

ITW1 ASSIGNMENT5

Unix Project

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Branch: CSE

Date: June 6, 2021

Files Attached In Email :

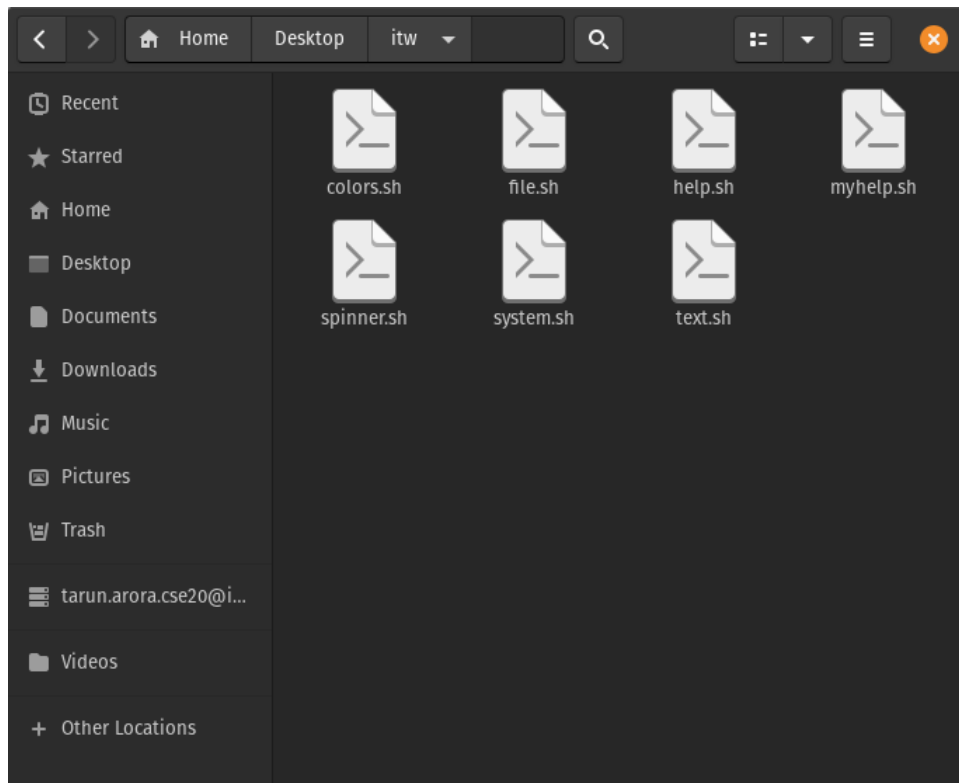
1. 20075092_UnixProject.pdf

2. sh_Files_20075092.zip :-

- myhelp.sh
- file.sh
- text.sh
- system.sh
- Help.sh
- README
- spinner.sh

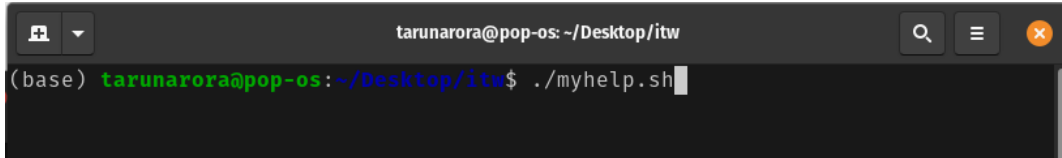
Screenshots

- Directory containing all the Files

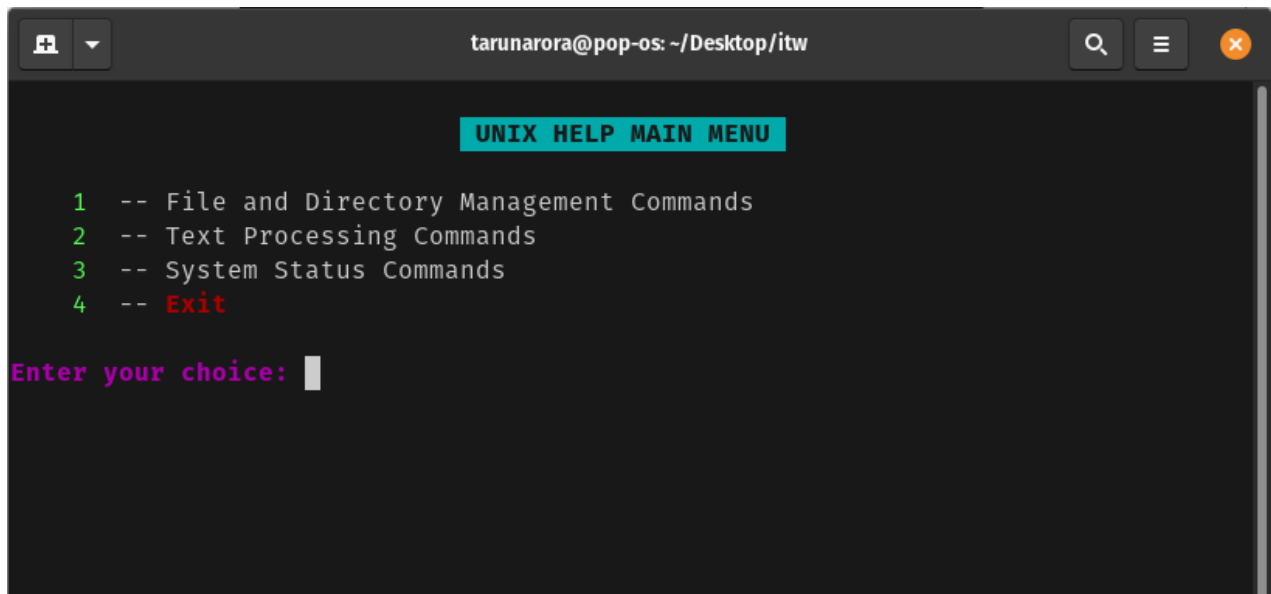


Novice Mode

- Starting The program from Main Menu



```
tarunarora@pop-os: ~/Desktop/itw
(base) tarunarora@pop-os:~/Desktop/itw$ ./myhelp.sh
