

1. Write a script called mycase, using the case utility to checks the type of character entered by a user:
 - a. Upper Case.
 - b. Lower Case.
 - c. Number.
 - d. Nothing.

```
maiyasser@localhost:~/lab3
File Edit View Search Terminal Help
#!/usr/bin/bash

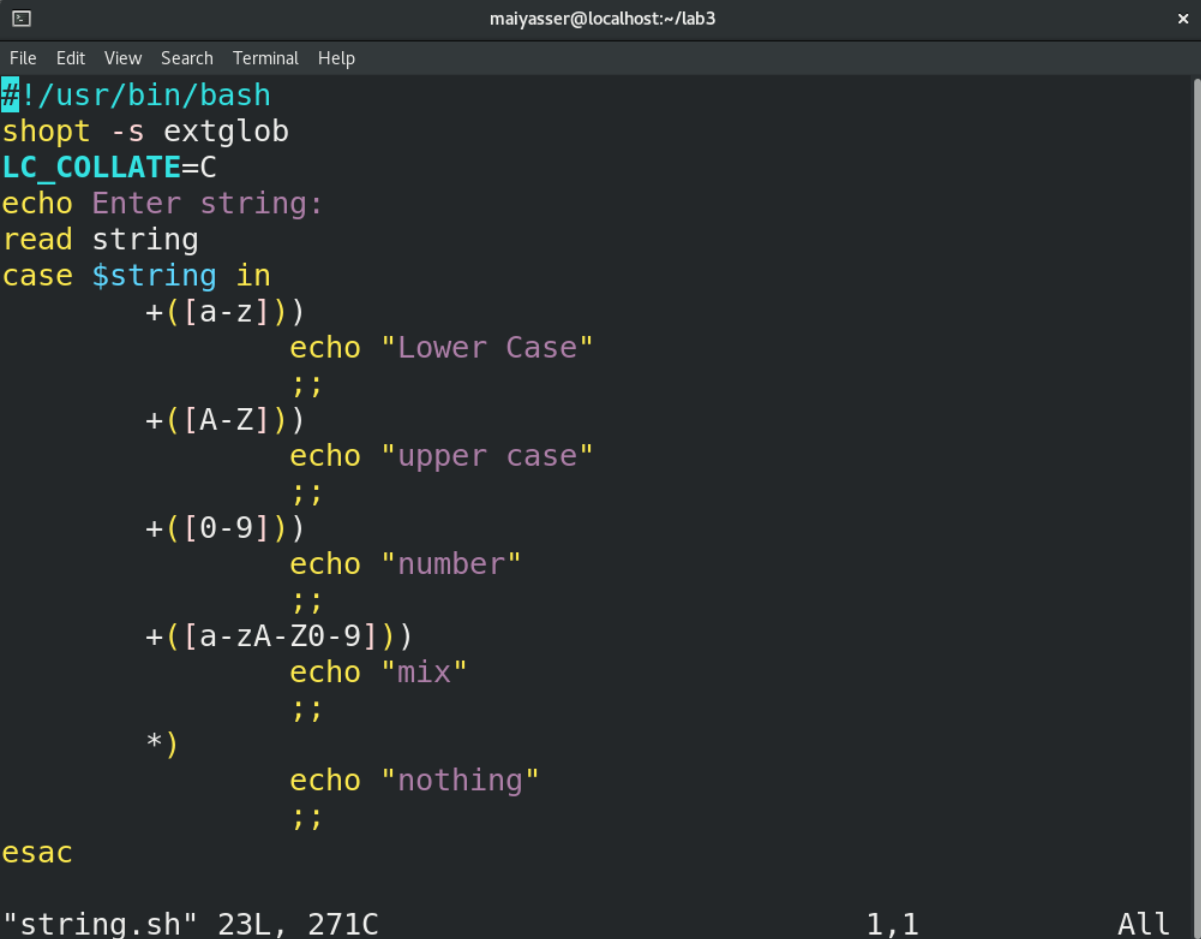
export LC_COLLATE=C
echo Enter character:
read char
case $char in
    [A-Z])echo upper case
           ;;
    [a-z])echo lower case
           ;;
    [0-9])echo number
           ;;
    *)echo nothing
           ;;
esac

~
~
~
~
~
~
"case.sh" 16L, 190C 1,1 All
```

```
maiyasser@localhost:~/lab3
File Edit View Search Terminal Help
[maiyasser@localhost lab3]$ vi case.sh
[maiyasser@localhost lab3]$ case.sh
Enter character:
H
upper case
[maiyasser@localhost lab3]$ case.sh
Enter character:
h
lower case
[maiyasser@localhost lab3]$ case.sh
Enter character:
7
number
[maiyasser@localhost lab3]$ case.sh
Enter character:
#
nothing
[maiyasser@localhost lab3]$
```

