

Mazen Abdeltawab Saad

BSS – Lab 2

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

Q1

touch greet.sh

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

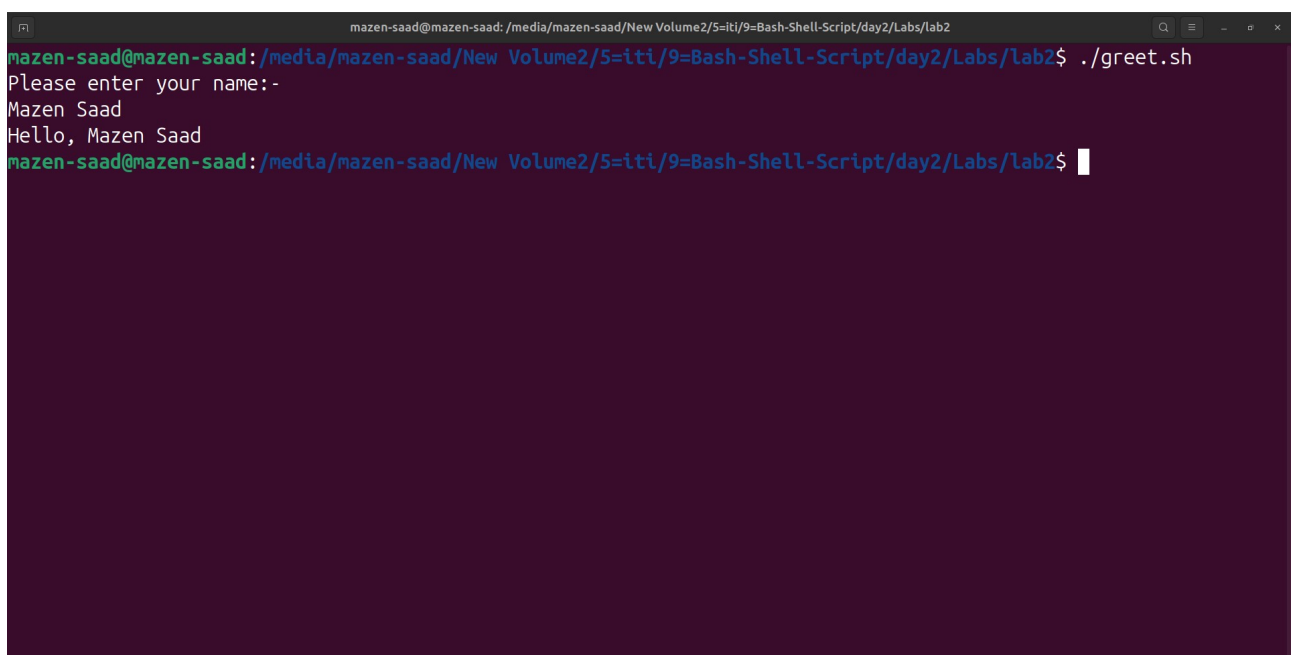
```
echo "Please enter your name:- "
```

```
read name
```

```
echo "Hello, $name"
```

Terminal =>

./greet.sh

A terminal window with a dark purple background. The title bar shows the path: mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2. The prompt is mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2\$. The user has entered ./greet.sh. The script outputs "Please enter your name:-". The user has entered "Mazen Saad". The script outputs "Hello, Mazen Saad". The prompt is now mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2\$ with a cursor.

