Assignment No 1

Assignment Name :- **Study Linux Commands**

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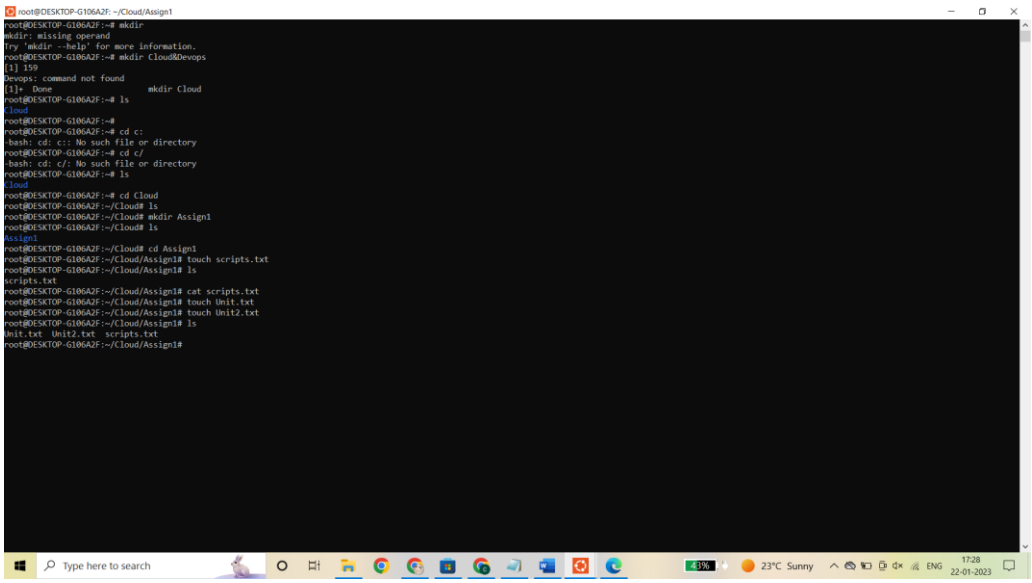
1) **Ls -** The most frequently used command in Linux to list directories.

1. ls command

The ls command without any options lists files and directories in a plain format without displaying much information like file types, permissions, modified date and time to mention just but a few.

Syntax - $ ls

Output –

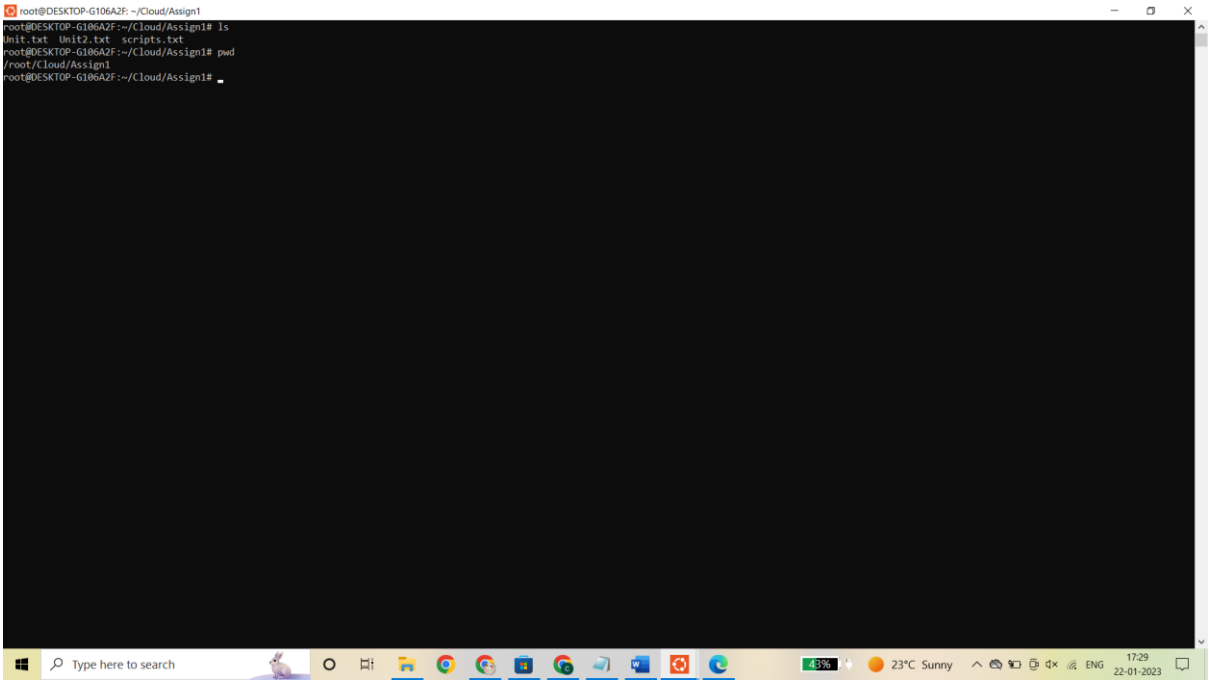


2 pwd command —

Used to print working directory command in Linux .
pwd stands for **P**rint **W**orking **D**irectory. It prints the path of the working directory, starting from the root.pwd is shell built-in command(pwd) or an actual binary(/bin/pwd).
$PWD is an environment variable which stores the path of the current directory.
This command has two flags.

Syntax - $pwd

Output



03. cd command-

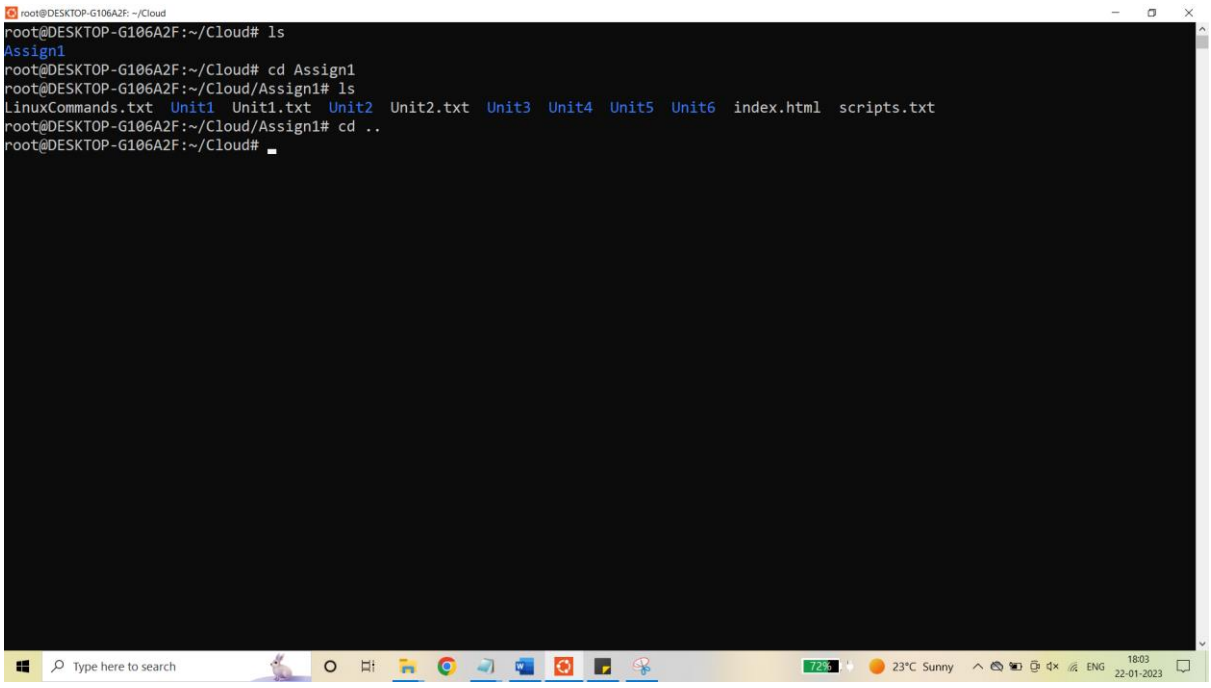
It is Linux command used to navigate through directories.

The cd command is highly popular, along with ls. It refers to “change directory” and, as its name suggests, switches you to the directory you’re trying to access.

Syntax -

$ cd [directory]

Output:-



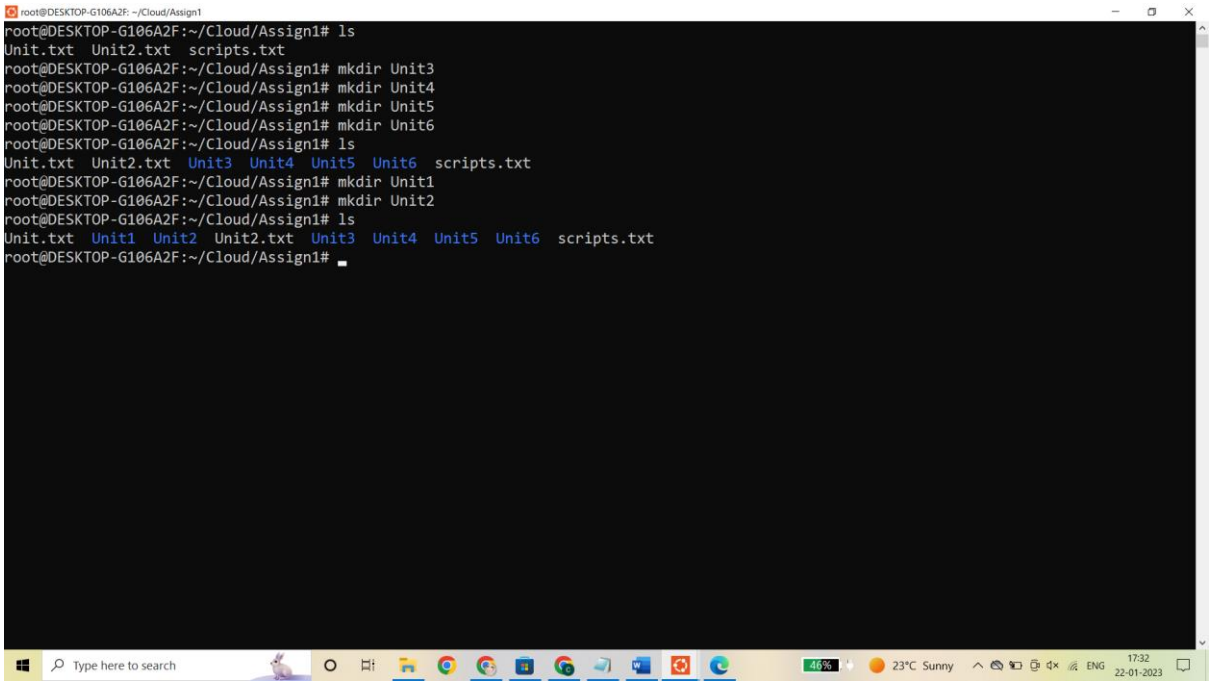
04 mkdir Command –

It is used to create directories in LinuxT
To create folders in the shell, you use the mkdir command. Just specify the new folder's name, ensure it doesn't exist, and you're ready to go.

Syntax –

mkdir [options...] [directories ...]

output-



05. mv command —

Move or rename files in Linux— The most frequently used command in Linux to list directories.

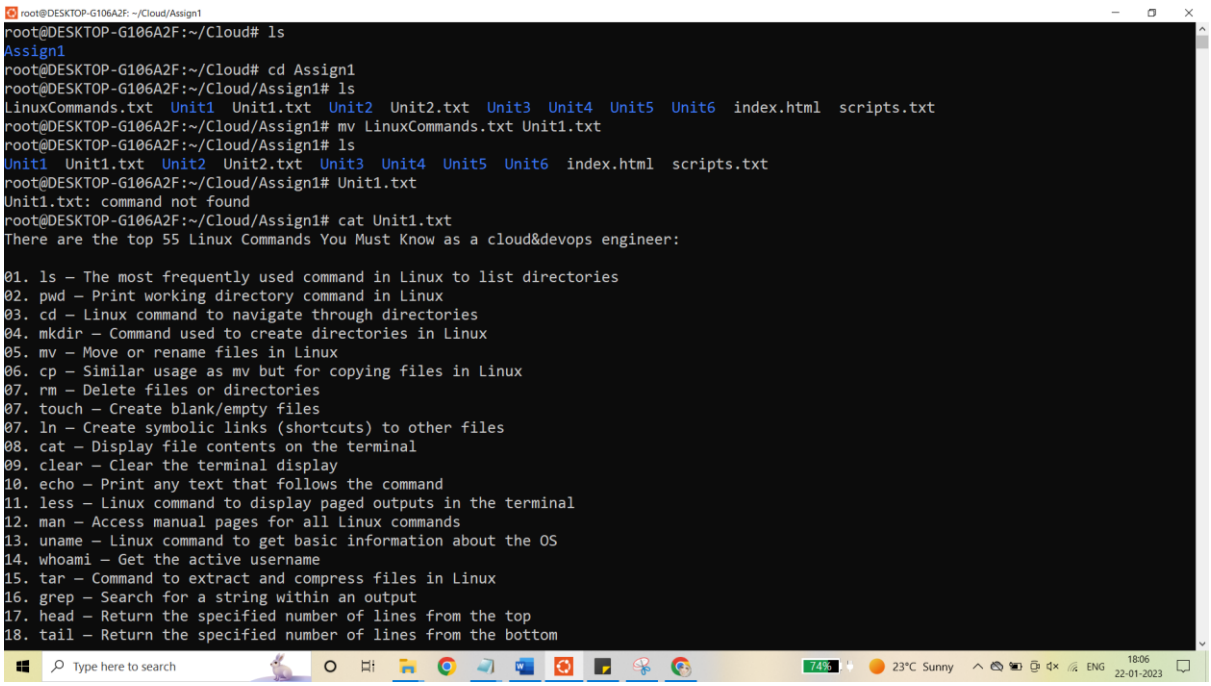
You use the mv command to move (or rename) files and directories through your file system.

To use this command, you'd type its name with the source and destination files

Syntax –

mv [Option] source destination

Output-



06. cp command—

Similar usage as mv but for copying files in Linux

It's so easy to copy files and folders directly in the Linux terminal that sometimes it can replace conventional file managers.

To use the cp command, just type it along with the source and destination files.

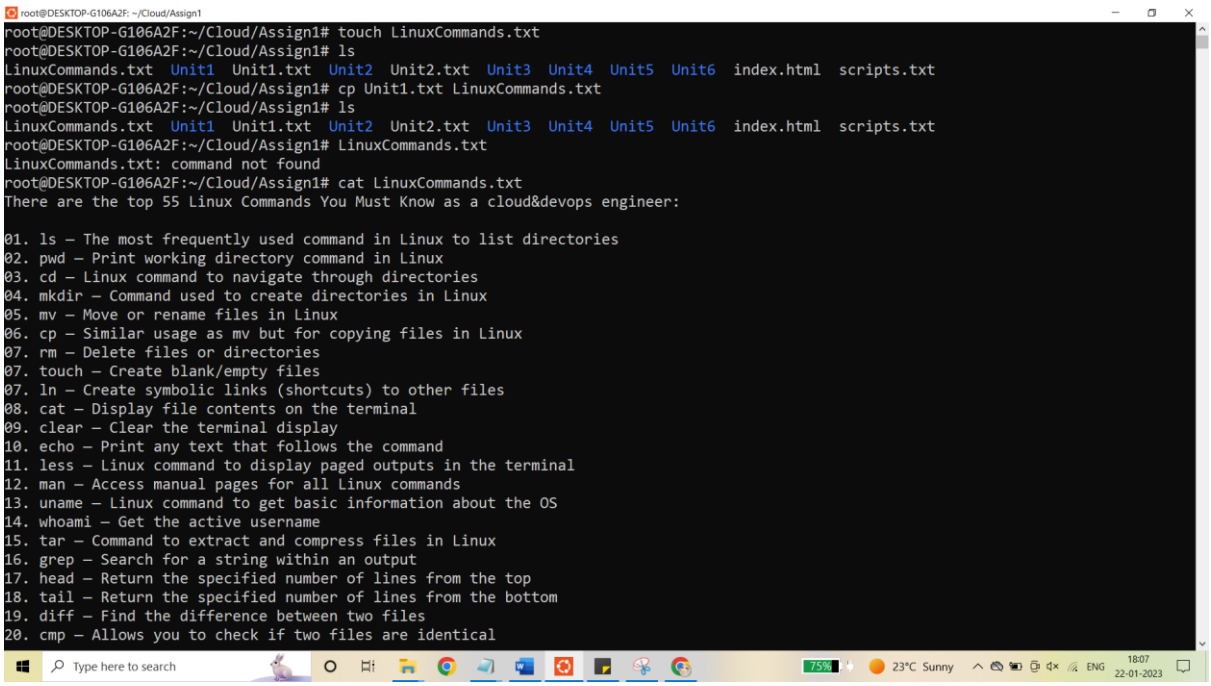
Syntax-

cp [OPTION] Source Destination

cp [OPTION] Source Directory

cp [OPTION] Source-1 Source-2 Source-3 Source-n Directory

Output



07. rm command —

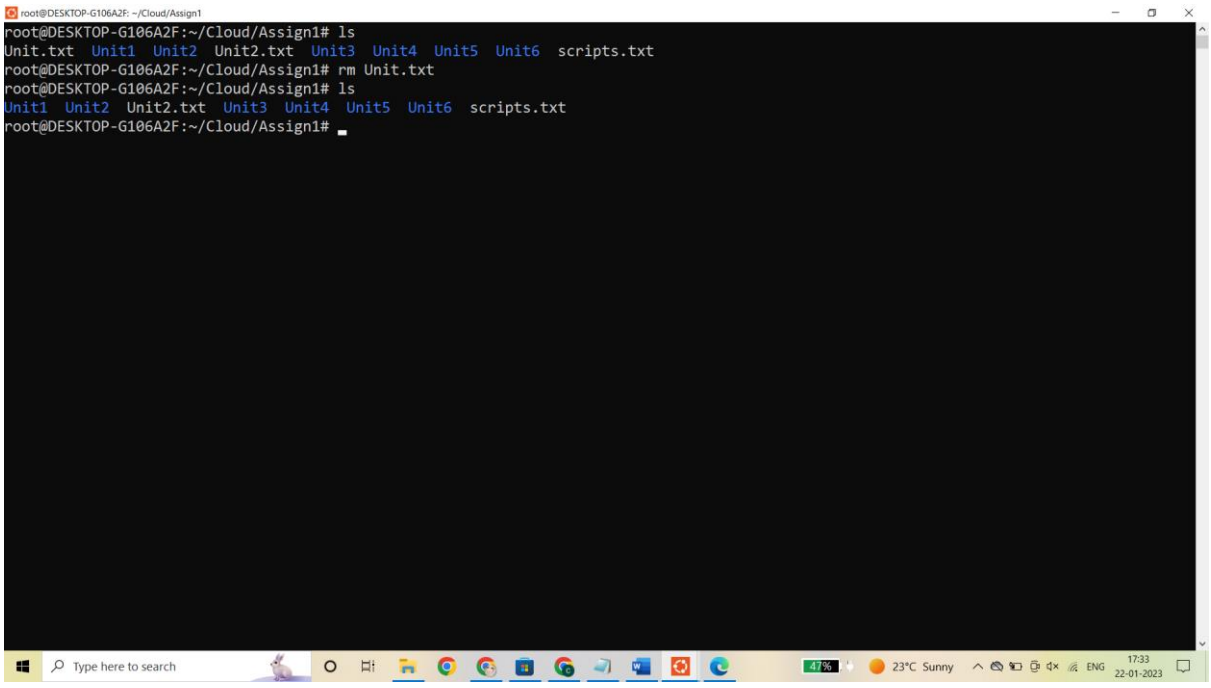
Delete files or directories

You can use the rm command to remove files and directories. Be careful while using it, though, because it's very difficult (yet not impossible) to recover files deleted this way.

Syntax-

rm [OPTION]... FILE...