2. Enhanced the previous script, by checking the type of string entered by a user:

- a. Upper Cases.
- b. Lower Cases.
- c. Numbers.
- d. Mix.
- e. Nothing.



```
maiyasser@localhost:~/lab3
File Edit View Search Terminal Help
#!/usr/bin/bash
shopt -s extglob
LC_COLLATE=C
echo Enter string:
read string
case $string in
    +([a-z]))
        echo "Lower Case"
        ;;
    +([A-Z]))
        echo "upper case"
        ;;
    +([0-9]))
        echo "number"
        ;;
    +([a-zA-Z0-9]))
        echo "mix"
        ;;
    *)
        echo "nothing"
        ;;
esac

"string.sh" 23L, 271C 1,1 All
```

```
maiyasser@localhost:~/lab3
File Edit View Search Terminal Help
[maiyasser@localhost lab3]$ string.sh
Enter string:
hahahha
Lower Case
[maiyasser@localhost lab3]$ string.sh
Enter string:
HAHAHAH
upper case
[maiyasser@localhost lab3]$ string.sh
Enter string:
lol33
mix
[maiyasser@localhost lab3]$ string.sh
Enter string:
%>%^^
nothing
[maiyasser@localhost lab3]$
```

3. Write a script called mychmod using for utility to give execute permission to all files and directories in your home directory.

```
#!/bin/bash
for i in $(ls $HOME)
do
    chmod +x $HOME/$i
done
```