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./greet.sh
Please enter your name:-
Mazen Saad
Hello, Mazen Saad
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$
```

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

Q2

touch s1.sh s2.sh

##=> file s1.sh

#!/usr/bin/bash

x=5

./s2.sh \$x

export x

##=> file s2.sh

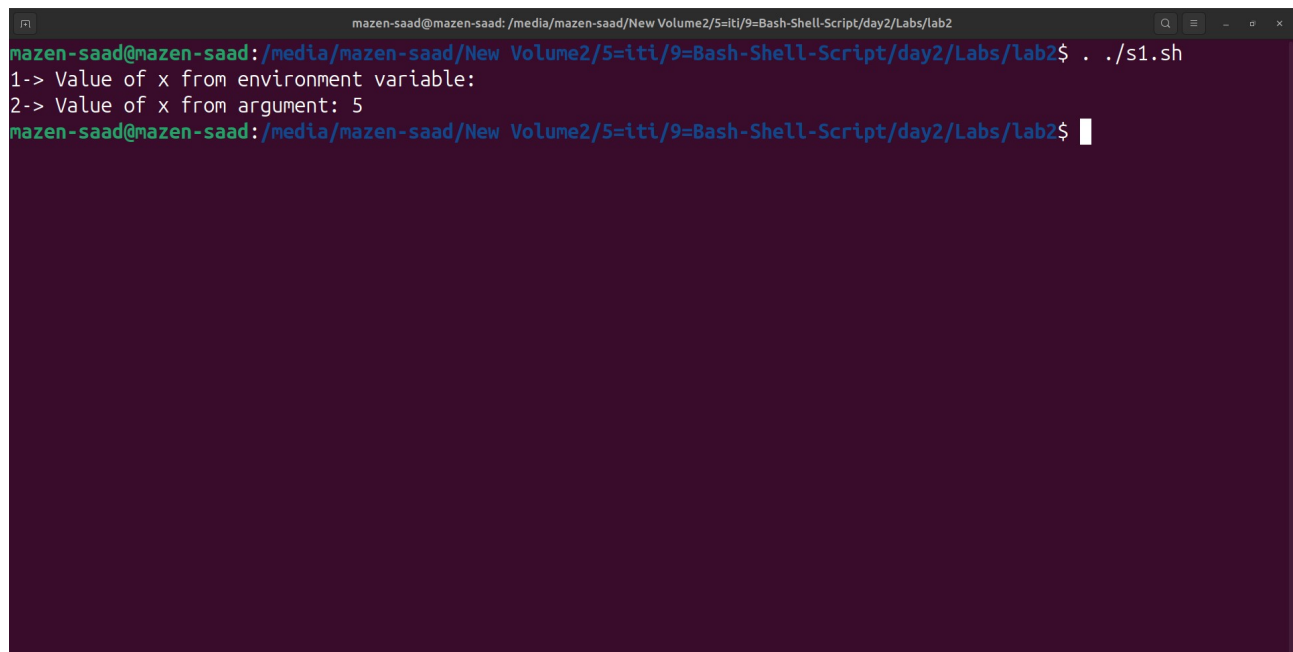
#!/usr/bin/bash

echo "1-> Value of x from environment variable: \$x"

echo "2-> Value of x from argument: \$1"

Terminal =>

./s1.sh

A terminal window with a dark purple background. The title bar shows the path "/media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2". The prompt is "mazen-saad@mazen-saad:". The user enters "./s1.sh". The output shows "1-> Value of x from environment variable:" followed by a new line and "2-> Value of x from argument: 5". The prompt returns to "mazen-saad@mazen-saad:".

```
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./s1.sh
1-> Value of x from environment variable:
2-> Value of x from argument: 5
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$
```

3. Create a script called mycp where:
- It copies a file to another
 - It copies multiple files to a directory.

Q3

```
touch mycp.sh
```

```
#-
```

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

```
if [ "$#" -lt 2 ]
```

```
then
```

```
    echo "Usage: $0 source_file... destination"
```

```
    exit 1
```

```
fi
```

```
#-
```

```
dest="${@: -1}"
```

```
#-
```

```
if [ -d "$dest" ]
```

```
then
```

```
    #-
```

```
    for src in "$@"
```

```
    do
```

```
        [ "$src" != "$dest" ] && cp -r "$src" "$dest/"
```

```
    done
```

```
else
```

```
    #-
```

```
    cp "$1" "$dest"
```

```
fi
```

Terminal =>

```
# 1=> one file
```

```
touch file1.txt
```

```
./mycp.sh file1.txt file2.txt
```

```
# 2=> multiple files
```

```
mkdir target_directory
```

```
./mycp.sh file1.txt file2.txt target_directory/
```

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ls
file1.txt greet.sh lab2.txt mycd.sh mycp.sh myinfo.sh myls2.sh myls.sh mytest.sh s1.sh s2.sh target_directory
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mycp.sh file1.txt file2.txt
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ls
file1.txt file2.txt greet.sh lab2.txt mycd.sh mycp.sh myinfo.sh myls2.sh myls.sh mytest.sh s1.sh s2.sh target_directory
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mycp.sh file1.txt file2.txt target_directory/
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ls target_directory/
file1.txt file2.txt
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$
```

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.

