**OS(operating system)**:

\* An operating system (OS) is system software that manages computer hardware

and software resources, and provides common services for computer programs.

\* An operating system acts as an interface between the software and hardware.

Examples of operating system are Windows, Linux, Mac OS, etc.

**Windows:(microsoft) [founders Bill gates, paul allen]**

\* OS -windows operating system

\* single user mode

\* paid service

\* security less

\*GUI & CMD(graphical user interface & Command promt)

\*supports Any Hardware (laptops, desktop)

\*performance less compared to linux

\*30 gb space required (Hard-disk)

\*require Antivirus

\*kernal is standard

**RHEL: RedHat enterprise Linux [founder linus torvalds in 1991 based on unix os**]

\*Os -linux os

\*open source

\*multi user mode

\*GUI and command line interface

\*performance is good

\*kernel we can modify

\*Any hardware(laptops,desktops)

\*(8-10gb)required

\*security high

**unix: [AT&T at bell labs]**

\*Os

\*paid service

\*CLI

\*DEdicated hardware

**LINUX COMMANDS:**-

ROOT: Root is the superuser account in Unix and Linux. It's **a user account for administrative purposes** and typically has the highest access rights on the system.

**1) Touch:** Allows us to creat files

**a)** For creating single file

[]touch filename

[]ls

[] filename

**b)** For creating multiple files

[]touch filen1 file2 file3 ......

**c)** Using directory path to creating files

[]touch folders\_path/filename

**d)** Using directory path to creating files

[]touch /myfiles/movies/music/filename

**2) Cat:**  Allows to create files and writes file content

**a)** For creating files

[] cat > filename.py

**b**) For creating files and writes file content while creating

[]cat > filename.py

a=10

b=15

c=a+b

print(c)

ctrl+c ---> to save the file

**c)** To read the file content without using editors

[]cat filename

hi

hello

**d)** For merges the files and store the output

[]cat > f1

hi

hel

[]cat > f2

welcome

[]cat f1 f2 > f3

[]cat f3

hi

hel

welcome

**3) vi,nano:** Allows users to create, edit and manage files

**a)** for editing the files

[]vi filename

i-insert/R-replace

Esc, :, qw! --> for saving data and exit

[]vi filename

i

Esc,:, q! --> exit without saving data

**b)** nano:

[]nano filename

**4) mkdir:** To create directories and multiple directories

**a)** To create single directories

[]mkdir dirname:

**b)** TO create multiple directories

[]mkdir {dir1,dir2,dir3}

**c)**To create subdirectories in directories

[]mkdir -p

ex: []mkdir -p /directory/subdir1/subdir-in-subdir.

ex: []mkdir -p /myfiles/movies/music

**5) rm**: used to delete files within in directories and delete directories

**a)** For removing files

[]rm filename

**b)** For removing directories

[]rm -rf dirname

**c)** For removing the filepath

[]rm -rf \*

**6) rmdir:** To permanently delete an empty directory and empty subdirectories

**a)** For deleting empty directories

[]rmdir dirname

**b)** for deleting subdirectories and and its main directories mydir

[]rmdir -p dir/subdir

**7) sudo:** It give permission

[newuser]sudo docker images

img v1 5447

**8)pwd** (path working directory): To find the path of your current working directory

[] pwd

ex:- /myfiles/photos

**9)cd**: To check current working directory

**a)** To check directories

[root:/]cd dir1

[root9880--/dir1]

**b)** To check subdirectory in main directory

[root:] cd /f1/f2/f3

**c)** For go back to main directory or sub directory

[]cd ../../

ex:-[ root:/f1/f2/f3/f4]cd ../../-->go back to f4 to f2

ex:-[root:/f2]cd .. -->back to f2

**10)ls:** Lists files and directories

[root;]ls

ex: f1 f2 dir1 dir2

**b)** for checking hidden files

[]ls -a:

ex:- .f1.f2 .f3

**11)ll:** For checking the which are files have write,read,excute permission

[]ll

ex:- rw\_rwe\_r\_\_ root root file1

ex:- drw\_r\_\_rwe root root dir1

**12) cp:** For to copy files or directories and their content

**a)** for copy the files

[]cp filename

**b)** For copy the file to a new file

[]cp filename newfilename

**c)** for copy the file to sub file

[]cp filename/f2/f2/newfilename

**13) mv:** move and rename files

**a)** To moving file to directory

[]mv filename dir\_path

ex:- mv movedfile /f1/f2/f3

[f3]ls

movedfile

**b)** For renaming

[]mv oldfilename newfilename

**14)grep**:find a word by searching through all the texts in a specific file

[]grep c=a+b add.py

[] c=a+b

[]rpm –qa|grep tree htop

**15)df -h:**

report the system’s disk space usage, shown in percentage & in KB's

**16)du** :

If you want to check how much space a file or a directory takes up, use the du command.

You can run this command to identify which part of the system uses the storage excessively

[] du /dir1 or du file1

**17) head:**used to allow to view the top lines

**a)** For first 10 lines of code

[]head add.py

ex:-

a=1

b=2

c=3

d=4

e=5

f=6

g=7

h=8

i=9

j=10

**b)** For first 4 lines of code

[] head -n 5 app.py

ex:-

a

b

c

d

e

**18)tail:**Display the last ten lines of a file

**a)** For bottom 10 lines of code

[]tail app.py

**b)** For bottom 4 lines of code

[]tail -n -2 app.py --> specifying lines

**19)diff:** Command compares two contents of a file line by

line.it will display the parts that do not match

**a)** for comparing two files

[]diff file1 file2

<hi

<hel

------

> wlcm

**20)chmod:**command that modifies a file or directory’s read, write, and execute permissions

each file is associated with three user classes – owner, group member, and others.

r=4,w=2,e=1

**a)**For allow the permissions

[]chmod 777 filename

**21) usermod:**adding existing user to group

[]usermod -a -G root docker

[]usermod -a -G sudo user

**21)useradd:**Linux is a multi-user system, meaning more than one person can use it simultaneously.

**a)** for adding the user

[]useradd newuser

[]passwd newuser

newpswd:1234

retype:1234

**b)** For checking the user id

[]id -a newuser ->check user

uid=1002(newuser) gid=989(newusr)

**c)** For delet the user account

[]userdel user1

**22)groupadd**:used to add the group

**a)** For adding group

[]groupadd usa

[]cat /etc/group--->list of groups

usa

canada

**b)** For delet the user account

[]groupdel usa

**21)chown**: used to change the ownership

**a)**changing the owner

[]chown name\_of\_owner:groupname filename

22)ping:used to check the whether a network is reachable

**a)**For checking

[]ping www.google.com

64 bytes \*\*\*\*\*\*\*

64 bytes \*\*\*\*\*\*\*

**23)wget:**used to download files from internet

**a)** For the downloading

[]wget https://wordpress.org/latest.zip

**b)** For the downloading

[]curl -O https://wordpress.org/latest.zip

**24)top**: display all the running processes and a dynamic real-time view of the current system.

It sums up the resource utilization, from CPU to memory usage.

[]top

**25)history:** system will list up to 500 previously executed commands

**a)** For checking history of previous commands

[]history

**b)** To clear previous commands history

[]history -c

**26)echo:**it is a built-in utility that displays a line of text or string using

the standard output

[]echo "hi"

hi

**27)zip:**it is used to compress your files into a ZIP file

[]zip zipfilename file1 file2

[]ls

zipfilename.zip

**28)unzip:**it extracts the zipped files from an archive file(.zip)

[]unzip zipfilename.zip

[]ls

f1 f2 f3

**28)apt-get install or apt install/ yum install:**it is used to install applications

**a)** For updating server

[]apt update

**b)** To install applications

[]apt install python3

**29)version checking:**

[] git --version

[]git -v /git -version

**30)Ifconfig:** is to check public and private ip's

[]ifconfig / ifconfig -a

**31)start,stop,status:**it is used to change the servies status or to check or to start the servies

Example: nginx

[]systemctl status nginx.service / service nginx status

[]systemctl start nginx.service / service nginx start

[]systemctl stop nginx.service / service nginx stop

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