LINUX COMMAND LINE

Ls command: (list directory content)

- To list all the directories in pwd

  ls

- To list content of the root directory

  ls /

- To list content of a particular directory

  ls Documents

- To know which directory we are working in

  pwd

  /home/Tina

- To print one step back directory

  ls ..

  Tina

- To print two step back directory

  ls ../..

- To display lists in long format

  ls –l

  (dir) (u) (g) (o) (slrtf)   (size)

  D   rwx r-x r-x   2   Tina Tina 4096 Sep 4 2022 dir

- To display hidden folders

  ls -a

- To print hidden folder and long format files together

  ls -al

- To display long lists files order by size

  ls -lS

- To display files of a certain extension

  ls Documents /*.html

- To display all files with extension in directory in a dir.

  ls Documents /*.*

- To create a file containing content of ls

  ls –lS > out.txt

- To only display directories

  ls –d */

- To display commands which can be used with ls

  man ls

cd command: (change directory)

- To change to root directory

  cd /

- To move to one step back directory

  cd ..

- To change directory

  cd Desktop

  cd Documents/books

  Now,

  If we have a file name "My books" with space in b/w
  and we use

         cd Documents/My books

  it will give an error as it takes "my" in consideration.
  So,

         cd Documents

         cd "My Books"

cat command:

1. Displaying text files
2. Combining content of text files
3. Creating new text files

- cat (use ctrl+D to move out)

  cat

  Hello World -(echo input)

  Hello World

- To display content of text file

  cat list1.txt   - to display content of a text file

  cat list1.txt list2.txt – content of multiple files

  cat –b list1.txt – add line no to the commands
  (blank lines excluded)

  cat –n list1.txt – add line no to blank lines

  cat –S list1.txt – squeezes multiple blank lines to
  single one

  cat –E list1.txt – adds a dollar sign at the end

I/O Redirection:

(Third application of cat command)

- Creating new files using cat

cat > test.txt

Line1

Line2

Line3   (ctrl+D)

- To add more content in test.txt (to append)

cat >> test.txt

Line4

Line5

If we don't use "**>>**" it will overwrite "line4.." in place of "line1.."

- To append content of two files in one

cat list1.txt list2.txt> out.txt

cat out.txt

mkdir: (to create directory)

- cd Desktop
  mkdir image - creates a dir. Image
- mkdir image/pics - creates pics folder inside image dir.
- mkdir names/tina- produces an error as names is not a dir.
  So,
- **mkdir –p names/tina**
   (parent flag)
- mkdir –p names/{tina,saurabh,dad}
  curly brackets for creating multiple folders inside names

Don't give space b/w filename & comma

rmdir: (to remove directory)

- **rm -r names** - removes parent as well as child dir. (recursive flag)
- rmdir –p names/pics

less command: (use Q to quit)

- less <filename>

  shift+ cap.G – coming to end of long file

  small g- at the beginning

  space-if we want to move page by page
- to search a word from top to bottom

  / word (press n for next same word)
- to search a word from bottom to up

  ? word

touch command: (to create a new file)

- touch <filename>

  Use the same command to change the timestamp of the created file

nano command:

- nano <filename> - it creates a file &shows a terminal to write content of file.
  ctrl+o - to save file
  press enter and ctrl +x

- highlights code keywords
  nano file.cpp – cpp file is created & you can write and save the code.

sudo command: (super user do)

- sudo mkdir newdir
            password:_____
- sudo -s

top command: (Dynamic real time of a system)
            (which process takes most computer memory)

PID(process id)
I is used to show running processes
Press Q to quit top command
By default refresh rate is 3sec, press S to change it.

kill command: (to kill a process)

- pidof <process_name>
- kill <pid>
- kill -KILL <pid> -alternative
- kill -9 <pid> - alternative
- **to find pid of program**

  ps -ux

  ps -aux - to see all running processes

  ps -c <program name> - list pid of processes related to program

Note: pid changes every single time we closes it and then restart it .

echo command:

- echo <word>

  // word

- echo "word" -alternative

  // word

- **create variable:**

  myvar=10

  echo $myvar

  x=10

  Echo "the value of x is $x"

Note: there should be no space between variable name ,comma and its value.

- To use special features

  echo -e 'some \n text'
    (escape flag)
  some
  text

  \n: moves to next line.

  \t: tabs

  \b: attaches words (sometext)

  \a: alert (some text)

chmod:

- Change permission of the file

  Chmod o+w file.txt
        (others)(to add permission)(write)
  ls –l
  chmod ugo=rwx file.txt – for all people
  ls –ld dir

  If it is in first position:
  - : normal text file
  c: char special file
  b: binary special file

octal and numerical permissions:

u.users			g.group			o.other		
r	w	x	r	w	x	r	w	x
1	1	1	1	1	1	1	1	1
4	2	1	4	0	1	0	2	1

(double)   (value acc to user read)

4+2+1=7   4+1=5   2+1=3

- **chmod 753 file.txt**

BASH SCRIPTING

Script Bash:

- To create a script file

  nano myscript.sh

  ctrl+O   Enter   ctrl+X

  (to save)   (to exit)

  In script:

  Step1: #! <path> -(which bash 4 path)

  Step2: content ...

