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### PRACTICAL-1

Basics Unix Commands:

#### **1.Command - who:**

Syntax: who

Description: It lists who is logged in current machine.

O/p:

```
ubuntu@ubuntu:~$ who
ubuntu      :0                2022-01-15 22:33 (:0)
ubuntu@ubuntu:~$
```

#### **2. Command - who am I :**

Syntax: whoami

Description:

It displays the username of the current user when this command is invoked

O/p:

```
ubuntu@ubuntu:~$ whoami
ubuntu
ubuntu@ubuntu:~$
```

#### **3. Command – touch :**

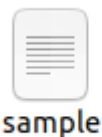
Syntax: touch file\_name

Description:

It is used to create a file without any content. The file created using touch command is empty.

O/p:

```
ubuntu@ubuntu:~$ touch sample
ubuntu@ubuntu:~$
```



#### 4. Command – cat :

Syntax : `$cat file_name`

Description: It reads data from the file and gives their content as output. It helps us to create, view, concatenate files.

O/p:

```
ubuntu@ubuntu:~$ cat sample
This is use of touch and using cat command we can display
ubuntu@ubuntu:~$
```

#### 5. Command – cp :

Syntax: `cp Src_file Dest_file`

Description: This command is used to copy files or group of files or directory.

O/p:

```
ubuntu@ubuntu:~$ touch sample2
ubuntu@ubuntu:~$ cp sample sample2
ubuntu@ubuntu:~$ cat sample2
This is use of touch and using cat command we can display
```

#### 6. Command – rm :

Syntax : `rm File_name`

**Description :** rm command is used to remove objects such as files, directories, symbolic links and so on from the file system like UNIX.

O/p:

```
ubuntu@ubuntu:~$ rm sample2
ubuntu@ubuntu:~$
```

#### 7. Command – mv :

Syntax: `mv source destination`

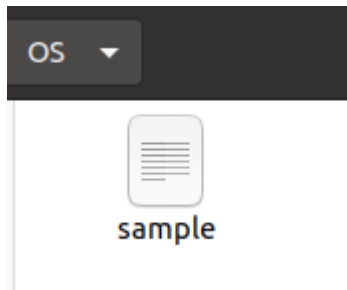
Description : mv is used to move one or more files or directories from one place to another in a file system like UNIX

It has two distinct functions:

- (i) It renames a file or folder.
- (ii) It moves a group of files to a different directory.

O/p:

```
ubuntu@ubuntu:~$ mv sample OS
ubuntu@ubuntu:~$
```



### 8. Command – ls :

Syntax: ls folder\_name

Description : ls command is **used to list files or directories in Linux**

O/p:

```
ubuntu@ubuntu:~$ touch sample2
ubuntu@ubuntu:~$ ls OS
sample sample2
ubuntu@ubuntu:~$
```

### 9. Command – ln :

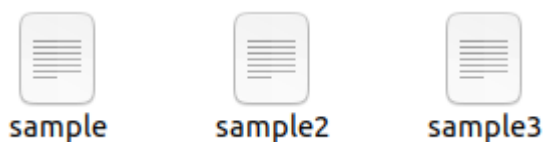
Syntax: ln file1\_name file2\_name

Description : The *ln* command is used to create links between files.

O/p:

```
ubuntu@ubuntu:~$ cat sample
This is use of touch and using cat command we can display

ubuntu@ubuntu:~$ ln sample sample2
ln: failed to create hard link 'sample2': File exists
ubuntu@ubuntu:~$ ln sample sample3
ubuntu@ubuntu:~$
```



### 10. Command – chmod :

Syntax: chmod [reference][operator][mode] file...

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

O/p:

```
ubuntu@ubuntu:~$ chmod a+x sample
ubuntu@ubuntu:~$
```

### 11. Command – umask :

Syntax: umask [-p] [-S] [mode]

Description : Display or set file mode mask.

O/p:

```
ubuntu@ubuntu:~$ umask
0002
ubuntu@ubuntu:~$
```

```
ubuntu@ubuntu:~$ umask -S
u=rwx,g=rwx,o=rwx
```

### 12. Command – pwd :

Syntax: pwd [-LP]

Description : Print the name of current working directory

O/p:

```
ubuntu@ubuntu:~$ pwd
/home/ubuntu
ubuntu@ubuntu:~$
```

### 13. Command – mkdir :

Syntax: mkdir file \_name

Description : Create the directory, if they do not already exists.