Output



08. touch command—

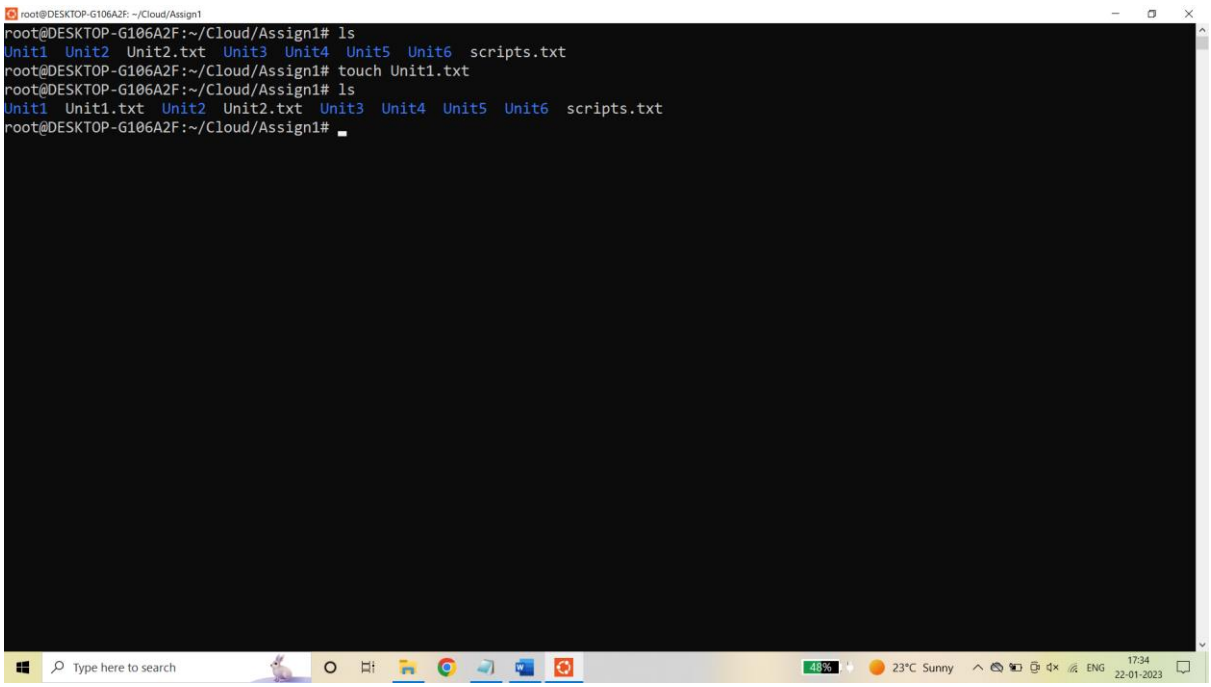
It used to Create blank/empty files.

The Linux touch command is used to create a file without any content. The file created using the touch command is empty with zero bytes. This command can be used when the user doesn't have data to store at the time of file creation.

Syntax :-

touch <filename>

Output-



09. ln command--

Create symbolic links (shortcuts) to other files A symlink (symbolic) is a type of file that points to other files or directories (folders) in Linux.You can create a symlink (symbolic) by using the ln command in the command line.Symbolic links are useful because they act as shortcuts to a file or directory.

Syntax-

Output-

10. cat command—

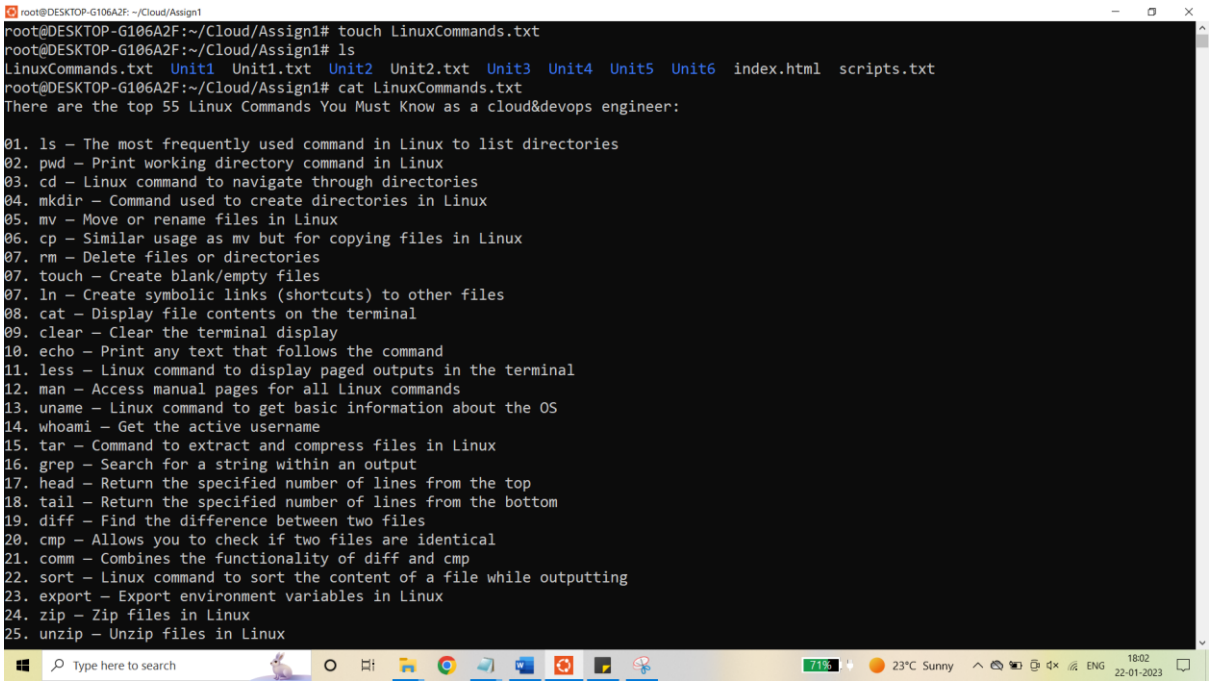
Display file contents on the terminal .

Cat is short for concatenate. This command displays the contents of one or more files without having to open the file for editing.

Syntax-

$cat filename

Output-



11. clear command —

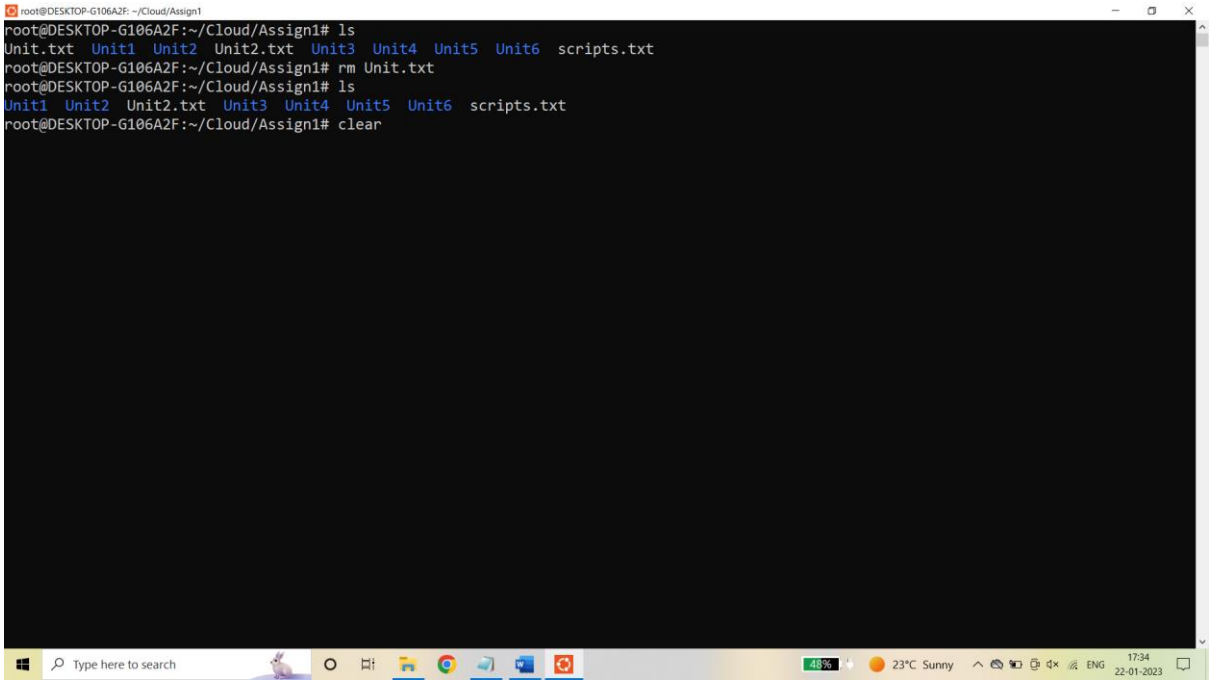
It is used to Clear the terminal display

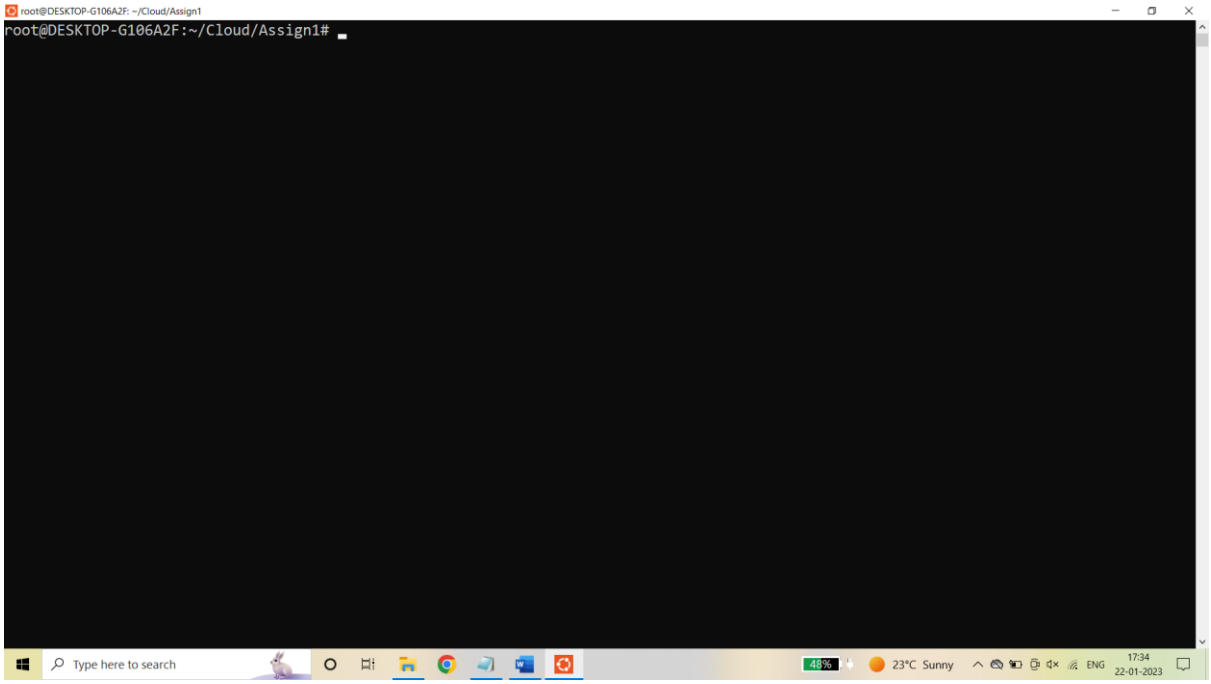
Clear is a standard Unix computer operating system command that is used to clear the terminal screen. This command first looks for a terminal type in the environment and after that, it figures out the terminfo database for how to clear the screen.

Synatx :

$clear

Output





12. echo command —

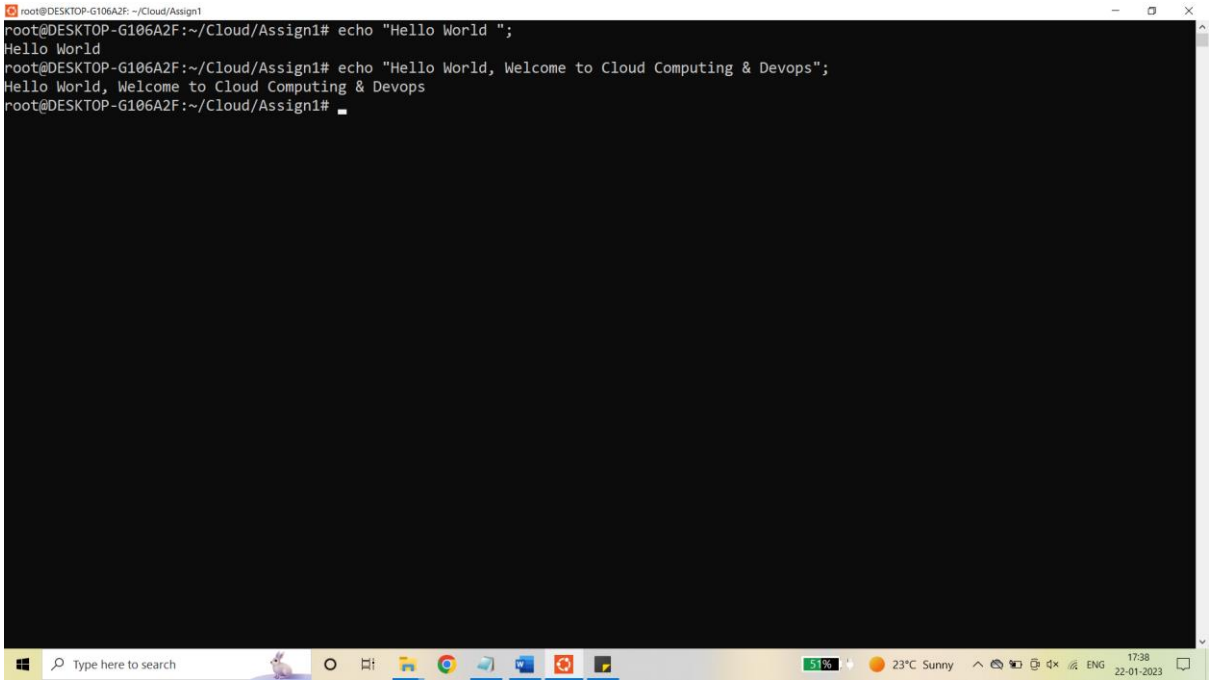
Print any text that follows the command

The echo command is a built-in Linux feature that prints out arguments as the standard output. Echo is commonly used to display text strings or command results as messages.

Syntax-

$echo “String”

Output-



13. less command—

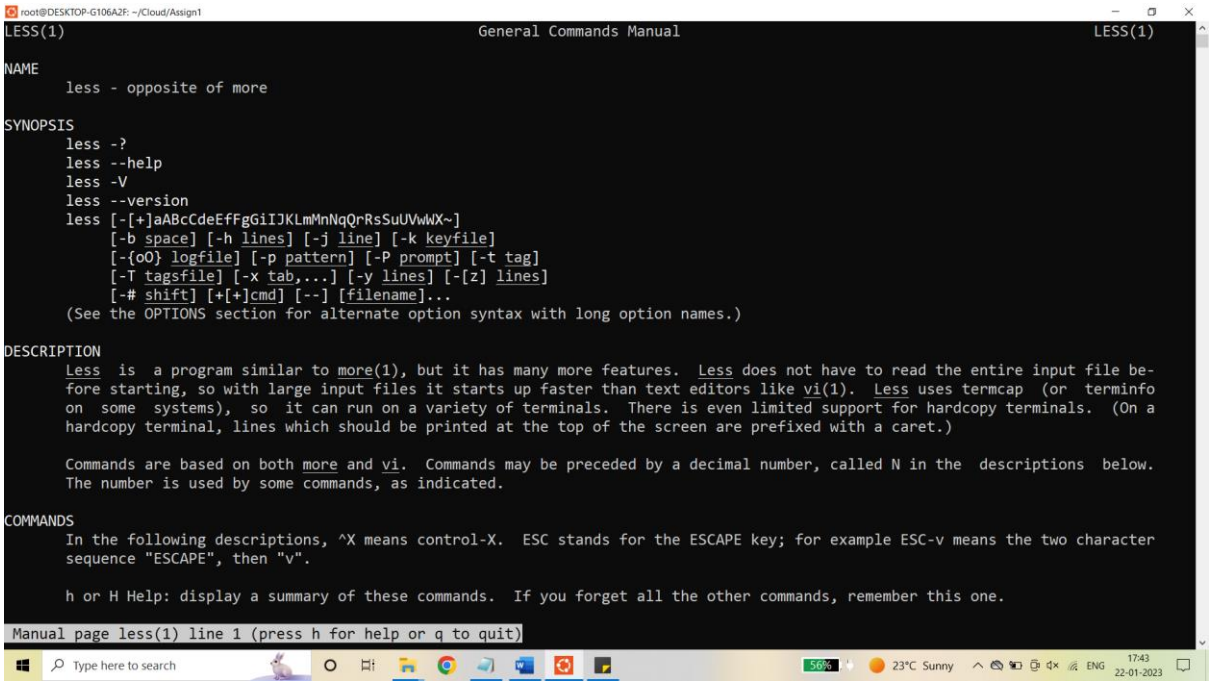
It is Linux command to display paged outputs in the terminal .

The less command is a Linux terminal pager that shows a file's contents one screen at a time. It is useful when dealing with a large text file because it doesn't load the entire file but accesses it page by page, resulting in fast loading speeds.

Syntax-

$less filename

Output



14. man command —

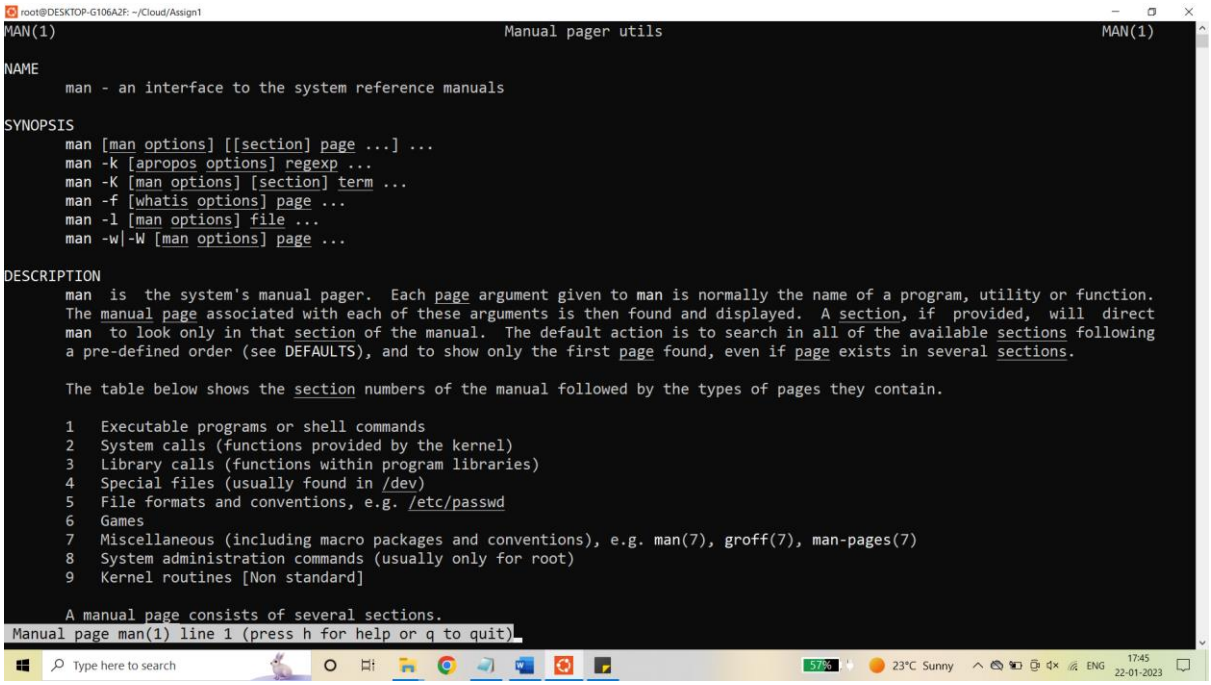
Access manual pages for all Linux commands

The man command is a built-in manual for using Linux commands. It allows users to view the reference manuals of a command or utility run in the terminal. The man page (short for manual page) includes a command description, applicable options, flags, examples, and other informative sections.

Syntax-

$man [OPTION]... [COMMAND NAME]...

Output



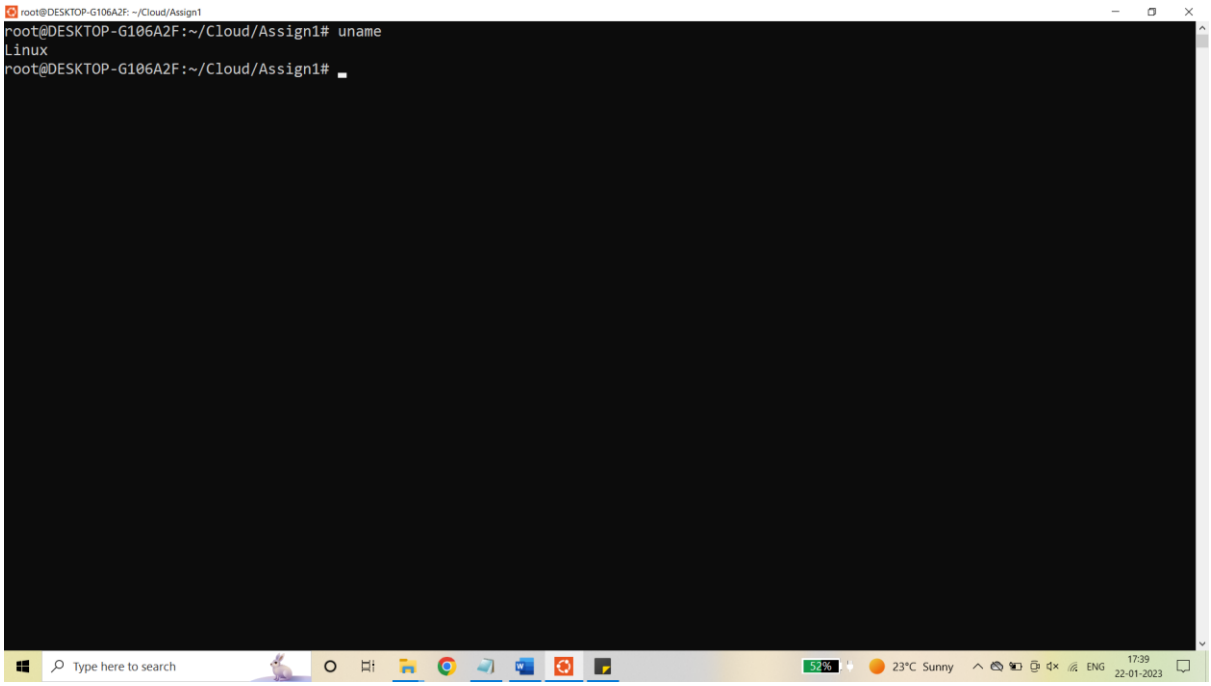
15. uname command—

It is Linux comma The uname command writes to standard output the name of the operating system that you are using.nd to get basic information about the OS.

