

Assignment 1

Cloud Computing

Name: Ishraq Ahmed Esha

ID: 19301261

Course: CSE484

Sec: 01

Date: October 9, 2022

Answer to the Question No 1

Delivering hosted services through the internet is referred to as "cloud computing" in general. There are three primary forms of cloud computing for these services. Various applications in the fields of art, business, data storage, backup, education, entertainment, management, social networking, etc., are offered by cloud service providers. There are various types of cloud computing applications these are:

1. Github

Github provides cloud storage to its user. User can save their works on the github platform and can work remotely by accessing the content from anywhere.

2. Discord

In terms of business application, it offers a user-friendly interface that enables us to establish public and private communication channels on the cloud they operate their operations from the cloud platform.

3. LinkedIn

In terms of social applications like Facebook, Twitter, etc., LinkedIn is a platform for professional work. It also works on the cloud computing platform.

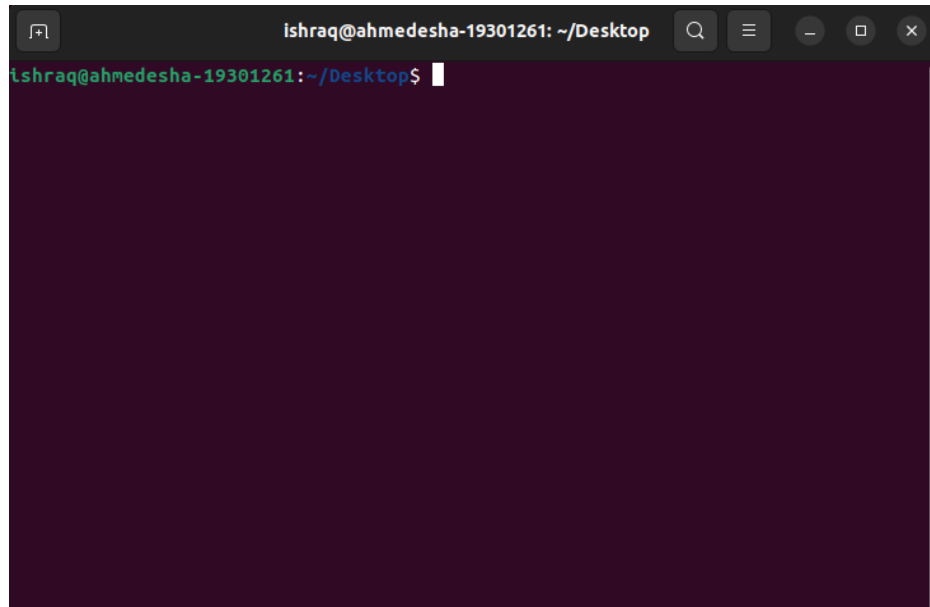
4. Netflix

Regarding entertainment applications, streaming platforms like Netflix also host movies and series on the cloud platform. They hosted their service on the cloud through the internet, and users also get access from cloud computing platforms.

These are some different kinds of cloud computing applications.

Answer to the Question No 2

I have installed Ubuntu 20.04.1 LTS in Oracle VirtualBox. My username is ishraq, and pc name is ahmedesha-19301261