O/p:

```
ubuntu@ubuntu:~$ mkdir demo1
ubuntu@ubuntu:~$ ls
demo1  Documents  Music  Pictures  sample  sample3  Templates
Desktop Downloads  OS     Public   sample2 snap      Videos
ubuntu@ubuntu:~$
```

### 14. Command – rmdir :

Syntax: rmdir file\_name

Description : Remove the Directory.

O/p:

```
ubuntu@ubuntu:~$ rmdir demo1
ubuntu@ubuntu:~$ ls
Desktop  Downloads  OS          Public  sample2  snap      Videos
Documents Music       Pictures    sample  sample3  Templates
```

### 15. Command – cd :

Syntax: cd [-L]

Description : Change the shell working directory

O/p:

```
ubuntu@ubuntu:~$ cd OS
ubuntu@ubuntu:~/OS$ cd desktop
bash: cd: desktop: No such file or directory
ubuntu@ubuntu:~/OS$ cd Desktop
bash: cd: Desktop: No such file or directory
ubuntu@ubuntu:~/OS$ cd ..
ubuntu@ubuntu:~$ cd Desktop
ubuntu@ubuntu:~/Desktop$
```

### 16. Command – bc :

Syntax: bc [options] [file...]

Description :

O/p:

```
ubuntu@ubuntu:~$ bc
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free Software
Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type 'warranty'.
20 / 2
10
```

### 17. Command - bc -l :

Syntax: bc -l

Description : use the predefined math routines

O/p:

```
ubuntu@ubuntu:~$ bc -l
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free Software
Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type 'warranty'.
55-10
45
```

**18. Command – expr :**

Syntax: expr Expression

Description : Print the value of Expression to standard output.

O/p:

```
ubuntu@ubuntu:~/Desktop$ expr 10 - 2
8
ubuntu@ubuntu:~/Desktop$ expr 10 / 2
5
```

**19. Command – factor :**

Syntax: factor number

Description : Print the prime factors of each specified integer number

O/p:

```
ubuntu@ubuntu:~/Desktop$ factor 20
20: 2 2 5
ubuntu@ubuntu:~/Desktop$
```

**20. Command – logname :**

Syntax: logname [Option]

Description : Print the name of current user

O/p:

```
ubuntu@ubuntu:~$ logname
ubuntu
ubuntu@ubuntu:~$
```

**21. Command - uname :**

Syntax: uname []

Description :

O/p:

```

ubuntu@ubuntu:~$ uname
Linux
ubuntu@ubuntu:~$ uname --help
Usage: uname [OPTION]...
Print certain system information.  With no OPTION, same as -s.

  -a, --all                print all information, in the following order,
                           except omit -p and -i if unknown:
  -s, --kernel-name        print the kernel name
  -n, --nodename            print the network node hostname
  -r, --kernel-release     print the kernel release
  -v, --kernel-version     print the kernel version
  -m, --machine            print the machine hardware name
  -p, --processor          print the processor type (non-portable)
  -i, --hardware-platform  print the hardware platform (non-portable)
  -o, --operating-system   print the operating system
  --help                  display this help and exit
  --version               output version information and exit

```

## 22. Command – tty :

Syntax: tty [OPTION]

Description : Print the file name of the terminal connected to standard input.

O/p:

```

ubuntu@ubuntu:~$ tty --help
Usage: tty [OPTION]...
Print the file name of the terminal connected to standard input.

  -s, --silent, --quiet    print nothing, only return an exit status
  --help                  display this help and exit
  --version               output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation at: <https://www.gnu.org/software/coreutils/tty>
or available locally via: info '(coreutils) tty invocation'
ubuntu@ubuntu:~$ sudo tty
[sudo] password for ubuntu:
/dev/pts/0
ubuntu@ubuntu:~$

```

## 23. Command – date :

Syntax: date [OPTION]...[+FORMAT]

Description : Display the current time In the given FORMAT, of set the system Date.

O/p:

```

or available locally via: info '(coreutils) da
ubuntu@ubuntu:~$ date
Mon 17 Jan 2022 07:35:41 AM PST
ubuntu@ubuntu:~$

```

## 24. Command – df :

Syntax: df [OPTION]...[FILE]...

