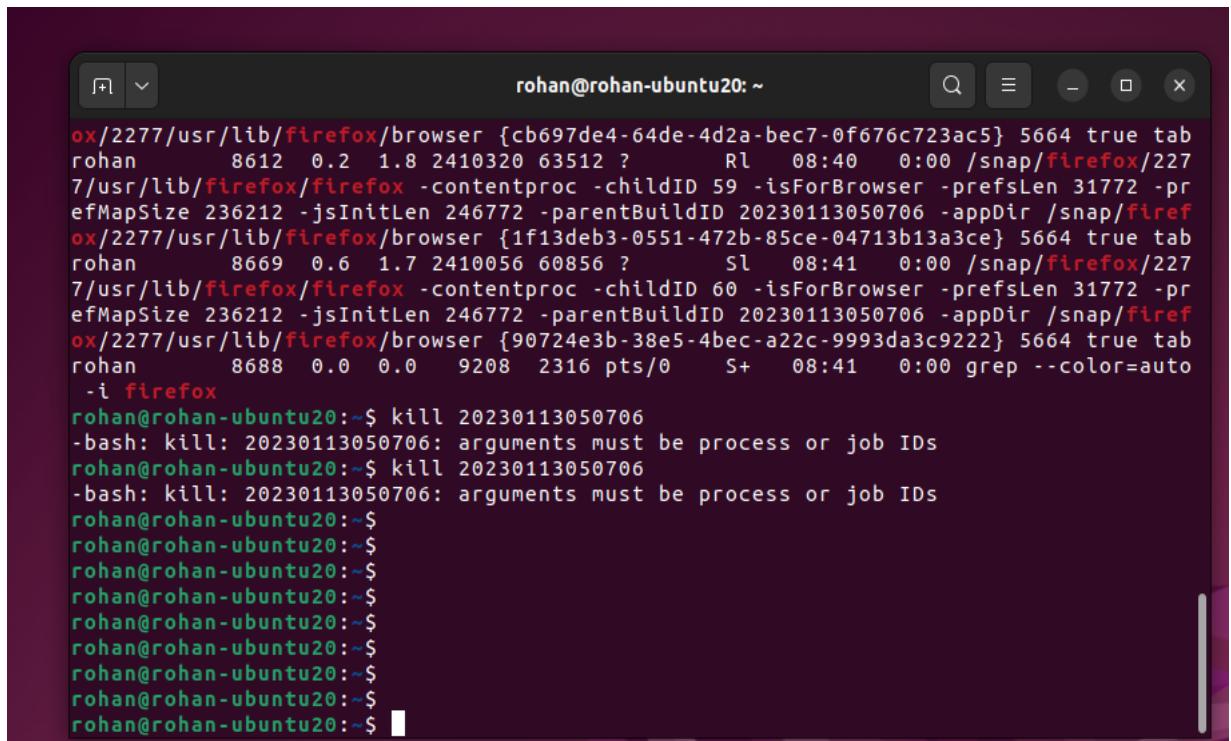
rohan@rohan-ubuntu20:~$ sudo viit passwd o
sudo: viit: command not found
rohan@rohan-ubuntu20:~$ sudo viit2 passwd
sudo: viit2: command not found
rohan@rohan-ubuntu20:~$ ls -l | wc -l
36
rohan@rohan-ubuntu20:~$
```

50. kill

Syntax: kill <pid>

Description:--Command to kill the process (PID)

Screenshot:

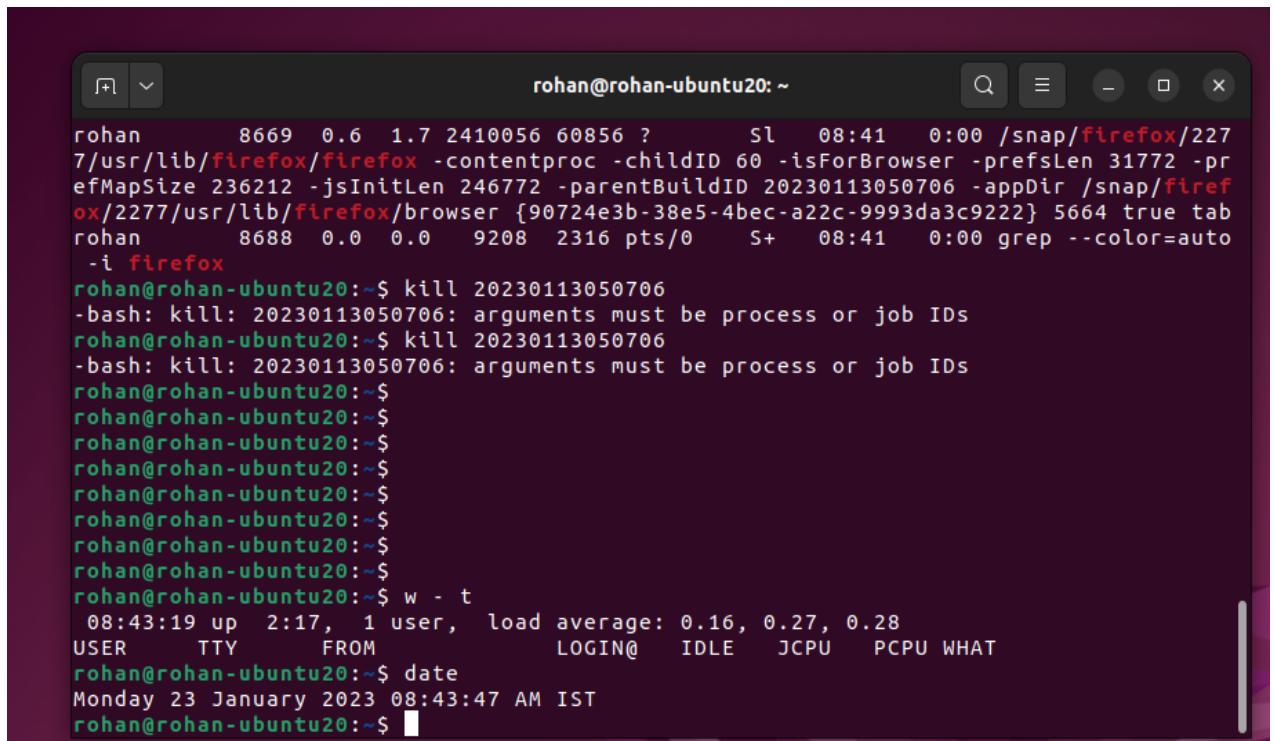


```
rohan@rohan-ubuntu20:~$ grep --color=auto -i firefox
ox/2277/usr/lib/firefox/browser {cb697de4-64de-4d2a-bec7-0f676c723ac5} 5664 true tab
rohan     8612  0.2  1.8 2410320 63512 ?      Rl   08:40  0:00 /snap/firefox/227
7/usr/lib/firefox/firefox -contentproc -childID 59 -isForBrowser -prefsLen 31772 -prefMapSize 236212 -jsInitLen 246772 -parentBuildID 20230113050706 -appDir /snap/firefox/227
ox/2277/usr/lib/firefox/browser {1f13deb3-0551-472b-85ce-04713b13a3ce} 5664 true tab