Syntax-

$uname

Output



16. whoami command—

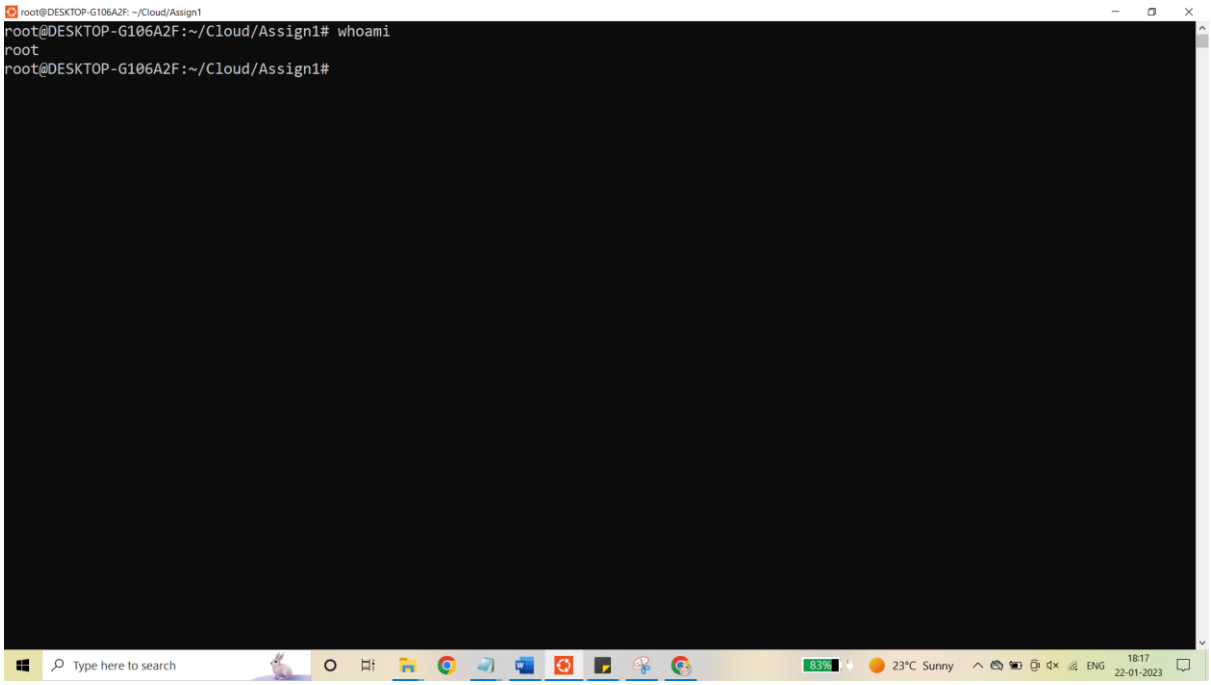
It is used to get the active username.

Using the whoami command, you can get the currently logged-in user in the Windows system. The whoami command prints the username with the domain name.

Syntax

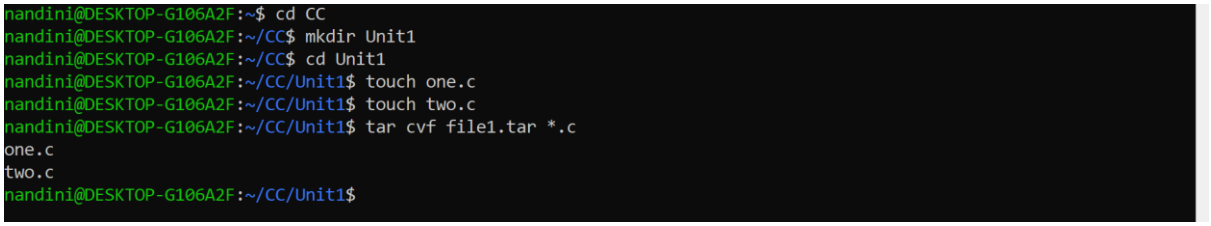
$whoami

Output -



17. tar command —

Command to extract and compress files in Linux



18. grep command –

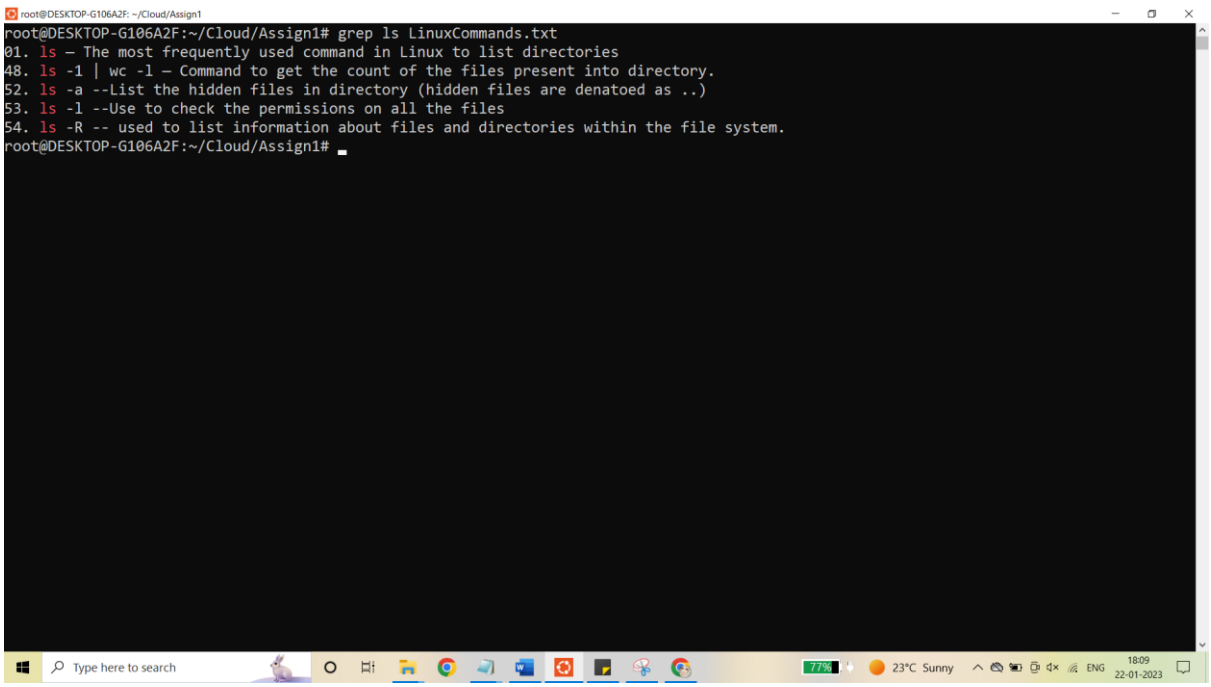
It is used to Search for a string within an output. Grep is an acronym that stands for Global Regular Expression Print.

Grep is a Linux / Unix command-line tool used to search for a string of characters in a specified file. The text search pattern is called a regular expression. When it finds a match, it prints the line with the result. The grep command is handy when searching through large log files.

Syntax

grep [options] pattern [files]

Output



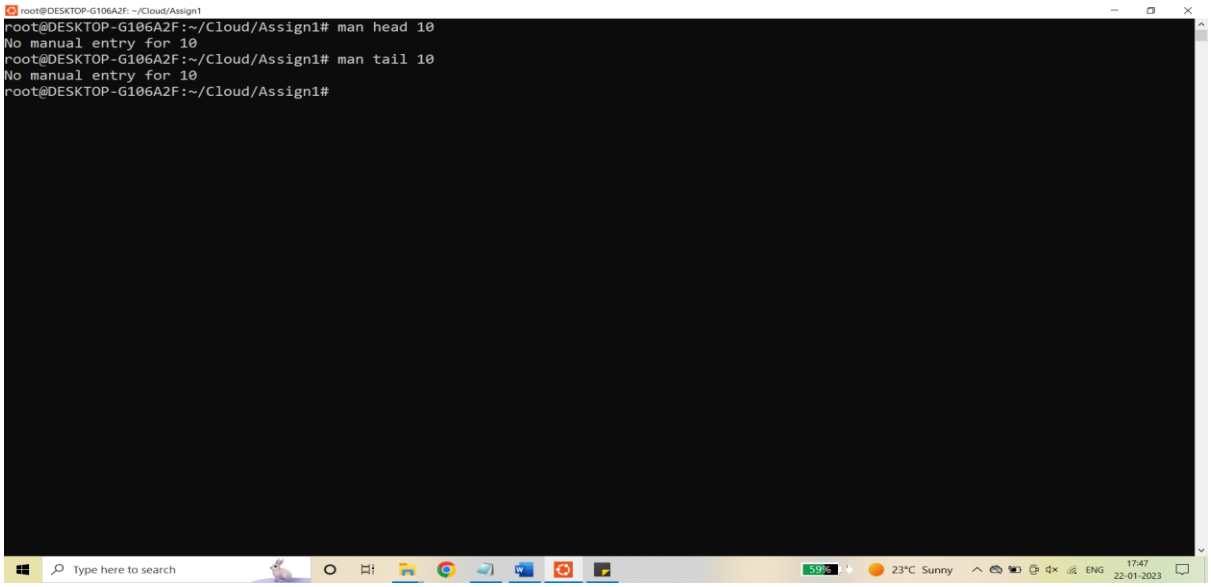
19. head commnad —

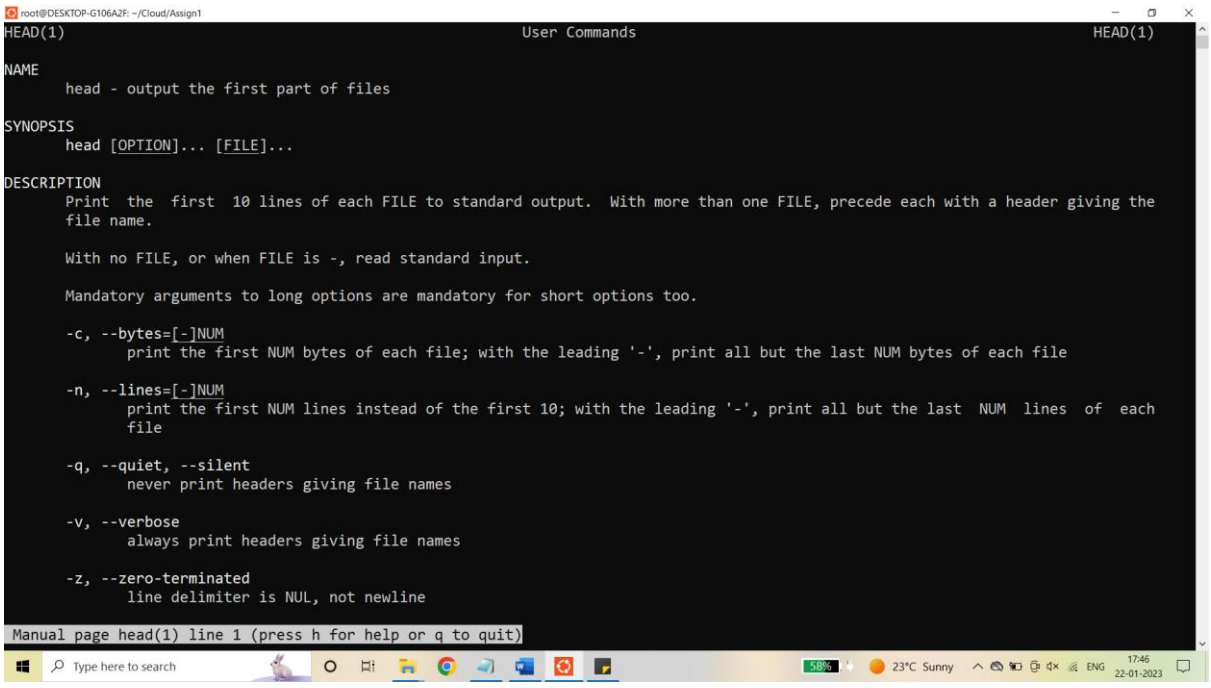
It is used to Return the specified number of lines from the top. The head command, as the name implies, print the top N number of data of the given input. By default, it prints the first 10 lines of the specified files. If more than one file name is provided then data from each file is preceded by its file name.

Syntax-

head [OPTION]... [FILE]...

Output-





20. tail command —

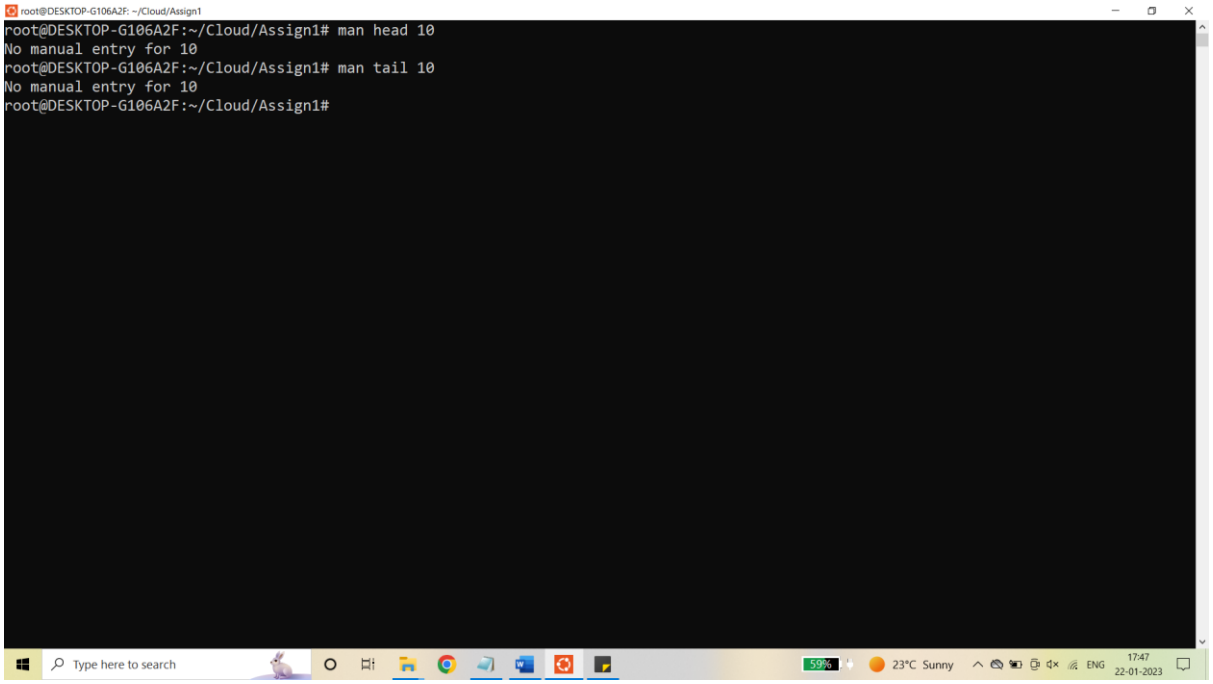
It is used to return the specified number of lines from the bottom.

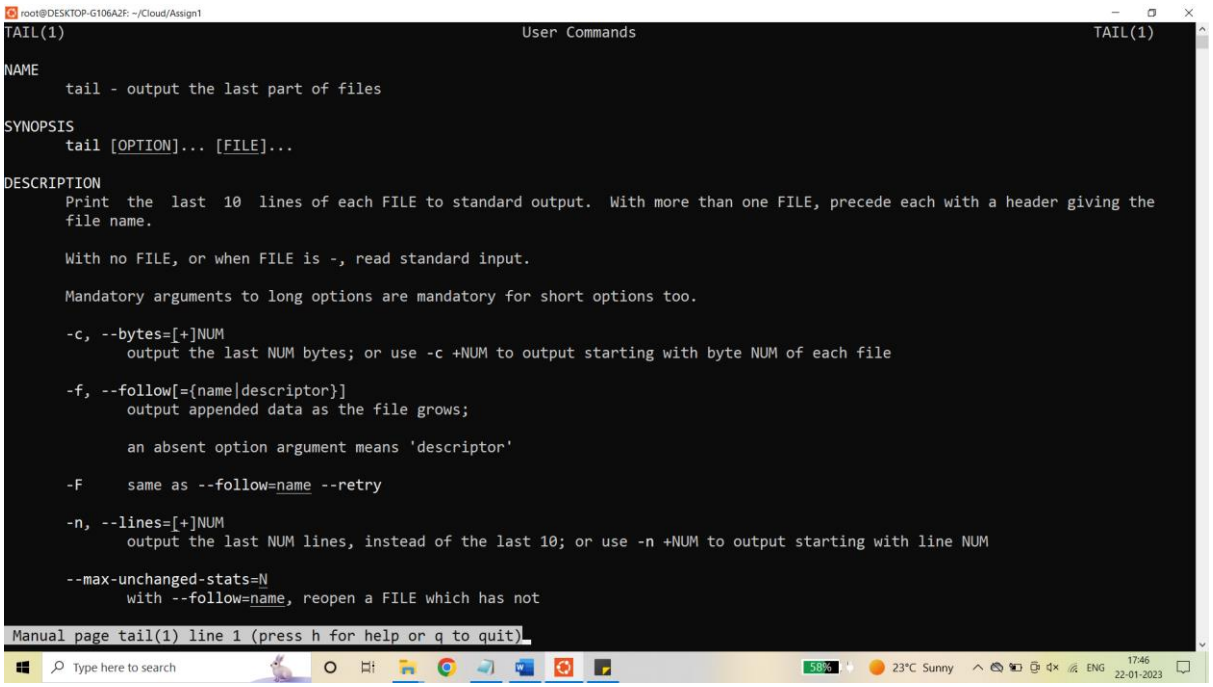
It is the complementary of head command.The tail command, as the name implies, print the last N number of data of the given input. By default it prints the last 10 lines of the specified files. If more than one file name is provided then data from each file is precedes by its file name.

Syntax-

head [OPTION]... [FILE]...

Output-





21 diff command —

Find the difference between two files.

Diff stands for difference. This command is used to display the differences in the files by comparing the files line by line.

The Important thing to remember is that diff uses certain special symbols and instructions that are required to make two files identical. It tells you the instructions on how to change the first file to make it match the second file.

Special symbols are:

A : add

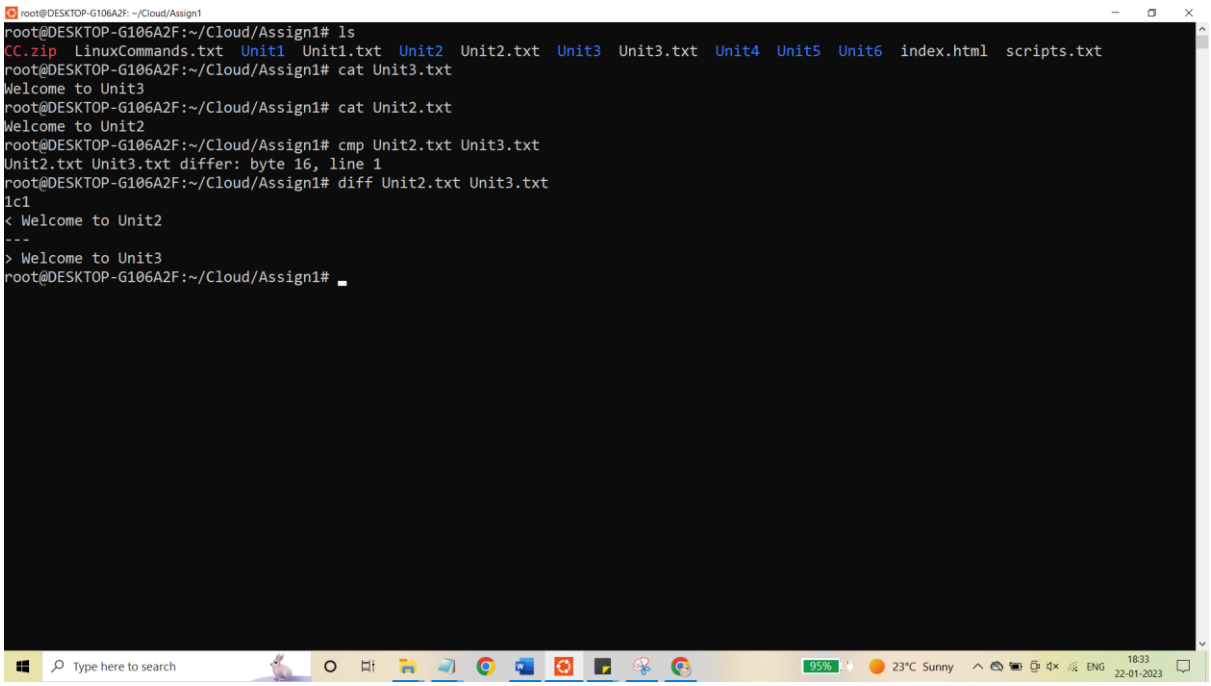
C : change

D : delete

Syntax-

diff [options] File1 File2

Output-



22. cmp command —

Allows you to check if two files are identical.