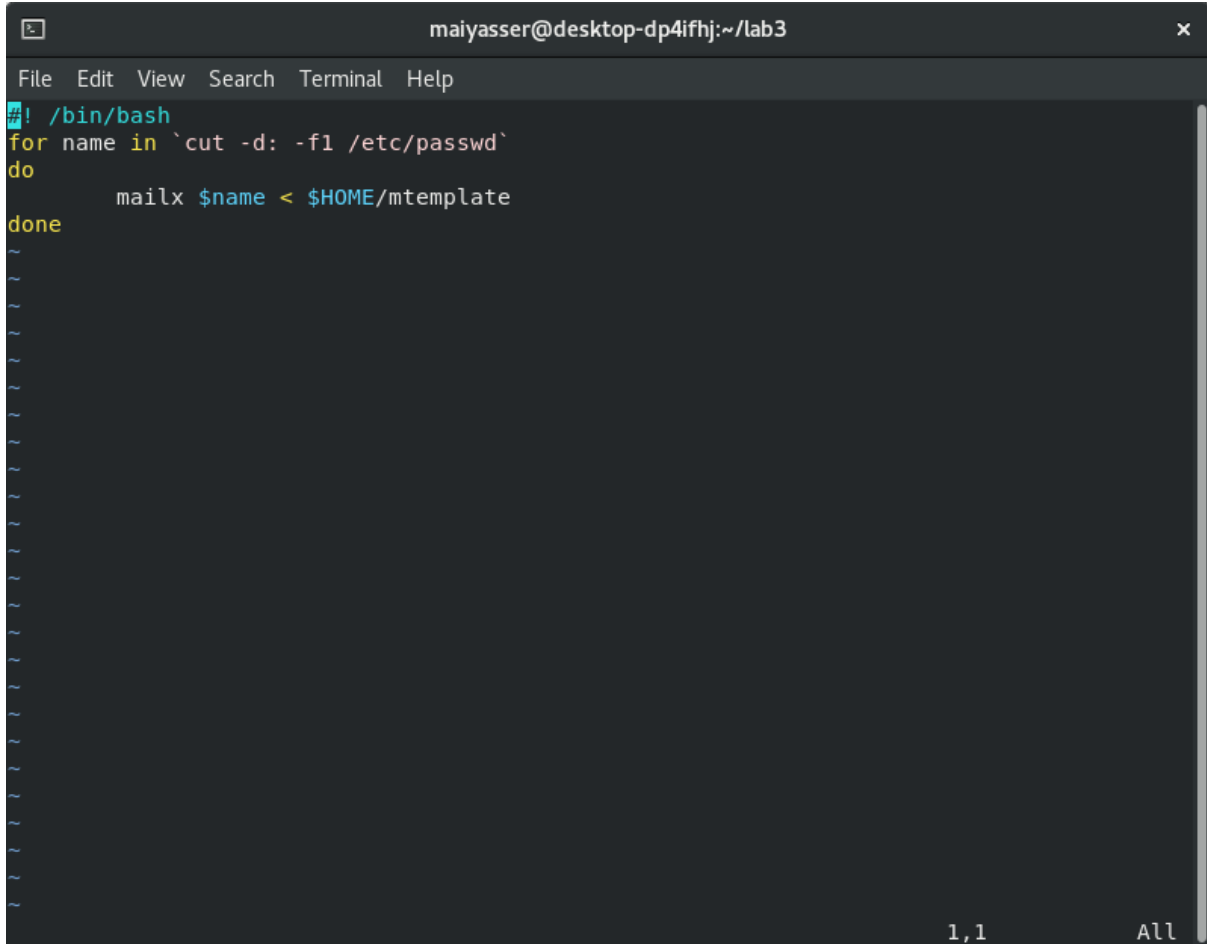
"mychmod" 5L, 65C 1,1 All

```
maiyasser@localhost:~/lab3
File Edit View Search Terminal Help

[maiyasser@localhost lab3]$ mychmod
[maiyasser@localhost lab3]$ ls -l ~
total 5780
drwxrwxr-x. 2 maiyasser maiyasser      60 Dec  6 13:22 bash2
drwxrwxr-x. 2 maiyasser maiyasser     18 Dec  5 14:49 Commands
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Desktop
drwxrwxr-x. 3 maiyasser maiyasser     22 Nov 22 13:54 dirtest
drwxrwxr-x. 2 maiyasser maiyasser     18 Dec  3 16:56 docs
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Documents
drwxr-xr-x. 2 maiyasser maiyasser    4096 Dec  6 13:27 Downloads
-rwxrwxr-x. 1 maiyasser maiyasser 119923 Nov 28 13:05 error
-rwxrwxr-x. 1 maiyasser maiyasser      6 Nov 28 11:44 filename1
-rwxrwxr-x. 1 maiyasser maiyasser      6 Nov 28 11:44 filename2
-rwxrwxr-x. 1 maiyasser maiyasser    2615 Nov 28 11:02 fileusername
es
drwxrwxr-x. 2 maiyasser maiyasser     35 Dec  6 01:49 lab2
-rwxrwxr-x. 1 maiyasser maiyasser     72 Dec  6 02:09 lab21
-rwxrwxr-x. 1 maiyasser maiyasser    14 Dec  5 14:54 lab2_1.sh
drwxrwxr-x. 3 maiyasser maiyasser     64 Dec  6 15:29 lab3
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Music
dr-x--x--x. 2 maiyasser maiyasser      6 Nov 24 15:12 myteam
-rwx-wx--x. 1 maiyasser maiyasser   2563 Nov 22 14:52 oldpasswd
-rwxrwxr-x. 1 maiyasser maiyasser 5750389 Nov 28 13:05 output
drwxr-xr-x. 2 maiyasser maiyasser    8192 Dec  6 14:54 Pictures
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Public
-rwxrwxr-x. 1 maiyasser maiyasser     84 Nov 28 12:55 result
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Templates
d--x--x-rwx. 2 maiyasser maiyasser      6 Nov 26 15:36 test
--x--x-rwx. 1 maiyasser maiyasser      0 Nov 26 15:36 test1
drwxr-xr-x. 2 maiyasser maiyasser      6 Nov 21 15:23 Videos
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
[maiyasser@localhost lab3]$
```

4. Write a script called mybackup using for utility to create a backup of only files in your home directory.

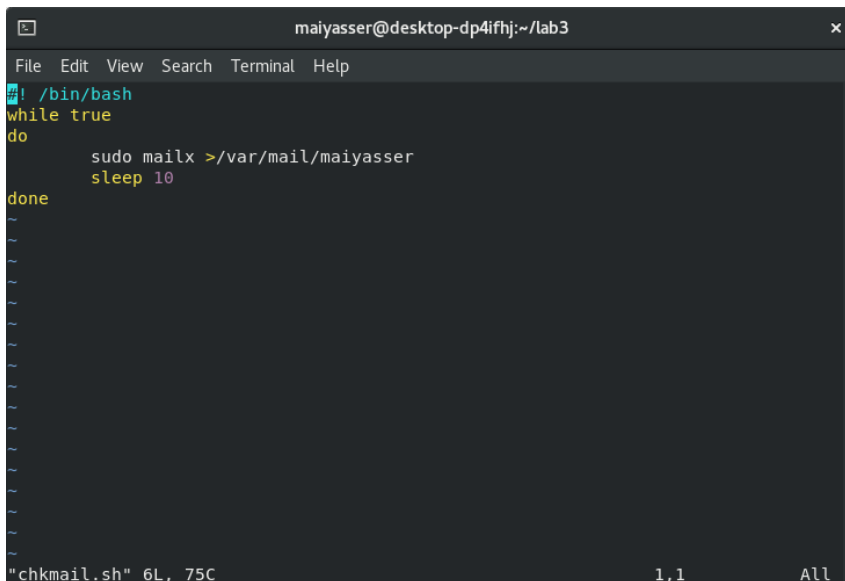
5. Write a script called mymail using for utility to send a mail to all users in the system.
Note: write the mail body in a file called mtemplate.

