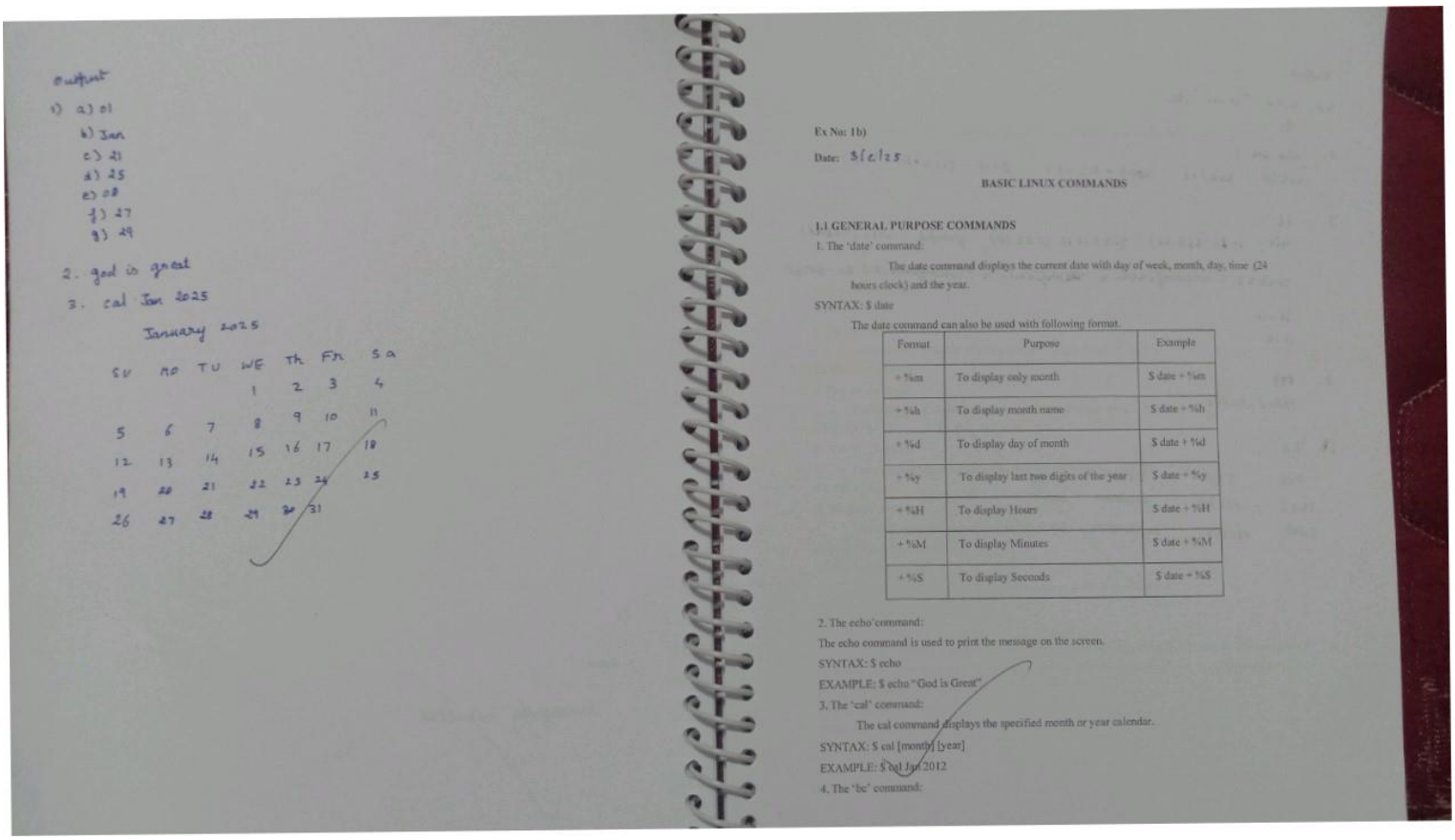
EXP NO: 01 BASIC LINUX COMMANDS NAME:Akshaya Sri S

DATE: 2.2.2025 REG NO: 230701024



output

1) a) 01
b) Jan
c) 21
d) 25
e) 08
f) 27
g) 29

2. god is great

3. cal Jan 2025

January 2025

SU	MO	TU	WE	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Ex No: 1b)

Date: 3/2/25

BASIC LINUX COMMANDS

1.1 GENERAL PURPOSE COMMANDS

1. The 'date' command:

The date command displays the current date with day of week, month, day, time (24 hours clock) and the year.