```



```
tarunarora@pop-os: ~/Desktop/itw

  UNIX HELP MAIN MENU

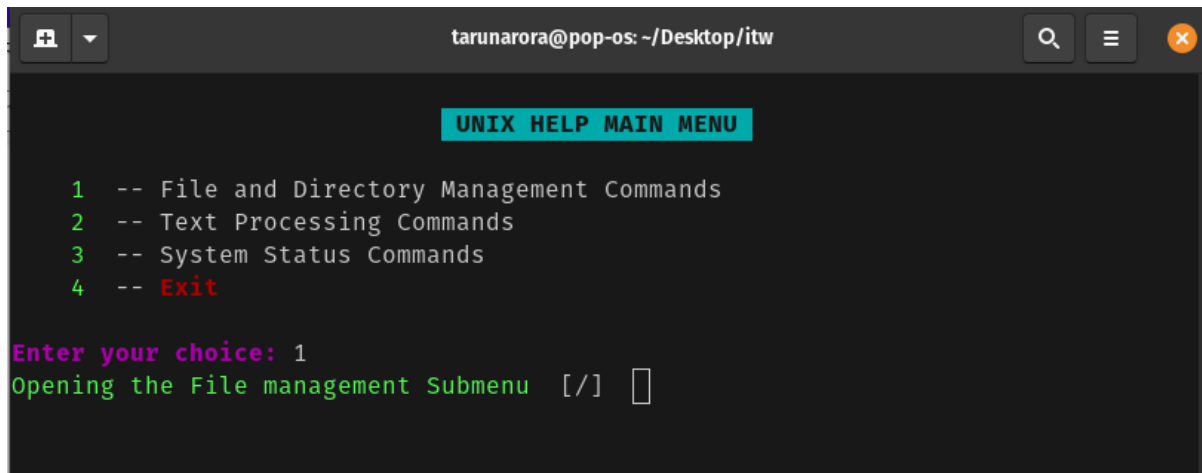
1  -- File and Directory Management Commands
2  -- Text Processing Commands
3  -- System Status Commands
4  -- Exit

Enter your choice: 
```

Submenus and Their Functionalities:-

- File and Directory Management Commands

Going to File Management Menu to Main Menu



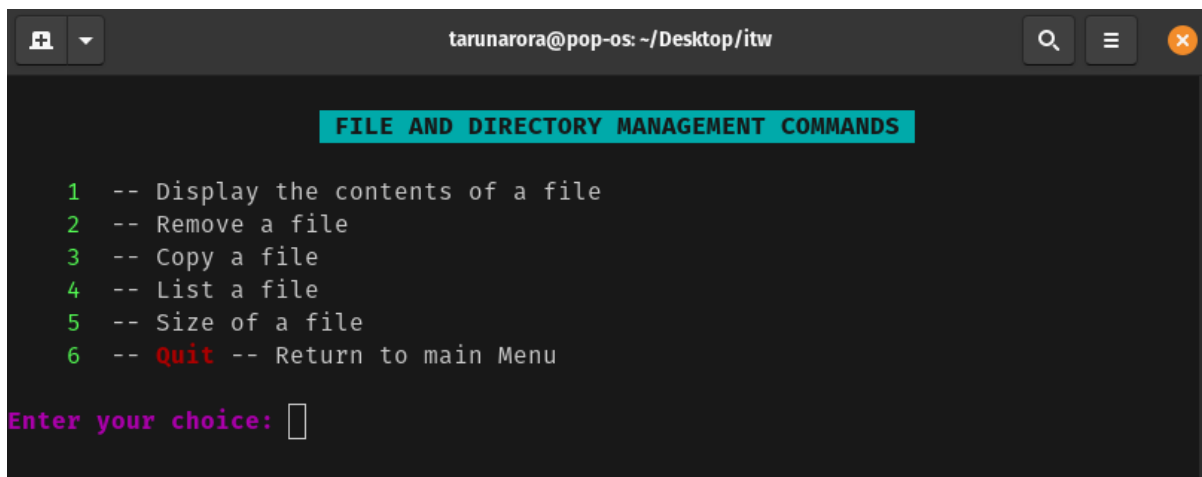
```
tarunarora@pop-os: ~/Desktop/itw

UNIX HELP MAIN MENU

1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit

Enter your choice: 1
Opening the File management Submenu  [/]  
```