Q4

touch mycd.sh

```
if [ $# -eq 0 ]
```

```
then
```

```
    cd ~
```

```
else
```

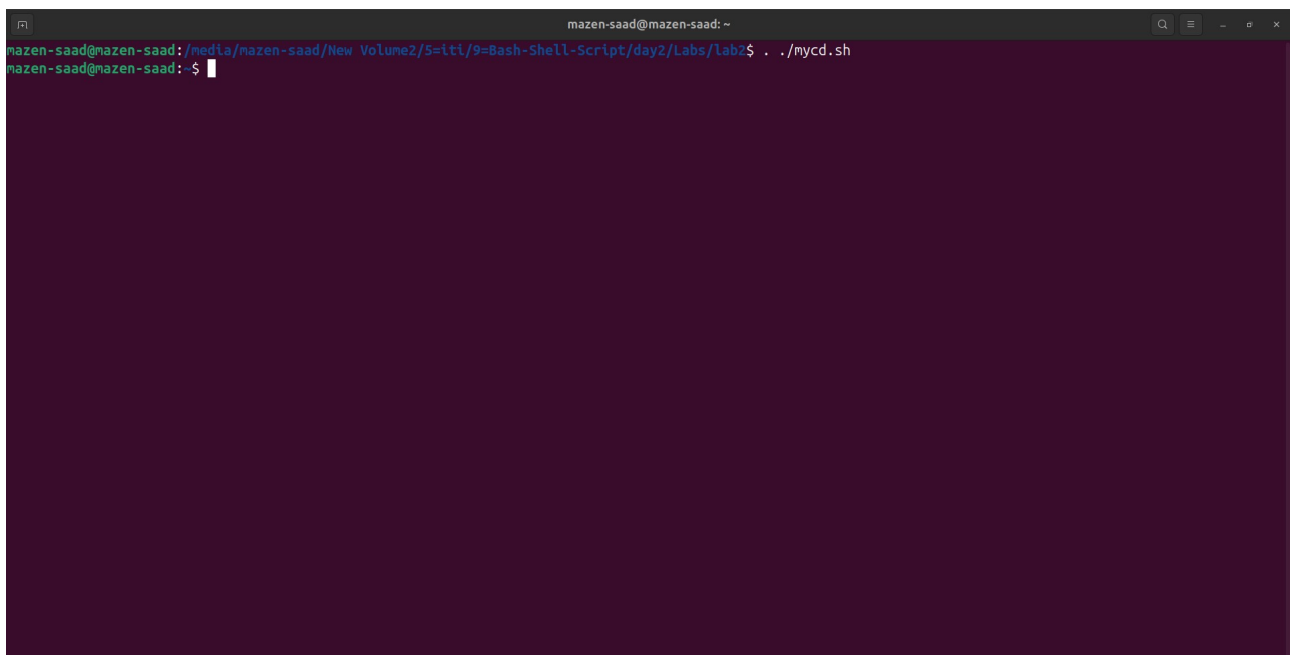
```
    cd "$1"
```

```
fi
```

Terminal =>

```
. ./mycd.sh
```

```
. ./mycd.sh ~/Documents
```

A terminal window with a dark purple background. The title bar shows 'mazen-saad@mazen-saad: ~'. The prompt is 'mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2\$'. The command './mycd.sh' has been entered and executed. The prompt has changed to 'mazen-saad@mazen-saad: ~\$', indicating the current directory is the user's home directory. The terminal is otherwise empty.

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$ . ./mycd.sh
mazen-saad@mazen-saad: ~$
```

```
mazen-saad@mazen-saad: ~/Documents
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mycd.sh ~/Documents
mazen-saad@mazen-saad: ~/Documents$
```

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

Q5

touch myls.sh

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

