1. **Create a script that asks for user name then send a greeting to him :**

➔ Step 1 : create vi file and type the script

```
gharabawy@gharabawy-virtual-machine:~$ vi script1.sh
```

```
#! /bin/bash
echo Enter your name :
read uname
echo "Welcome $uname :) "
~
```

➔ Step 2 : change permission to give the file executable permission then run the script

```
gharabawy@gharabawy-virtual-machine:~$ chmod +x script1.sh
gharabawy@gharabawy-virtual-machine:~$ ls -l script1.sh
-rwxrwxr-x 1 gharabawy gharabawy 75 14:04 11 سب  script1.sh
gharabawy@gharabawy-virtual-machine:~$ ./script1.sh
Enter your name :
Mohamed
Welcome Mohamed :)
```

2. **Create a script called s1 that calls another script s2 where:**
    a. **In s1 there is a variable called x, it's value 5**
    b. **Try to print the value of x in s2 by two different ways**

➔ Step 1 : create 3 files … 1st one for s1 , 2nd for s2 and 3rd for way two to print x value
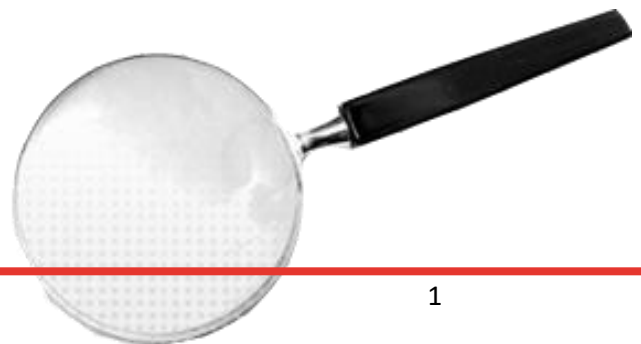
```
gharabawy@gharabawy-virtual-machine:~$ vi s1.sh
gharabawy@gharabawy-virtual-machine:~$ vi s2.sh
gharabawy@gharabawy-virtual-machine:~$ vi way2.sh
```

➔ Step 2 :

```
#! /bin/bash
x=5
. s2.sh
```

➔ Step 3 :

```
#! /bin/bash
echo First way to print value of x
echo "The value is $x"
echo -----------------------------
echo Second way to print value of x

. way2.sh "$x"
```

➔ Step 4 :

```
#!/bin/bash

x_s1="$1"
echo "Value of x received as an argument : $x_s1"
```

3. **Create a script called mycp where :**
    a. **It copies a file to another**
    b. **It copies multiple files to a directory**
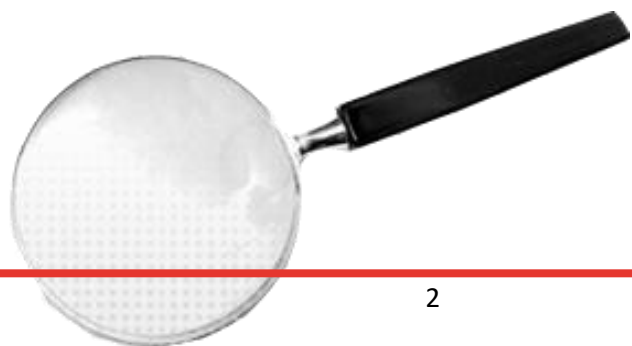
➔ Step 1 :

```
#!/bin/bash

# Copy a file to another
if [ "$#" -eq 2 ]; then
    cp "$1" "$2"
    echo "File '$1' copied to '$2'"

# Copy multiple files to a directory
elif [ "$#" -gt 2 ]; then
    cp "$1"/* "$2/"
    echo "Files copied to '$2/'"

else
    echo "Usage: ./mycp source destination"
fi
```

➔ Step 2 :

```
gharabawy@gharabawy-virtual-machine:~$ ./mycp.sh file1 file2
File 'file1' copied to 'file2'
gharabawy@gharabawy-virtual-machine:~$ mkdir dir2
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh dir2
Enter ls option you need (l/a/d/i/R):
a
.  ..
gharabawy@gharabawy-virtual-machine:~$ ./mycp.sh file1 dir2/
File 'file1' copied to 'dir2/'
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh dir2
Enter ls option you need (l/a/d/i/R):
a
.  ..  file1
```

4. Create a script called **mycd** where:
   a. It changed directory to the user home directory, if it is called without arguments.
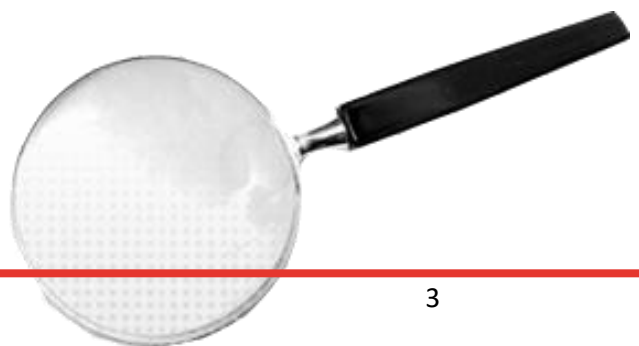   b. Otherwise, it change directory to the given directory

➔ **Step 1 :**

```
#!/bin/bash

if [ "$#" -eq 0 ]; then
    # no arguments
    cd ~
    echo "done ---> $HOME"
else
    dir="$1"
    cd "$dir"
    echo "done ---> $dir"
fi
```