Cmp command in Linux/UNIX is used to compare the two files byte by byte and helps you to find out whether the two files are identical or not.

When cmp is used for comparison between two files, it reports the location of the first mismatch to the screen if difference is found and if no difference is found i.e the files compared are identical. Cmp displays no message and simply returns the prompt if the files compared are identical.

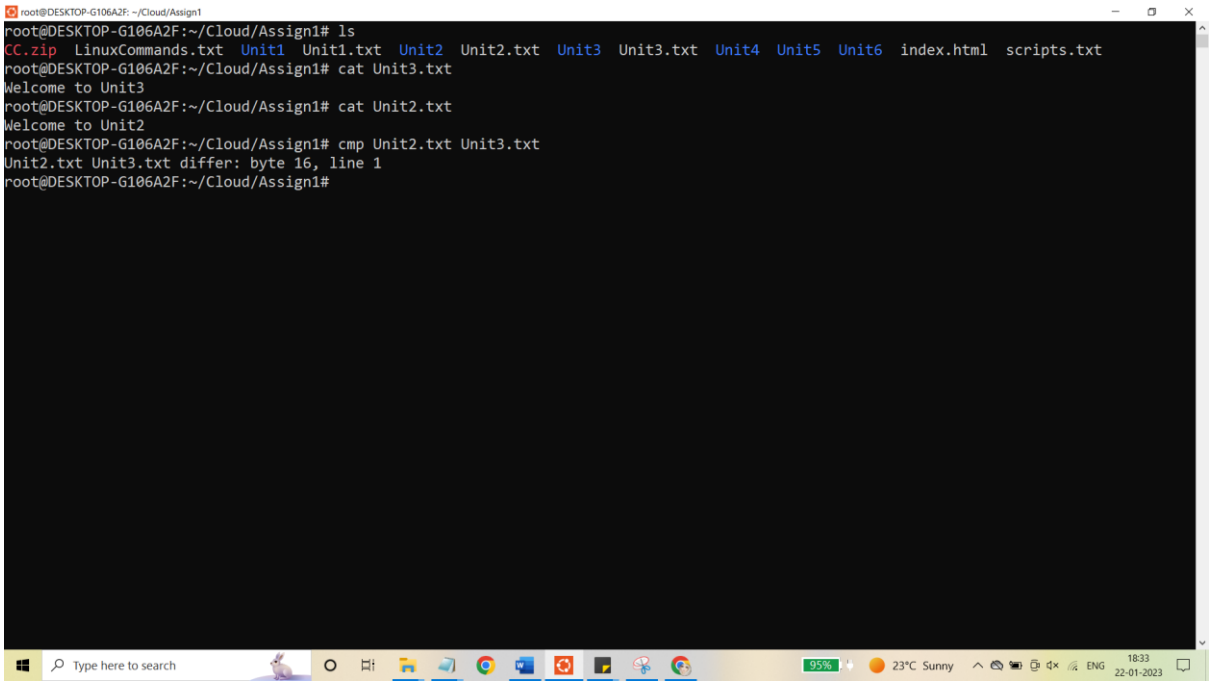
Syntax-

cmp [OPTION]... FILE1 [FILE2 [SKIP1 [SKIP2]]]

SKIP1 ,SKIP2 & OPTION are optional

and FILE1 & FILE2 refer to the filenames

Output-



23. comm command —

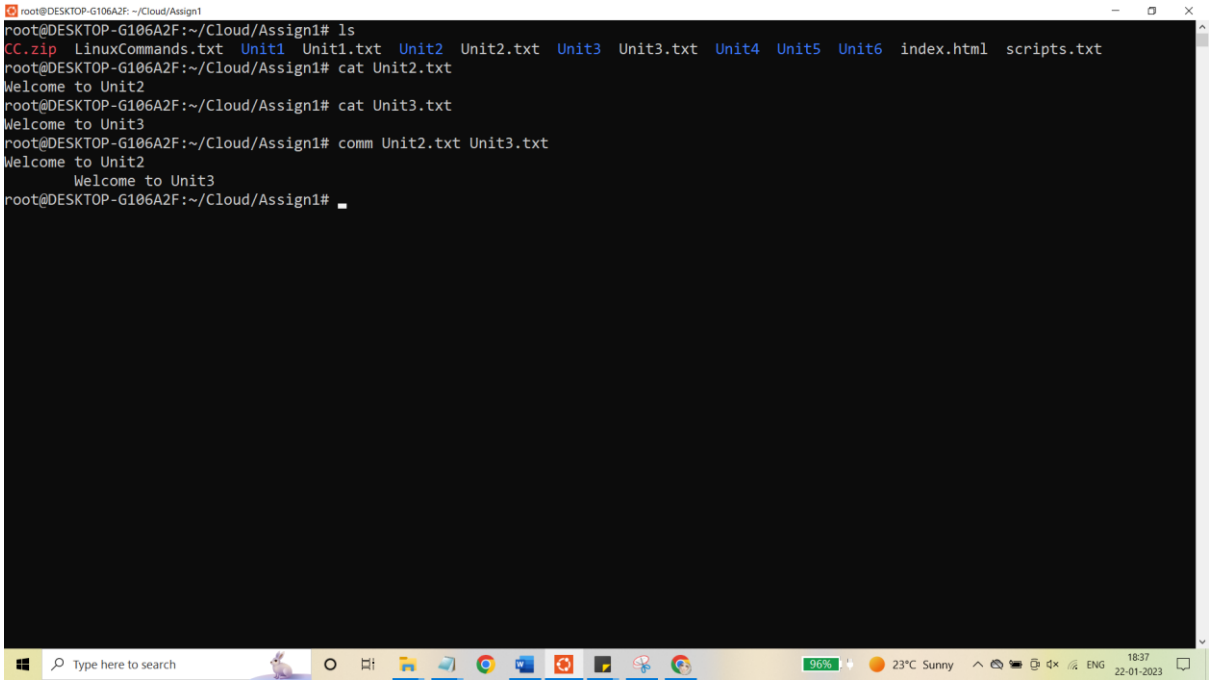
Combines the functionality of diff and cmp.

Suppose you have two lists of people and you are asked to find out the names available in one and not in the other, or even those common to both. Comm is the command that will help you to achieve this. It requires two sorted files which it compares line by line.

Syntax-

$comm [OPTION]... FILE1 FILE2

Output-



24. sort command —

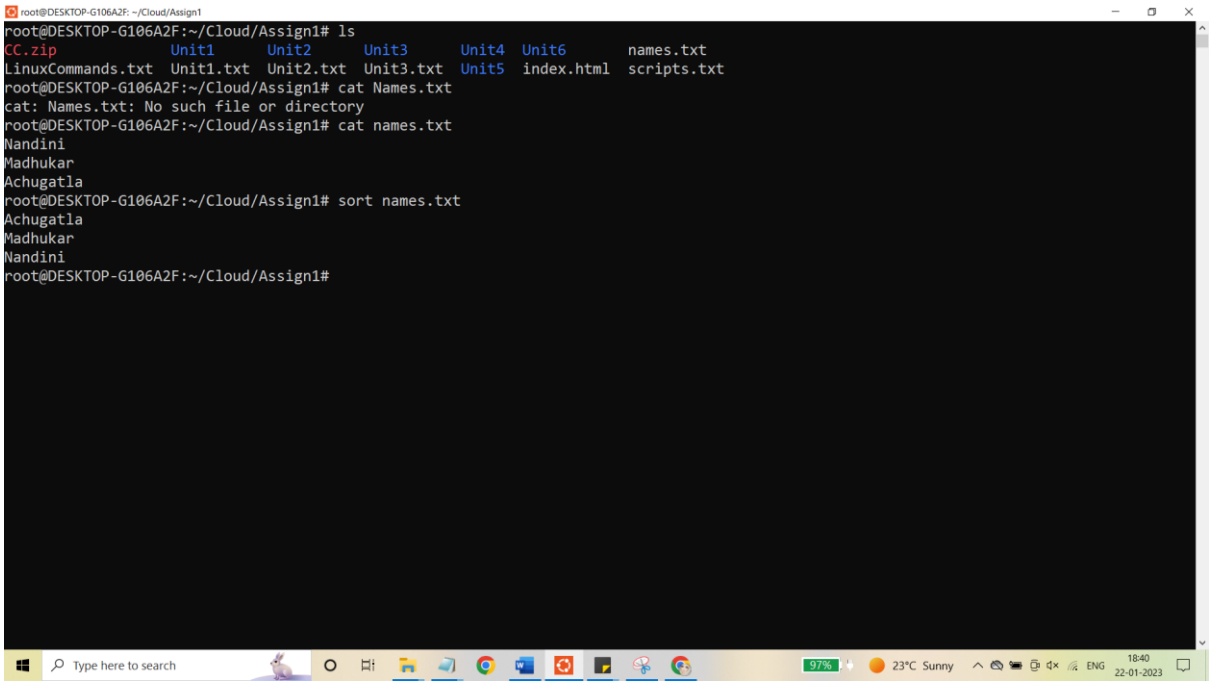
Linux command to sort the content of a file while outputting

SORT command is used to sort a file, arranging the records in a particular order. By default, the sort command sorts file assuming the contents are ASCII. Using options in the sort command can also be used to sort numerically.

Syntax-

$ sort filename.txt

Output-



25. export command —

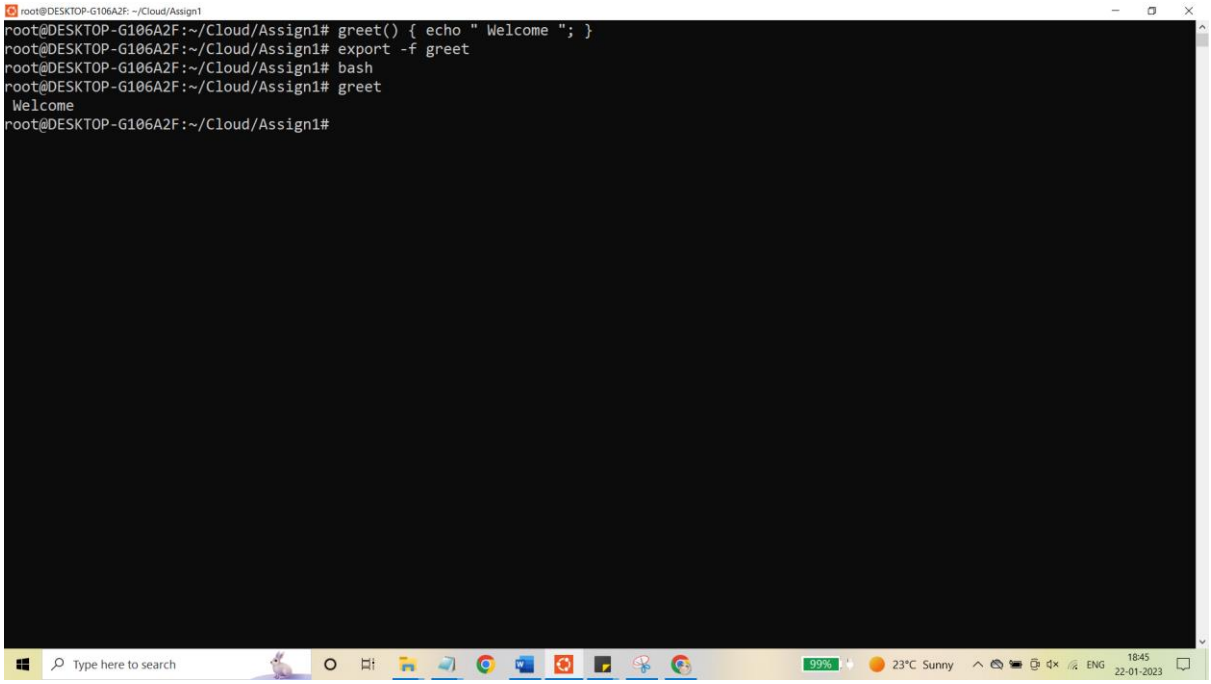
Export environment variables in Linux. export is bash shell BUILTINS commands, which means it is part of the shell. It marks an environment variables to be exported to child-processes.

Export is defined in POSIX as The shell shall give the export attribute to the variables corresponding to the specified names, which shall cause them to be in the environment of subsequently executed commands. If the name of a variable is followed by = word, then the value of that variable shall be set to the word.

Syntax-

export [-f] [-n] [name[=value] ...] or export -p

Output-



26. zip command —

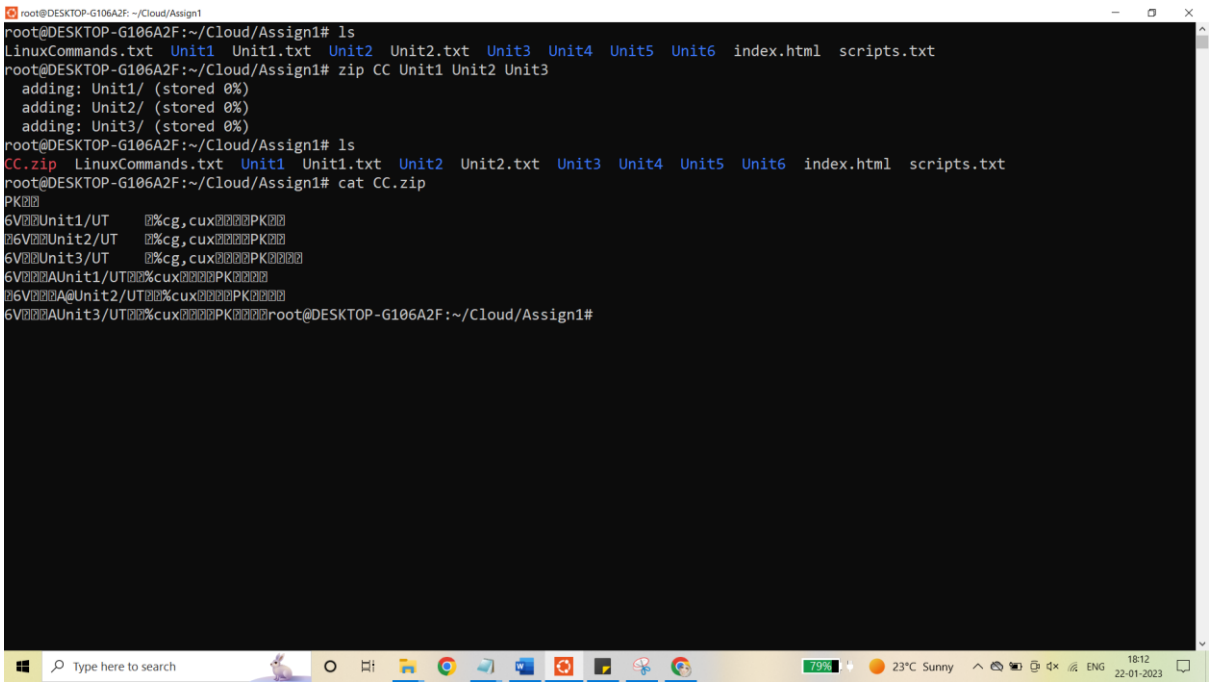
Zip files in Linux

ZIP is a compression and file packaging utility for Unix. Each file is stored in single .zip {.zip-filename} file with the extension .zip.

Syntax-

zip [options] zipfile files_list

Output



27. unzip command —

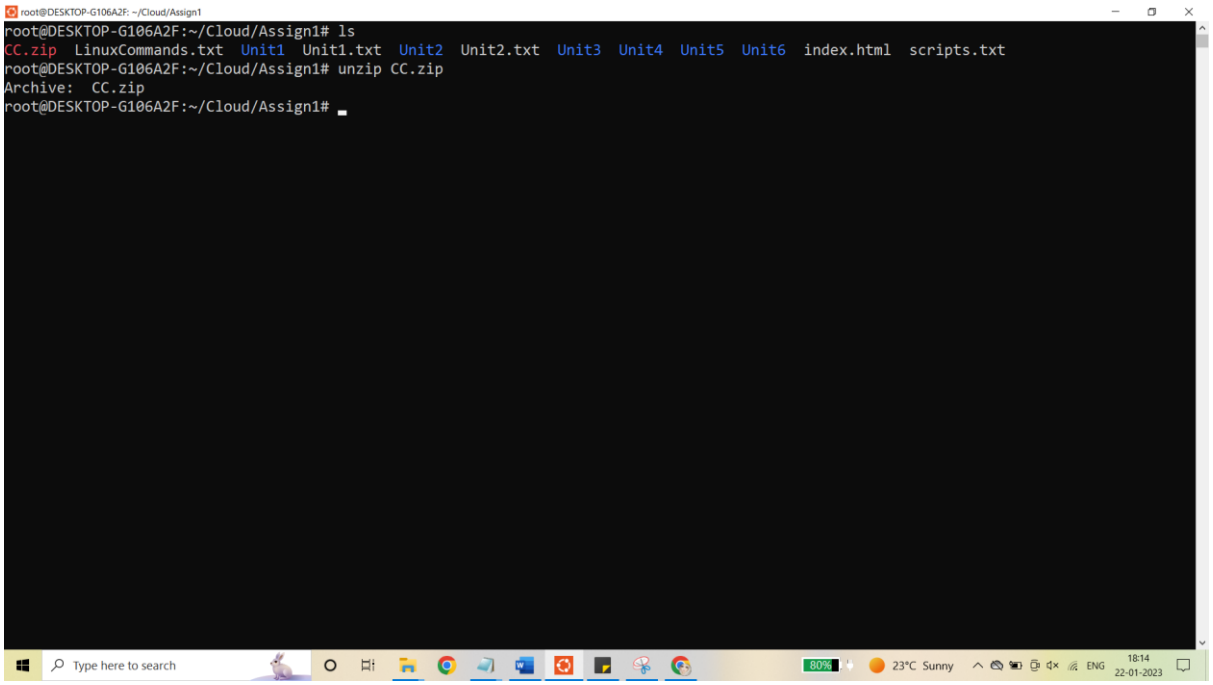
Unzip files in Linux

Unzip lists, tests, or extracts files from archives of the zip format, which are most commonly found on MS-DOS and Windows systems.

Syntax-

unzip [options] zipfile files_list

Output



28. ssh command—

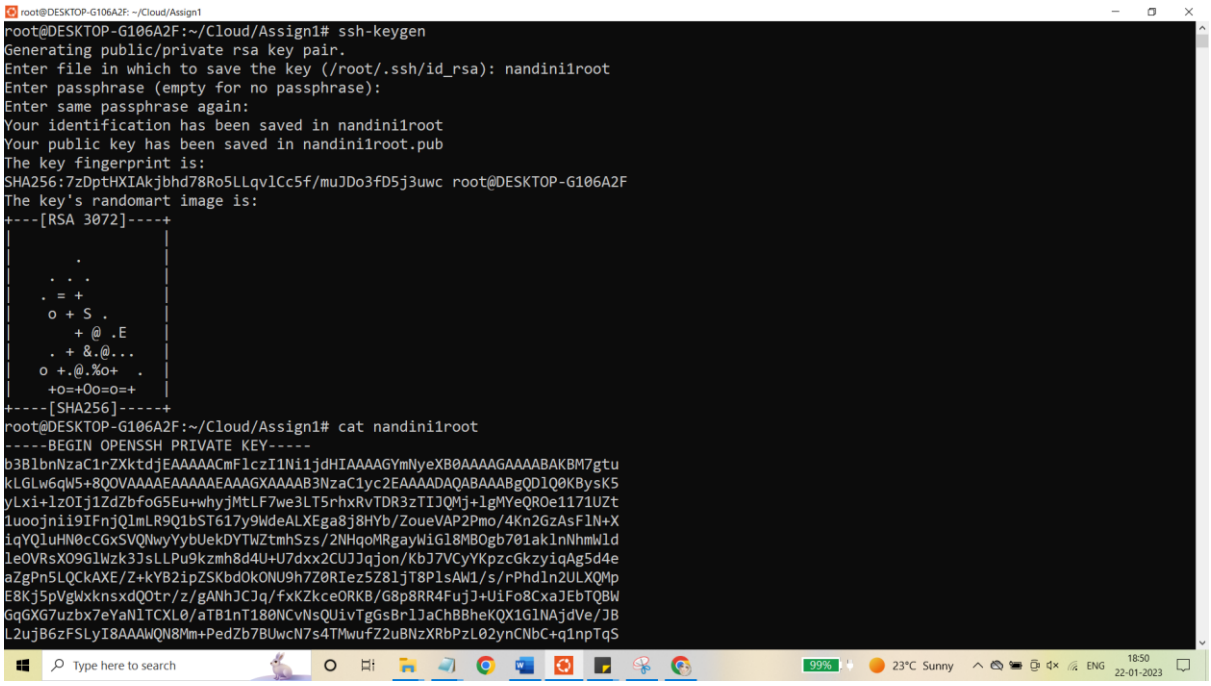
Secure Shell command in Linux.