File Management Submenu: -



```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice:  
```

Functionalities Of File Management Submenu: -

1. Displaying Contents of a File

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 1
Enter the Path of File which you want to view: /home/tarunarora/Desktop/list.txt
ab
bg ms
df
effrf
fr
eee
efrefef

Enter your choice: 
```

2. Removing a file

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 2
Enter the Path of File which you want to remove: /home/tarunarora/Desktop/list.txt
/home/tarunarora/Desktop/list.txt removed successfully.
Enter your choice: 
```

3. Copying Contents of a File

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 3
Enter the Path of File from which content is to be copied: /home/tarunarora/ques2b
Enter the path of the file onto which content is to be pasted: /home/tarunarora/ques2c
Contents copied successfully
Enter your choice: █
```

4. Listing a file

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 4
Enter the Path of File which you want to list: /home/tarunarora/ques2b
-rw-rw-r-- 1 tarunarora tarunarora 22 May 18 18:04 /home/tarunarora/ques2b
Enter your choice: █
```

5. Displaying Size of file

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 5
Enter the Path of File: /home/tarunarora/ques2b
4.0K
Enter your choice: 
```

6. Quit

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 6
Returning to the Main Menu
[/] 
```

```
tarunarora@pop-os: ~/Desktop/itw

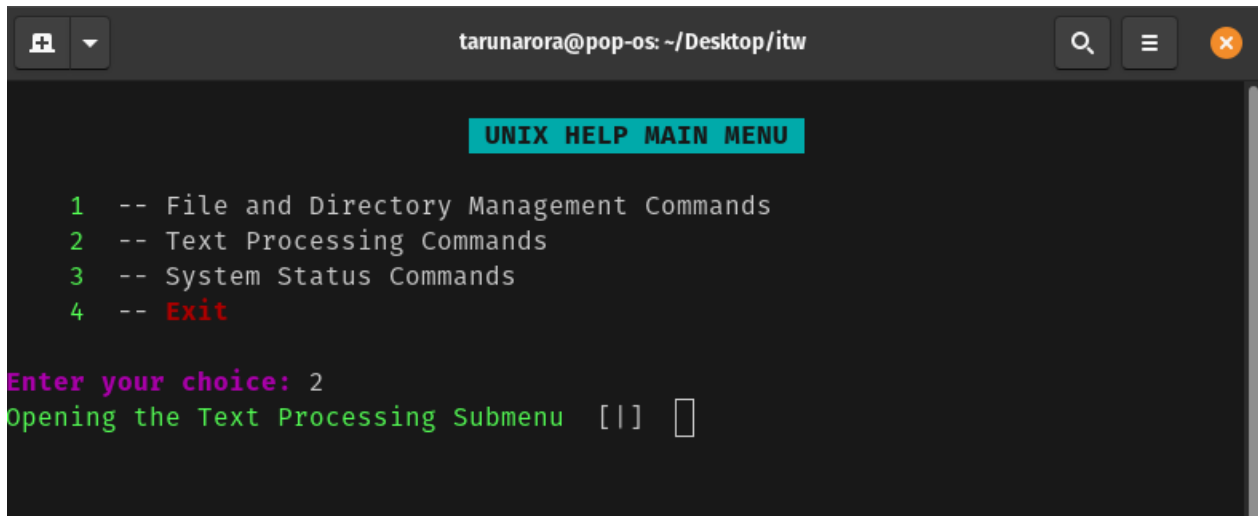
UNIX HELP MAIN MENU

1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit

Enter your choice: 
```