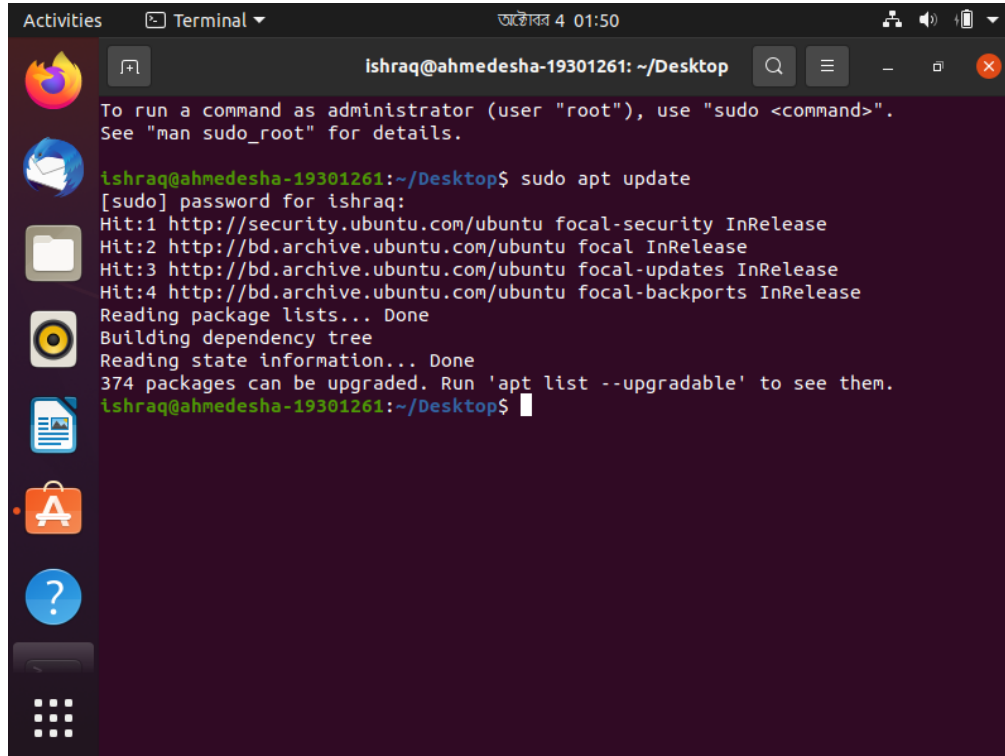
Some basic commands for Ubuntu.

1. **sudo**

Sudo (SuperUser Do) is similar to Launch as an administrator in Windows Linux commands lets you run applications or other commands with administrative rights. When you need to alter files in a directory that your user wouldn't typically have access to, for instance, this is helpful.

i) sudo apt-get update

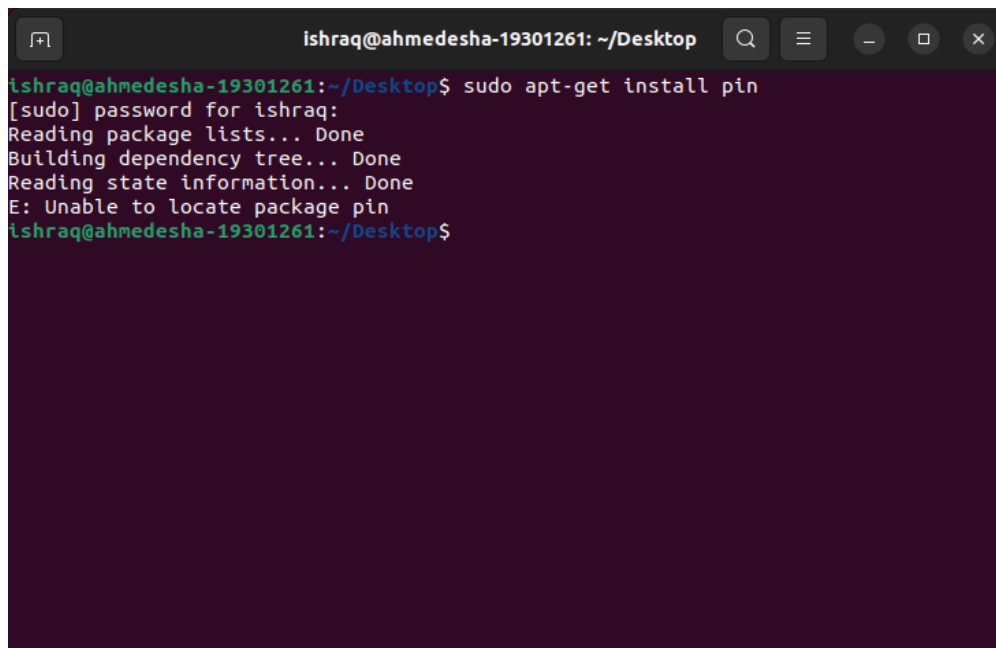
The first program you must perform in each Linux system after a new install is apt-get update with super user privileges. This command updates the database and notifies your system whether or not updated packages are available.

