

# Assignment – 1

## OPERATING SYSTEM

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

```
Windows Subsystem for Linux is now available in the Microsoft Store!
You can upgrade by running 'wsl.exe --update' or by visiting https://aka.ms/wslstorepage
Installing WSL from the Microsoft Store will give you the latest WSL updates, faster.
For more information please visit https://aka.ms/wslstoreinfo

Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.10.16.3-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

This message is shown once a day. To disable it please create the
/home/trriggeredcoder/.hushlogin file.
trriggeredcoder@DESKTOP-VQ00159:~$ date
Sun Jul 21 13:13:18 IST 2024
trriggeredcoder@DESKTOP-VQ00159:~$
```

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

```
trriggeredcoder@DESKTOP-VQ00159:~$ w
14:12:55 up 59 min, 0 users, load average: 0.00, 0.00, 0.00
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
trriggeredcoder@DESKTOP-VQ00159:~$ |
```

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

```
trrigeredcoder@DESKTOP-VC  ×  +  ∨

trrigeredcoder@DESKTOP-VQ00159:~$ ps
  PID TTY          TIME CMD
   10 pts/0        00:00:00 bash
   91 pts/0        00:00:00 ps
trrigeredcoder@DESKTOP-VQ00159:~$
```

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

```
trrigeredcoder@DESKTOP-VC  ×  +  ∨

trrigeredcoder@DESKTOP-VQ00159:~$ ls
f1 f2 f4
trrigeredcoder@DESKTOP-VQ00159:~$ ls -l
total 12
-rw-r--r-- 1 trrigeredcoder trrigeredcoder 12 Feb 24  2023 f1
-rw-r--r-- 1 trrigeredcoder trrigeredcoder  6 Feb 24  2023 f2
-rw-r--r-- 1 trrigeredcoder trrigeredcoder 12 Feb 23  2023 f4
trrigeredcoder@DESKTOP-VQ00159:~$
```

5. Check the *manual of ls* command.

```
trrigeredcoder@DESKTOP-VQ00159:~$ man ls
```

Output:

```

trriggeredcoder@DESKTOP-VC x + v
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 ~
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.

```

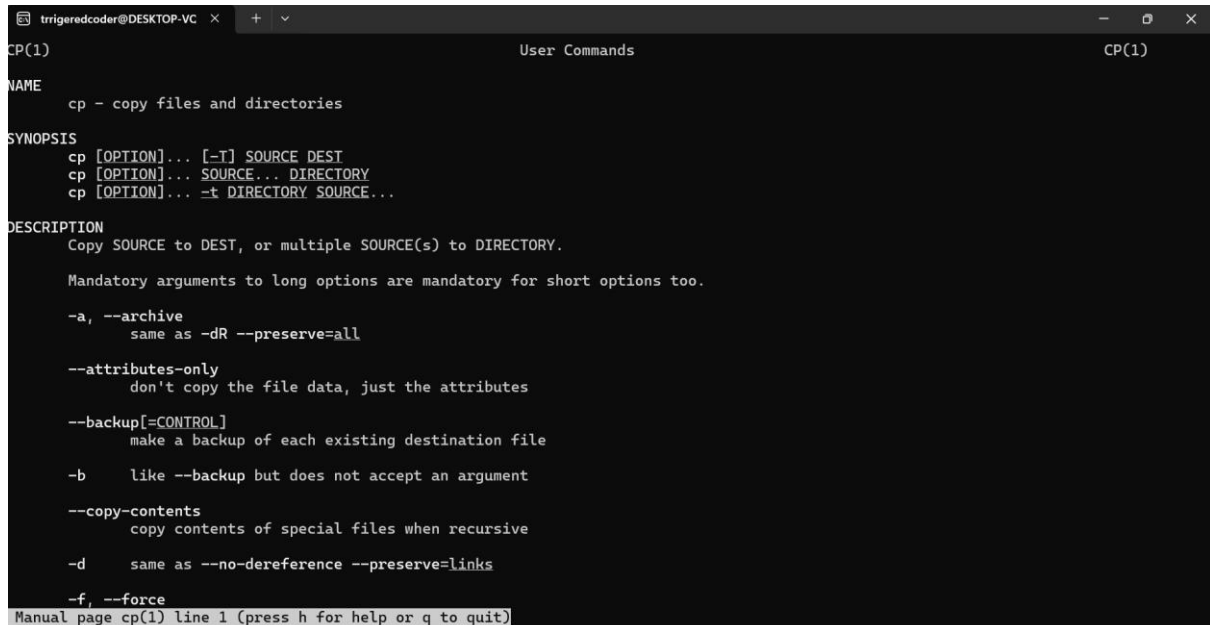
trriggeredcoder@DESKTOP-VC x + v
trriggeredcoder@DESKTOP-VQ00159:~$ ls
f1 f2 f4
trriggeredcoder@DESKTOP-VQ00159:~$ ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.0   1816   1180 ?        Sl   13:13   0:00 /init
root         8  0.0  0.0   2164    356 ?        Ss   13:13   0:00 /init
root         9  0.0  0.0   2172    356 ?        R   13:13   0:00 /init
trrigger+  10  0.0  0.1   6164   5088 pts/0    Ss   13:13   0:00 -bash
trrigger+  129  0.0  0.0   7476   3216 pts/0    R+   13:55   0:00 ps aux
trriggeredcoder@DESKTOP-VQ00159:~$ w
 13:55:28 up 42 min,  0 users,  load average: 0.00, 0.00, 0.00
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
trriggeredcoder@DESKTOP-VQ00159:~$ |

```

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

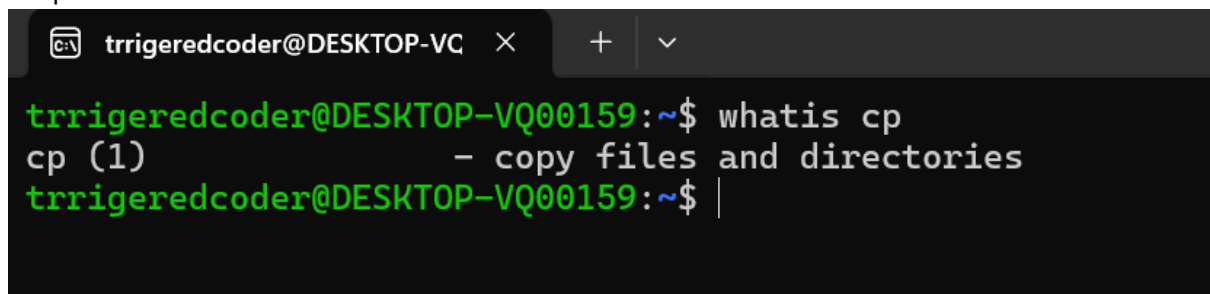
trrigeredcoder@DESKTOP-VQ00159:~\$ man cp

Output:

A screenshot of a terminal window titled 'trrigeredcoder@DESKTOP-VC'. The terminal shows the output of the 'man cp' command. The output is formatted with sections: NAME, SYNOPSIS, and DESCRIPTION. The NAME section shows 'cp - copy files and directories'. The SYNOPSIS section shows three usage patterns: 'cp [OPTION]... [-I] SOURCE DEST', 'cp [OPTION]... SOURCE... DIRECTORY', and 'cp [OPTION]... -t DIRECTORY SOURCE...'. The DESCRIPTION section explains that 'cp' copies SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY. It lists several options: -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), and -f, --force. At the bottom, it says 'Manual page cp(1) line 1 (press h for help or q to quit)'.

trrigeredcoder@DESKTOP-VQ00159:~\$ whatis cp

Output:

A screenshot of a terminal window titled 'trrigeredcoder@DESKTOP-VC'. The terminal shows the output of the 'whatis cp' command. The output is a single line: 'cp (1) - copy files and directories'. Below this, the prompt 'trrigeredcoder@DESKTOP-VQ00159:~\$' is followed by a vertical bar '|', indicating the cursor is ready for the next command.

### Key Differences

- **man cp**: Provides a detailed manual with sections like NAME, SYNOPSIS, DESCRIPTION, and OPTIONS, along with examples and extensive explanations.
- **whatis cp**: Provides a concise, one-line summary of the command, giving you a quick idea of what the command does.

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

Primary Difference:

- **echo**: Best for simple text output, easy to use, automatically adds a newline.
- **printf**: Best for formatted text output, more powerful and flexible, requires explicit format string, does not automatically add a newline.

Output:

```
trrigeredcoder@DESKTOP-VC  ×  +  ∨  
trrigeredcoder@DESKTOP-VQ00159:~$ echo "Number: $1"  
Number:  
trrigeredcoder@DESKTOP-VQ00159:~$ printf "Number: %d\n" $1  
Number: 0  
trrigeredcoder@DESKTOP-VQ00159:~$ |
```

**9. In the home directory, create a directory MCA2022. Inside the MCA2022, create another directory <FirstName\_Section\_ClassRoll> and get into the directory [~/MCA2022/Ankur\_A\_00\$].**

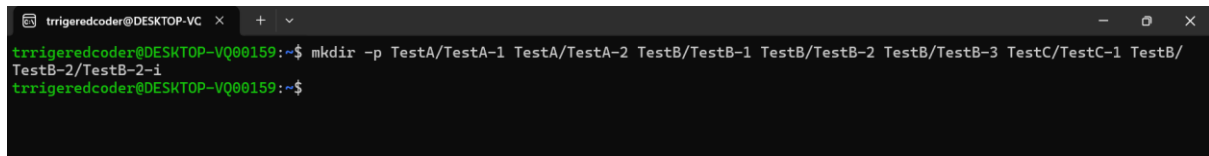
```
trrigeredcoder@DESKTOP-VC  ×  +  ∨  
trrigeredcoder@DESKTOP-VQ00159:~$ mkdir ~/MCA2022  
trrigeredcoder@DESKTOP-VQ00159:~$ mkdir ~/MCA2022/Rohit_B_19  
trrigeredcoder@DESKTOP-VQ00159:~$ cd ~/MCA2022/Rohit_B_19  
trrigeredcoder@DESKTOP-VQ00159:~/MCA2022/Rohit_B_19$
```

**10. Go to the subdirectory and create another subdirectory "Unix\_File\_System" within it.**

```
trrigeredcoder@DESKTOP-VC  ×  +  ∨  
trrigeredcoder@DESKTOP-VQ00159:~$ cd ~/MCA2022/Rohit_B_19  
trrigeredcoder@DESKTOP-VQ00159:~/MCA2022/Rohit_B_19$ mkdir Unix_File_System  
trrigeredcoder@DESKTOP-VQ00159:~/MCA2022/Rohit_B_19$
```

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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.



```
trrigeredcoder@DESKTOP-VC x + v - 0 x  
trrigeredcoder@DESKTOP-VQ00159:~$ 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  
trrigeredcoder@DESKTOP-VQ00159:~$
```

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



```
trrigeredcoder@DESKTOP-VC x + v  
trrigeredcoder@DESKTOP-VQ00159:~$ realpath TestB/TestB-2/TestB-2-i  
/home/trrigeredcoder/TestB/TestB-2/TestB-2-i  
trrigeredcoder@DESKTOP-VQ00159:~$ |
```