It is a protocol used to securely connect to a remote server/system. Ssh is secure in the sense that it transfers the data in encrypted form between the host and the client. It transfers inputs from the client to the host and relays back the output. Ssh runs at TCP/IP port 22.

Syntax-

ssh user_name@host(IP/Domain_name)

Output-



29. service command —

Linux command to start and stop services The service command starts, stop and restart a daemon or services by calling the script. Usually all scripts are stored in /etc/init.d directory.

It runs a script in as predictable environment as possible.

Syntax:

service script_name command

30. ps command—

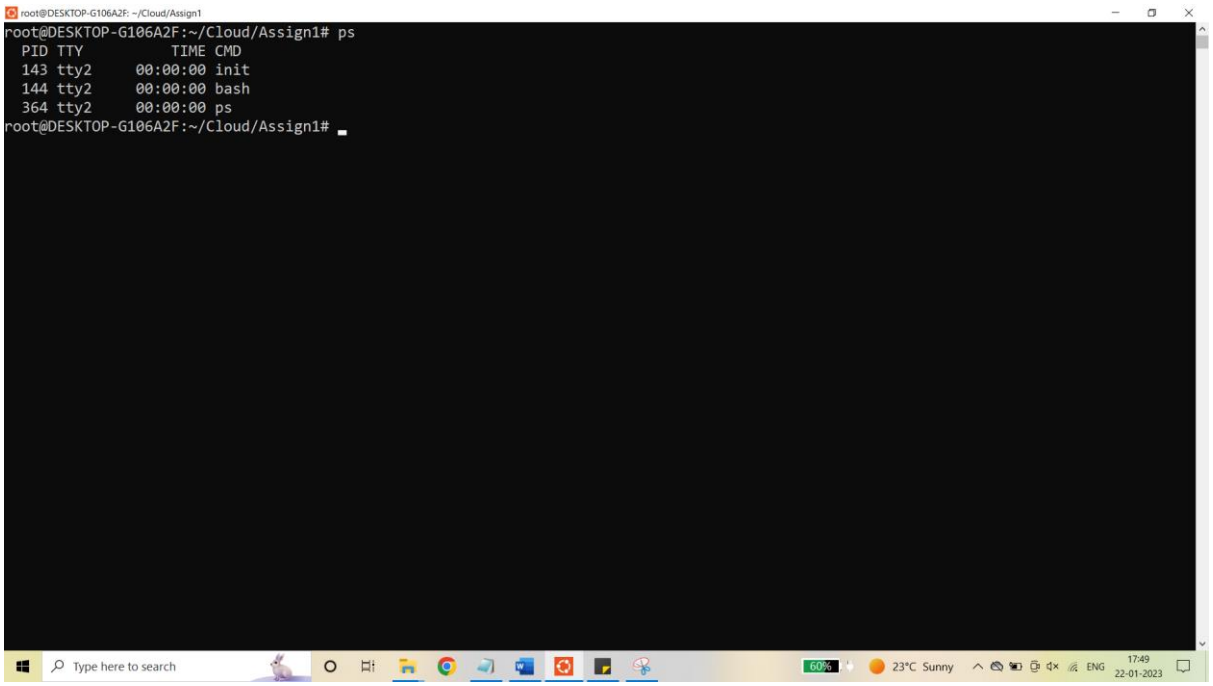
Display active processes.

You can list running processes using the ps command (ps means process status). The ps command displays your currently running processes in real-time.

Syntax-

$ps

Output



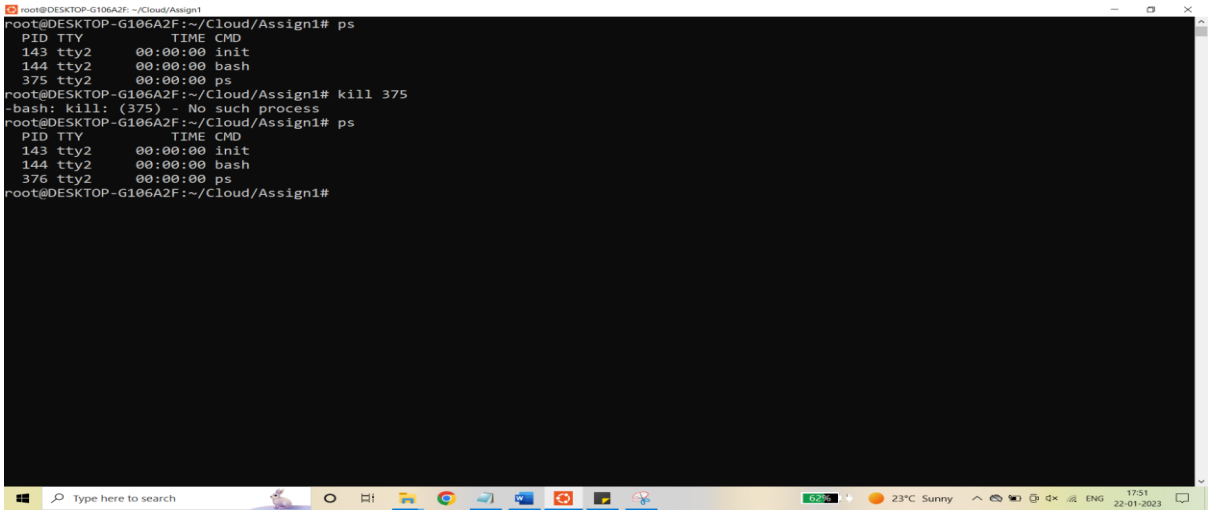
31. kill and killall —

Kill active processes by process ID or name. kill command in Linux (located in /bin/kill), is a built-in command which is used to terminate processes manually. kill command sends a signal to a process which terminates the process. If the user doesn't specify any signal which is to be sent along with kill command then default TERM signal is sent that terminates the process.

Killall is a tool for terminating running processes on your system based on name. In contrast, kill terminates processes based on Process ID number (PID). Kill and killall can also send specific system signals to processes.

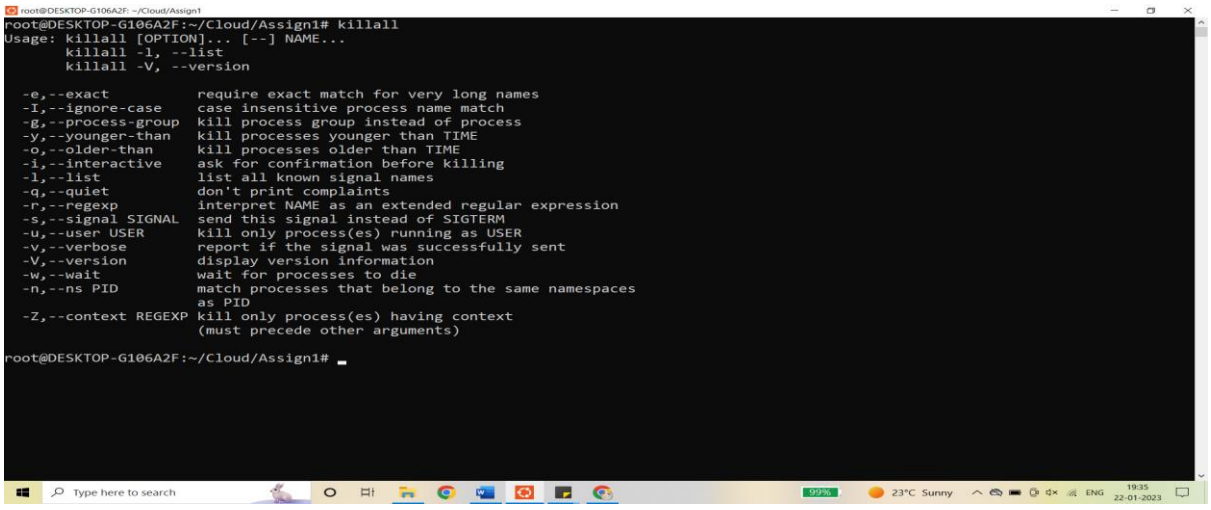
Syntax- $kill -l

Output-



Kill all

Syntax -$ sudo killall yes



32. df command—

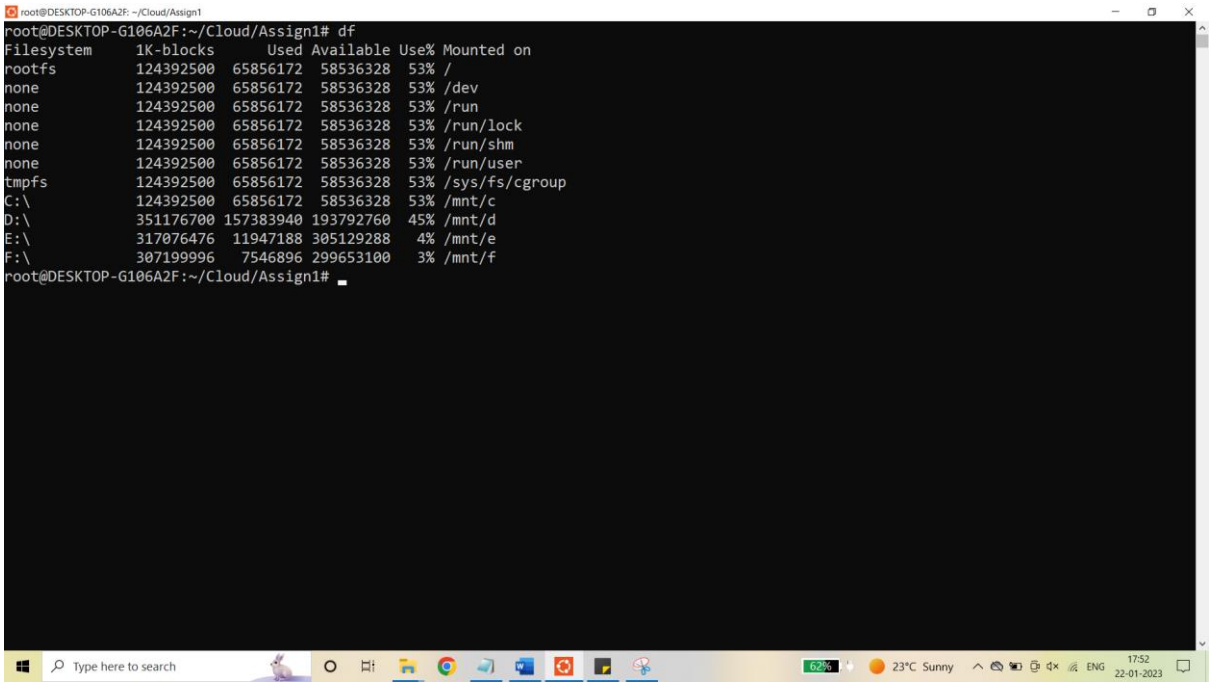
Display disk filesystem information.

The ‘df‘ command stands for “disk filesystem“, it is used to get a full summary of available and used disk space usage of the file system on the Linux system.

Syntax-

df [OPTION]… [FILE]…

Output-



33. mount command —

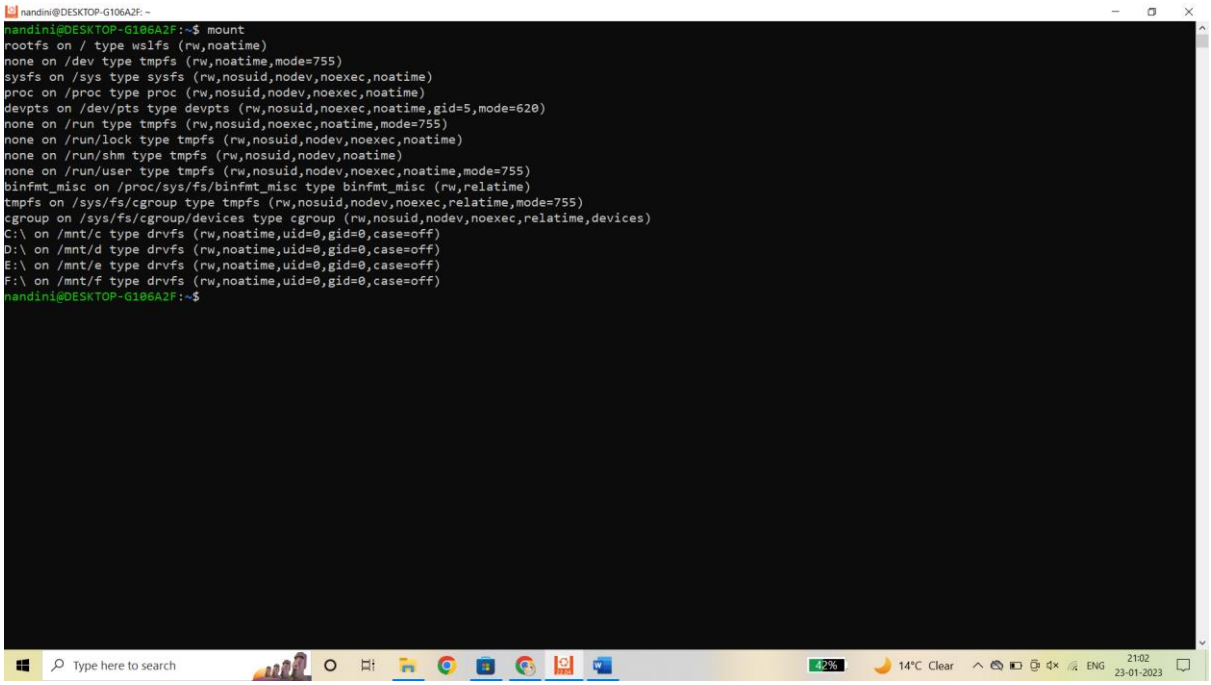
Mount file systems in Linux.

Mount command is used to mount the filesystem found on a device to big tree structure(Linux filesystem) rooted at '/'. Conversely, another command umount can be used to detach these devices from the Tree.

Syntax-

mount -t type device dir

Output-



34. chmod command —

Command to change file permissions.

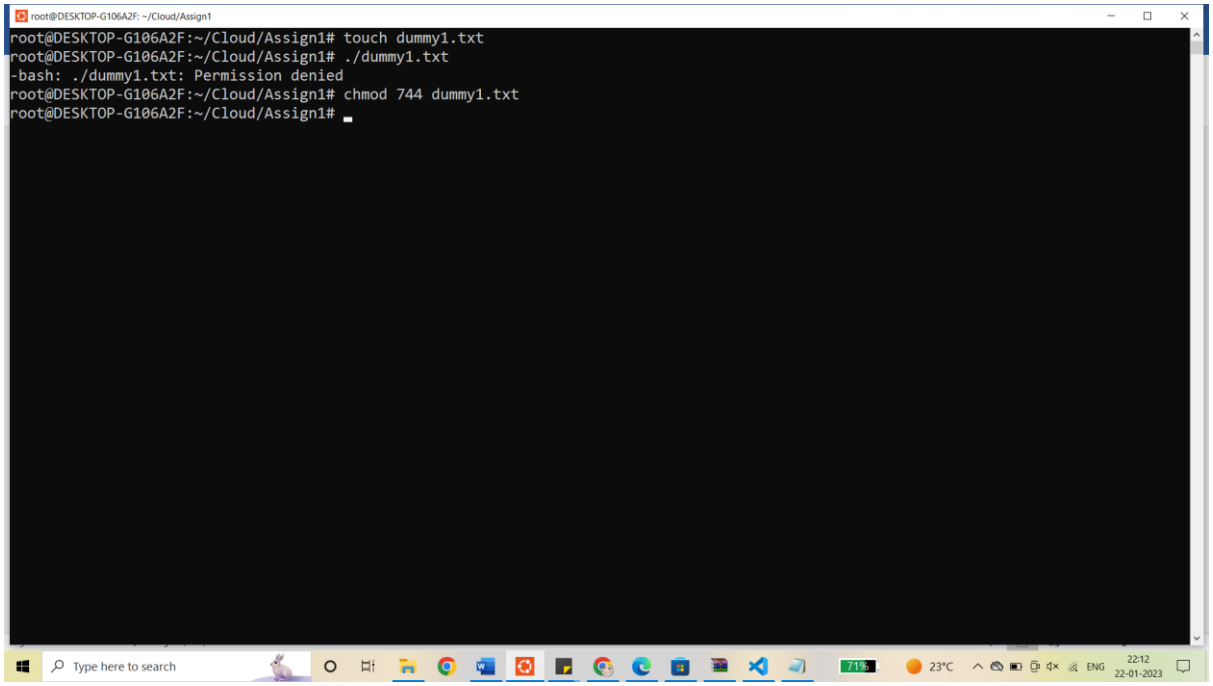
In Unix-like operating systems, the chmod command is used to change the access mode of a file.

The name is an abbreviation of change mode.

Syntax-

```
chmod [reference][operator][mode] file...
```

Output-



35. chown command —

Command for granting ownership of files or folders.

The chown command allows you to change the user and/or group ownership of a given file, directory, or symbolic link.In Linux, all files are associated with an owner and a group and assigned with permission access rights for the file owner, the group members, and others. Different users in the operating system have ownership and permission to ensure that the files are secure and put restrictions on who can modify the contents of the files. In Linux there are different users who use the system:

Each user has some properties associated with them, such as a user ID and a home directory. We can add users into a group to make the process of managing users easier.

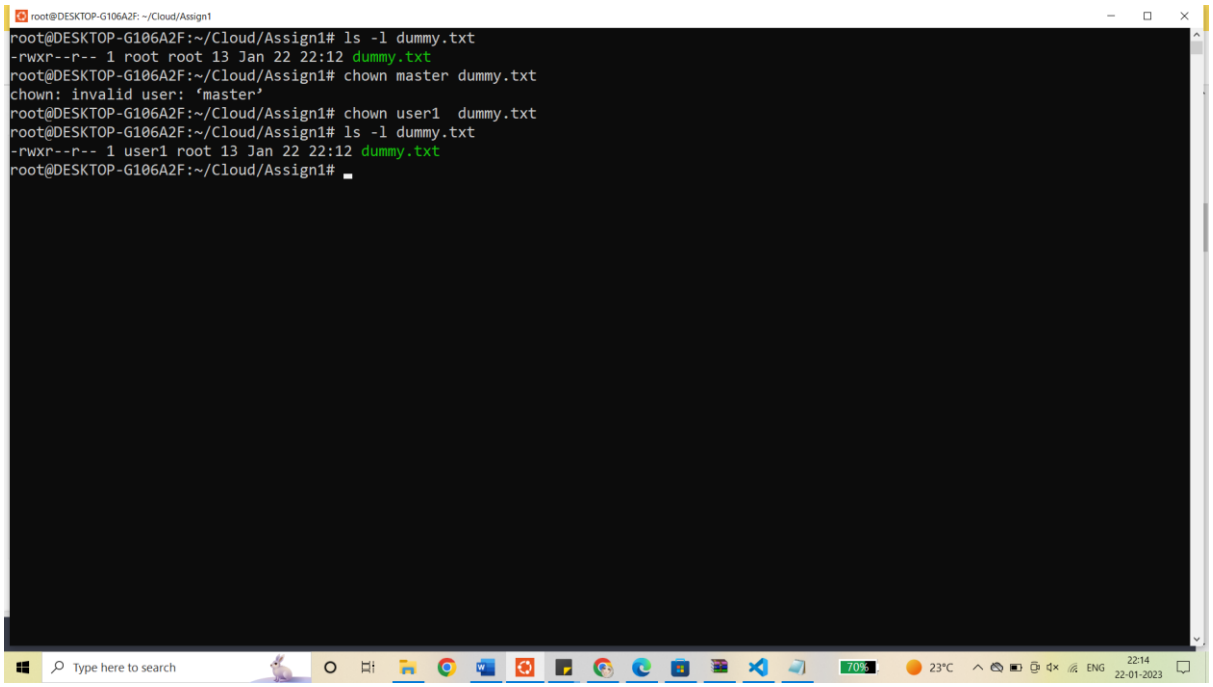
A group can have zero or more users. A specified user can be associated with a “default group”. It can also be a member of other groups on the system as well.