A terminal window titled 'ishraq@ahmedesha-19301261: ~/Desktop' with a search bar and window controls. The terminal shows the output of the 'sudo apt update' command. It starts with a message about running commands as administrator. Then, it prompts for a password. The output shows four hits from the Ubuntu repository for security, focal, focal-updates, and focal-backports. It then reports that 374 packages can be upgraded. The prompt returns to the user.

```
Activities Terminal ৩১ অক্টোবর ৪ ০১:৫০
ishraq@ahmedesha-19301261: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ishraq@ahmedesha-19301261:~/Desktop$ sudo apt update
[sudo] password for ishraq:
Hit:1 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:2 http://bd.archive.ubuntu.com/ubuntu focal InRelease
Hit:3 http://bd.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:4 http://bd.archive.ubuntu.com/ubuntu focal-backports InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
374 packages can be upgraded. Run 'apt list --upgradable' to see them.
ishraq@ahmedesha-19301261:~/Desktop$
```

2. sudo apt-get install

To install any specific package, we can use this command. The command will then use as `sudo apt-get install <package-name>`

A terminal window titled 'ishraq@ahmedesha-19301261: ~/Desktop' with a search bar and window controls. The terminal shows the output of the 'sudo apt-get install pin' command. It prompts for a password. The output shows that the package lists are read, the dependency tree is built, and state information is read. However, it ends with an error message: 'E: Unable to locate package pin'. The prompt returns to the user.

```
ishraq@ahmedesha-19301261: ~/Desktop
ishraq@ahmedesha-19301261:~/Desktop$ sudo apt-get install pin
[sudo] password for ishraq:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package pin
ishraq@ahmedesha-19301261:~/Desktop$
```

3. dpkg - -list

To show the list of packages installed on the system.

```
ishraq@ahmedesha-19301261: ~  
ishraq@ahmedesha-19301261:~$ dpkg --get-selections  
Desired=Unknown/Install/Remove/Purge/Hold  
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend  
|| Err?=(none)/Reinst-required (Status,Err: uppercase=bad)  
||/ Name                               Version  
-----  
ii accountsservice                     22.07.5-2ubuntu1.3  
ii acl                                 2.3.1-1  
ii acpi-support                         0.144  
ii acpid                               1:2.0.33-1ubuntu1  
ii adduser                             3.118ubuntu5  
ii adwaita-icon-theme                  41.0-1ubuntu1  
ii aisleriot                           1:3.22.22-1  
ii alsa-base                           1.0.25+dfsg-0ubuntu7  
ii alsa-topology-conf                  1.2.5.1-2  
ii alsa-ucm-conf                       1.2.6.3-1ubuntu1  
ii alsa-utils                          1.2.6-1ubuntu1  
ii amd64-microcode                    3.20191218.1ubuntu2  
ii anacron                             2.3-31ubuntu2  
ii apg                                 2.2.3.dfsg.1-5build2  
ii apparmor                            3.0.4-2ubuntu2.1  
ii apport                              2.20.11-0ubuntu82.1  
ii apport-gtk                          2.20.11-0ubuntu82.1  
ii apport-symptoms                    0.24
```

4. cd

cd refers to the change directory. As such, it is one of the most fundamental Ubuntu commands. Just type cd followed by the folder's name to use this command. Both relative and absolute paths to folders are supported, as is the usage of a folder's name inside the current working directory. Such as cd / → refers to going to the root directory. Cd <folder name> → to go to the specific folder.

5. ls

The `ls` (list) command displays a directory tree with all the files and directories currently in use. If you wish to see the contents of a different directory, you may give its path.

