

Assignment – 1

OPERATING SYSTEM

TOPIC: BASIC UNIX COMMANDS & FILE SYSTEM COMMANDS

1. Display the date using the “date” command.

```
namrata@NamraRio:~$ date
Sun Jul 21 13:30:45 IST 2024
```

2. Check who are the users logged in using the “who” command.

```
namrata@NamraRio:~$ who
namrata@NamraRio:~$ |
```

3. Check the running processes using the “ps” command.

```
namrata@NamraRio:~$ ps
PID TTY          TIME CMD
  15 pts/0        00:00:00 bash
  32 pts/0        00:00:00 ps
```

4. List the files with “ls” command with and without -l option.

```
namrata@NamraRio:~/MCA2023/Namrata_B_34/Unix_File_System$ ls
TestA TestB TestC
namrata@NamraRio:~/MCA2023/Namrata_B_34/Unix_File_System$ ls -l
total 12
drwxr-xr-x 4 namrata namrata 4096 Jul 21 15:43 TestA
drwxr-xr-x 5 namrata namrata 4096 Jul 21 15:43 TestB
drwxr-xr-x 3 namrata namrata 4096 Jul 21 15:43 TestC
```

5. Check the *manual of ls* command.

```
LS(1)                                User Commands                                LS(1)
NAME
  ls - list directory contents
SYNOPSIS
  ls [OPTION]... [FILE]...
DESCRIPTION
  List information about the FILES (the current directory by default). Sort entries alphabetically if none of
  -cftuvSUX nor --sort is specified.
  Mandatory arguments to long options are mandatory for short options too.
  -a, --all
    do not ignore entries starting with .
  -A, --almost-all
    do not list implied . and ..
  --author
    with -l, print the author of each file
  -b, --escape
    print C-style escapes for nongraphic characters
  --block-size=SIZE
    with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below
  -B, --ignore-backups
    do not list implied entries ending with ~
  -c
    with -lt: sort by, and show, ctime (time of last modification of file status information); with -l:
    show ctime and sort by name; otherwise: sort by ctime, newest first
  -C
    list entries by columns
  --color[=WHEN]
    colorize the output; WHEN can be 'always' (default if omitted), 'auto', or 'never'; more info below
Manual page ls(1) line 1 (press h for help or q to quit)
```

6. Show the commands used to display (i) filenames (ii) processes (iii) users.

(i) filenames : ls

```
namrata@NamraRio:~$ ls
MCA2023
```

(ii) processes : ps

```
namrata@NamraRio:~$ ps
  PID TTY          TIME CMD
   15 pts/0    00:00:00 bash
  106 pts/0    00:00:00 ps
```

(iii) users: who

```
namrata@NamraRio:~$ who
namrata@NamraRio:~$ |
```

7. Check and state the difference between man and whatis command by checking **man cp** & **whatis cp**.

man cp:

```
CP(1)                                User Commands
NAME
  cp - copy files and directories

SYNOPSIS
  cp [OPTION]... [-I] SOURCE DEST
  cp [OPTION]... SOURCE... DIRECTORY
  cp [OPTION]... -t DIRECTORY SOURCE...

DESCRIPTION
  Copy SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY.
  Mandatory arguments to long options are mandatory for short options too.

  -a, --archive
      same as -dR --preserve=all

  --attributes-only
      don't copy the file data, just the attributes

  --backup[=CONTROL]
      make a backup of each existing destination file

  -b
      like --backup but does not accept an argument

  --copy-contents
      copy contents of special files when recursive

  -d
      same as --no-dereference --preserve=links

  -f, --force
      if an existing destination file cannot be opened, remove it and try again (this option is ignored when the -n option is also used)

  -i, --interactive
      prompt before overwrite (overrides a previous -n option)

  -H
      follow command-line symbolic links in SOURCE

  -l, --link

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

whatis cp:

```
namrata@NamraRio:~$ whatis cp
cp (1)             - copy files and directories
```

difference between man and whatis:

Feature	man Command	whatis Command
Purpose	Displays the manual page for a command, providing detailed information including usage, options, and examples.	Provides a brief one-line description of a command.
Output Detail	Extensive and detailed information, often several pages long.	Concise and brief, usually a single line.
Depth of Information	Comprehensive and in-depth, including sections like NAME, SYNOPSIS, DESCRIPTION, OPTIONS, EXAMPLES, etc.	Summarized and to the point.

8. What is the primary difference between **printf** and **echo** command. Check and print.

Printf:

```
namrata@NamraRio:~$ printf "Name: %s,\n Age: %d\n" "Namrata" 24
Name: Namrata,
Age: 24
```

Echo:

Difference between printf and echo:

```
namrata@NamraRio:~$ echo "Name: Namrata, Age: 24"
Name: Namrata, Age: 24
```

Feature	printf Command	echo Command
Purpose	Formats and prints data according to specified format.	Prints arguments to the standard output.
Formatting	Offers extensive formatting options similar to the C printf function (e.g., format specifiers like %d, %s, %f).	Limited or no formatting capabilities; simply outputs text.

9. In the home directory, create a directory *MCA2022*. Inside the *MCA2022*, create another directory *<FistName_Section_ClassRoll>* and get into the directory [*~ /MCA2022/Ankur_A_oo\$*].

```
namrata@NamraRio:~$ mkdir MCA2023
namrata@NamraRio:~$ cd MCA2023
namrata@NamraRio:~/MCA2023$ mkdir Namrata_B_34
namrata@NamraRio:~/MCA2023$ cd Namrata_B_34
namrata@NamraRio:~/MCA2023/Namrata_B_34$ pwd
/home/namrata/MCA2023/Namrata_B_34
```

10. Go to the subdirectory and create another subdirectory “*Unix_File_System*” within it.

```
namrata@NamraRio:~/MCA2023/Namrata_B_34$ mkdir Unix_File_System
namrata@NamraRio:~/MCA2023/Namrata_B_34$ cd Unix_File_System
namrata@NamraRio:~/MCA2023/Namrata_B_34/Unix_File_System$
```

11. Create the subdirectories *TestA*, *TestB*, *TestC* and corresponding sub-subdirectories *TestA-1*, *TestA-2*, *TestB-1*, *TestB-2*, *TestB-3*, *TestC-1*, *TestB-2-i* in a single command.

```
namrata@NamraRio:~/MCA2023/Namrata_B_34/Unix_File_System$ mkdir -p TestA/TestA-1 TestA/TestA-2 TestB/TestB-1
TestB/TestB-2 TestB/TestB-3 TestC/TestC-1 TestB/TestB-2/TestB-2-i
```

12. Show the absolute path of *TestB-2-i*.

```
namrata@NamraRio:~/MCA2023/Namrata_B_34/Unix_File_System/TestB/TestB-2/TestB-2-i$ pwd
/home/namrata/MCA2023/Namrata_B_34/Unix_File_System/TestB/TestB-2/TestB-2-i
```