Description : Show Information about the file system on which each FILE resides, or all file system by default

O/p:

```
ubuntu@ubuntu:~$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
udev            964700         0   964700    0% /dev
tmpfs           199488       1620   197868    1% /run
/dev/sda5       19992176 7648572 11305012  41% /
tmpfs           997432         0   997432    0% /dev/shm
tmpfs           5120          4     5116    1% /run/lock
tmpfs           997432         0   997432    0% /sys/fs/cgroup
/dev/loop0       56832       56832    0 100% /snap/core18/2128
/dev/loop2       66688       66688    0 100% /snap/gtk-common-themes/1515
/dev/loop1       224256     224256    0 100% /snap/gnome-3-34-1804/72
/dev/loop3       52224       52224    0 100% /snap/snap-store/547
/dev/loop4       33152       33152    0 100% /snap/snapd/12704
/dev/sda1       523248         4   523244    1% /boot/efi
/dev/loop5       44416       44416    0 100% /snap/snapd/14295
/dev/loop6       56960       56960    0 100% /snap/core18/2284
tmpfs           199484         0   199444    1% /run/user/1000
/dev/sr1        2999936 2999936    0 100% /media/ubuntu/Ubuntu 20.04.3 LT
S_ amd64
/dev/sr0        108792     108792    0 100% /media/ubuntu/CDROM
/dev/loop7       63488       63488    0 100% /snap/core20/1270
/dev/loop8       128         128    0 100% /snap/bare/5
/dev/loop9       224256     224256    0 100% /snap/gnome-3-34-1804/77
/dev/loop10      66816       66816    0 100% /snap/gtk-common-themes/1519
/dev/loop11      55552       55552    0 100% /snap/snap-store/558
/dev/loop12      253952     253952    0 100% /snap/gnome-3-38-2004/87
ubuntu@ubuntu:~$
```

## 25. Command – du :

Syntax: du [OPTION]...[FILE]...

Description : Summarize disk usage of the set of FILES, recursively for directories.

O/p:

```
ubuntu@ubuntu:~$ du -B
du: option requires an argument -- 'B'
Try 'du --help' for more information.
ubuntu@ubuntu:~$ du -b
4096  ./Documents
4096  ./Public
4096  ./Music
4096  ./Videos
4096  ./Templates
4096  ./Desktop
4408  ./local/share/keyrings
342659 ./local/share/tracker/data
346755 ./local/share/tracker
4703  ./local/share/gnome-shell
4096  ./local/share/evolution/memos/trash
8192  ./local/share/evolution/memos
4096  ./local/share/evolution/calendar/trash
4269  ./local/share/evolution/calendar/system
12461 ./local/share/evolution/calendar
4096  ./local/share/evolution/tasks/trash
4269  ./local/share/evolution/tasks/system
12461 ./local/share/evolution/tasks
4096  ./local/share/evolution/mail/trash
8192  ./local/share/evolution/mail
4096  ./local/share/evolution/addressbook/trash
4096  ./local/share/evolution/addressbook/system/photos
94208 ./local/share/evolution/addressbook/system
102400 ./local/share/evolution/addressbook
147802 ./local/share/evolution
```

## 26. Command – ulimit :



Syntax: `ulimit [-SHabcdefiklmnpqrstuvxPT] [limit]`

Description : Modify shell resource limits. Provide control over the resources available to the shell and processes, it creates on system that allow such control.

O/p:

```
ubuntu@ubuntu:~$ ulimit
unlimited
ubuntu@ubuntu:~$
```

## 27. Command – cal :

Syntax : `cal [general options] [-jy] [[month] year]`

Description : Display the calendar.

O/p :

```
ubuntu@ubuntu:~$ cal
      January 2022
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
ubuntu@ubuntu:~$
```

## 28. Command – wc :

Syntax: `wc [OPTION]... [FILE]...`

Description : Print newline, word, and byte counts for each FILE, and a total line if more than one FILE is specified. A word is a non-zero-length sequence of characters delimited by white space.

O/p:

```
ubuntu@ubuntu:~$ cd OS
ubuntu@ubuntu:~/OS$ wc demo2.txt
 2  6 36 demo2.txt
ubuntu@ubuntu:~/OS$
```

## 29. Command – sort :

Syntax: `sort [OPTION]... [FILE]...`

Description : Write sorted concatenation of all FILE(s) to standard output.

O/p:

```
ubuntu@ubuntu:~$ cd OS
ubuntu@ubuntu:~/OS$ sort demo2
sort: cannot read: demo2: No such file or directory
ubuntu@ubuntu:~/OS$ sort demo2.txt
123456
hello!!! how are you? today?
ubuntu@ubuntu:~/OS$
```

### 30. Command – cut :

Syntax: cut OPTION... [FILE]...

Description : cut OPTION... [FILE]...

O/p:

```
ubuntu@ubuntu:~/OS$ cut -b 1,4 demo2.txt
hl
14
```

### 31. Command – grep :

Syntax: grep [OPTION]... PATTERNS [FILE]...

Description : Search for PATTERNS in each FILE.

O/p:

```
ubuntu@ubuntu:~$ cd OS
ubuntu@ubuntu:~/OS$ grep -i "o" demo2.txt
hello!!! how are you? today?
ubuntu@ubuntu:~/OS$
```

### 32. Command – awk :

Syntax: awk 'program' input-file...

