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Lab 3

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.

```
read -p "Enter a character: " x

case "$x" in
    [A-Z])
        echo "Upper Case."
        ;;
    [a-z])
        echo "Lower Case."
        ;;
    [0-9])
        echo "Number."
        ;;
    "")
        echo "Nothing."
        ;;
    *)
        echo "Other."
        ;;
esac
```

```
[seif@localhost Files]$ vi mycase
[seif@localhost Files]$ chmod +x mycase
[seif@localhost Files]$ ./mycase
Enter a character: a
Lower Case.
[seif@localhost Files]$ ./mycase
Enter a character: A
Upper Case.
[seif@localhost Files]$ ./mycase
Enter a character: *
Other.
```

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.

```
read -p "Enter a character: " x
case "$x" in
    [A-Z]*)
        echo "Upper Case."
        ;;
    [a-z]*)
        echo "Lower Case."
        ;;
    [0-9]*)
        echo "Number."
        ;;
    [A-Za-z0-9]*)
        echo "Mix."
        ;;
    "")
        echo "Nothing."
        ;;
    *)
        echo "Other."
        ;;
esac
```

```
[seif@localhost Files]$ ./mycase
Enter a character: asffasfasaf
Lower Case.
[seif@localhost Files]$ ./mycase
Enter a character: ASFFASFSA
Upper Case.
[seif@localhost Files]$ ./mycase
Enter a character:
Nothing.
[seif@localhost Files]$ ./mycase
Enter a character: 4657
Number.
```

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

```
#!/usr/bin/bash
```

```
#Q3
```

```
cd ~
```

```
for file in *; do
    if [ -f "$file" ] || [ -d "$file" ]; then
        chmod +x "$file"
    fi
done
```

```
~
~
```

```
[seif@localhost Files]$ ./mychmod
```

```
[seif@localhost Files]$ ls -l ~
```

```
total 8
```

```
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Desktop
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Documents
drwxr-xr-x. 2 seif seif   64 Jul 25 18:40 Downloads
drwxrwxr-x. 9 seif seif 4096 Jul 26 15:09 Files
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Music
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Pictures
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Public
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Templates
drwxr-xr-x. 2 seif seif    6 Jul 21 13:11 Videos
```

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

```
#!/bin/bash

#Q4

backup="/home/seif/Documents/Intro_To_Shell_Scripting/Files/backup"

mkdir -p "$backup"

cd ~

for file in *; do
    if [ -f "$file" ]; then
        cp "$file" "$backup"
    fi
done

echo "Backup completed. All files in your home directory have been copied to $backup."
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi mybackup
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./mybackup
Backup completed. All files in your home directory have been copied to /home/seif/Documents/Intro_To_Shell_Scripting/Files/backup.
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ls
backup  mybackup  mycase
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ cd backup
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files/backup$ ls
file1  file2  file3
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files/backup$ ls /home/Seif/
ls: cannot access '/home/Seif/': No such file or directory
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files/backup$ ls /home/seif/
Bash      Documents  file1  file3  Pictures  snap      Videos      vmware
Desktop   Downloads  file2  Music  Public    Templates 'VirtualBox VMs'
```

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

#Q5

maill="mtemplate"

for user in $(cut -d: -f1 /etc/passwd); do
    mail -s "Email" "$user" < "$maill"
done

echo "Email sent to all users in the system."
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi mymail
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ chmod +x mymail
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi mtemplate
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ sudo apt-get install -y mailx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package mailx is a virtual package provided by:
  mailutils 1:3.14-1
  bsd-mailx 8.1.2-0.20180807cvs-2build2
You should explicitly select one to install.

E: Package 'mailx' has no installation candidate
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./mymail
```

```
Email sent to all users in the system.
```

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

```
#!/bin/bash

#Q6

username=$1

while true; do
    mail_check=$(ls "/var/mail/$username" 2>/dev/null)

    if [ -n "$mail_check" ]; then
        echo "You have new mail in /var/mail/$username."
    else
        echo "No new mail for $username."
    fi

    sleep 10
done
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi chkmail
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ chmod +x chkmail
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./chkmail seif
No new mail for seif.
No new mail for seif.
```

Bonus:

Open a talk session to a certain user when she/he logs into the system.