- Text Processing Submenu

Going to Text Processing Submenu to Main Menu



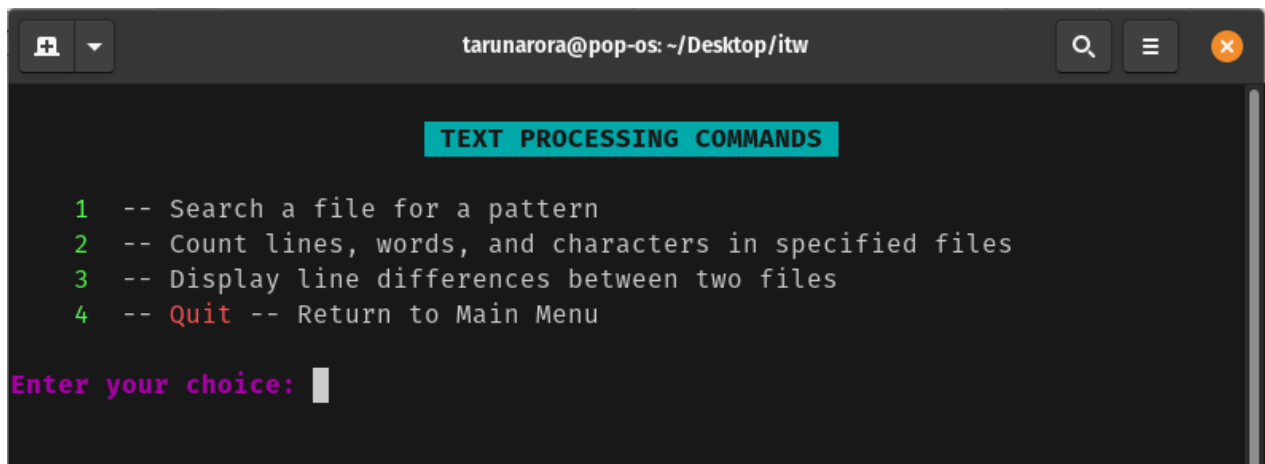
```
tarunarora@pop-os: ~/Desktop/itw

UNIX HELP MAIN MENU

1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit

Enter your choice: 2
Opening the Text Processing Submenu  [ ]
```

Text Processing Submenu: -



```
tarunarora@pop-os: ~/Desktop/itw

TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Quit -- Return to Main Menu

Enter your choice: 
```

Functionalities Of Text Processing Submenu: -

1. Searching For a pattern in a file


```
tarunarora@pop-os: ~/Desktop/itw

TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Quit -- Return to Main Menu

Enter your choice: 1

Enter file to check for pattern : /home/tarunarora/ques2b

Enter pattern to search for : hi

hi
hello hi
hi bye

Enter your choice: 
```

2. Counting Number of lines words and characters in a file

```
tarunarora@pop-os: ~/Desktop/itw

TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Quit -- Return to Main Menu

Enter your choice: 2

Enter filename : /home/tarunarora/ques2b

Number of line : 4
Number of words : 7
Number of characters : 26

Enter your choice: 
```

3. Displaying line differences between two files

```
tarunarora@pop-os: ~/Desktop/itw

TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Quit -- Return to Main Menu

Enter your choice: 3

Enter path of first file : /home/tarunarora/ques2b
Now Enter path of second file : /home/tarunarora/ques2c
The differences (if any) in the content of the files are shown below :-
1,4c1,7
< hi
< hello hi
< hi bye
< ok bye
---
> tarun
>
> is
>
> good
>
> bye
```

4. Quit

```
tarunarora@pop-os: ~/Desktop/itw

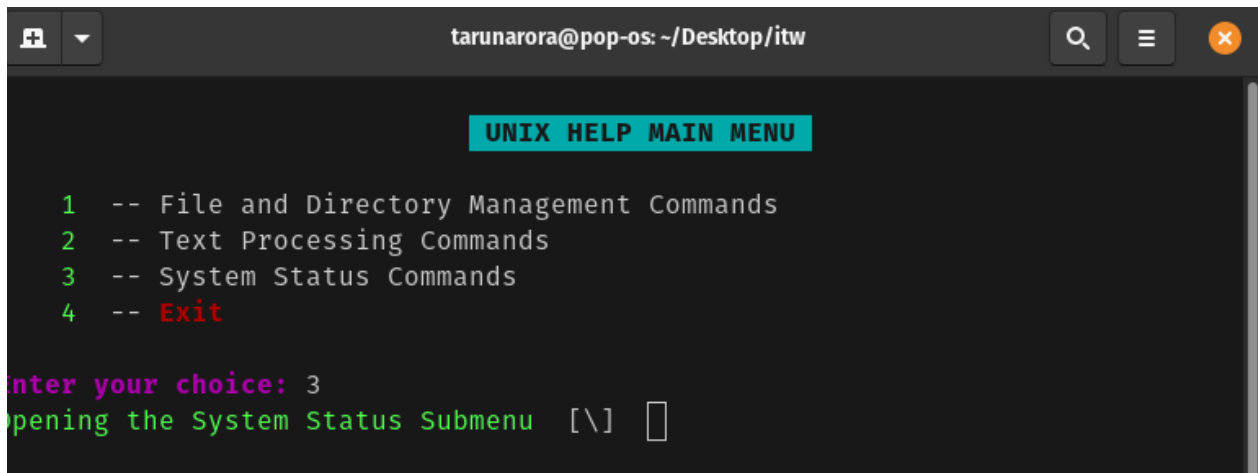
TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Quit -- Return to Main Menu

Enter your choice: 4
Returning to the Main Menu
[\] □
```