6. mkdir <folder name>

To make a new folder, we can use `mkdir` command. With `cd` command, we have to go first to the desired directory, and then we can create a new folder by typing `mkdir <folder name>`

7. pwd

pwd refers to → print working directory. The current working directory's whole pathname is shown by this Ubuntu command.

```
Ishraq@ahmedesha-19301261: ~/Desktop
Ishraq@ahmedesha-19301261:~/Desktop$ cd /
Ishraq@ahmedesha-19301261:/$ cd home
Ishraq@ahmedesha-19301261:/home$ ls
Ishraq
Ishraq@ahmedesha-19301261:/home$ cd ishraq
Ishraq@ahmedesha-19301261:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
Ishraq@ahmedesha-19301261:~$ cd desktop
bash: cd: desktop: No such file or directory
Ishraq@ahmedesha-19301261:~$ cd Desktop
Ishraq@ahmedesha-19301261:~/Desktop$ mkdir "CSE484"
Ishraq@ahmedesha-19301261:~/Desktop$ ls
CSE484
Ishraq@ahmedesha-19301261:~/Desktop$ pwd
/home/ishraq/Desktop
Ishraq@ahmedesha-19301261:~/Desktop$
```

8. history

This command brings up a list of your past commands up to the limit of history.

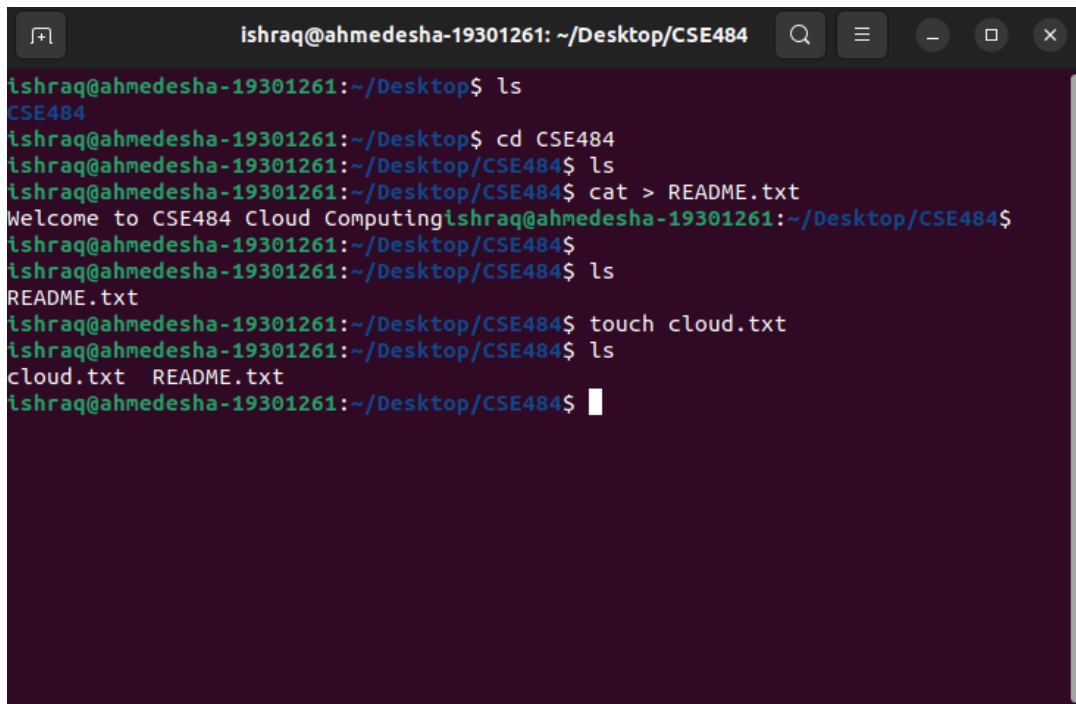
```
Ishraq@ahmedesha-19301261: ~/Desktop
Ishraq@ahmedesha-19301261:~/Desktop$ history
 1 sudo apt update
 2 sudo apt install build-essential dkms linux-headers-$(uname-r)
 3 ls
 4 ./autorun.sh
 5 ls
 6 cd home
 7 ls
 8 cd Pictures
 9 ls
10 cd screenshots
11 cd screenshots
12 cd Screenshots
13 ls
14 cd ../
15 cd ../../
16 ls
17 clear
18 exit
19 exit
20 sudo
21 clear
22 exit
23 sudo apt-get install pin
24 clear
25 exit
26 dpkg --get-selections
27 clear
28 cd /
29 cd home
30 cd Home
31 clear
32 cd ..
33 cd /
34 cd home
35 ls
36 cd ishraq
37 ls
38 cd desktop
39 cd Desktop
40 mkdir "CSE484"
41 ls
42 pwd
43 history
44 clear
45 history
Ishraq@ahmedesha-19301261:~/Desktop$
```