A terminal window titled 'maiyyasser@desktop-dp4ifhj:~/lab3' with a menu bar (File, Edit, View, Search, Terminal, Help). The script content is:

```
#!/bin/bash
for name in `cut -d: -f1 /etc/passwd`
do
    mailx $name < $HOME/mtemplate
done
```

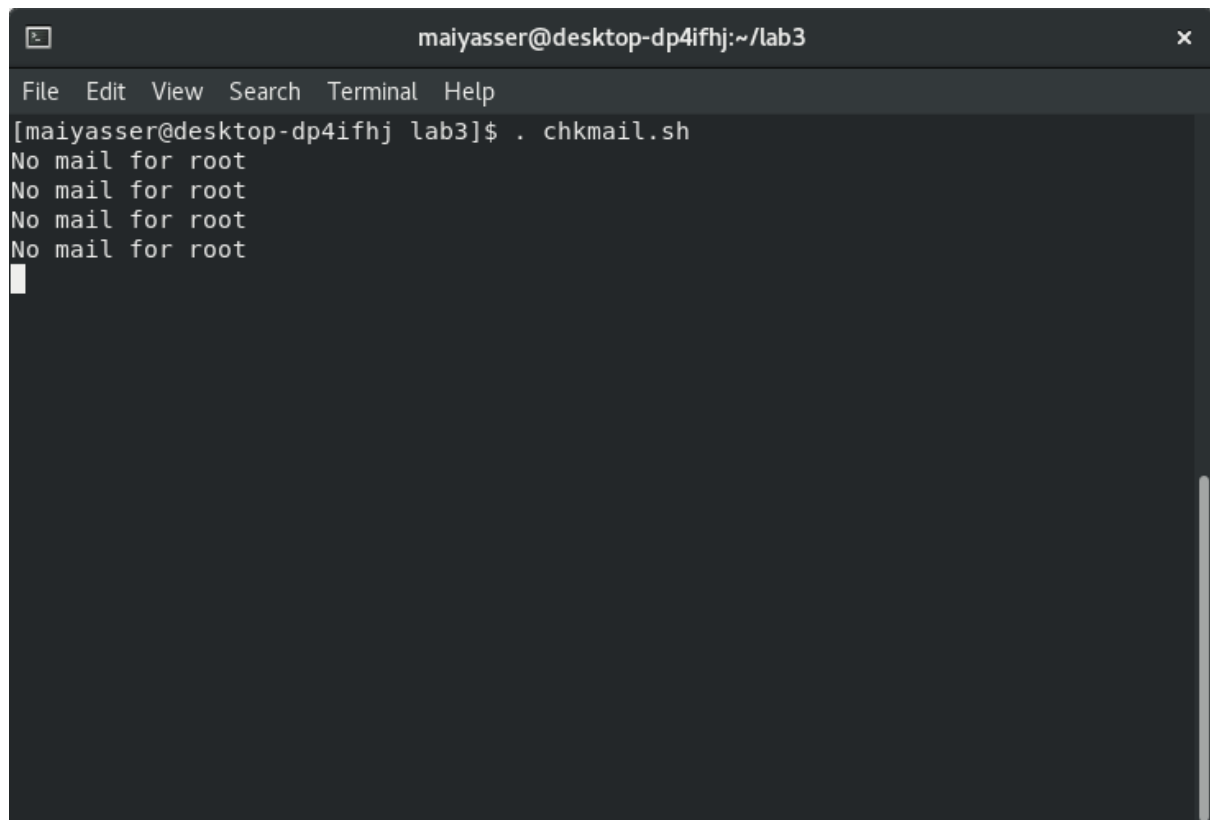
 The window shows line numbers 1 through 11 on the left margin. The status bar at the bottom right shows '1,1' and 'All'.