SYNTAX: $ date

The date command can also be used with following format.

Format	Purpose	Example
+ %m	To display only month	$ date + %m
+ %h	To display month name	$ date + %h
+ %d	To display day of month	$ date + %d
+ %y	To display last two digits of the year	$ date + %y
+ %H	To display Hours	$ date + %H
+ %M	To display Minutes	$ date + %M
+ %S	To display Seconds	$ date + %S

2. The echo command:

The echo command is used to print the message on the screen.

SYNTAX: $ echo

EXAMPLE: $ echo "God is Great"

3. The 'cal' command:

The cal command displays the specified month or year calendar.

SYNTAX: $ cal [month] [year]

EXAMPLE: $ cal Jan 2012

4. The 'bc' command:

EXAMPLE:s

Output:

4) echo "10+10" | bc
20

6. who am i
CSE26 pts/17 2025-02-01 8:16 (172.16.9.26)

7. id
uid = 1026 (CSE26) gid = 1016 (CSE26) groups = 1016 (CSE26)
context = unconfined_u : unconfined_r : unconfined_t : s0-c0:c0

id -u
1015

8. tty
/dev/pts/17

9. ps
PID	TTY	TIME	CMD
1936	pts/17	00:00:00	bash
2584	pts/17	00:00:00	ps

Unix offers an online calculator and can be invoked by the command bc.

SYNTAX: $ bc
EXAMPLE: bc –l
16/4
5/2

5. The 'who' command

The who command is used to display the data about all the users who are currently logged into the system.

SYNTAX: $ who

6. The 'who am i' command

The who am i command displays data about login details of the user.

SYNTAX: $ who am i

7. The 'id' command

The id command displays the numerical value corresponding to your login.

SYNTAX: $ id

8. The 'tty' command

The tty (teletype) command is used to know the terminal name that we are using.

SYNTAX: $ tty

9. The 'clear' command

The clear command is used to clear the screen of your terminal.

SYNTAX: $ clear

10. The 'man' command

The man command gives you complete access to the Unix commands.

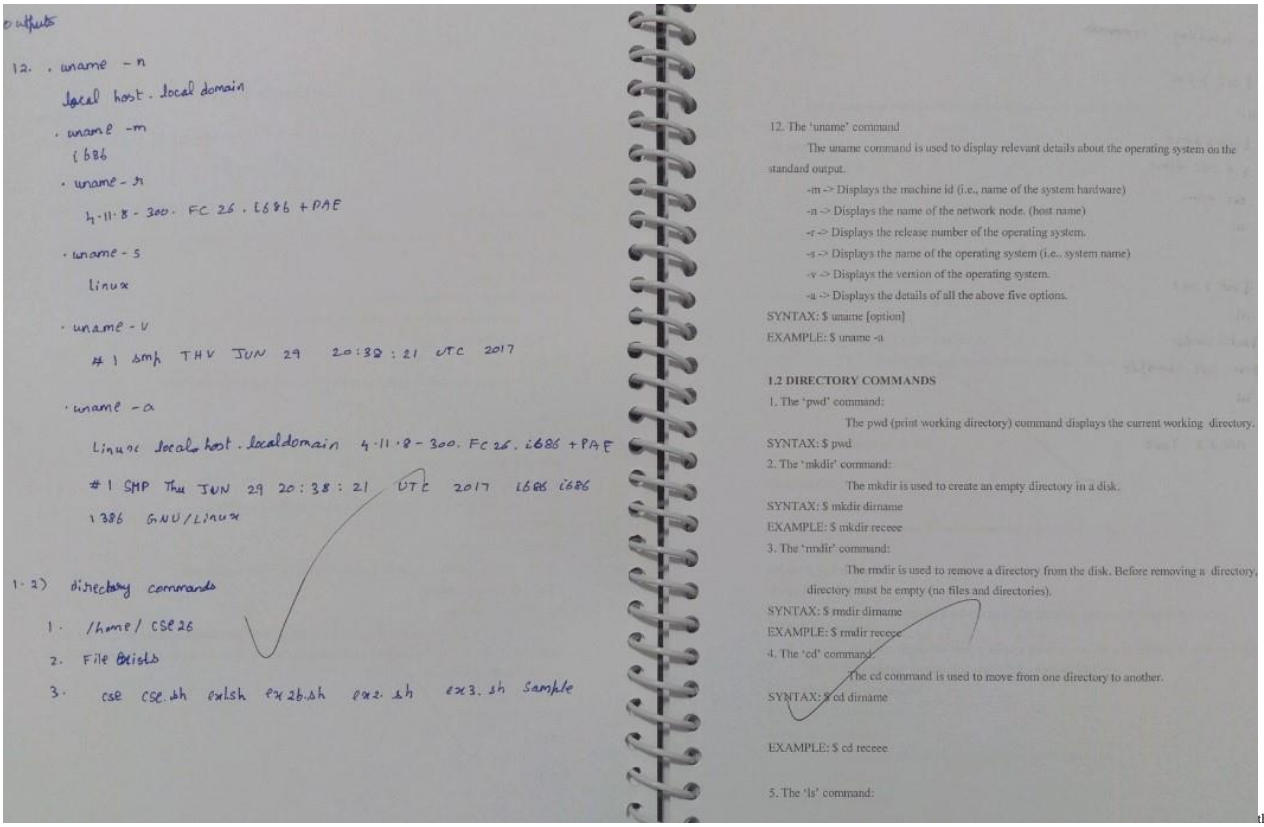
SYNTAX: $ man [command]