9. `cat > <filename>`

This command creates an empty file and can edit the file from the terminal. After adding the contents to the file, press `ctrl+d` to save the content to the file. Such as `cat > README.txt`. After creating this empty file, I wrote Welcome to CSE484 Cloud Computing and pressed `ctrl+d` to save this sentence to the file.

10. `touch <filename>`

This command creates an empty file like the previous command. It can't edit the contents of the file from the terminal. To create an empty text file, we can just use `touch cloud.txt` this command.

A terminal window titled 'ishraq@ahmedesha-19301261: ~/Desktop/CSE484'. The terminal shows the following commands and output:

```
ishraq@ahmedesha-19301261:~/Desktop$ ls
CSE484
ishraq@ahmedesha-19301261:~/Desktop$ cd CSE484
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ cat > README.txt
Welcome to CSE484 Cloud Computing
ishraq@ahmedesha-19301261:~/Desktop/CSE484$
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ touch cloud.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
cloud.txt README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$
```

11. `rm`

This command is used to remove the file or directory. `rm README.txt` after typing this command, the README.txt file will be deleted. `rm -r`, this command removes the directory with its content.

12. `more <filename>`

There are lots of commands to display the contents of a file. We can use `more README.txt` this command. After typing this command, we can see the file's content in our terminal.

```
ishraq@ahmedesha-19301261: ~/Desktop/CSE484
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
cloud.txt  README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ rm cloud.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ more README.txt
Welcome to CSE484 Cloud Computing
ishraq@ahmedesha-19301261:~/Desktop/CSE484$
```

13. df

This command shows the information on disk space usage by all mounted filesystems.

14. free

This command shows the amount of unused storage space currently available on the system.

```
ishraq@ahmedesha-19301261: ~/Desktop
ishraq@ahmedesha-19301261:~/Desktop$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
tmpfs            2402776      1524   2401252   1% /run
/dev/sda3       102831016 11942796  85618512  13% /
tmpfs           12013868        0  12013868   0% /dev/shm
tmpfs             5120         4     5116   1% /run/lock
/dev/sda2        524252      5364    518888   2% /boot/efi
tmpfs           2402772      2416   2400356   1% /run/user/1000
/dev/sr0         62390      62390        0 100% /media/ishraq/VBox_GAs_6.1.38
ishraq@ahmedesha-19301261:~/Desktop$ free
              total        used        free      shared  buff/cache   available
Mem:         24027736     929176    21420356        46252    1678204    22722704
Swap:        2097148          0     2097148
```


15. rmdir

This command removes the empty directory.