Description : Awk is a general-purpose scripting language designed for advanced text processing. It is mostly used as a reporting and analysis tool.

O/p:

```
123456
ubuntu@ubuntu:~/OS$ awk '/Hello NIRMA/ {print}' demo2.txt
ubuntu@ubuntu:~/OS$ awk '{print}' demo2.txt
hello!!! how are you? today?
123456
```

### 33. head :

Syntax: head [OPTION]... [FILE]...

Desc: Print the first 10 lines of each FILE to standard output.

O/p:

```
ubuntu@ubuntu:~/OS$ head demo2.txt
hello!!! how are you? today?
123456
ubuntu@ubuntu:~/OS$
```

### 34. pg :

Syntax: pg [-number] [-p string] [-cefnrs] [+line] [+pattern/] [file...]

Desc: The pg command displays the contents of text files, one page at a time.

### 35. More :

Syntax: more [options] ...

Desc: A file perusal filter for CRT viewing.

O/p:

```
ubuntu@ubuntu:~/OS$ more demo2.txt
hello!!! how are you? today?
123456
```

### 36.tail :

Syntax: tail [OPTION]... [FILE]...

Desc: Print the last 10 lines of each FILE to standard output. 17

O/p:

```
ubuntu@ubuntu:~/OS$ tail demo2.txt
hello!!! how are you? today?
123456
```

### 37. pipe() :

Syntax: command1 | command2 Desc: Use multiple commands consecutively.

O/p:

```
ubuntu@ubuntu:~/OS$ who | whoami
ubuntu
ubuntu@ubuntu:~/OS$
```

### 38. Tee :

Syntax: tee [OPTION]... [FILE]...

Desc: Copy standard input to each FILE, and also to standard output.

O/p:

```
ubuntu@ubuntu:~/OS$ tee demo2.txt
hii
hii
hello
hello
^C
```

### 39. ps :

Syntax: ps [options]

Desc: abbreviation for “Process Status”. ps command is used to list the currently running processes and their PIDs along with some other information depends on different options

O/p;

```
ubuntu@ubuntu:~/OS$ ps
  PID TTY          TIME CMD
 13741 pts/0        00:00:00 bash
 13803 pts/0        00:00:00 ps
ubuntu@ubuntu:~/OS$
```

### 40. kill :

Syntax: kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill -l [sigspec]

Desc: Send a signal to a job, built-in command which is used to terminate processes manually.

### 41. nice :

Syntax: nice [OPTION] [COMMAND [ARG]...]

Desc: Run COMMAND with an adjusted niceness, which affects process scheduling.

O/p:

```
ubuntu@ubuntu:~/OS$ nice
0
ubuntu@ubuntu:~/OS$
```

### 42. read :

Syntax: read [-ers] [-a array] [-d delim] [-i text] [-n nchars] [-N nchars] [-p prompt] [-t timeout] [-u fd] [name ...]

Desc: Read a line from the standard input and split it into fields.

O/p:

```
ubuntu@ubuntu:~/OS$ echo "What's your Name?";read Name;echo "Greetings, $Name"
What's your Name?
KISHAN
Greetings, KISHAN
```

### 43. Echo :

Syntax: echo [option] [string]

Desc: Print the Statement to Standard output.

O/p:

```
ubuntu@ubuntu:~/OS$ echo Hello NIRMA and Welcome to $th sem
Hello NIRMA and Welcome to sem
ubuntu@ubuntu:~/OS$
```

### 44. I/O Direction :

Syntax: Redirection is a feature in Linux such that when executing a command, you can change the standard input/output devices.

Desc: < -input redirection & >-output redirection Thank You

O/p:

```
ubuntu@ubuntu:~/OS$ cat
hello NIRMA
hello NIRMA
Helllo 4 sem
Helllo 4 sem
^C
ubuntu@ubuntu:~/OS$ cat f1
cat: f1: No such file or directory
ubuntu@ubuntu:~/OS$ cat sample2.txtx
cat: sample2.txtx: No such file or directory
ubuntu@ubuntu:~/OS$ cat sample2.txt
cat: sample2.txt: No such file or directory
ubuntu@ubuntu:~/OS$ cat sample1.txt
cat: sample1.txt: No such file or directory
ubuntu@ubuntu:~/OS$ cat > sample2.txt
hola folkd
hola folks
^C
ubuntu@ubuntu:~/OS$ cat <sample2.txt
hola folkd
hola folks
ubuntu@ubuntu:~/OS$
```