rohan     8669  0.6  1.7 2410056 60856 ?      Sl   08:41  0:00 /snap/firefox/227
7/usr/lib/firefox/firefox -contentproc -childID 60 -isForBrowser -prefsLen 31772 -prefMapSize 236212 -jsInitLen 246772 -parentBuildID 20230113050706 -appDir /snap/firefox/227
ox/2277/usr/lib/firefox/browser {90724e3b-38e5-4bec-a22c-9993da3c9222} 5664 true tab
rohan     8688  0.0  0.0  9208   2316 pts/0    S+   08:41  0:00 grep --color=auto
-i firefox
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$
```

51. w - t

Description: check how many users logged into the linux

Screenshot:



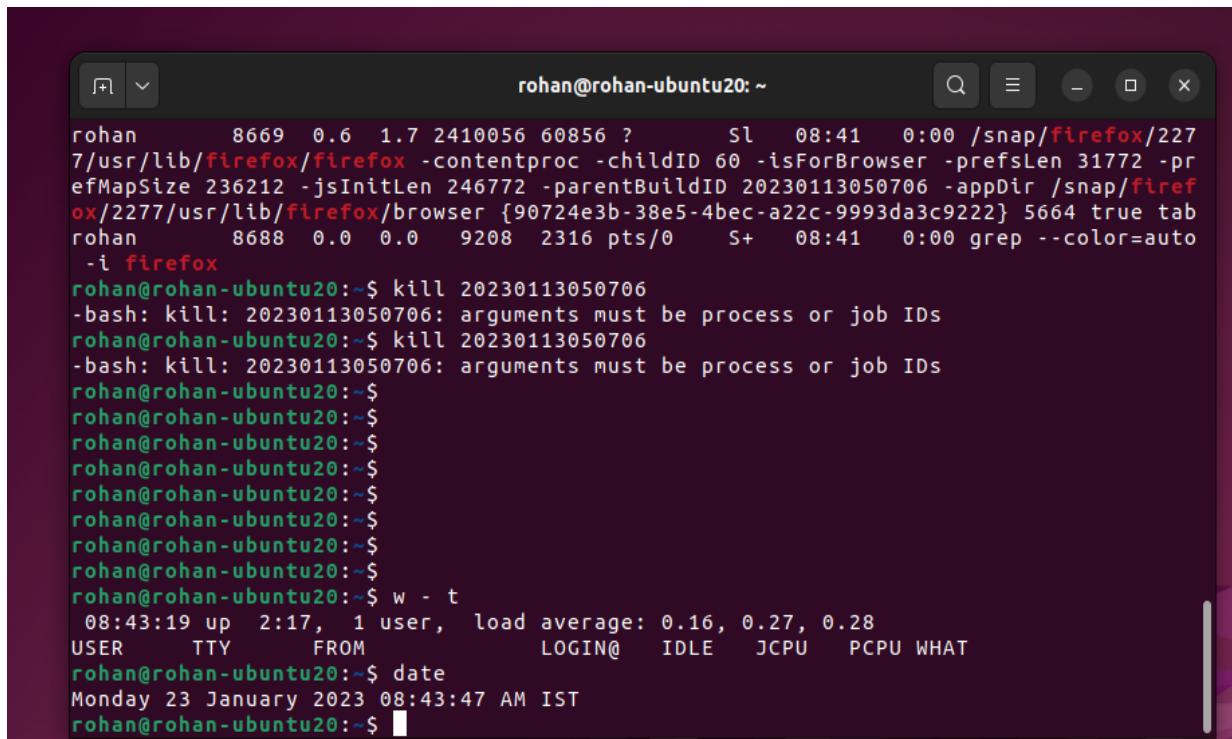
The screenshot shows a terminal window titled "rohan@rohan-ubuntu20:~". The terminal displays the following command and its output:

```