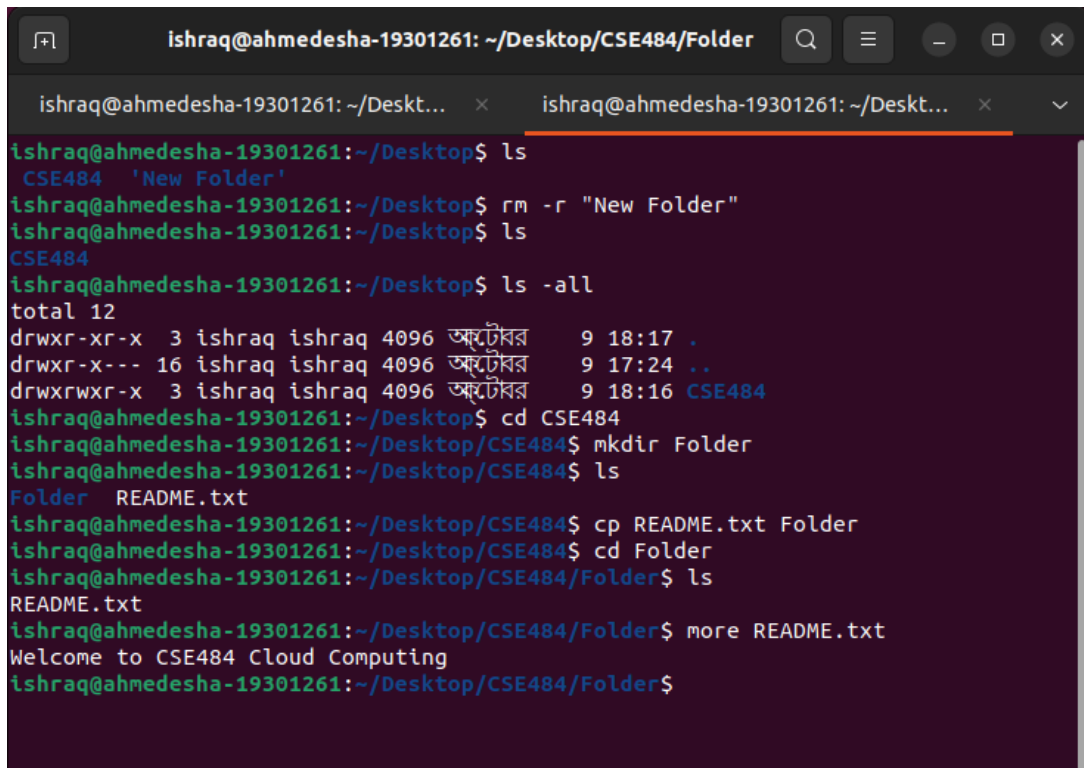
16. ls -all

This command is used to print the detailed information of the files/directories.

17. cp

This command is used to copy any file or directory to any directory.

cp <copy file name> <Folder name to copy> The command will be like
cp README.txt Folder.



```
ishraq@ahmedesha-19301261: ~/Desktop/CSE484/Folder
ishraq@ahmedesha-19301261:~/Desktop$ ls
CSE484 'New Folder'
ishraq@ahmedesha-19301261:~/Desktop$ rm -r "New Folder"
ishraq@ahmedesha-19301261:~/Desktop$ ls
CSE484
ishraq@ahmedesha-19301261:~/Desktop$ ls -all
total 12
drwxr-xr-x  3 ishraq ishraq 4096 অক্টোবর  9 18:17 .
drwxr-x--- 16 ishraq ishraq 4096 অক্টোবর  9 17:24 ..
drwxrwxr-x  3 ishraq ishraq 4096 অক্টোবর  9 18:16 CSE484
ishraq@ahmedesha-19301261:~/Desktop$ cd CSE484
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ mkdir Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
Folder README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ cp README.txt Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ cd Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ ls
README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ more README.txt
Welcome to CSE484 Cloud Computing
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$
```

18. mv

This command moves any file or directory to another location. mv <file to move>
<location name> Such as mv cloud.txt Folder.

19. uname -a

This command is used to show detailed information about the operation system (os), such as release number, version of Linux, and much more.

```
ishraq@ahmedesha-19301261: ~/Desktop
ishraq@ahmedesha-19301261:~/Desktop$ cd CSE484
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ touch cloud.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
cloud.txt  Folder  README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ mv cloud.txt Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
Folder  README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ cd Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ ls
cloud.txt  README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ cd ../../
ishraq@ahmedesha-19301261:~/Desktop$ uname -a
Linux ahmedesha-19301261 5.15.0-48-generic #54-Ubuntu SMP Fri Aug 26 13:26:29 UT
C 2022 x86_64 x86_64 x86_64 GNU/Linux
ishraq@ahmedesha-19301261:~/Desktop$ man touch
ishraq@ahmedesha-19301261:~/Desktop$ man more
ishraq@ahmedesha-19301261:~/Desktop$
```

20. Man

The man command can assist you in obtaining the comprehensive instruction manual for any particular command. The command format is `man <command name>`. Such as `man touch`.

```
ishraq@ahmedesha-19301261: ~/Desktop
TOUCH(1)                                User Commands                                TOUCH(1)

NAME
    touch - change file timestamps

SYNOPSIS
    touch [OPTION]... FILE...

DESCRIPTION
    Update the access and modification times of each FILE to the current
    time.

    A FILE argument that does not exist is created empty, unless -c or -h
    is supplied.

    A FILE argument string of - is handled specially and causes touch to
    change the times of the file associated with standard output.

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

    -a      change only the access time

Manual page touch(1) line 1 (press h for help or q to quit)
```