  By default script doesn't have permission to execute. So,

  chmod +x myscript.sh

- To display the content of myscript.sh

  ./myscript.sh

which and whatis command:

- To find location of a file/folder

  which bash

  which firefox

- To define a command in simple words

  whatsis ls

  whatis cat

  whatis firefox

useradd command: (creating users)

- To create a user   (default home dir.)   (shell)   (default gp)

  sudo useradd <username> -m -s/bin/bash -g users –c "my comment"
        (comment)

  ls home - (to check if user is added)

- To give password access to new user

  sudo passwd <username>

userdel command: (removing users)

sudo userdel <username> - doesn't del from home dir.

sudo userdel –r <username> - it will del info from home dir.

sudo rm –r home/tina - not recommended

Basic group command:

- To see groups working with user

  groups

- To see all working groups

  cat/etc/group

- To create a new group

sudo groupadd java

- To delete a group

sudo groupdel java

- To add a group in users group

sudo gpasswd -a   tina   java

                (add)   (gp to be added)

- To remove a group from user group

sudo gpasswd –d tina java

                (delete)

.bashrc file:

It is the file which is executed when we open the terminal.

ls –a

nano .bashrc

Move to end of file and write

                Echo "this is a test"

Save & exit

Ctrl+ shift+ T- "this is a test" will be written at the top.

Viewing resources:

- To report the amt. Available disk space used by file system.

  df –h

  (human readable form)

- To estimate & display the disk space used by files

  du –sh

  (summary)

In case of permission denied ; use sudo in front.

- Total amount of free,used,physical & swap memory in the system

  free -b/-m/-g/-t

  -b: byte, -m: megabyte, -g: gigabyte,
  - t:terabyte

Watch command:

- watch free –m
- watch –n1 free –m - to change refresh rate

By default it refreshes at every 2sec.

Ctrl+C to exit watch command

Head and tail command:

- head<filename>
- tail<filename>
- head –n3 <filename> - to change no of lines
  (3lines)

By default, it displays first 10 or last 10 lines of text file.

- head –f <filename>
  (follow)

find command: (search files in dir. Hierarchy)

- find (home/tina) **-name** <filename>
  (location search path)

In case of permission denied ; use sudo in front.

wc command: word count

- wc file.txt
  2   6   24 file.txt
  (no of lines) (no of words) (no of characters)

-c: count bytes ,
-w: count words ,
-l: counts no. of lines ,
-L: counts the longest line char.

cal command: (calendar)

- cal - shows cal of the current month
- ncal –shows cal of current month in formatted form
- cal 2022- shows cal of whole year
- cal 9 2022- shows cal of particular month (month no.)
- cal -3 – shows pr., previous and future month calendar
  By default it is set at -1 that is cal command itself

Date command:

- date -s "DD/MM/YYYY HH:MM:SS"- format time using this command

How to run multiple terminals com. :

- Use of semicolon (;)
  ls ; pwd
  It will run the output for all commands even if any one gives an error.
- Use of ampersand (&)

ls && pwd

It will not execute the next command if the running command gives an error.

Eg: ls && CAL&& pwd

- Use of or(||)

ls ||pwd

It will execute another command only if the first one produces an error.

apt -get command: (to install packages)

(Advanced packaging tool)

Debian based OS uses this command- ubuntu

- sudo apt-get update
- To install a software

  apt-get install <software_name>
- To remove a software

  apt-get remove <software_name>
- To remove all configuration files related to software

  apt-get remove -purge <software_name>

  sudo apt-get autoremove - remove unreq. Packages

ifconfig command: (Interface configuration)

(to view & change network conf. of our system)

- ifconfig
- sudo ifconfig <nameofinternet> down - it disconnects the internet
- sudo ifconfig <name of internet> up - it reconnects to internet

tar command: (zip file)

- tar -cvf test.tar <name of file>
  (create)
- tar –xvf <filename>.tar (extract file)
- tar –czvf <tar_filename>.tar.gz <filename>

grep command: (used to find pattern in a file)

(Global regular expression print)

- man tar> file.txt - creates a man tar detail text.file
- grep "search_word" <filename>

netstat command: It is used to display network connection ,routing tables & network interfaces.

- netstat -a - shows all connections along with their status
- netstat -a | less -shows in a more flexible way
- netstat -at | less - to see tcp connections
- netstat -au| less - to see udp connections
- netstat -l | less - listening ports are showed
- netstat -s | less - for statistics
- netstat -p | less- to see pid of related interfaces
- netstat -n | less-numeric nodes
- netstat -c | less-shows status continuously
- **netstat -ie - shows same output as ifconfig**
- netstat -an |grep ':80'
  (the pipe sign implements the command written next to it like grep,less)