rohan      8669  0.6  1.7 2410056 60856 ?      Sl   08:41   0:00 /snap/firefox/2277/usr/lib/firefox/firefox -contentproc -childID 60 -isForBrowser -prefsLen 31772 -prefMapSize 236212 -jsInitLen 246772 -parentBuildID 20230113050706 -appDir /snap/firefox/2277/usr/lib/firefox/browser {90724e3b-38e5-4bec-a22c-9993da3c9222} 5664 true tab
rohan      8688  0.0  0.0   9208  2316 pts/0    S+   08:41   0:00 grep --color=auto
-i firefox
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$
rohan@rohan-ubuntu20:~$ w - t
08:43:19 up 2:17, 1 user,  load average: 0.16, 0.27, 0.28
USER   TTY     FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
rohan@rohan-ubuntu20:~$ date
Monday 23 January 2023 08:43:47 AM IST
rohan@rohan-ubuntu20:~$ █
```

51. date

Description: -- used to check the current date, time in linux

Screenshot:



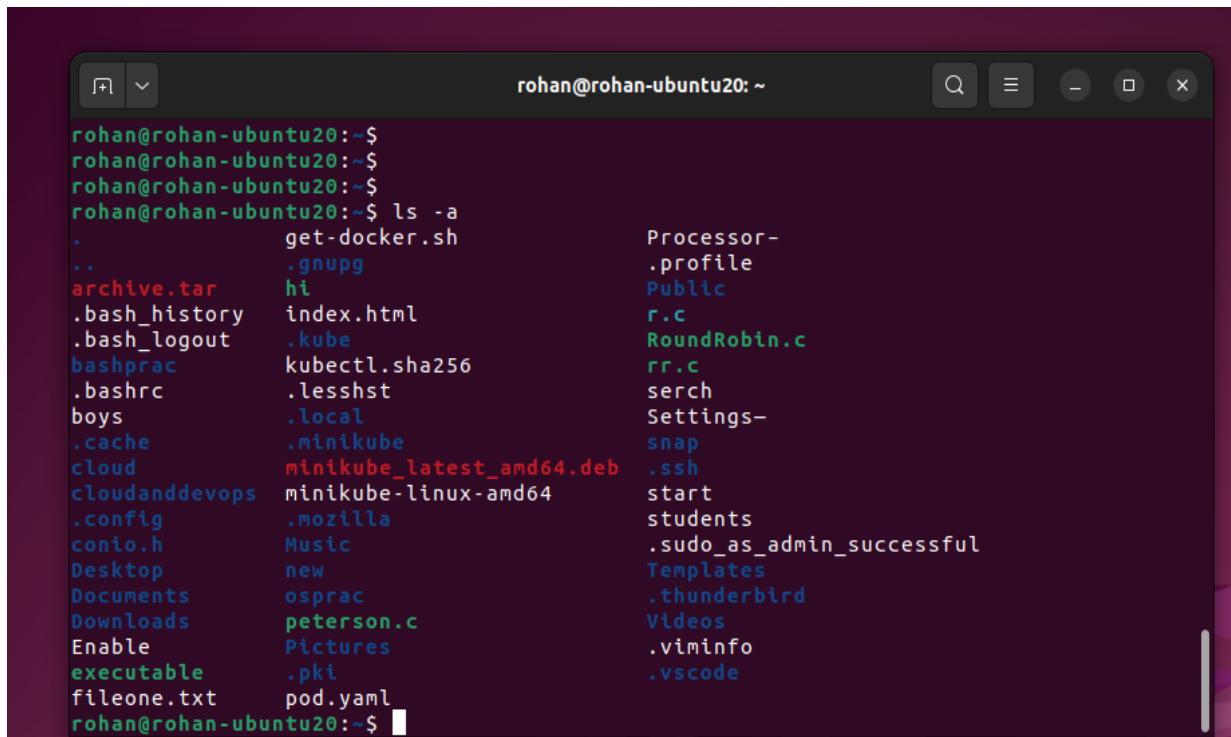
```
rohan@rohan-ubuntu20:~
```

```
rohan      8669  0.6  1.7 2410056 60856 ?      Sl    08:41   0:00 /snap/firefox/227
7/usr/lib/firefox/firefox -contentproc -childID 60 -isForBrowser -prefsLen 31772 -prefMapSize 236212 -jsInitLen 246772 -parentBuildID 20230113050706 -appDir /snap/firefox/227/usr/lib/firefox/browser {90724e3b-38e5-4bec-a22c-9993da3c9222} 5664 true tab
rohan      8688  0.0  0.0   9208  2316 pts/0     S+   08:41   0:00 grep --color=auto
-i firefox
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$ kill 20230113050706
-bash: kill: 20230113050706: arguments must be process or job IDs
rohan@rohan-ubuntu20:~$ 
rohan@rohan-ubuntu20:~$ w - t
08:43:19 up 2:17, 1 user, load average: 0.16, 0.27, 0.28
USER   TTY   FROM           LOGIN@ IDLE   JCPU   PCPU WHAT
rohan@rohan-ubuntu20:~$ date
Monday 23 January 2023 08:43:47 AM IST
rohan@rohan-ubuntu20:~$ 
```

52. ls -a

Description: ls -a --List the hidden files in directory (hidden files are denoted as ..)