- System Status Submenu

Going to System Status Submenu to Main Menu

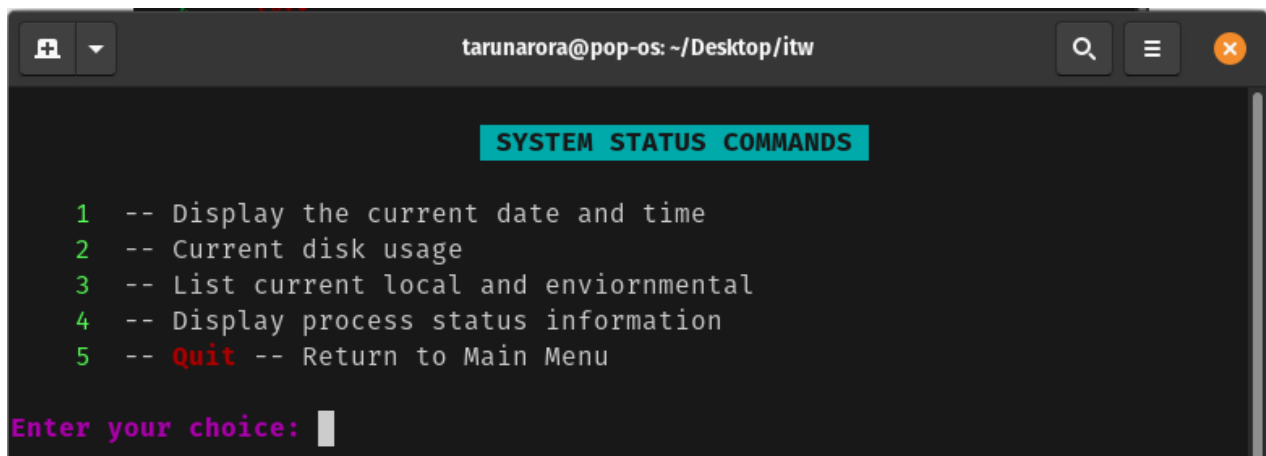


```
tarunarora@pop-os: ~/Desktop/itw
UNIX HELP MAIN MENU

1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit

Enter your choice: 3
Opening the System Status Submenu  [\]  
```

System Status Submenu: -



```
tarunarora@pop-os: ~/Desktop/itw
SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice:  
```

Functionalities Of System Status Submenu: -

1. Displaying Current Date and Time

```
tarunarora@pop-os: ~/Desktop/itw

SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice: 1

06/Jun/2021 12:58

Enter your choice: 
```

2. Displaying Current Disk Usage

```
tarunarora@pop-os: ~/Desktop/itw

SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice: 2

Filesystem      1K-blocks      Used Available Use% Mounted on
tmpfs            605584         1944    603640   1% /run
/dev/sda9       145604608 54932784 83205844  40% /
tmpfs           3027920      141048   2886872   5% /dev/shm
tmpfs             5120           4        5116   1% /run/lock
tmpfs            4096           0         4096   0% /sys/fs/cgroup
/dev/sda6        510980      333972   177008   66% /boot/efi
tmpfs           605584         140    605444   1% /run/user/1000

Enter your choice: 
```

3. Listing current local and environmental variables

```
tarunarora@pop-os: ~/Desktop/itw

SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice: 3

SHELL=/bin/bash
SESSION_MANAGER=local/pop-os:@/tmp/.ICE-unix/4256,unix/pop-os:/tmp/.ICE-unix/4256
QT_ACCESSIBILITY=1
NVM_RC_VERSION=
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-pop:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
GTK_IM_MODULE=ibus
CONDA_EXE=/home/tarunarora/anaconda3/bin/conda
_CE_M=
LANGUAGE=en_US:en
LC_ADDRESS=en_IN.UTF-8
GNOME_SHELL_SESSION_MODE=pop
LC_NAME=en_IN.UTF-8
```