21. gzip

This command is used to zip any file or directory. `gzip <file name>`. Such as `gzip README.txt`

22. gunzip

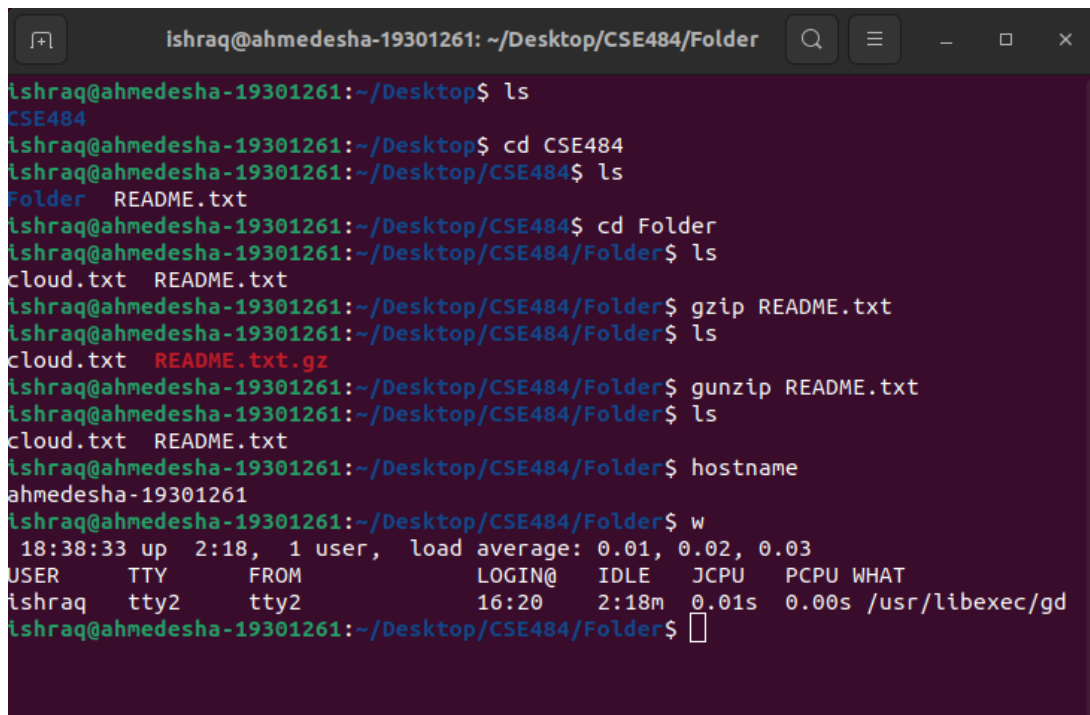
This command is used to unzip any file or directory. `gunzip <file name>`. Such as `gunzip README.txt`

23. hostname

This command will print the hostname in the terminal. For me, it is `ahmedesha-19301261`

24. w

This command will display the user details currently logged into the system.



```
ishraq@ahmedesha-19301261: ~/Desktop/CSE484/Folder
ishraq@ahmedesha-19301261:~/Desktop$ ls
CSE484
ishraq@ahmedesha-19301261:~/Desktop$ cd CSE484
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ ls
Folder README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484$ cd Folder
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ ls
cloud.txt README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ gzip README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ ls
cloud.txt README.txt.gz
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ gunzip README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ ls
cloud.txt README.txt
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ hostname
ahmedesha-19301261
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$ w
 18:38:33 up  2:18,  1 user,  load average: 0.01, 0.02, 0.03
USER    TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
ishraq  tty2     tty2          16:20    2:18m  0.01s  0.00s /usr/libexec/gd
ishraq@ahmedesha-19301261:~/Desktop/CSE484/Folder$
```

These are some basic commands for Ubuntu.