Syntax-

Syn chown [OPTION]… [OWNER][:[GROUP]] FILE…

chown [OPTION]… –reference=RFILE FILE…tax-

Output-



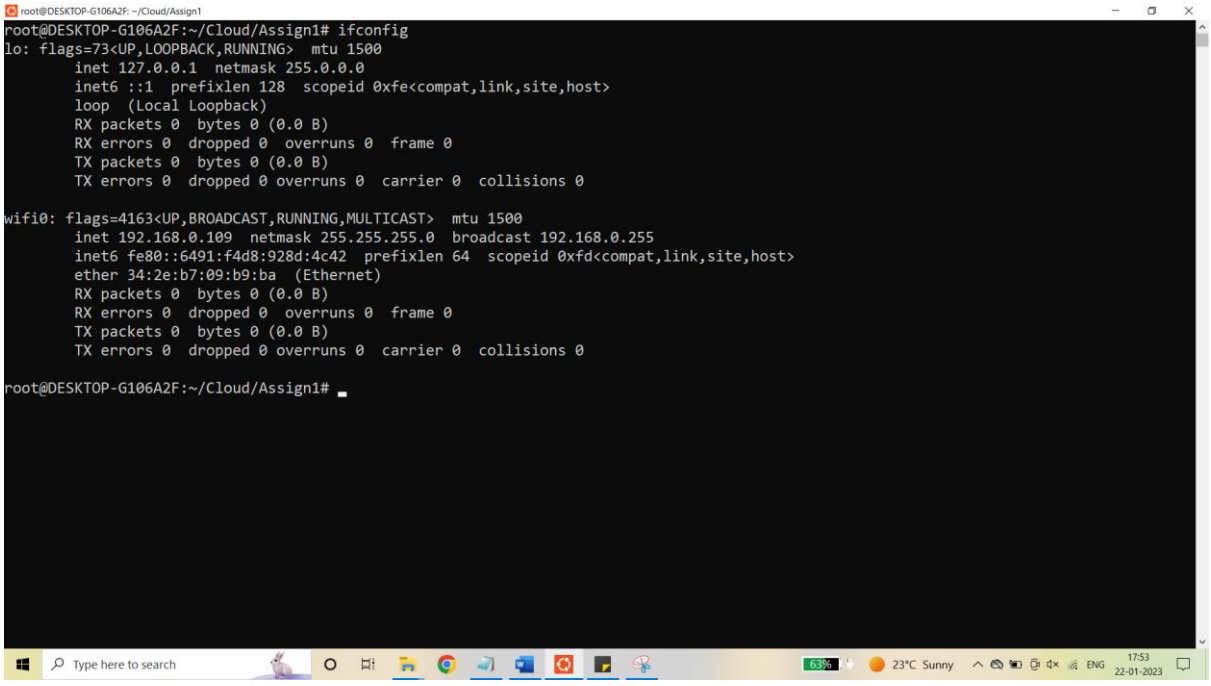
36. ifconfig command —

Display network interfaces and IP addresses. You can use the ifconfig command to assign an address to a network interface and to configure or display the current network interface configuration information. ifconfig(interface configuration) command is used to configure the kernel-resident network interfaces. It is used at the boot time to set up the interfaces as necessary. After that, it is usually used when needed during debugging or when you need system tuning. Also, this command is used to assign the IP address and netmask to an interface or to enable or disable a given interface.

Syntax-

ifconfig [...OPTIONS] [INTERFACE]

Output-



37. traceroute command —

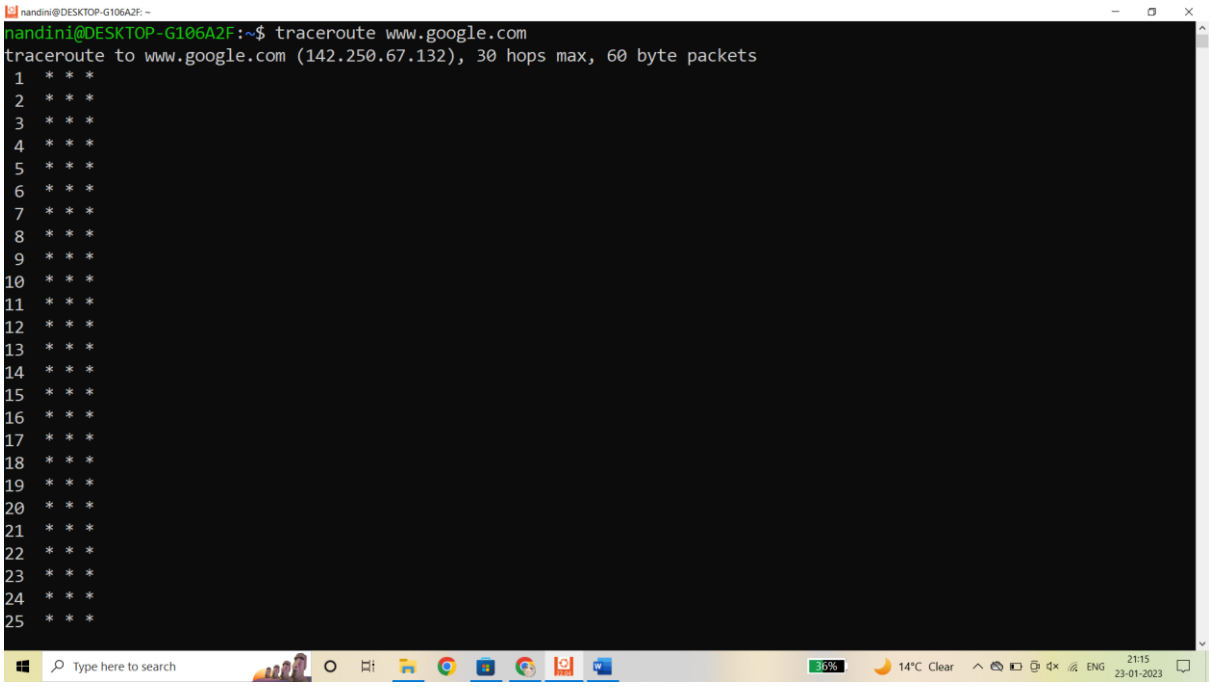
Trace all the network hops to reach the destination.

The UNIX/Linux traceroute command (tracert on a Windows computer) identifies the route a packet takes between your computer and the destination computer specified in the command.

Syntax-

traceroute [options] host_Address [pathlength]

Output-



38. wget command —

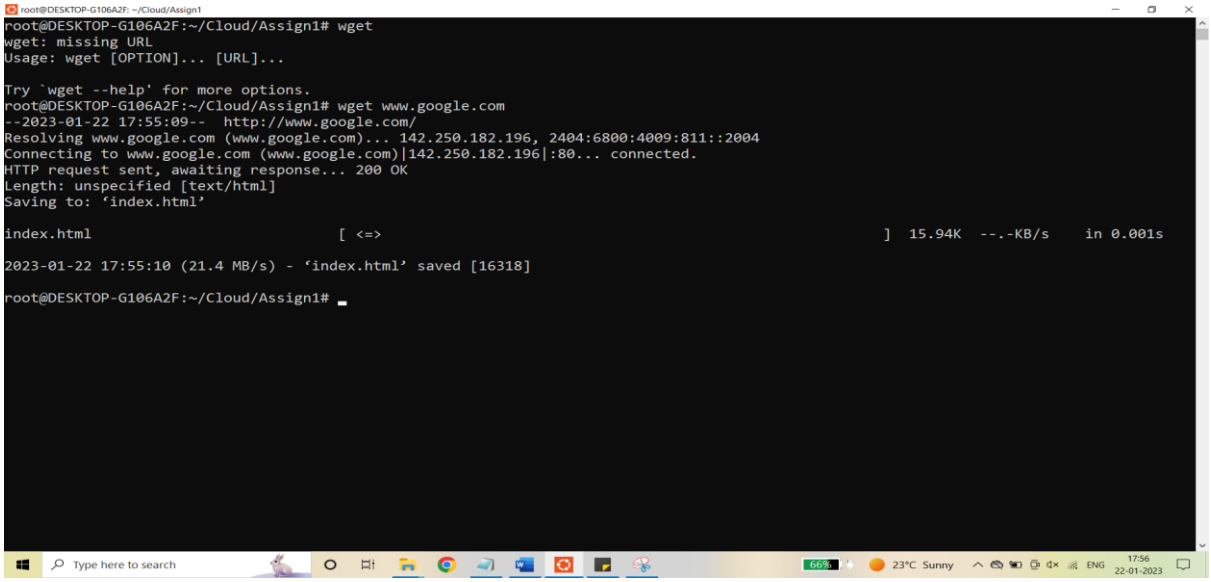
Direct download files from the internet.

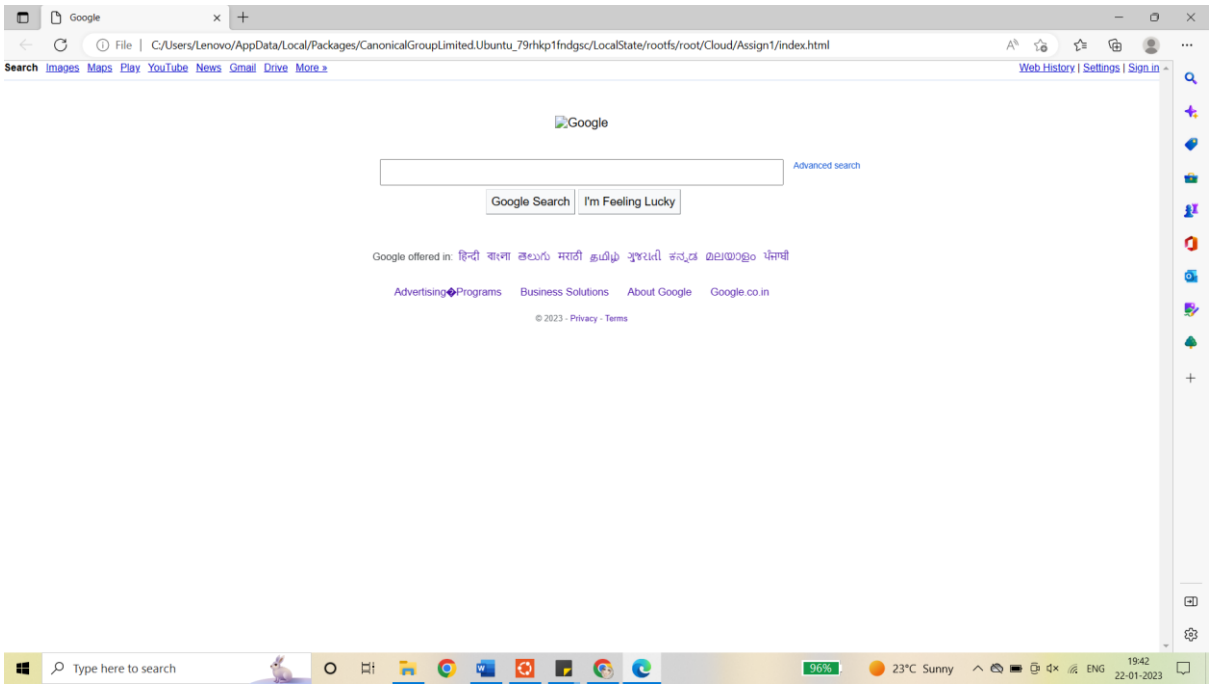
The wget command is an internet file downloader that can download anything from files and web pages all the way through to entire websites.

Syntax-

```
wget [option] [URL]
```

Output-





39. ufw command—

Firewall command.

40. iptables command —

Base firewall for all other firewall utilities to interface with

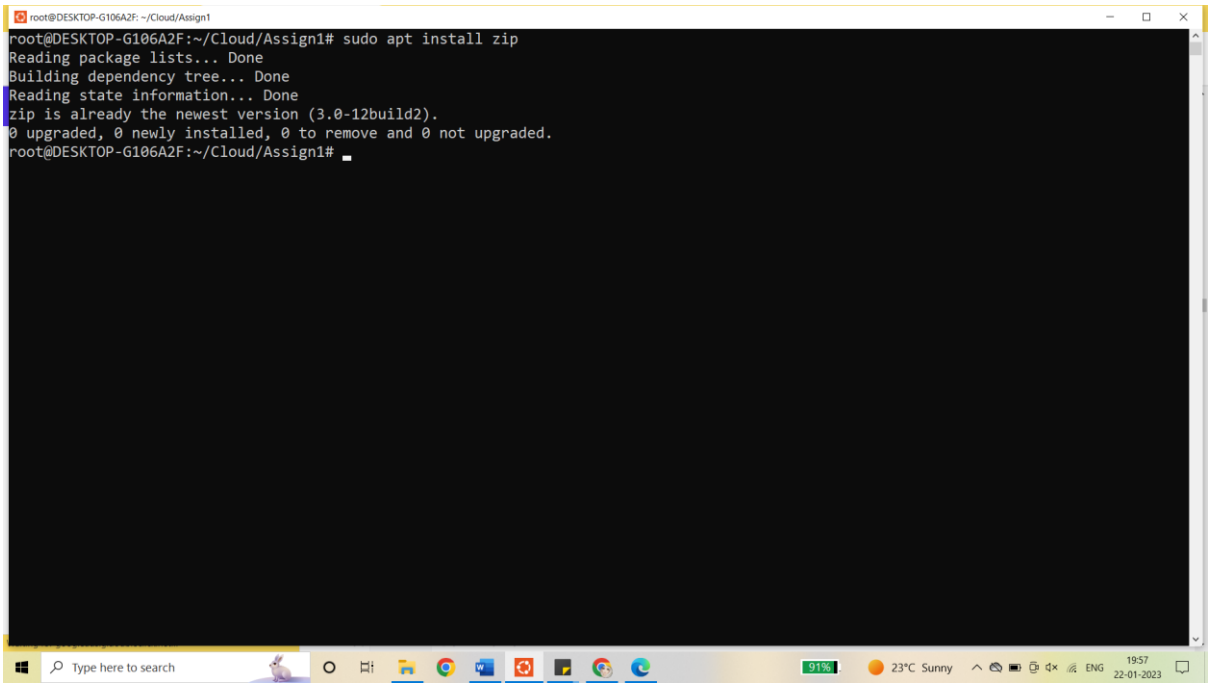
The Linux command line firewall Iptables enables system administrators to control both incoming and outgoing traffic. Iptables employ a collection of tables with chains that each contain a set of pre-configured or user-defined rules. A command-line firewall tool called iptables uses policy chains to allow or deny traffic. Iptables searches through its list of rules to find one that matches a connection that tries to establish itself on your system. In the absence of one, it falls back on the default course of action.

Syntax-

```
iptables --table TABLE -A/-C/-D... CHAIN rule --jump Target
```

41. apt, pacman, yum, rpm —

Package managers depending on the distro



42. sudo command —

Command to escalate privileges in Linux.

Sudo is a Linux utility that allows users to run commands with the privileges of another user, when no arguments are provided, this will execute the command as the root user.If sudo is not configured correctly, this could allow attackers to escalate their privileges to root.

Syntax-

sudo -V | -h | -l | -v | -k | -K | -s | [-H] [-P] [-S] [-b] |

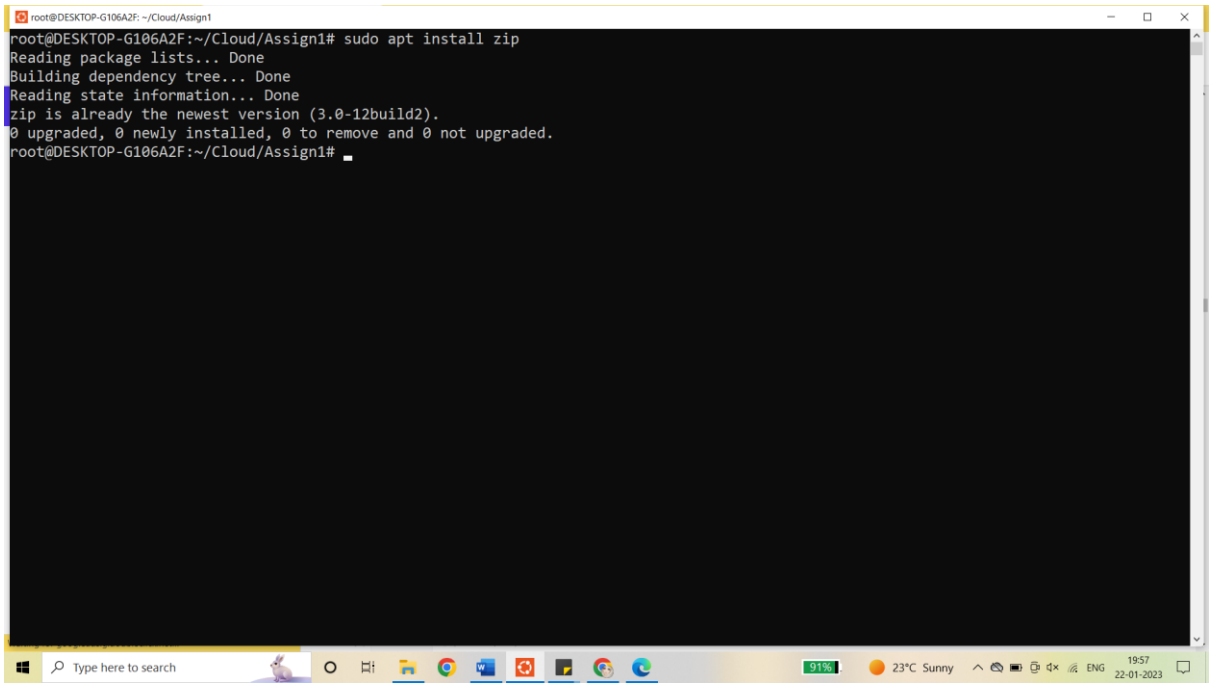
[-p prompt] [-c class|-] [-a auth_type] [-r role] [-t type]

[-u username|#uid] commandsudo -V | -h | -l | -L | -v | -k | -K | -s | [-H] [-P] [-S] [-b] |

[-p prompt] [-c class|-] [-a auth_type] [-r role] [-t type]

[-u username|#uid] command

Output-



43. cal command —

View a command-line calendar

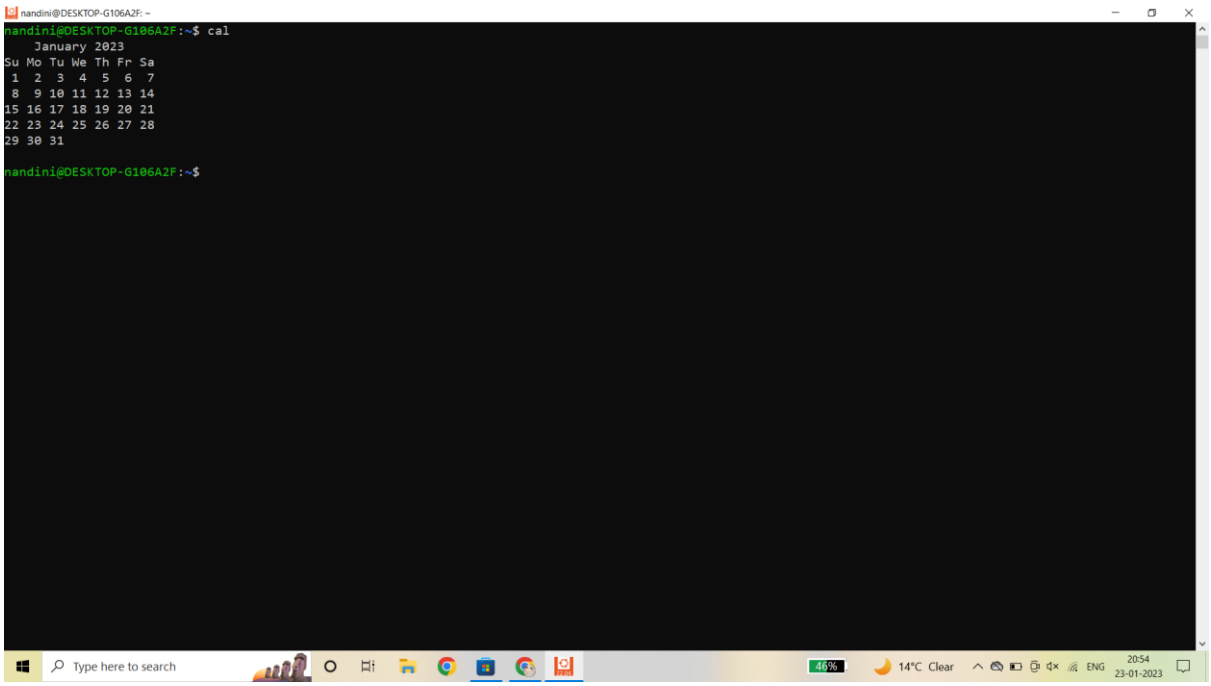
If a user wants a quick view of the calendar in the Linux terminal, cal is the command for you. By default, the cal command shows the current month calendar as output.