6. Write a script called chkmail to check for new mails every 10 seconds. Note: mails are saved in /var/mail/username.

A terminal window titled 'maiyyasser@desktop-dp4ifhj:~/lab3' with a menu bar (File, Edit, View, Search, Terminal, Help). The script content is:

```
#!/bin/bash
while true
do
    sudo mailx >/var/mail/maiyyasser
    sleep 10
done
```

 The window shows line numbers 1 through 11 on the left margin. The status bar at the bottom right shows '1,1' and 'All'. The bottom left corner of the window displays '"chkmail.sh" 6L, 75C'.

A terminal window titled 'maiyaasser@desktop-dp4ifhj:~/lab3' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is '[maiyaasser@desktop-dp4ifhj lab3]\$' and the command '. chkmail.sh' has been entered. The output shows four lines of 'No mail for root' followed by a cursor.

```
maiyaasser@desktop-dp4ifhj:~/lab3
File Edit View Search Terminal Help
[maiyaasser@desktop-dp4ifhj lab3]$ . chkmail.sh
No mail for root
No mail for root
No mail for root
No mail for root
█
```

7. What is the output of the following script

```
typeset -i n1
typeset -i n2
n1=1
n2=1
while test $n1 -eq $n2
do
n2=$((n2+1))
print $n1
if [ $n1 -gt $n2 ]
then
break
else
continue
fi
n1=$((n1+1))
print $n2
Done
```

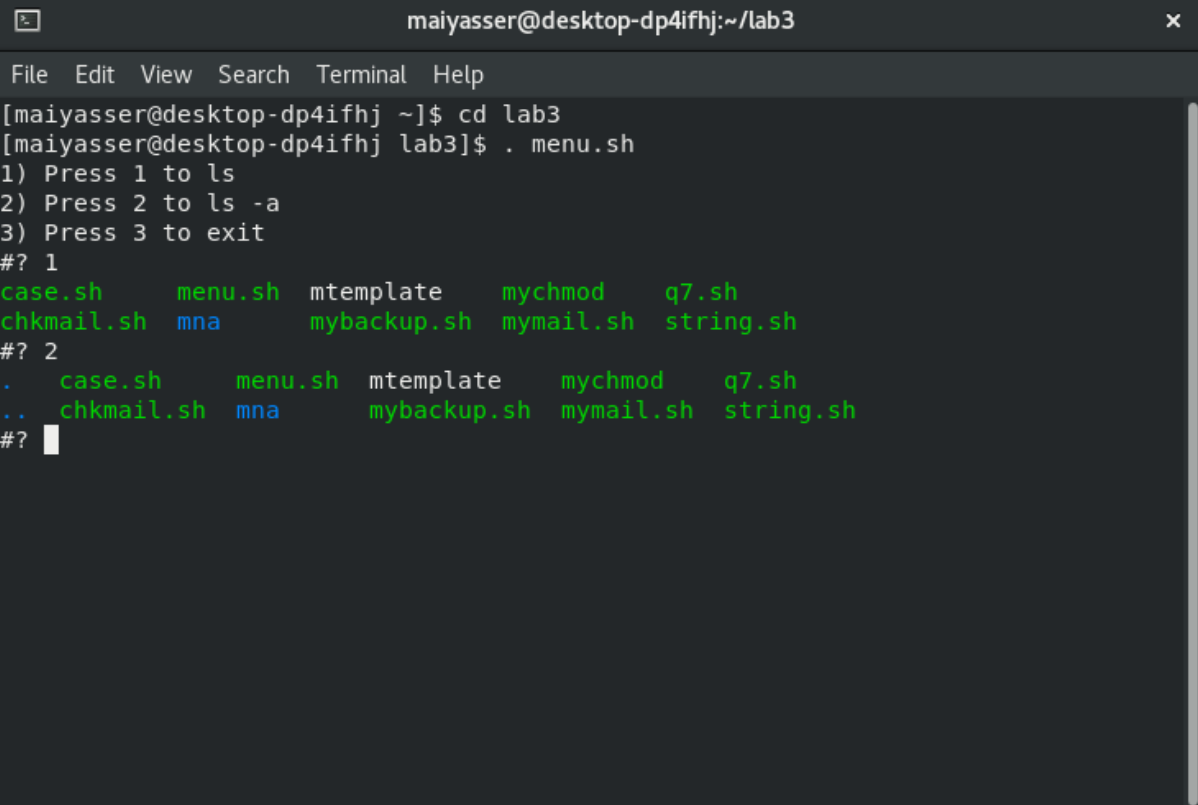
Output is 1

8. Create the following menu:

- a. Press 1 to ls
- b. Press 2 to ls -a
- c. Press 3 to exit

Using select utility then while utility.