Screenshot:



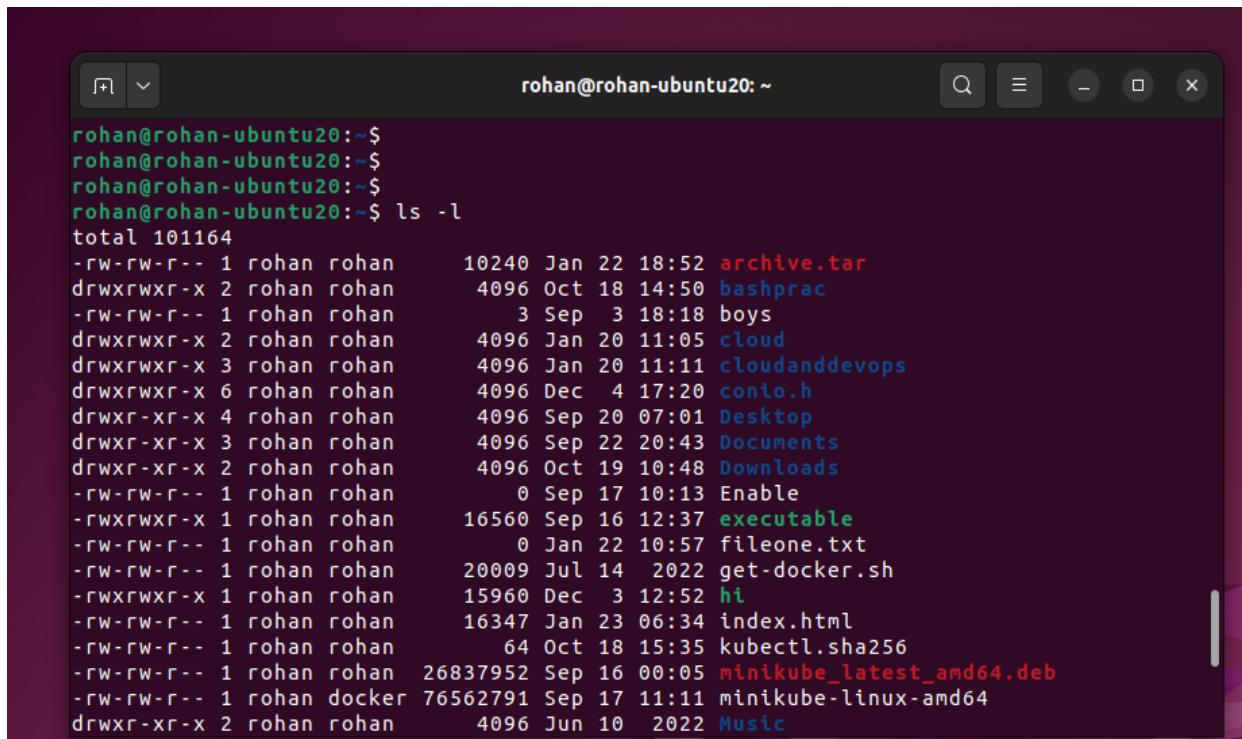
The screenshot shows a terminal window titled "rohan@rohan-ubuntu20: ~". The command "ls -a" is run, displaying a list of files and directories including hidden ones like .profile, .ssh, and .vscode.

```
rohan@rohan-ubuntu20:~$ ls -a
.
..
archive.tar
.bash_history
.bash_logout
.bashprac
.bashrc
boys
.cache
cloud
cloudanddevops
.config
conio.h
Desktop
Documents
Downloads
Enable
executable
fileone.txt
get-docker.sh
.gnupg
hi
index.html
.kube
kubectl.sha256
.lesshst
.local
.minikube
minikube_latest_and64.deb
minikube-linux-amd64
.mozilla
Music
new
osprac
peterson.c
Pictures
.pki
pod.yaml
Processor-
.profile
Public
r.c
RoundRobin.c
rr.c
serch
Settings-
snap
.ssh
start
students
.sudo_as_admin_successful
Templates
.thunderbird
Videos
.viminfo
.vscode
rohan@rohan-ubuntu20:~$
```

53. ls -l

Description:--Use to check the permissions on all the files

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The window title is "rohan@rohan-ubuntu20: ~". The command entered was "ls -l", which lists the contents of the current directory. The output shows a total of 101164 files. The files are listed with their permissions (e.g., -rw-rw-r--, drwxrwxr-x), owner (rohan), group (rohan), size (e.g., 10240, 4096), modification date (e.g., Jan 22 18:52, Oct 18 14:50), and names (e.g., archive.tar, bashprac, boys, cloud, cloudanddevops, conio.h, Desktop, Documents, Downloads, Enable, executable, fileone.txt, get-docker.sh, hi, index.html, kubectl.sha256, minikube_latest_amd64.deb, minikube-linux-amd64, Music). Some file names are highlighted in blue.