4. Display process status information

```
tarunarora@pop-os: ~/Desktop/itw

SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice: 4

PID TTY          TIME CMD
  1 ?            00:00:02 systemd
  2 ?            00:00:00 kthreadd
  3 ?            00:00:00 rcu_gp
  4 ?            00:00:00 rcu_par_gp
  9 ?            00:00:00 mm_percpu_wq
 10 ?            00:00:00 rcu_tasks_rude_
 11 ?            00:00:00 rcu_tasks_trace
 12 ?            00:00:00 ksoftirqd/0
 13 ?            00:00:03 rcu_sched
 14 ?            00:00:00 migration/0
 15 ?            00:00:00 idle_inject/0
 16 ?            00:00:00 cpuhp/0
 17 ?            00:00:00 cpuhp/1
 18 ?            00:00:00 idle_inject/1
 19 ?            00:00:00 migration/1
```

5. Quit

```
tarunarora@pop-os: ~/Desktop/itw

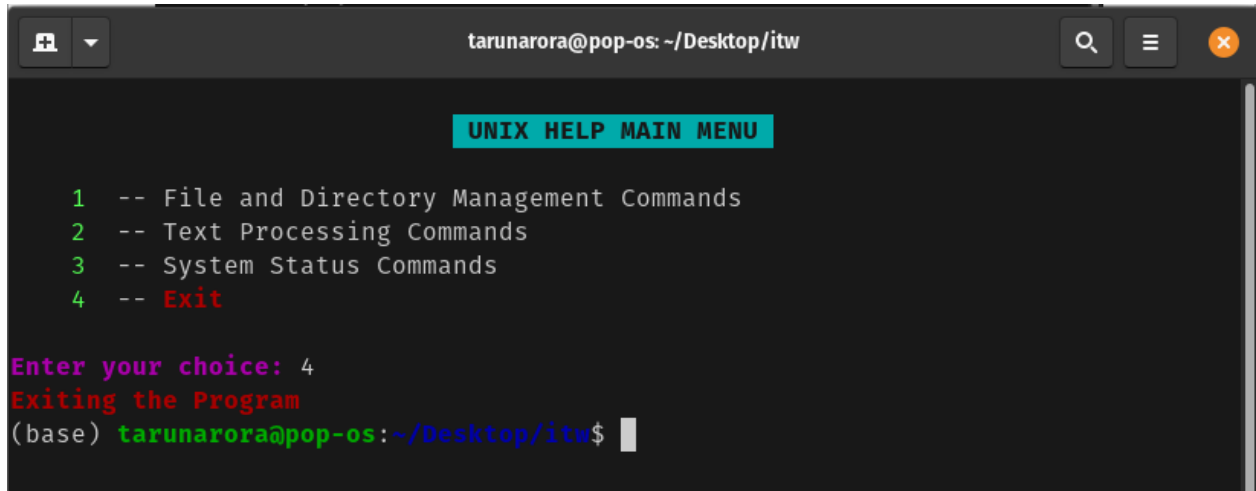
SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Quit -- Return to Main Menu

Enter your choice: 5
Returning to the Main Menu
[\] █
```

- Exit

This option fully quits the program and returns to terminal



```
tarunarora@pop-os: ~/Desktop/itw
UNIX HELP MAIN MENU
1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit
Enter your choice: 4
Exiting the Program
(base) tarunarora@pop-os: ~/Desktop/itw$
```