11. The 'ps' command

The ps command is used to the process currently alive in the machine with the 'ps' (process status) command, which displays information about process that are alive when you run the command. 'ps' produces a snapshot of machine activity.

SYNTAX: $ ps
EXAMPLE: $ ps
$ ps –e
$ps -aux

EXAMPLE:s



outputs

12. . uname -n

local host . local domain

. uname -m

i686

. uname -r

4.11.8-300. FC 26 . i686 + PAE

. uname -s

linux

. uname -v

#1 smp THU JUN 29 20:38:21 UTC 2017

. uname -a

Linux local host . localdomain 4.11.8-300. FC 26. i686 + PAE

#1 SMP Thu JUN 29 20:38:21 UTC 2017 i686 i686

i386 GNU/Linux

1.2) directory commands

1. /home/ CSE26

2. File Exists

3. cse CSE.sh ex1sh ex2b.sh ex2.sh ex3.sh sample

12. The 'uname' command

The uname command is used to display relevant details about the operating system on the standard output.

-m -> Displays the machine id (i.e., name of the system hardware)

-n -> Displays the name of the network node. (host name)

-r -> Displays the release number of the operating system.

-s -> Displays the name of the operating system (i.e., system name)

-v -> Displays the version of the operating system.

-a -> Displays the details of all the above five options.

SYNTAX: $ uname [option]

EXAMPLE: $ uname -a

1.2 DIRECTORY COMMANDS

1. The 'pwd' command:

The pwd (print working directory) command displays the current working directory.

SYNTAX: $ pwd

2. The 'mkdir' command:

The mkdir is used to create an empty directory in a disk.

SYNTAX: $ mkdir dirname

EXAMPLE: $ mkdir receee

3. The 'rmdir' command:

The rmdir is used to remove a directory from the disk. Before removing a directory, directory must be empty (no files and directories).

SYNTAX: $ rmdir dirname

EXAMPLE: $ rmdir receee

4. The 'cd' command:

The cd command is used to move from one directory to another.

SYNTAX: $ cd dirname

EXAMPLE: $ cd receee

5. The 'ls' command:

the

EXAMPLE:s

1.3 File handling commands

3) $cat > euc
Hi
$cat > demo
$cp rec demo
cat demo
Hi

5) $cat > rec
Hi
$cat > sample
$mv rec sample
Hi

6) ASCII Text

The ls command displays the list of files in the current working directory.

SYNTAX: $ ls

EXAMPLE: $ ls

$ ls –l

$ ls –a

1.3 FILE HANDLING COMMANDS

1. The 'cat' command:

The cat command is used to create a file.

SYNTAX: $ cat > filename

EXAMPLE: $ cat > rec

2. The 'Display contents of a file' command:

The cat command is also used to view the contents of a specified file.

SYNTAX: $ cat filename

3. The 'cp' command:

The cp command is used to copy the contents of one file to another and copies the file from one place to another.

SYNTAX: $ cp oldfile newfile

EXAMPLE: $ cp ese ece

4. The 'rm' command:

The rm command is used to remove or erase an existing file

SYNTAX: $ rm filename

EXAMPLE: $ rm rec

$ rm –f rec

Use option –fr to delete recursively the contents of the directory and its subdirectories.