```
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$  
rohan@rohan-ubuntu20:~$ ls -l  
total 101164  
-rw-rw-r-- 1 rohan rohan 10240 Jan 22 18:52 archive.tar  
drwxrwxr-x 2 rohan rohan 4096 Oct 18 14:50 bashprac  
-rw-rw-r-- 1 rohan rohan 3 Sep 3 18:18 boys  
drwxrwxr-x 2 rohan rohan 4096 Jan 20 11:05 cloud  
drwxrwxr-x 3 rohan rohan 4096 Jan 20 11:11 cloudanddevops  
drwxrwxr-x 6 rohan rohan 4096 Dec 4 17:20 conio.h  
drwxr-xr-x 4 rohan rohan 4096 Sep 20 07:01 Desktop  
drwxr-xr-x 3 rohan rohan 4096 Sep 22 20:43 Documents  
drwxr-xr-x 2 rohan rohan 4096 Oct 19 10:48 Downloads  
-rw-rw-r-- 1 rohan rohan 0 Sep 17 10:13 Enable  
-rwxrwxr-x 1 rohan rohan 16560 Sep 16 12:37 executable  
-rw-rw-r-- 1 rohan rohan 0 Jan 22 10:57 fileone.txt  
-rw-rw-r-- 1 rohan rohan 20009 Jul 14 2022 get-docker.sh  
-rwxrwxr-x 1 rohan rohan 15960 Dec 3 12:52 hi  
-rw-rw-r-- 1 rohan rohan 16347 Jan 23 06:34 index.html  
-rw-rw-r-- 1 rohan rohan 64 Oct 18 15:35 kubectl.sha256  
-rw-rw-r-- 1 rohan rohan 26837952 Sep 16 00:05 minikube_latest_amd64.deb  
-rw-rw-r-- 1 rohan docker 76562791 Sep 17 11:11 minikube-linux-amd64  
drwxr-xr-x 2 rohan rohan 4096 Jun 10 2022 Music
```

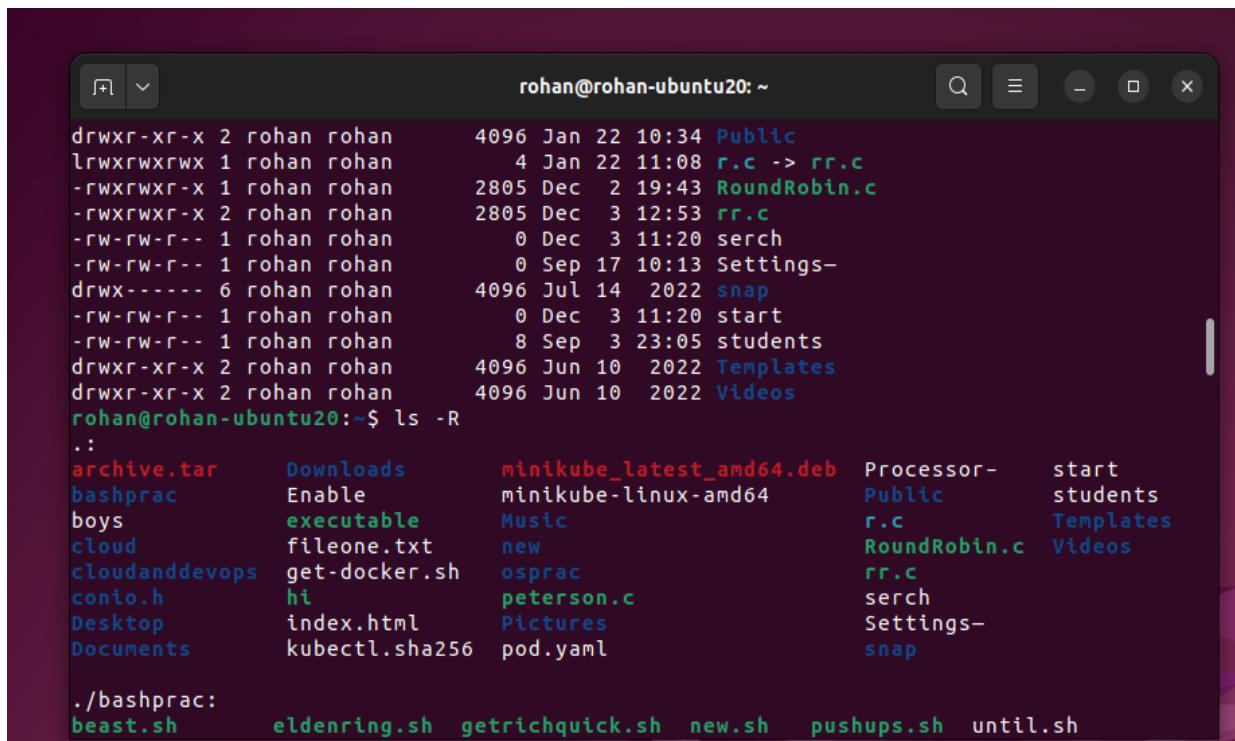
54. ls -R –

Description:

used to list information about files and directories within the file system.

ls -a: lists all directories

Screenshot:



```
rohan@rohan-ubuntu20:~$ ls -R
.
drwxr-xr-x 2 rohan rohan    4096 Jan 22 10:34 Public