Using select



```
maiyasser@desktop-dp4ifhj:~/lab3
File Edit View Search Terminal Help
[maiyasser@desktop-dp4ifhj ~]$ cd lab3
[maiyasser@desktop-dp4ifhj lab3]$ . menu.sh
1) Press 1 to ls
2) Press 2 to ls -a
3) Press 3 to exit
#? 1
case.sh      menu.sh    mtemplate   mychmod     q7.sh
chkmail.sh   mna        mybackup.sh mymail.sh   string.sh
#? 2
.   case.sh      menu.sh    mtemplate   mychmod     q7.sh
..  chkmail.sh   mna        mybackup.sh mymail.sh   string.sh
#? 
```



```
maiasser@desktop-dp4ifhj:~/lab3
File Edit View Search Terminal Help
#!/bin/bash
select choice in "Press 1 to ls" "Press 2 to ls -a" "Press 3 to exit"
do
    case $REPLY in
        1)ls
            ;;
        2)ls -a
            ;;
        3)exit
            ;;
    esac
done

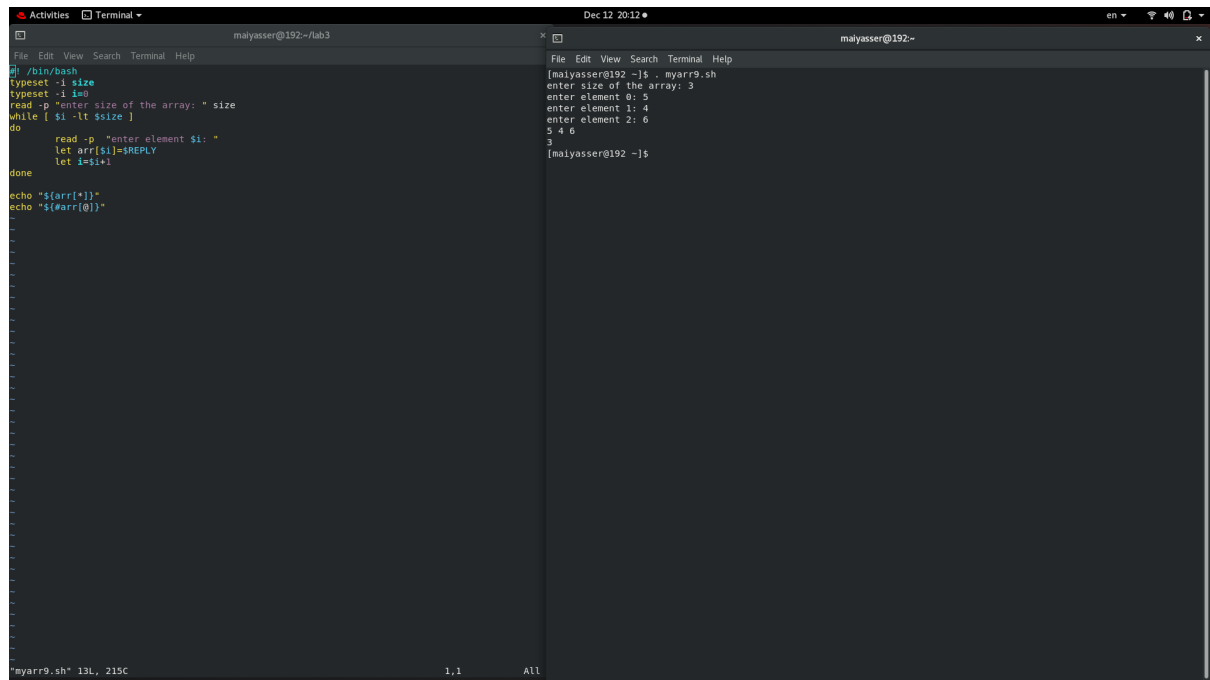
"menu.sh" 12L, 157C 1,1 All
```