5. The 'mv' command:

The mv command is used to move a file from one place to another. It removes a specified file from its original location and places it in specified location.

SYNTAX: $ mv oldfile newfile

EXAMPLE: $ mv ese eee

6. The 'file' command:

The file command is used to determine the type of file.

SYNTAX: $ file filename

EXAMPLE: $ file receee

7) 1 2 16 rec

9) who | wc rec

" " 71 rec

10) who | tee sample | wc rec

" " 71 rec

11) rec → ls r**

ls ?ec → rec

7. The 'wc' command:

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

SYNTAX: $ wc filename

EXAMPLE: $ wc recee

8. The 'Directing output to a file' command:

The ls command lists the files on the terminal (screen). Using the redirection operator ">" we can send the output to file instead of showing it on the screen.

SYNTAX: $ ls > filename

EXAMPLE: $ ls > cseee

9. The 'pipes' command:

The Unix allows us to connect two commands together using these pipes. A pipe (|) is an mechanism by which the output of one command can be channeled into the input of another command.

SYNTAX: $ command1 | command2

EXAMPLE: $ who | wc -l

10. The 'tee' command:

While using pipes, we have not seen any output from a command that gets piped into another command. To save the output, which is produced in the middle of a pipe, the tee command is very useful.

SYNTAX: $ command | tee filename

EXAMPLE: $ who | tee sample | wc -l

11. The 'Metacharacters of unix' command:

Metacharacters are special characters that are at higher and abstract level compared to most of other characters in Unix. The shell understands and interprets these metacharacters in a special way.

* - Specifies number of characters

?- Specifies a single character

[ ]- used to match a whole set of file names at a command line.

! – Used to Specify Not

EXAMPLE:

$ ls r** - Displays all the files whose name begins with 'r'

$ ls ?kkk - Displays the files which are having 'kkk', from the second characters irrespective of the first character.

$ ls [a-m] – Lists the files whose names begins alphabets from 'a' to 'm'

$ ls [!a-m] – Lists all files other than files whose names begins alphabets from 'a' to 'm' 12.

The 'File permissions' command:

lüle ıwrnüssion İs Ilıc w;jy of controllin Ilı,' accessİbİlily for each of three users

'İle ly Users Cinuıps '111d Ollıeıs, l'lıcıx• Ihıve Iypes tile peıınissions are available,

th.•y arc

r-read
w-write
x-execute

The permis

First tlııcv bils	Owner ofIlıc file
Ihree hits	xvhİch of Ilıc file Ilcloılgs
l.:ısl Ihıve bits	Olhers

MPLE: $ ls colleee

-rwxr-xr- ı Lak ıtd 1525janıol 2:10 co

rwx Thefile İs readahle. iğlilable and executable b)' Ilıc owner ofthe file.

l.ak Specilies Owner ofthe file.

r-x Indicales absence of the write perıuis.sion by (he Ciroup oxvncr of Ilıc 'İle, Sid Is Ilıc Owner"f file.

F- Illilicalcs rcad pennİssİons allıcrs.

1$, •ı-he 'chınod' camınand:

The chınod comınand İs usul set ıvad. HIİte and cxecute vernüssions lâr all categoıies of

(L.sers tör file.

SYNTAX: S chmod category operation permission file

Category	Operation	permission
u-users	+ assign	r-read
g-group	-Remove	w-write
o-others	= assign absolutely	x-execute
a-all		

EXAMPLE:

S chi110d u —W.X college

Removes write & execute permission for users for 'college' file.

S chmod u 4 rms', g4rw college

Assigns read & write pelmission tor users and groups for 'college' file.

S clunod g=wx college

Assigns absolute permission for groups of all read, write and execute permissions for 'college' file,

14. The 'Octal Notations' command:

•Ille file permissions can be changed using octal notations also. The octal notations for file pernussion are

