OS Assignment-1

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Write a shell script with the name <last four digits of your roll no.>_firstname_menu.sh that repeatedly displays the following menu: [1] Find user [2] List large files [3] Disk usage [4] View Log File [5] Exit Your choice >

If you enter any number other than [1 – 5], the script gives you an error message.

If you enter 1 (Find user), the script will:

- *Prompt for a user name.*
- *Displays result [whether it is a valid user or not].*
  If you enter 2 (List large files), the script will:
- *Prompt for a size in bytes*
- *List the names and sizes of all files greater than or equal to the specified size.*
  If there are no files of that size, a blank list with headings only will be printed.
  If you enter 3 (Disk usage), result will be displayed appropriately.
  When you choose command 4 (View Log File), the script will display a file named logfile.txt with appropriate headings.
  Your script will create this file as follows: Every time a command is entered, you will append a line to a file named logfile.txt. The line will have the user name, the menu choice, and the output of the date command, separated by percent signs. The menu choice must be given in words, as shown in the sample output. Don't just give the menu choice as a number—when you look at the log file a month from now, you want to know that a user did a "disk usage" command, not "3."
  Invalid commands and the exit command do not have to be entered in the log file if you don't want to.
  If you enter 5 (Exit), the script will exit.
  Menu options 1, 2, and 4 (find user, list large files, and view log file) must be implemented as separate functions. Add any other functions that you feel will make your job easier.

```
#!/bin/bash

print_user(){
        read -p "Enter user name: " name
        echo "$name"
}

list_files(){
```

```
		read -p "Enter size in bytes: " sz
		echo "Files/Directories with size greater than or equal to ${sz}B are:"
		((sz=sz-1)) #this is done since -size flag of find can only find greater or
lesser files, not equal files, with respect to size

		: 'echo $sz
		l=($(find . -size +"$sz"c))
		echo ${l[@]}'

		find . -size +${sz}c -print0 | xargs -0 du -sh
}

logfile="logfile.txt"
if [ ! -f "$logfile" ]; then
		touch "$logfile"
fi

view_log(){
	echo "$logfile":
	cat "$logfile"
}

arr=('Find user' 'List large files' 'Disk usage' 'View Log File' 'Exit')

: 'for((i=0;i<${#arr[*]};i++));do
		echo ${arr[$i]}
done'

select opt in "${arr[@]}" #self-note: this syntax for arr after in is very important
do
		case "$opt" in
					${arr[0]})
							print_user;;
					${arr[1]})
							list_files;;
					${arr[2]})
							echo 'Disk Usage:'
							du -ah;;
					${arr[3]})
							view_log;;
					${arr[4]})
							break;;
					*)
							echo 'Invalid input'
		esac
		echo "$(whoami)%$opt%$(date)" >> "$logfile"
done
```

```
1) Find user         3) Disk usage        5) Exit
2) List large files  4) View Log File
#? 1
Enter user name: me
me
#? 2
Enter size in bytes: 100000
Files/Directories with size greater than or equal to 100000B are:
#? 2
Enter size in bytes: 1000
Files/Directories with size greater than or equal to 1000B are:
8.0K    ./.DS_Store
4.0K    ./1090_firstname_menu.sh
 96K    ./BCSE-OS-assignments-I-2021.pdf
 12K    ./.1090_firstname_menu.sh.swp
#? 3
Disk Usage:
4.0K    ./4.sh
4.0K    ./1.sh
8.0K    ./.DS_Store
4.0K    ./1090_firstname_menu.sh
 96K    ./BCSE-OS-assignments-I-2021.pdf
  0B    ./my-deleted-files
4.0K    ./tester.sh
4.0K    ./2.sh
4.0K    ./rm
 12K    ./.1090_firstname_menu.sh.swp
4.0K    ./logfile.txt
4.0K    ./3.sh
148K    .
#? 4
logfile.txt:
rgdgr8%Find user%Sun Sep 12 00:24:57 IST 2021
rgdgr8%List large files%Sun Sep 12 00:25:00 IST 2021
rgdgr8%Disk usage%Sun Sep 12 00:25:05 IST 2021
rgdgr8%View Log File%Sun Sep 12 00:25:14 IST 2021
rgdgr8%Find user%Sun Sep 12 00:29:05 IST 2021
rgdgr8%List large files%Sun Sep 12 00:29:30 IST 2021
rgdgr8%Disk usage%Sun Sep 12 00:29:48 IST 2021
rgdgr8%View Log File%Sun Sep 12 00:29:59 IST 2021
rgdgr8%Find user%Sun Sep 12 00:30:55 IST 2021
rgdgr8%List large files%Sun Sep 12 00:30:59 IST 2021
rgdgr8%List large files%Sun Sep 12 00:31:07 IST 2021
rgdgr8%Disk usage%Sun Sep 12 00:31:18 IST 2021
#? 5
```