Cal command is a calendar command in Linux which is used to see the calendar of a specific month or a whole year.

Syntax-

cal [[month] year]-

Output-



44. alias command —

Create custom shortcuts for your regularly used commands

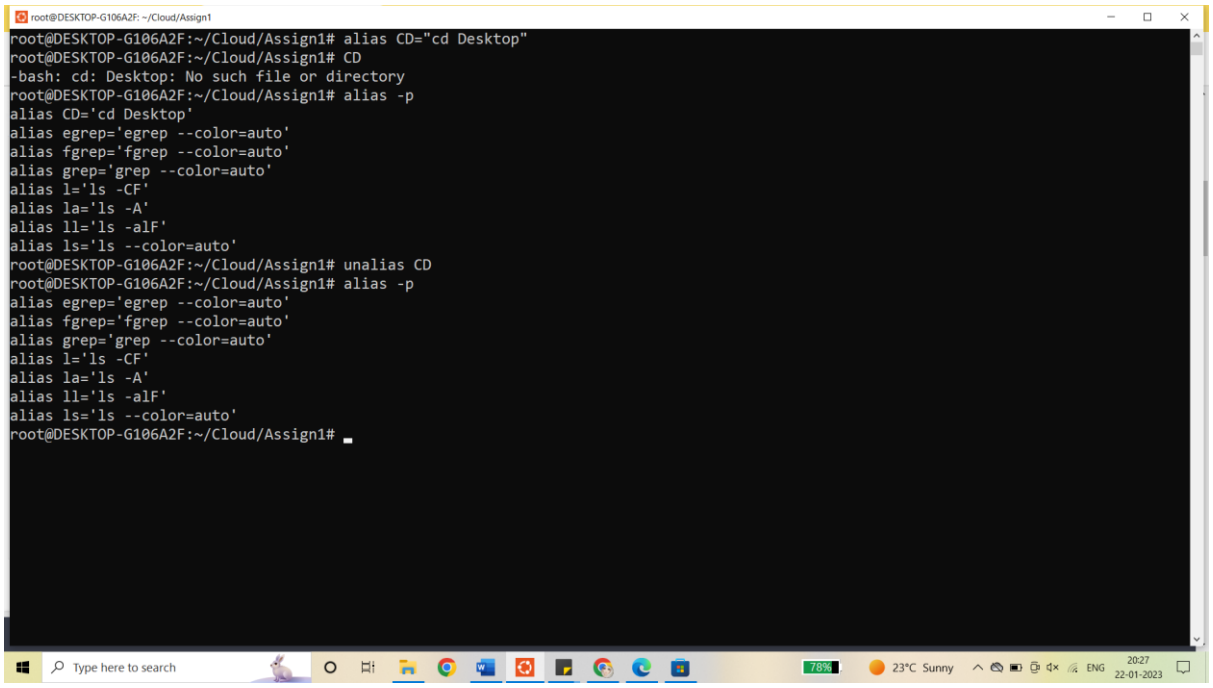
In Linux, an alias is a shortcut that references a command. An alias replaces a string that invokes a command in the Linux shell with another user-defined string.

Aliases are mostly used to replace long commands, improving efficiency and avoiding potential spelling errors. Aliases can also replace commands with additional options, making them easier to use.

Syntax-

```
alias [-p] [name[=value] ... ]
```

Output-



45. dd command —

Majorly used for creating bootable USB sticks.

dd is very powerful tool. Dd stands for Data Duplicator which is make copy using block by block from one device into another device. So we can also use dd tool for data backup and restore from one device into another device.

46. whereis command —

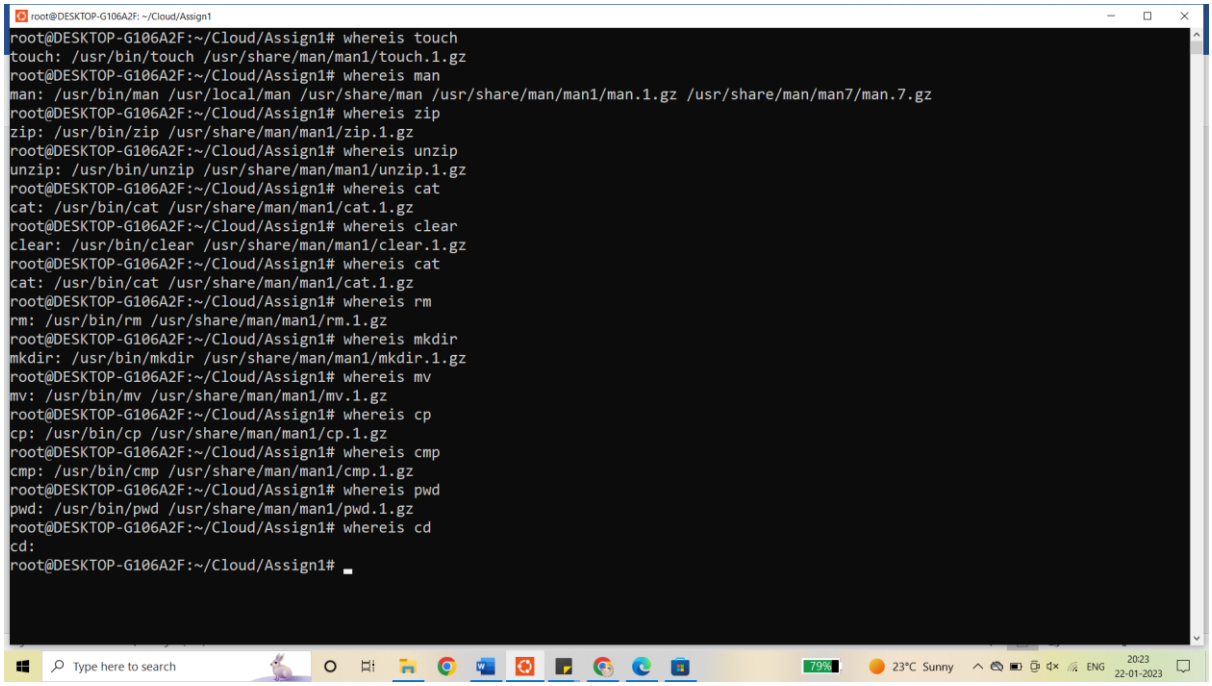
Locate the binary, source, and manual pages for a command

Whereis command is used to find the location of source/binary file of a command and manuals sections for a specified file in Linux system.

Synatx-

whereis [options] filename…

Output-



47 whatis command —

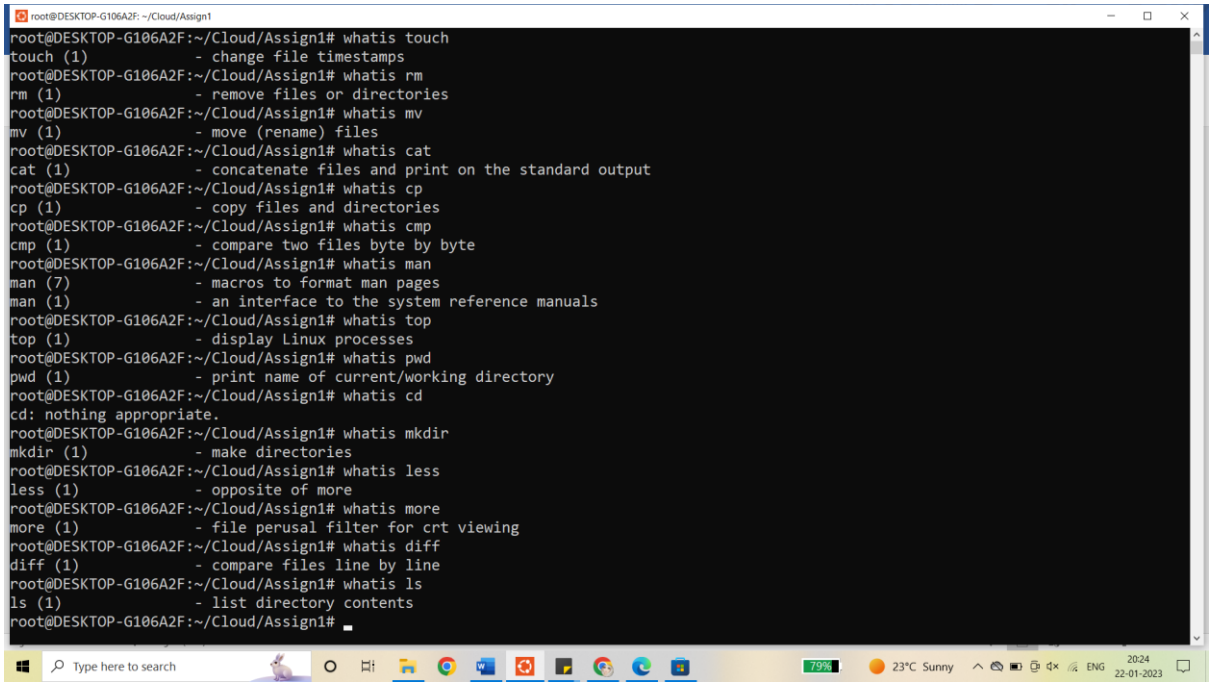
Find what a command is used for

Whatis command in Linux is used to get a one-line manual page descriptions. In Linux, each manual page has some sort of description within it. So this command search for the manual pages names and show the manual page description of the specified filename or argument.

Syntax:

Whatis [-dlv?V] [-r|-w] [-s list] [-m system[, ...]] [-M path] [-L locale] [-C file] name ...

Output-



48. top command —

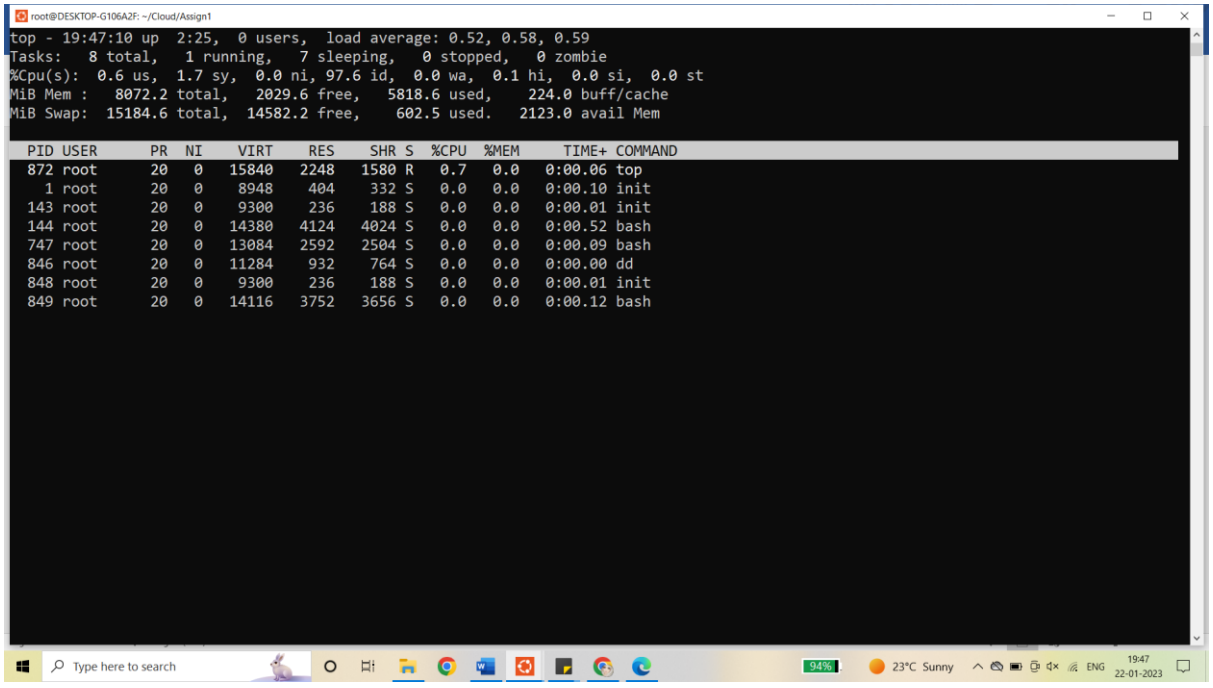
View active processes live with their system usage

The top (table of processes) command shows a real-time view of running processes in Linux and displays kernel-managed tasks. The command also provides a system information summary that shows resource utilization, including CPU and memory usage.

Syntax:

top -hv | -bcEeHiOSs1 -d secs -n max -u | U user -p pid(s) -o field -w [cols]

Output-



49. useradd and usermod command —

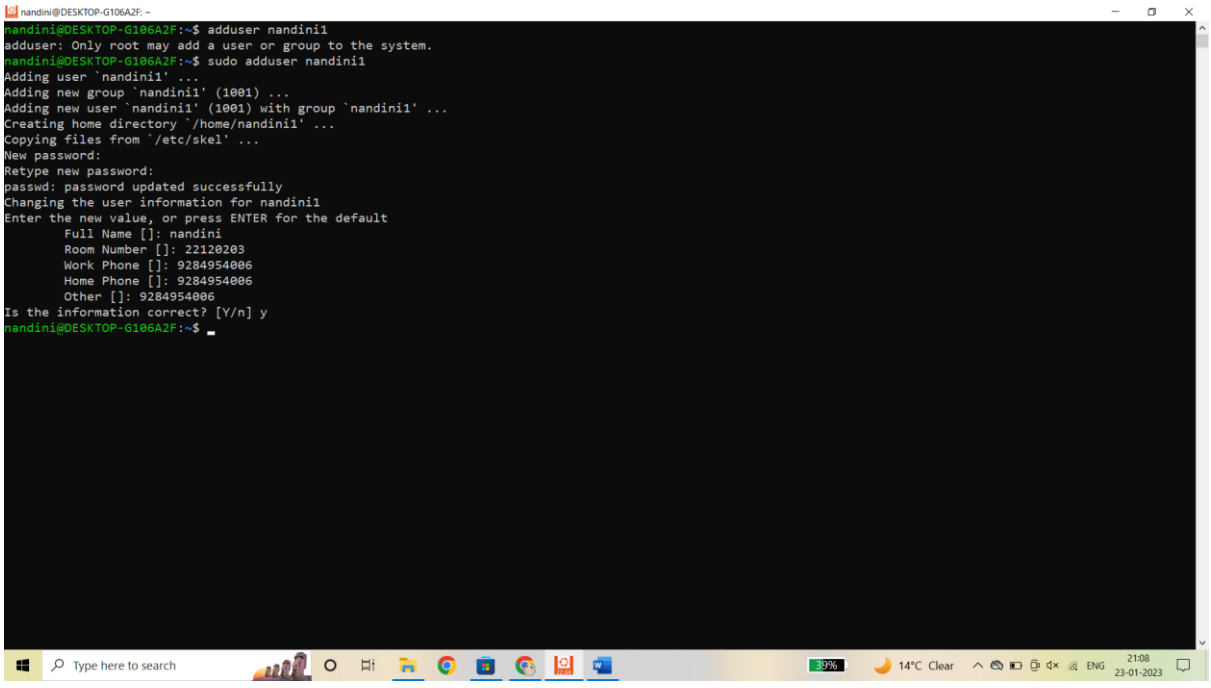
Add new user or change existing users data

Usermod command or modify user is a command in Linux that is used to change the properties of a user in Linux through the command line. After creating a user we have to sometimes change their attributes like password or login directory etc.

In Linux, a ‘useradd‘ command is a low-level utility that is used for adding/creating user accounts in Linux and other Unix-like operating systems. The ‘adduser‘ is much similar to the useradd command because it is just a symbolic link to it.

Syntax-

Output-



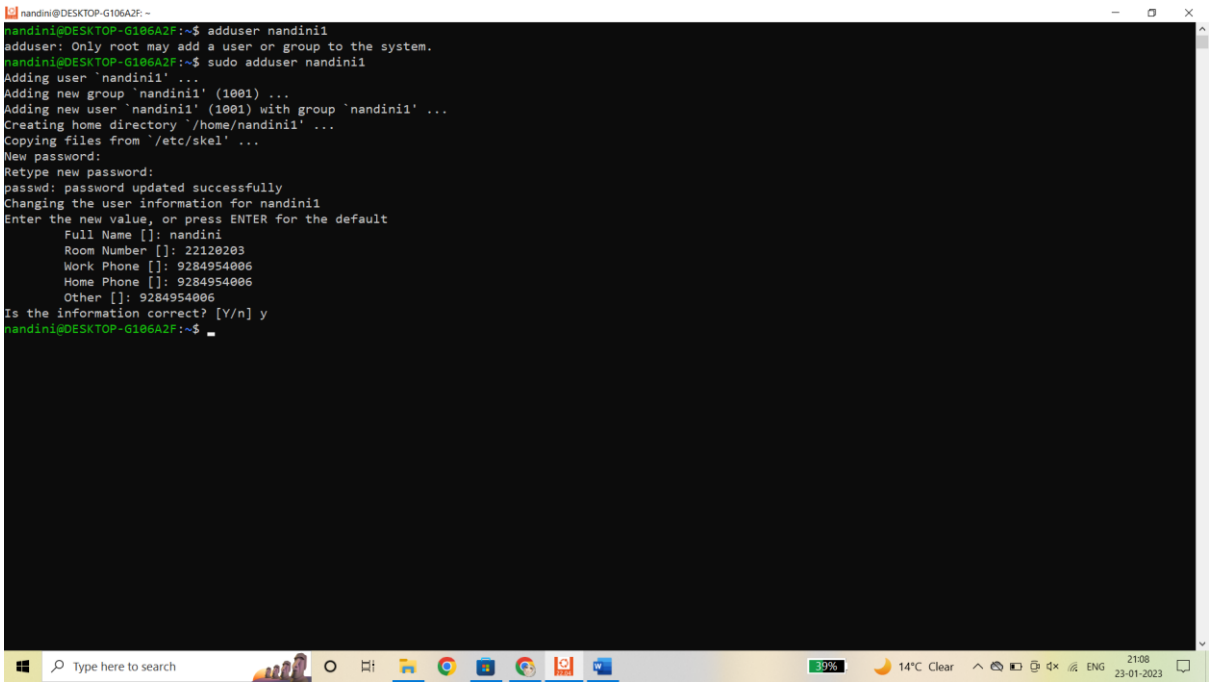
50. passwd command —

Create or update passwords for existing users

Syntax-

Passwd [-R load_module] [-f | -s -a] [User]