Read permission	4
Write permission	
Execute pennission	

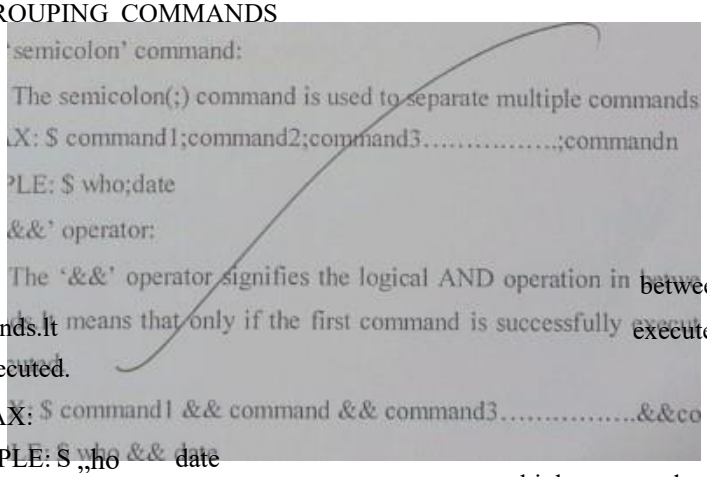
EXAMPLE:

S chmod 761 college

Assigns all permission the omner, read and permissions to the group and only executable permission to the others for •college' file.

1.4 GROUPING COMMANDS

I- The



between two or commands.lt executed, then will executed.

SYNTAX:

EXAMPLE: S „ho date

multiple comnnnds at the command line.

SYNTÆX: S command

EXAMPLE: S who;date

2. The more valid Unix the next command

3, The operator:

The • Il' operator signifies the logical OR operation in between two or more valid Unix conunands,ll nieans, that only if the first command will happen to be un successtillly,it will continue to execule next commands.

SYN'I'AX: command I I l command command3.. . ....llcommandn

EXAMPLE: S who date

I .5 FILTERS

l . The head filter

It displays the first ten lines ofa tile.

SYNTAX: S head filename

EXAMPLE: S head college Display twe top ten lines.

$ head -5 college Display the top five lines.

2. The tail filler

It displays ten lines of a file from the end ofthe file.

SYNTAX: tail filename

EXAMPI.E: S tail college Display the last ten lines.

Stail -5 college Display the last five lines.

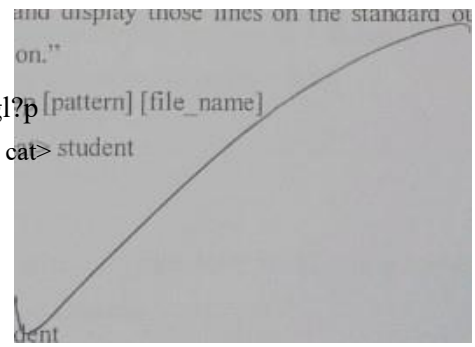
3. The more filter:

The pg command shows the file page by page.

SYNTAX: S Is -l more

4. The 'grep' command:

This command is used to search for a particular pattern from a file or from the standard input and display those lines on the standard utput. "Grep" stands for "global search for regular expression. "



SYNTAX: gl?p

EXAMPLE: $ cat> student

Arun cse

Ram ece

Kani cse

$ grep "cse" stu nt

Arun cse

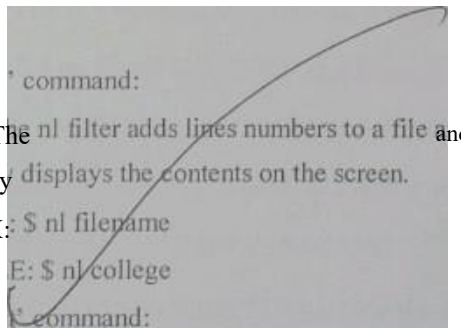
Kani cse

5. The 'sort' command:

The sort command is used to sort the contents ofa file. The sort command reports only to the screen, the actual file remains unchanged.

SYNTAX: S sort filename
EXAMPLE: sort college OPTIONS:

Command	Purpose
Sort —r college	Sorts and displays the file contents in reverse order
Sort —c college	Check ifthe file is sorted
Sort —n college	Sorts numerically
Sort —m college	Sorts numerically in reverse order
Sort —u college	Remove duplicate records
Sort —l college	Skip the column with -PI (one) option.Sorts according to second column



The but simply

SYNTAX:

oftext using cut command.

6. The 'nl' command:

displays the file and not provides access to edit

EXAMPl.E: S n oilege

7. The 'cu '

We can select specified fields from a line

SYNTAX: S cut -c filename EXAMPLE:

S cut -c college

OPTION:

-c — Option cut on the specified character position from each line.

