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.

```
#!/bin/bash
case $1 in
[A-Z])
        echo character in Upper Case.
        ;;
[a-z])
        echo character in lower Case.
        ;;
[0-9])echo character in number.
        ;;
*)echo nothing
esac
```

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.

```
#!/bin/bash
shopt -s extglob
LC_COLLATE=C
case $1 in
+([A-Z]))
        echo string in Upper Case.
        ;;
+([a-z]))
        echo string in lower Case.
        ;;
+([0-9]))
        echo string in number.
        ;;
+([a-zA-z0-9]))
        echo string is mix
        ;;
*)
        echo nothing
esac
```

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 path in ~/`ls ~/`
do
chmod +x $path
done
```

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

```
#!/bin/bash
if [ ! -e ~/mybackup ]
then
mkdir ~/mybackup
fi
for file in ~/`ls ~/`
do
if [ -f $file ]
then
        cp $file mybackup
fi
done
```

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.

```
#!/bin/bash
for user in `cut -f1 -d: /etc/passwd`
do
mailx $user < ~/lab2/mtemplate
echo mail is sended to $user
done
```

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

In script 1 :

```
#!/bin/bash
. /home/Eng.mahmoud/myscp/chkmailback.sh &
~
```

in script 2:

```
#!/bin/bash
y=$(wc -l /var/mail/`whoami`|cut -f1 -d" ")
while true
do
x=$(wc -l /var/mail/`whoami`|cut -f1 -d" ")
if [ $x -eq $y ]
then
sleep 10;
else
echo you have email
let y=$x
sleep 10;
fi
done
~
```

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.

```
#!/usr/bin/bash
select choice in "Press 1 to ls" "Press 2 to ls –a" "Press 3 to exit"
do
case $REPLY in
1) ls `pwd`
   ;;
2) ls -a `pwd`
   ;;
3) exit
   ;;
*) echo "please enter a correct choice"
   ;;
esac
done
~
```

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.

```
#!/usr/bin/bash
typeset -i x
read -p "enter the size of your array :" x
if [ $x -ge 1 ]
then
x=$x-1
for i in $(seq 0 $x);
do
read -p "enter element $i : " arr[i]
done
echo "elements is : ${arr[*]}"
else
echo "enter correct size"
fi
```

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

```
#!/bin/bash
sum=0
typeset -i i=0
press=""
while [ ${#press} -eq 0 ]
do
read -p "enter number $i :" num[i]
let sum=${num[i]}+$sum
i=$i+1
read -p "press enter to another input" press
done
let result=$sum/${#num[*]}
echo $result
```

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

```
#!/usr/bin/bash
if [ $# -eq 0 -o $# -gt 1 ]
then
echo "my function takes one argument"
else
function mysq
{
        let sq=$1*$1;
        return $sq ;
}
mysq $1
echo "the square of $1 = $?"
fi
```