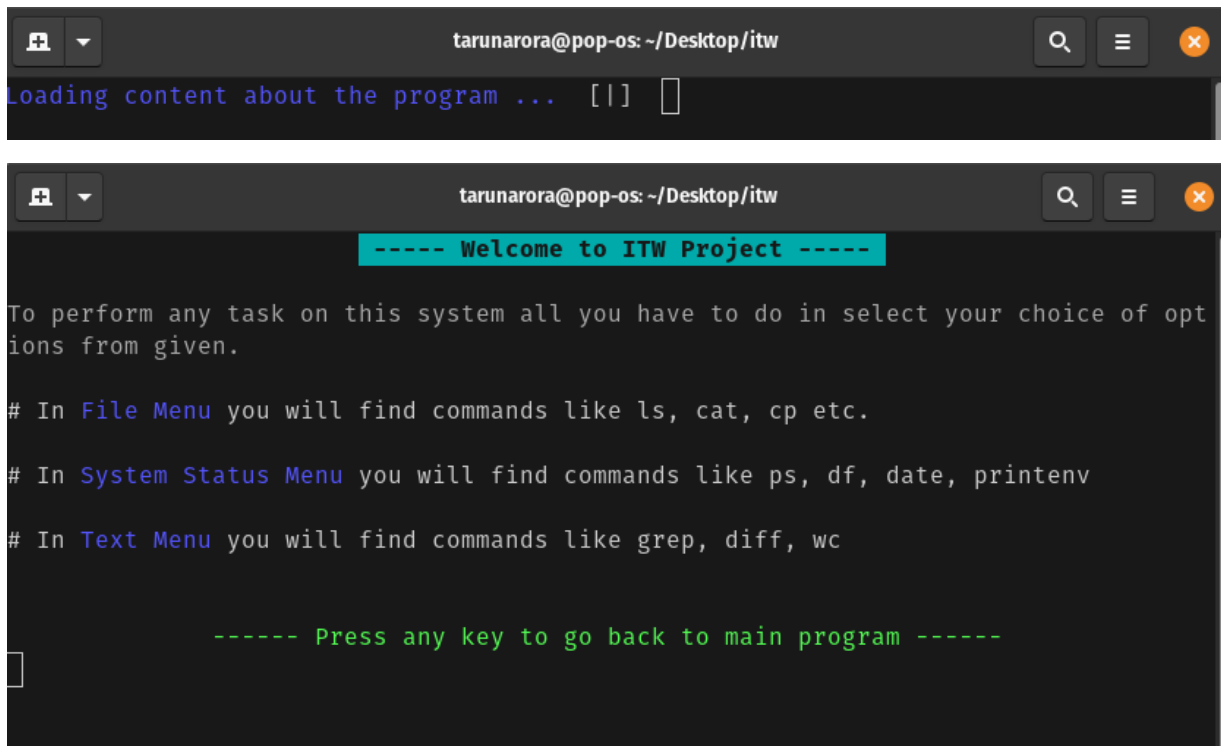
Entering The Expert Mode

Here one would directly jump to a submenu and perform actions and return to the terminal.

Or can go to help menu for instructions.

1. Help Menu

Command `./myhelp.sh help`

A terminal window titled 'tarunarora@pop-os: ~/Desktop/itw' showing the output of the command './myhelp.sh help'. The first line is 'Loading content about the program ...' followed by a cursor. The second screenshot shows the full output: a cyan banner '----- Welcome to ITW Project -----', followed by instructions to select from options, and lists of commands for File Menu, System Status Menu, and Text Menu. It ends with a green prompt '----- Press any key to go back to main program -----' and a cursor.

```
tarunarora@pop-os: ~/Desktop/itw
Loading content about the program ...  []

----- Welcome to ITW Project -----

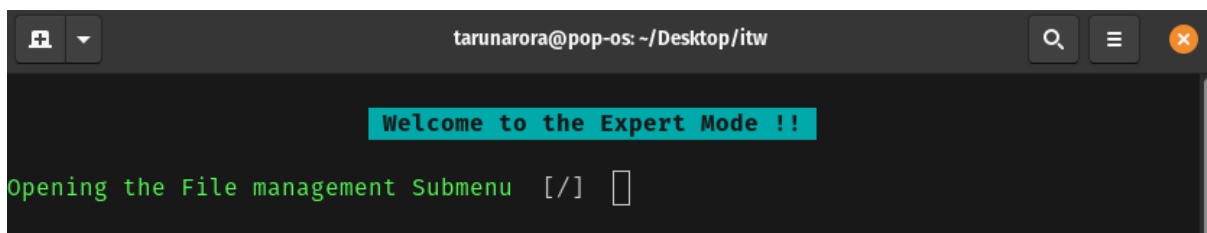
To perform any task on this system all you have to do in select your choice of opt
ions from given.

# In File Menu you will find commands like ls, cat, cp etc.
# In System Status Menu you will find commands like ps, df, date, printenv
# In Text Menu you will find commands like grep, diff, wc

----- Press any key to go back to main program -----
[]
```

2. File Management Menu

Command `./myhelp.sh file`

A terminal window titled 'tarunarora@pop-os: ~/Desktop/itw' showing the output of the command './myhelp.sh file'. It displays a cyan banner 'Welcome to the Expert Mode !!' followed by the text 'Opening the File management Submenu' and a cursor.

```
tarunarora@pop-os: ~/Desktop/itw
Welcome to the Expert Mode !!

Opening the File management Submenu  [/]
```



```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Exit the program

Enter your choice: 
```

3. Text Processing Menu

Command `./myhelp.sh text`

```
tarunarora@pop-os: ~/Desktop/itw

Welcome to the Expert Mode !!

Opening the Text Processing Submenu [ ]

tarunarora@pop-os: ~/Desktop/itw

TEXT PROCESSING COMMANDS

1 -- Search a file for a pattern
2 -- Count lines, words, and characters in specified files
3 -- Display line differences between two files
4 -- Exit Program

Enter your choice: 
```