```
#!/bin/bash

#Bonus

username=$1

logged_in=$(who | grep "^$username " | wc -l)

if [ "$logged_in" -eq 1 ]; then
    talk "$username"
else
    echo "$username is not currently logged in."
fi
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi ts
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ chmod +x ts
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ sudo apt-get install talk
[sudo] password for seif:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  cabextract chromium-codecs-ffmpeg-extra fonts-wine fuseiso gconf-service gconf-service-bac
  gir1.2-javascriptcoregtk-4.1 gir1.2-soup-3.0 gir1.2-webkit2-4.1 glib-networking:i386 gstre
  gstreamer1.0-plugins-good:i386 gstreamer1.0-vaapi gstreamer1.0-x:i386 icoutils jq libaa1:i
  libavahi-common-data:i386 libavahi-common3:i386 libavc1394-0:i386 libcacao0:i386 libcairo-0
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./ts seif
```

[No connection yet]

[Error on read from talk daemon: Connection refused. Press any key...]

[Checking for invitation on caller's machine]

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
```

```
#!/bin/bash

typeset -i n1
typeset -i n2

n1=1
n2=1

while test $n1 -eq $n2
do
    n2=$((n2 + 1))

    echo "n1: $n1"

    if [ $n1 -gt $n2 ]
    then
        break
    else
        continue
    fi

    n1=$((n1 + 1))

    echo "n2: $n2"
done
~
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ vi q7
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./q7
n1: 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.

Select

```
#!/bin/bash

PS3="Please enter your choice: "

select choice in "ls" "ls -a" "exit"; do
    case $choice in
        "ls")
            ls
            ;;
        "ls -a")
            ls -a
            ;;
        "exit")
            echo "Exiting..."
            break
            ;;
        *)
            echo "Invalid choice. Please select 1, 2, or 3."
            ;;
    esac
done
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ chmod +x q8
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./q8
1) ls
2) ls -a
3) exit
Please enter your choice: 1
backup chkmail mtemplate mybackup mycase mymail q7 q8 ts
Please enter your choice: 2
. .. backup chkmail mtemplate mybackup mycase mymail q7 q8 ts
Please enter your choice: 3
Exiting...
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./q8
1) ls
2) ls -a
3) exit
Please enter your choice: asd
Invalid choice. Please select 1, 2, or 3.
Please enter your choice: 4
Invalid choice. Please select 1, 2, or 3.
Please enter your choice: 3
Exiting...
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$
```

While

```
#!/bin/bash

while true; do
    echo "Menu:"
    echo "a. Press 1 to ls"
    echo "b. Press 2 to ls -a"
    echo "c. Press 3 to exit"

    read -p "Enter your choice: " choice

    case "$choice" in
        1)
            ls
            ;;
        2)
            ls -a
            ;;
        3)
            echo "Exiting..."
            break
            ;;
        *)
            echo "Invalid choice. Please try again."
            ;;
    esac
done
```

```
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$ ./q8w
Menu:
a. Press 1 to ls
b. Press 2 to ls -a
c. Press 3 to exit
Enter your choice: 1
backup  chkmail  mtemplate  mybackup  mycase  mymail  q7  q8  q8w  ts
Menu:
a. Press 1 to ls
b. Press 2 to ls -a
c. Press 3 to exit
Enter your choice: 2
.  ..  backup  chkmail  mtemplate  mybackup  mycase  mymail  q7  q8  q8w  ts
Menu:
a. Press 1 to ls
b. Press 2 to ls -a
c. Press 3 to exit
Enter your choice: 4
Invalid choice. Please try again.
Menu:
a. Press 1 to ls
b. Press 2 to ls -a
c. Press 3 to exit
Enter your choice: 5
Invalid choice. Please try again.
Menu:
a. Press 1 to ls
b. Press 2 to ls -a
c. Press 3 to exit
Enter your choice: 3
Exiting...
seif@alienware-17-r5:~/Documents/Intro_To_Shell_Scripting/Files$
```