Using while

```
maiasser@desktop-dp4ifhj:~/lab3
File Edit View Search Terminal Help
#!/bin/bash
while true
do
    echo Press 1 to ls
    echo Press 2 to ls -a
    echo Press 3 to exit
    read
    if [ $REPLY -eq 1 ]
    then
        ls
    elif [ $REPLY -eq 2 ]
    then
        ls -a
    elif [ $REPLY -eq 3 ]
    then
        exit
    fi
done

maiasser@desktop-dp4ifhj:~$ . menuwhile.sh
Press 1 to ls
Press 2 to ls -a
Press 3 to exit
1
bash2 Documents file2 lab21 lol oldpasswd Templates
Commands Downloads filename1 lab2 1.sh mtemplate output test
Desktop email.txt filename2 lab2bash Music Pictures test
dirtest error filename3 lab3 myctest Public Videos
docs ff lab2 lab3bash myteam result
Press 1 to ls
Press 2 to ls -a
Press 3 to exit
2
. Commands error .ICEauthority .mozilla Public
. .config .esd_auth lab2 mtemplate result
bash2 .dbus ff lab21 Music Templates
.bash2 history file2 lab2 1.sh myctest test
.bash2 logout dirtest filename1 lab2bash myteam test
.bash2 profile docs filename2 lab3 oldpasswd Videos
.bashrc Documents filename3 lab3bash output .viminfo
.bashrc.save Downloads .git .local Pictures
.cache email.txt .grfs lol .pk
Press 1 to ls
Press 2 to ls -a
Press 3 to exit
```

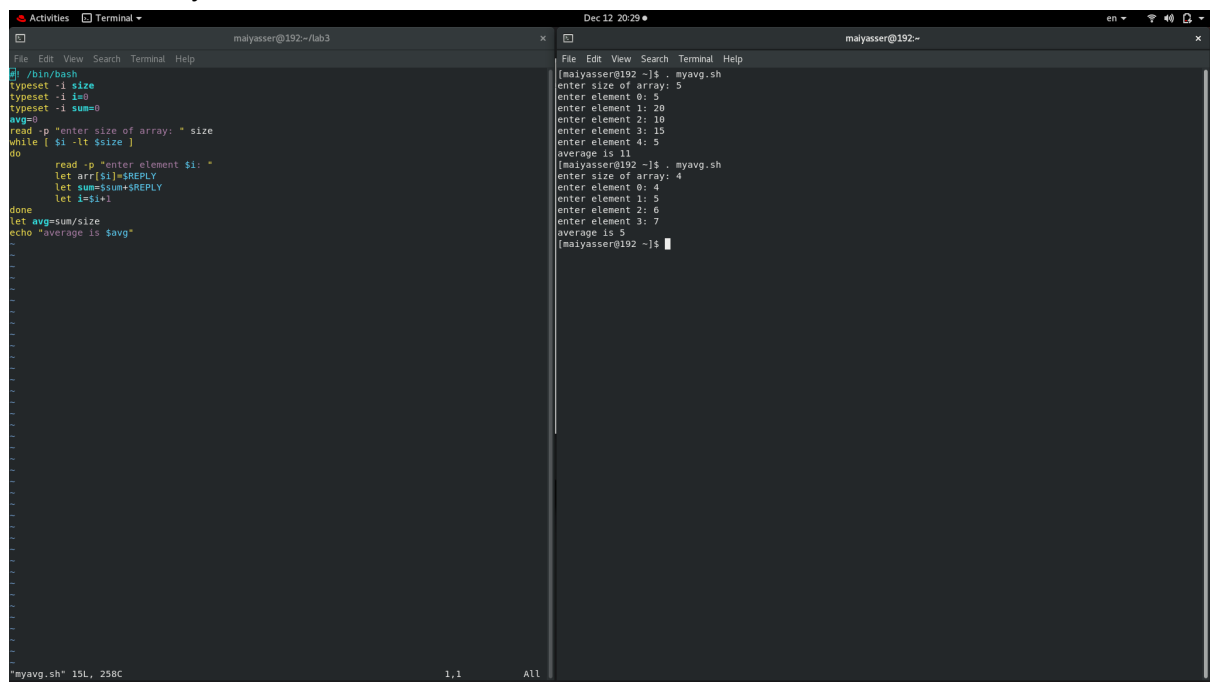
9. Write a script called myarr that ask a user how many elements he wants to enter in an array, fill the array and then print it.



```
malyasser@192:~/lab3
$ ./bin/bash
$ ./bin/bash
typeset -i size
typeset -i i=0
read -p "enter size of the array: " size
while [ $i -lt $size ]
do
    read -p "enter element $i: "
    let arr[$i]=$REPLY
    let i=$((i+1))
done
echo "${arr[@]}"
echo "${#arr[@]}"

malyasser@192:~$ . myarr9.sh
enter size of the array: 3
enter element 0: 5
enter element 1: 4
enter element 2: 6
5 4 6
3
[malyasser@192 ~]$
```