4. System Status Menu

Command `./myhelp.sh status`

```
tarunarora@pop-os: ~/Desktop/itw
Welcome to the Expert Mode !!

Opening the System Status Submenu  [/]

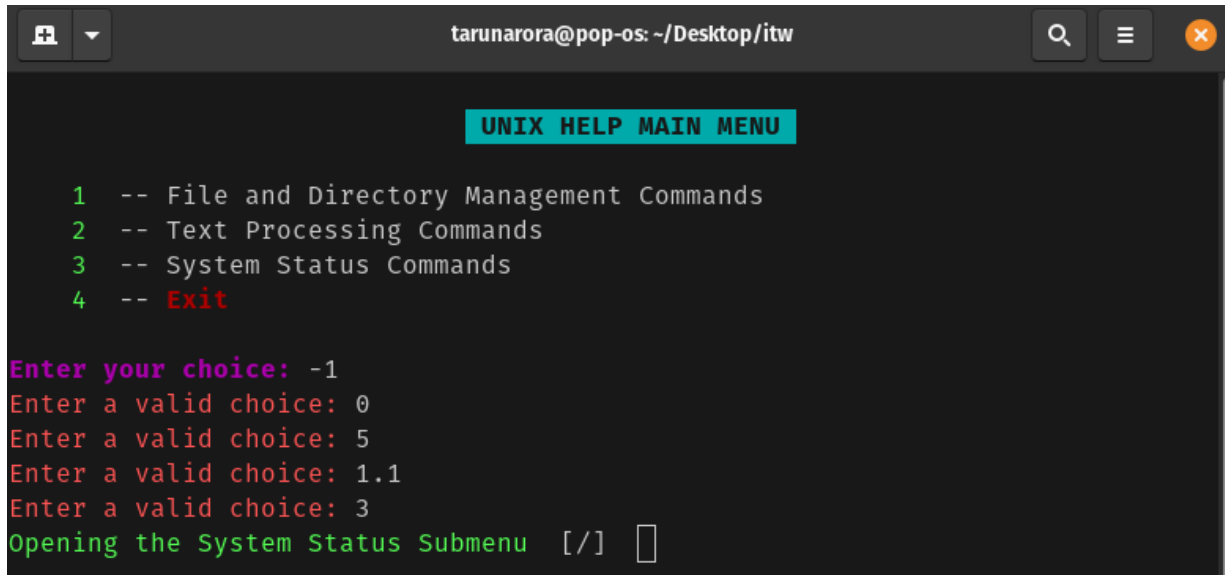
tarunarora@pop-os: ~/Desktop/itw
SYSTEM STATUS COMMANDS

1 -- Display the current date and time
2 -- Current disk usage
3 -- List current local and enviornmental
4 -- Display process status information
5 -- Exit the Program

Enter your choice: 
```

ERROR HANDLING AT VARIOUS STAGES

Choice Validation (Such a validation is imposed at all required places)



The screenshot shows a terminal window titled 'tarunarora@pop-os: ~/Desktop/itw'. The terminal displays a menu titled 'UNIX HELP MAIN MENU' with four options: 1 -- File and Directory Management Commands, 2 -- Text Processing Commands, 3 -- System Status Commands, and 4 -- Exit. Below the menu, the user is prompted to 'Enter your choice:'. The user enters '-1', and the terminal responds with 'Enter a valid choice: 0'. The user enters '0', and the terminal responds with 'Enter a valid choice: 5'. The user enters '5', and the terminal responds with 'Enter a valid choice: 1.1'. The user enters '1.1', and the terminal responds with 'Enter a valid choice: 3'. Finally, the user enters '3', and the terminal responds with 'Opening the System Status Submenu [/]' followed by a cursor.

```
tarunarora@pop-os: ~/Desktop/itw

UNIX HELP MAIN MENU

1 -- File and Directory Management Commands
2 -- Text Processing Commands
3 -- System Status Commands
4 -- Exit

Enter your choice: -1
Enter a valid choice: 0
Enter a valid choice: 5
Enter a valid choice: 1.1
Enter a valid choice: 3
Opening the System Status Submenu [ / ]
```

Path Validation (Such a validation is imposed at all required places)

```
tarunarora@pop-os: ~/Desktop/itw

FILE AND DIRECTORY MANAGEMENT COMMANDS

1 -- Display the contents of a file
2 -- Remove a file
3 -- Copy a file
4 -- List a file
5 -- Size of a file
6 -- Quit -- Return to main Menu

Enter your choice: 1
Enter the Path of File which you want to view: ./abcd
Enter a Valid Path: ./file
Enter a Valid Path: ./file.s
Enter a Valid Path: ./file.sh
#!/bin/bash
cd `dirname $0`
source colors.sh
```

Wrong Argument for Entering Expert Mode

```
tarunarora@pop-os: ~/Desktop/itw
(base) tarunarora@pop-os:~/Desktop/itw$ ./myhelp.sh 1

Enter a valid argument to Enter the Expert Mode.
-- file
-- text
-- status
-- help
Exiting the Program
(base) tarunarora@pop-os:~/Desktop/itw$
```

***** EOF *****