Output-



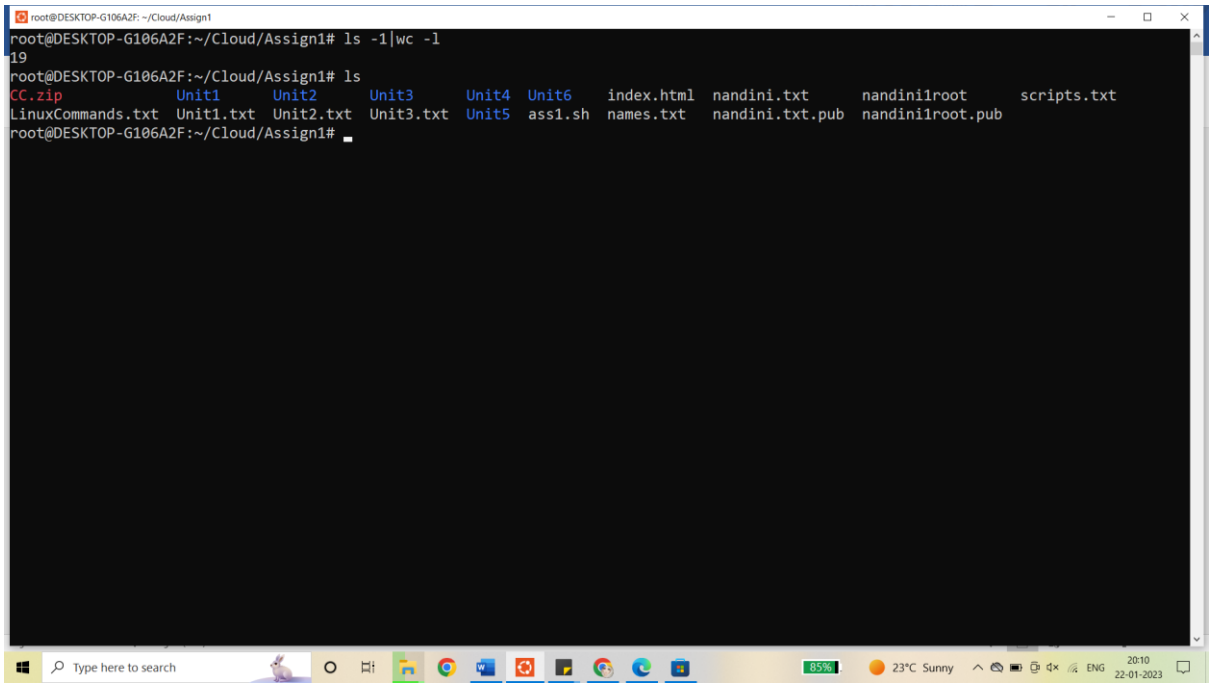
51. ls -1 | wc -l command —

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

Syntax-

ls -1 | wc -l

Output-



52 kill command -

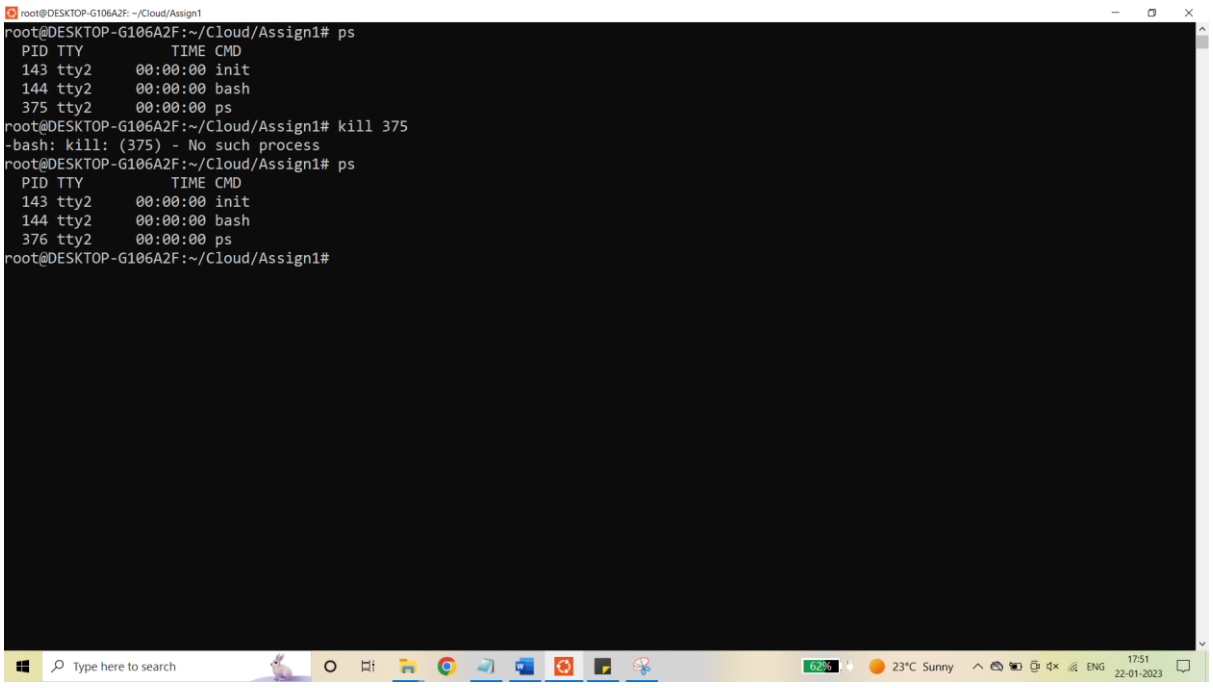
Command to kill the process (PID).

The kill command sends a signal (by default, the SIGTERM signal) to a running process. This default action normally stops processes. If you want to stop a process, specify the process ID (PID) in the ProcessID variable.

Syntax-

$kill -l

Output-



53. w command -

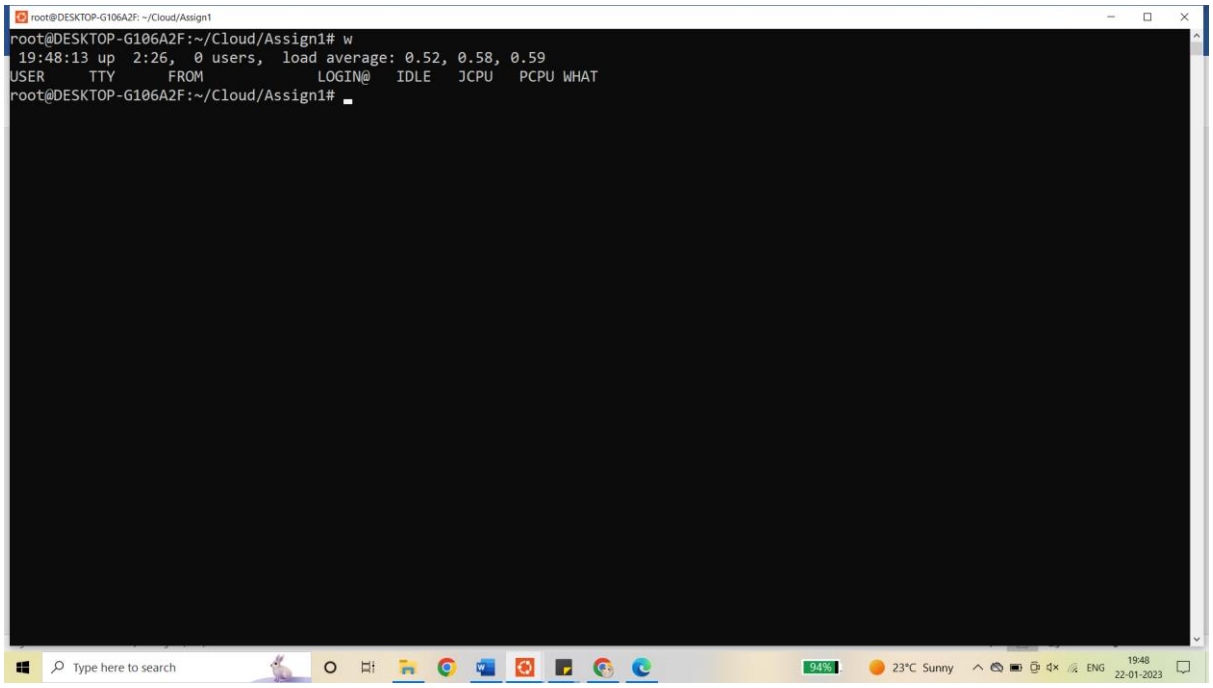
To check how many users logged into the linux.

w command in Linux is used to show who is logged on and what they are doing. This command shows the information about the users currently on the machine and their processes. The header shows, in this order, the current time, how long the system has been running, how many users are currently logged on, and the system load averages for the past 1, 5, and 15 minutes. The following entries are displayed for each user: login name, the tty name, the remote host, login time, idle time, JCPU, PCPU, and the command line of their current process. The JCPU time is the time used by all processes attached to the tty. It does not include past background jobs but does include currently running background jobs. The PCPU time is the time used by the current process, named in the “what” field.

Syntax:

w [options] user [...]

Output-



54. date command --

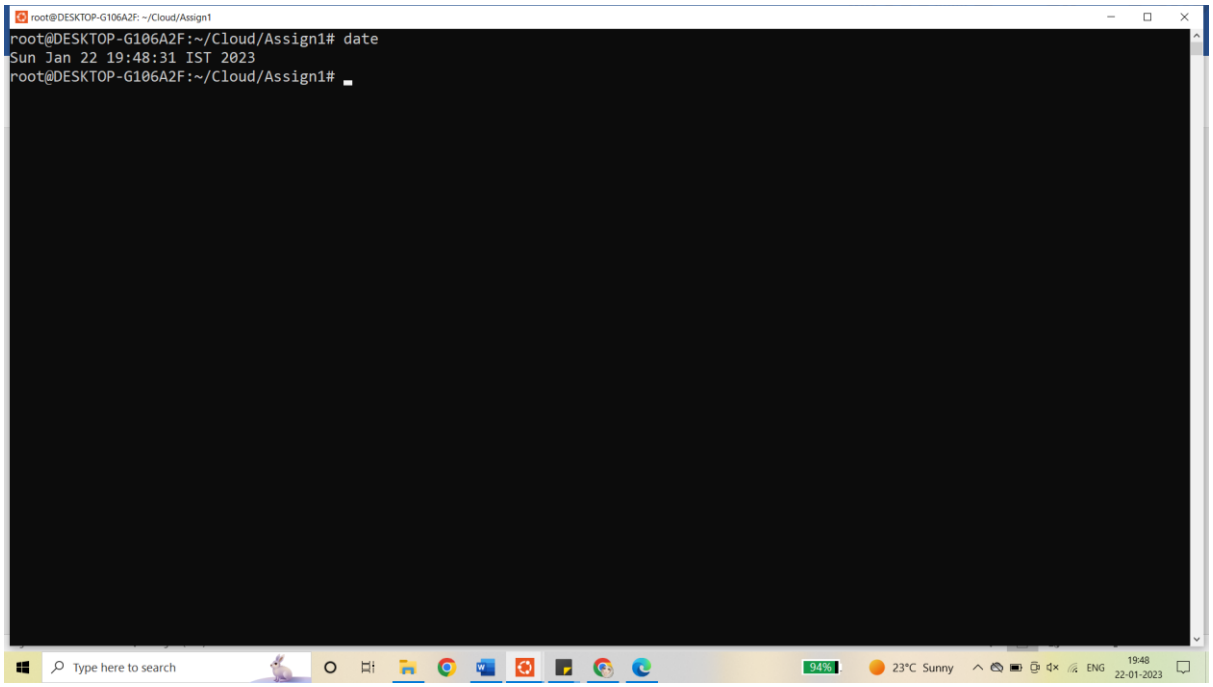
It is used to check the current date, time in linux date command is used to display the system date and time. date command is also used to set date and time of the system. By default the date command displays the date in the time zone on which unix/linux operating system is configured.You must be the super-user (root) to change the date and time.

Syntax:

date [OPTION]... [+FORMAT]

date [-u|--utc|--universal] [MMDDhhmm[[CC]YY][.ss]]

Output-



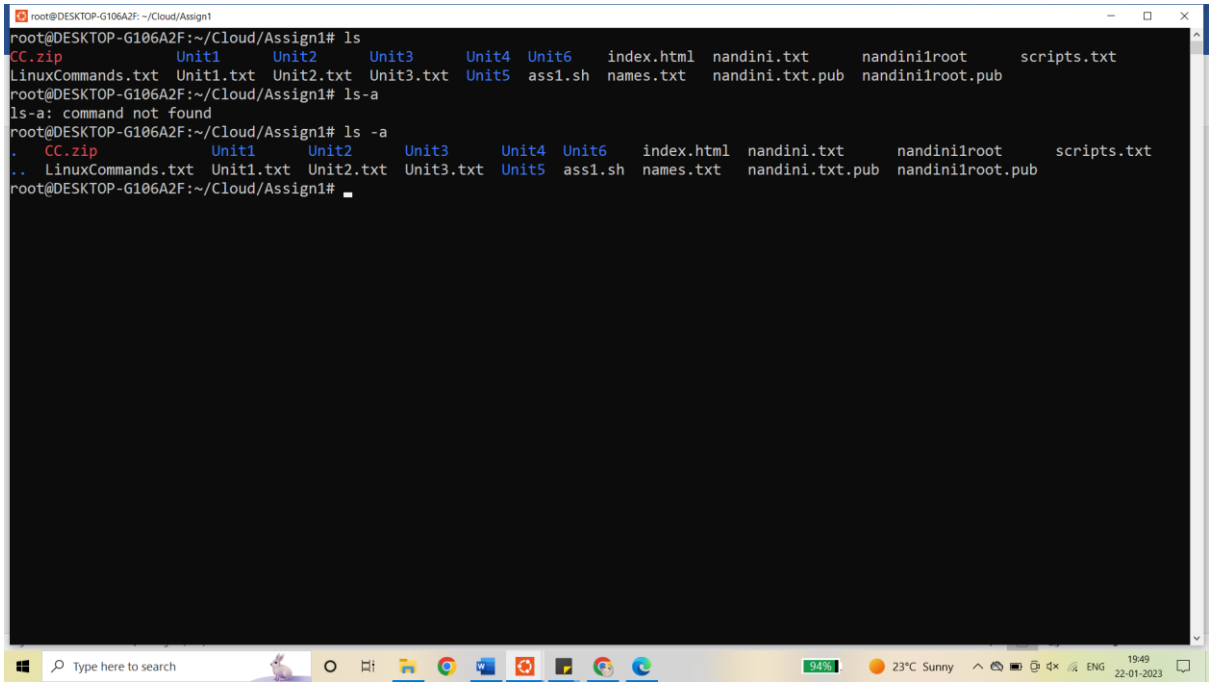
56 ls -a command –

List the hidden files in directory (hidden files are denatoed as ..)

Syntax-

ls -a

Output-



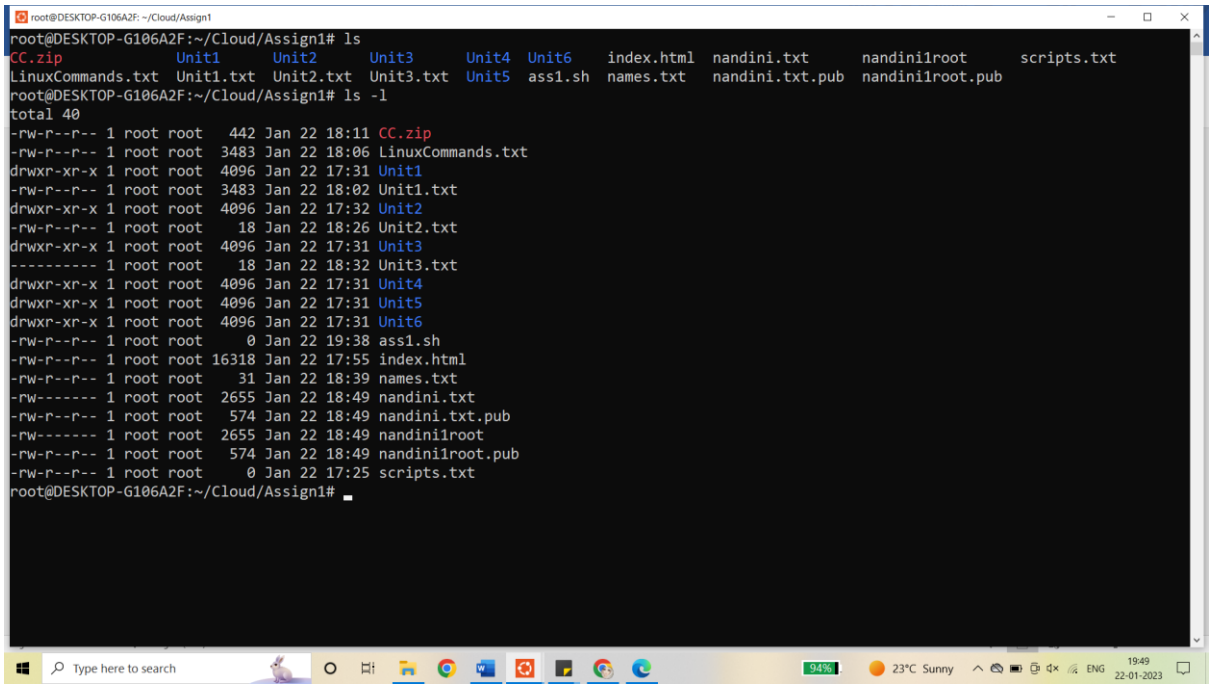
57.ls -l command --

Use to check the permissions on all the files

Syntax-

ls-l

Output-

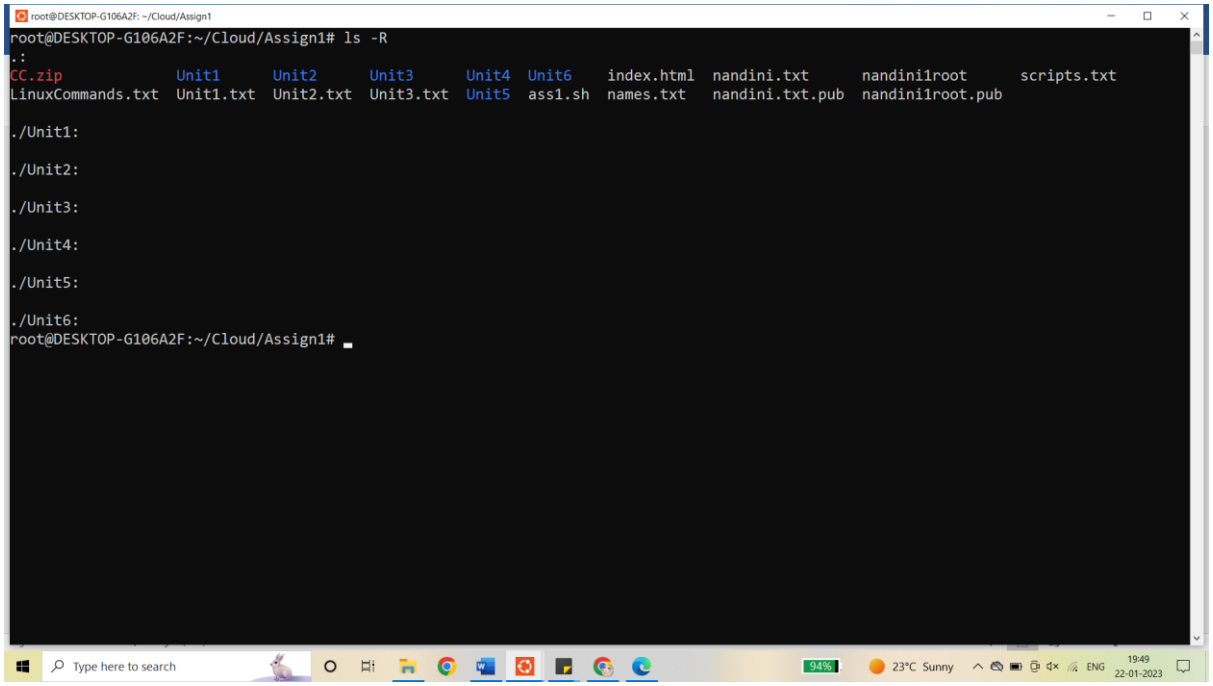


58. ls -R command –

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

Syntax- ls-r

Output-



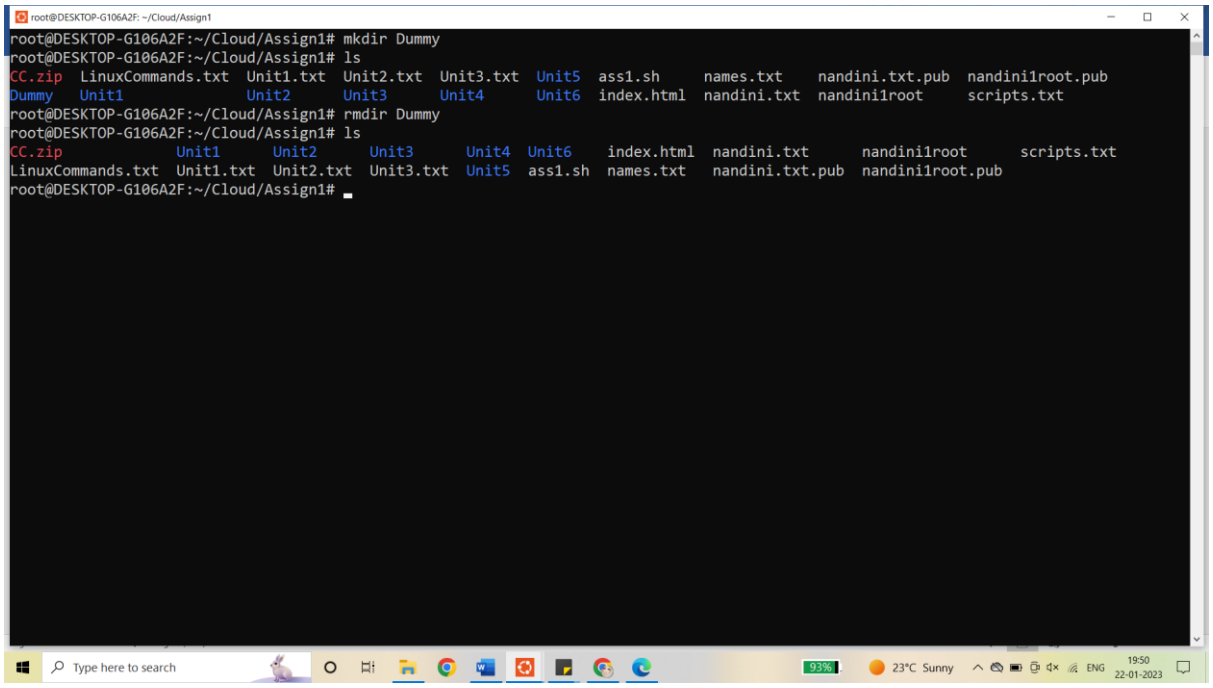
59 rm-command –

It is used to remove directory with the files

Syntax-

rmdir <dir_name>

Output-



60. rm Command –

Used to remove file

Syntax-

rm <file_name>

Output-