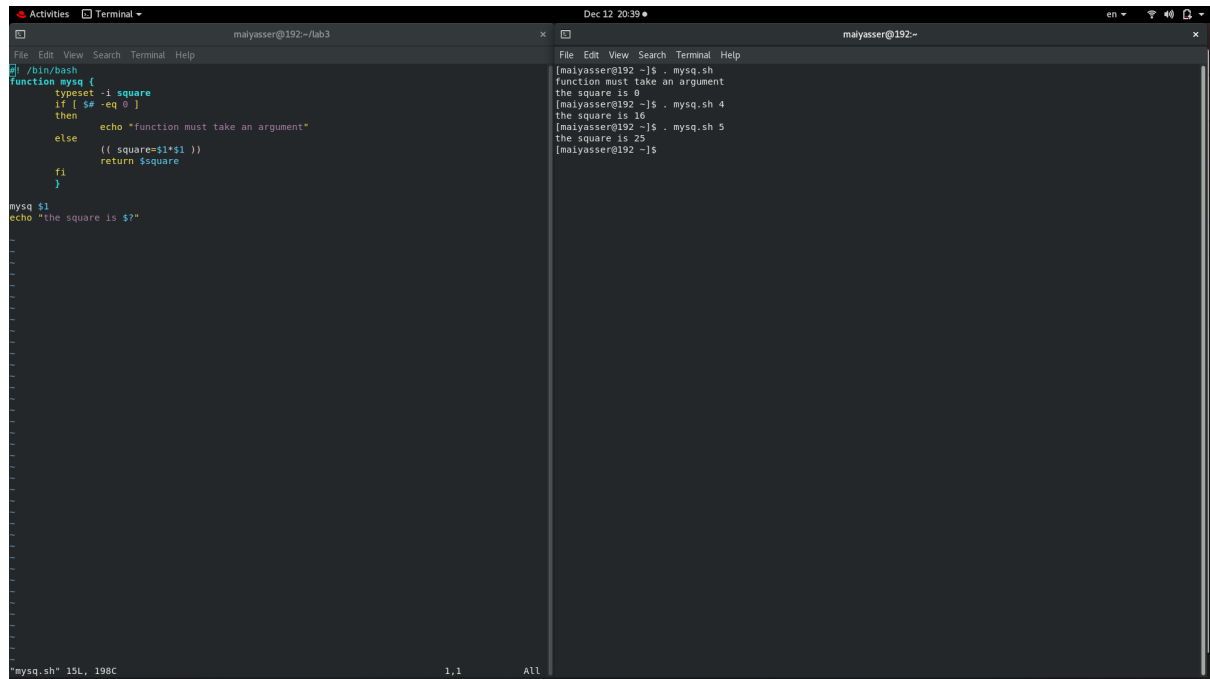
10. Write a script called myavg that calculates the average of all numbers entered by a user. Note: use arrays



```
malyasser@192:~/lab3
$ ./bin/bash
$ ./bin/bash
typeset -i size
typeset -i i=0
typeset -i sum=0
avg=0
read -p "enter size of array: " size
while [ $i -lt $size ]
do
    read -p "enter element $i: "
    let arr[$i]=$REPLY
    let sum=$((sum+$REPLY))
    let i=$((i+1))
done
let avg=sum/size
echo "average is $avg"

malyasser@192:~$ . myavg.sh
enter size of array: 5
enter element 0: 5
enter element 1: 20
enter element 2: 10
enter element 3: 15
enter element 4: 5
average is 11
[malyasser@192 ~]$ . myavg.sh
enter size of array: 4
enter element 0: 4
enter element 1: 5
enter element 2: 6
enter element 3: 7
average is 5.5
[malyasser@192 ~]$
```

11. Write a function called mysq that calculate square of its argument.



```
malayasser@192:~/lab3
function mysq {
    typeset -i square
    if [ $# -eq 0 ]
    then
        echo "function must take an argument"
    else
        (( square=${1}*${1} ))
        return $square
    fi
}

mysq $1
echo "the square is $"

malayasser@192:~
[malayasser@192 ~]$ . mysq.sh
function must take an argument
[malayasser@192 ~]$ . mysq.sh 4
the square is 16
[malayasser@192 ~]$ . mysq.sh 5
The square is 25
[malayasser@192 ~]$
```

Terminal window showing the definition and usage of a function named `mysq`. The function calculates the square of its argument. The left pane shows the function definition and a test call. The right pane shows the function being sourced and tested with arguments 4 and 5.