lrwxrwxrwx 1 rohan rohan        4 Jan 22 11:08 r.c -> rr.c
-rwxrwxr-x 1 rohan rohan   2805 Dec  2 19:43 RoundRobin.c
-rwxrwxr-x 2 rohan rohan   2805 Dec  3 12:53 rr.c
-rw-rw-r-- 1 rohan rohan        0 Dec  3 11:20 serch
-rw-rw-r-- 1 rohan rohan        0 Sep 17 10:13 Settings-
drwx----- 6 rohan rohan   4096 Jul 14  2022 snap
-rw-rw-r-- 1 rohan rohan        0 Dec  3 11:20 start
-rw-rw-r-- 1 rohan rohan        8 Sep  3 23:05 students
drwxr-xr-x 2 rohan rohan   4096 Jun 10  2022 Templates
drwxr-xr-x 2 rohan rohan   4096 Jun 10  2022 Videos
rohan@rohan-ubuntu20:~$ ls -R
.:
archive.tar      Downloads      minikube_latest_amd64.deb Processor-      start
bashprac         Enable        minikube-linux-amd64       Public       students
boys              executable     Music           r.c          Templates
cloud             fileone.txt   new             RoundRobin.c  Videos
cloudanddevops   get-docker.sh osprac          rr.c
conio.h          hi            peterson.c      serch
Desktop          index.html    Pictures        Settings-
Documents        kubectl.sha256 pod.yaml      snap

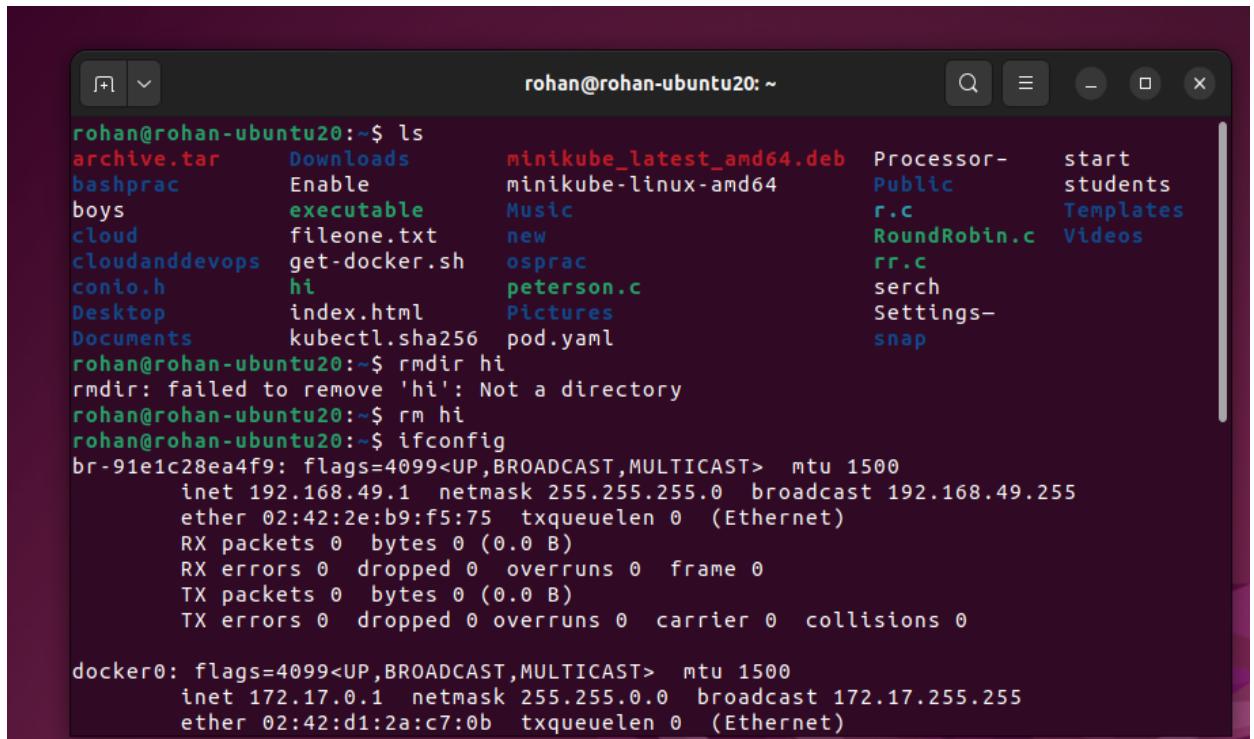
./bashprac:
beast.sh        eldenring.sh  getrichquick.sh  new.sh    pushups.sh  until.sh
```

55. rm -rf

Description:-- remove directory with the files

Rm -rf: forcefully remove dir

Screenshot:



The screenshot shows a terminal window with a dark background and light-colored text. The terminal title is "rohan@rohan-ubuntu20: ~". The user has run several commands:

```
rohan@rohan-ubuntu20:~$ ls
archive.tar      Downloads      minikube_latest_amd64.deb  Processor-    start
bashprac        Enable        minikube-linux-amd64        Public       students
boys            executable   Music          new           r.c          Templates
cloud           fileone.txt  osprac        peterson.c  RoundRobin.c Videos
cloudanddevops  get-docker.sh  Pictures        rr.c         serch
conio.h         hi           Pictures        Settings-   snap
Desktop         index.html   pod.yaml
Documents       kubectl.sha256
rohan@rohan-ubuntu20:~$ rmdir hi
rmdir: failed to remove 'hi': Not a directory
rohan@rohan-ubuntu20:~$ rm hi
rohan@rohan-ubuntu20:~$ ifconfig
br-91e1c28ea4f9: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
                  inet 192.168.49.1  netmask 255.255.255.0  broadcast 192.168.49.255
                      ether 02:42:2e:b9:f5:75  txqueuelen 0  (Ethernet)
                        RX packets 0  bytes 0 (0.0 B)
                        RX errors 0  dropped 0  overruns 0  frame 0
                        TX packets 0  bytes 0 (0.0 B)
                        TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

docker0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.17.0.1  netmask 255.255.0.0  broadcast 172.17.255.255
          ether 02:42:d1:2a:c7:0b  txqueuelen 0  (Ethernet)
```