➔ **Step 2 : Note ------> write (.) or (source) before you tun the script to run at all processes**

```
gharabawy@gharabawy-virtual-machine:~$ ls
d2            Desktop    Downloads   error.txt   mbox   Music      mycv             oldpasswd    passwd_copy   Public   s2.sh      snap   sortuser.txt   Videos
dead.letter   Documents  errors.txt  file2       medo   mycd.sh   my-system-state  output.txt   Pictures      s1.sh    script1.sh  sort   Templates      way2.sh
gharabawy@gharabawy-virtual-machine:~$ . ./mycd.sh Downloads
done ---> Downloads
gharabawy@gharabawy-virtual-machine:~/Downloads$ . ./mycd.sh
done ---> /home/gharabawy
gharabawy@gharabawy-virtual-machine:~$
```

Bash Shell

5. Create a script called myls where:
   a. It lists the current directory, if it is called without arguments.
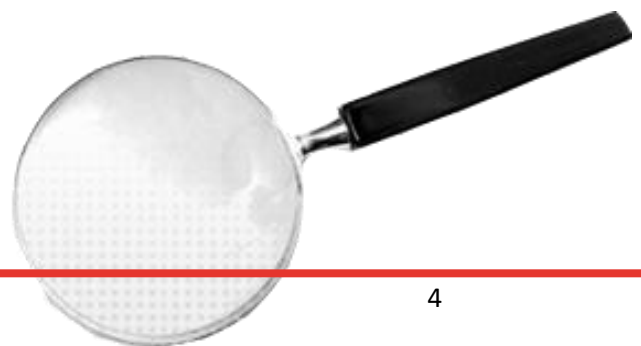   b. Otherwise, it lists the given directory

➔ **Step 1 :**

```
#!/bin/bash

if [ "$#" -eq 0 ]
then
        ls
else
        ls "$1"
fi
```

➔ **Step 2 :**

```
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh
d2              Desktop    Downloads   error.txt  mbox   Music    mycv      my-system-state  output.txt    Pictures  s1.sh   script1.sh  sort                 Templates  way2.sh
dead.letter  Documents  errors.txt  file2      medo  mycd.sh  myls.sh  oldpasswd        passwd_copy  Public    s2.sh   snap        sortuser.txt  Videos     way3.sh
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh d2
compfiley  mycd.sh  myls.sh  newfile.zip
gharabawy@gharabawy-virtual-machine:~$ 
```

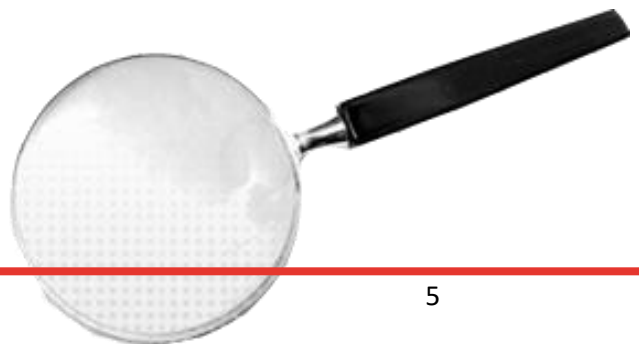6. **Enhance the above script to support the following options individually:**
   a. **–l: list in long format**
   b. **–a: list all entries including the hiding files**
   c. **–d: if an argument is a directory, list only its name**
   d. **–i: print inode number**
   e. **–R: recursively list subdirectories**

➔ **Step 1 :**

```bash
#!/bin/bash

echo "Enter ls option you need (l/a/d/i/R): "
read option

if [ "$#" -eq 0 ]; then
    if [ "$option" = "l" ]; then
        ls -l
    elif [ "$option" = "a" ]; then
        ls -a
    elif [ "$option" = "d" ]; then
        ls -d */
    elif [ "$option" = "i" ]; then
        ls -i
    elif [ "$option" = "R" ]; then
        ls -R
    else
        echo "Invalid option"
    fi
else
    if [ -d "$1" ]; then
        if [ "$option" = "l" ]; then
            ls -l "$1"
        elif [ "$option" = "a" ]; then
            ls -a "$1"
        elif [ "$option" = "d" ]; then
            ls -d "$1"
        elif [ "$option" = "i" ]; then
            ls -i "$1"
        elif [ "$option" = "R" ]; then
            ls -R "$1"
        else
            echo "Invalid option"
        fi
    else
        echo "Not a directory"
    fi
fi
```

Bash Shell

➔ Step 2 :

```
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh
Enter ls option you need (l/a/d/i/R):
a
.               .bashrc      d2          Downloads  file2    mbox     mycv            oldpasswd    .pki      s2.sh       sort                      Templates  way3.sh
..              .bashrc.swp  dead.letter errors.txt .gnupg   medo     .mycv.swp       output.txt   .profile  script1.sh  sortuser.txt              Videos
.bash_history   .cache       Desktop     error.txt  .lesshst Music    myls.sh         passwd_copy  Public    .selected_editor  .ssh                .vscode
.bash_logout    .config      Documents   .file1.swp .local   mycd.sh  my-system-state Pictures     s1.sh     snap        .sudo_as_admin_successful way2.sh
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh d2
Enter ls option you need (l/a/d/i/R):
R
d2:
compfiley  mycd.sh  myls.sh  newfile.zip
gharabawy@gharabawy-virtual-machine:~$ ./myls.sh d2
Enter ls option you need (l/a/d/i/R):
l
total 16
-rw-rw-r-- 1 gharabawy gharabawy 456 23:23 28 نوف compfiley
-rwxrwxr-x 1 gharabawy gharabawy 100 15:40 11 سب mycd.sh
-rwxrwxr-x 1 gharabawy gharabawy 133 16:05 11 سب myls.sh
-rw-rw-r-- 1 gharabawy gharabawy 227 15:01 16 نوف newfile.zip
```