```
if [ $# -eq 0 ]
```

```
then
```

```
    ls
```

```
else
```

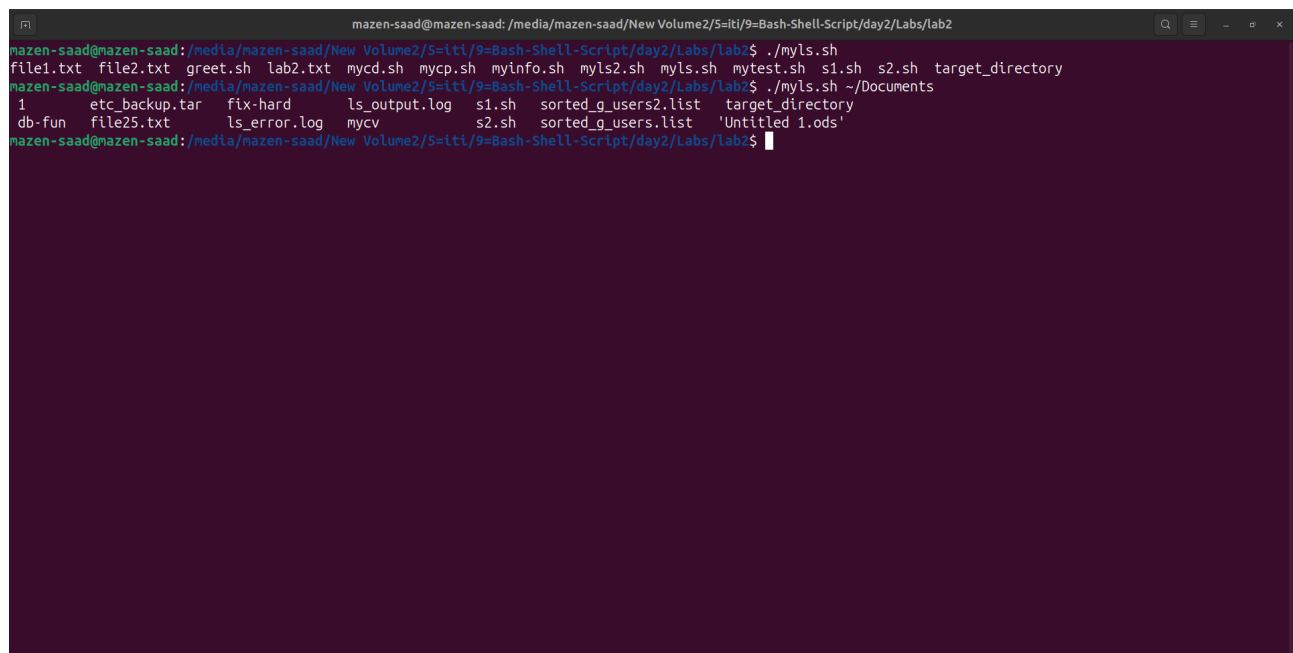
```
    ls "$1"
```

```
fi
```

Terminal =>

./mysls.sh

./mysls.sh ~/Documents

A terminal window with a dark purple background. The title bar shows the user 'mazen-saad' and the path '/media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2'. The terminal shows the following commands and output:
1. Command: ./mysls.sh
Output: file1.txt file2.txt greet.sh lab2.txt mycd.sh mycp.sh myinfo.sh myls2.sh myls.sh mytest.sh s1.sh s2.sh target_directory
2. Command: ./mysls.sh ~/Documents
Output: 1 etc_backup.tar fix-hard ls_output.log s1.sh sorted_g_users2.list target_directory
db_fun file25.txt ls_error.log mycv s2.sh sorted_g_users.list 'Untitled 1.ods'

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

Bonus: enhance the above script to support the following Synopsis:

```
mysls -option1 -option2
mysls -option2 -option1
mysls -option1option2
mysls -option2option1
```

Q6

touch myls2.sh

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