1.5 OTHER ESSENTIAL COMMANDS

l . five

Display amount of free and used ph»ical and suapped *Stem.

syopsis- free [options]

example

[root@localhost free -t total used free shared buffeache available Menu

4044-;SO 605404 2045080

148820 1393S36 s,,ap: 26214360 2621436

Total: 6665S16 605464 4666516

2. top

It provides a dynamic real-time view of processes in the system.

synopsis- top [options]

example

[root@localhost top top - up 24 min. 2 users, load

avemge: 0.01. 0.06. 0.23

Tasks: 21 1 total, I running, 210 sleeping. 0 stop '111bie

O.S us. 0.3 sy, 0.0 If, 98.9 id . ',va, 0.0 hi. 0.0 si. 0.0 st

KiB Mem : 4044380 total, 2052 600452 used. 1390968 bumeache RiB swap:

2621436 total, 2621436 , O used. 3234S20 avail PID USER PR NI VIRT RES

SHR S IME+ COMMAND

105 -00 175008 75700 51264 S 1.7 1.9 0:20.46 xorg 2529[redacted]

32640 2 1.0 0.S 0:02.47 gnome-tenn 3.

It reports the snapshot of current

processes synopsis- ps [options] example

[root@localhost ps -e

PID TTY TIME CMD

I ? 0:00:03 systemd

2 ? 0:00:00 kthreadd

3 ? 0:00:00 ksoliirqWO

4. vmstat

It reports virtual memory

statistics synopsis- vmstat

[optionsl example

[root@localhost vmstat proc s -m-memory---——sq-apn m--io-—- -

system-- cpu

- r b swpd free butt cache si so bi bo in cs us sy id wa st 000 1879368

1604 14871 16 00 64 7 72 140 1 0 97 1 0

5. df

It displays the amount of disk space available in tile-system.

Synopsis- df [options)

exatnple

[root@localhost ~]# df

Filesystem I K-blocks Used Available Use% Mounted on

devtmpfs 2010800 0 2010800 0% /dev tmpfs 2022188 148 2022040 /dev'shm

tmpfs 2022188 1404 2020784 1% /run /dev/sda6 487652 1(168276 289680 37% boot

6. ping

It is used verify that a device can communicate with another on network. PING

I-or Packet Internet Groper stands .

synopsis- ping [options]

[root@local host ~]# ping 172.16.4.1

PING 172.16,4.1 (172.16.4.1) 56(84) bytes of data.
64 bytes from 1 72.16.4.1 : icmp _seq=l ttl=64 time=0.328 ms

64 bytes from 172.16.4.1 : icmp_seq=2 ttl=64 tirne=O.228 ms
04 tiom 172, 16.4.1 : icinp seq=3 ttle64 time•0.264 ms
04 bytes tiem 172.16.4.1 : cmp seq=4 ttl=64 time=0.312 ms

—1 72.16.4.1 ping statistics —
4 packets trans:nitted. 4 received. packet loss. time 3000ms
rtt ntin'avg:tnavmdev — ms

7. 7. ifconfig

It is used configure nemork interface.

sylopsis- ifcontig [options]

exarnple

Iroot@localhost —lg ifconfig

mtu
1 500 inet 172. 16.6.102 netinask 2.55.255.252.0 broadcast 172,16.7.255 inet6 pretixlen 64 scopeid Ox20<link> ether txqueuelen 1000 (Ethernet)

RX packets 23216 bytes (2.3 MiB)
RX errors 0 dropped overruns 0 frame 0
TX packets bytes 107740 (105.2 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 8.

traceroute

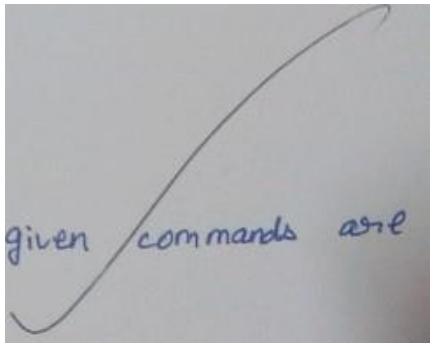
It tracks the route the packet takes to reach the destination.

synopsis- traceroute [options]

example

Iroot@localhost -IS traceroute wv.wrajalakshmi.org traceroute to \HHv.rajalakshmi.org (220.227.30.5 1), 30 hops max, 60 byte packets I gateway (172.16.4.1) 0.299 ms 0.297 ms 0.327 ms
2 220 225.219.3S (220.225.219.38) 6.185 ms 6.203 ms 6.189 ms

Result: wen



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