```
options=""
```

```
directory=""
```

```
#-
```

```
while [[ "$1" =~ ^- ]]
```

```
do
```

```
    options="$options $1"
```

```
    shift
```

```
done
```

```
if [ -n "$1" ]
```

```
then
```

```
    directory="$1"
```

```
fi
```

```
#-
```

```
if [ -n "$directory" ]
```

```
then
```

```
    ls $options "$directory"
```

```
else
```

```
    ls $options
```

```
fi
```

Terminal =>

```
# ./mys2.sh
```

```
# ./mys2.sh ~/Documents
```

```
# ./mys2.sh -l
```

```
# ./mys2.sh -a
```

```
# ./mys2.sh -i
```

```
# ./mys2.sh -R
```

```
# ./mys2.sh -la
```

```
# ./mys2.sh -al
```

```
# ./mys2.sh -l -a
```

```
# ./mys2.sh -l -a ~/Documents
```

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mys2.sh
file1.txt file2.txt greet.sh lab2.txt mycd.sh mycp.sh myinfo.sh myls2.sh myls.sh mytest.sh s1.sh s2.sh target_directory
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mys2.sh ~/Documents
1 etc_backup.tar fix-hard ls_output.log s1.sh sorted_g_users2.list target_directory
db-fun file25.txt ls_error.log mycv s2.sh sorted_g_users.list 'Untitled 1.ods'
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mys2.sh -la
total 21
drwxrwxrwx 1 root root 4096 Jul 2 21:45 .
drwxrwxrwx 1 root root 0 Jul 2 09:02 ..
-rwxrwxrwx 1 root root 3 Jul 2 15:40 file1.txt
-rwxrwxrwx 1 root root 3 Jul 2 21:45 file2.txt
-rwxrwxrwx 1 root root 103 Jul 2 21:36 greet.sh
-rwxrwxrwx 1 root root 4818 Jul 2 21:52 lab2.txt
-rwxrwxrwx 1 root root 75 Jul 2 17:20 mycd.sh
-rwxrwxrwx 1 root root 3678 Jul 2 21:44 mycp.sh
-rwxrwxrwx 1 root root 449 Jul 2 21:16 myinfo.sh
-rwxrwxrwx 1 root root 491 Jul 2 21:51 myls2.sh
-rwxrwxrwx 1 root root 65 Jul 2 17:28 myls.sh
-rwxrwxrwx 1 root root 461 Jul 2 20:52 mytest.sh
-rwxrwxrwx 1 root root 61 Jul 2 14:42 s1.sh
-rwxrwxrwx 1 root root 119 Jul 2 14:42 s2.sh
drwxrwxrwx 1 root root 0 Jul 2 21:45 target_directory
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=iti/9=Bash-Shell-Script/day2/Labs/lab2$ ./mys2.sh -l -a ~/Documents
total 69848
drwxr-xr-x 5 mazen-saad mazen-saad 4096 Jul 2 17:23 .
drwxr-xr-x 23 mazen-saad mazen-saad 4096 Jul 1 22:51 ..
drwxrwxr-x 2 mazen-saad mazen-saad 4096 Jul 1 21:56 1
drwxrwxr-x 4 mazen-saad mazen-saad 4096 Jun 30 21:49 db-fun
-rw-rw-r-- 1 mazen-saad mazen-saad 6533120 Jun 12 21:53 etc_backup.tar
-rw-rw-r-- 1 mazen-saad mazen-saad 5211598 Jun 12 21:44 file25.txt
drwxrwxr-x 2 mazen-saad mazen-saad 4096 Jul 1 09:06 fix-hard
-rw-rw-r-- 1 mazen-saad mazen-saad 118166 Jun 12 19:57 ls_error.log
-rw-rw-r-- 1 mazen-saad mazen-saad 59605705 Jun 12 19:57 ls_output.log
-rw-rw-r-- 1 mazen-saad mazen-saad 0 Jun 21 16:19 mycv
```

7. Create a script called mytest where:
- It check the type of the given argument (file/directory)
 - It check the permissions of the given argument (read/write/execute)

Q7

```
touch mytest.sh
```

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

```
if [ "$#" -ne 1 ]
```

```
then
```

```
    echo "Usage: $0 type file or directory"
```

```
    exit 1
```

```
fi
```

```
target="$1"
```

```
if [ -f "$target" ]
```

```
then
```

```
    echo "($target) is a file."
```

```
elif [ -d "$target" ]
```

```
then
```

```
    echo "($target) is a directory."
```

```
else
```

```
    echo "($target) is not a regular file or directory."
```

```
    exit 1
```

```
fi
```

```
echo "Permissions for ($target):"
```

```
[ -r "$target" ] && echo "Readable"
```

```
[ -w "$target" ] && echo "Writable"
```

```
[ -x "$target" ] && echo "Executable"
```

Terminal =>

```
./mytest.sh myls.sh
```

```
./mytest.sh target_directory
```

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$ ./mytest.sh myls.sh
(myls.sh) is a file.
Permissions for (myls.sh):
Readable
Writable
Executable
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$ ./mytest.sh target_directory
(target_directory) is a directory.
Permissions for (target_directory):
Readable
Writable
Executable
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$ ls -l
total 17
-rwxrwxrwx 1 root root 3 Jul 2 15:40 file1.txt
-rwxrwxrwx 1 root root 3 Jul 2 21:45 file2.txt
-rwxrwxrwx 1 root root 103 Jul 2 21:36 greet.sh
-rwxrwxrwx 1 root root 4815 Jul 2 21:54 lab2.txt
-rwxrwxrwx 1 root root 75 Jul 2 17:20 mycd.sh
-rwxrwxrwx 1 root root 3678 Jul 2 21:44 mycp.sh
-rwxrwxrwx 1 root root 449 Jul 2 21:16 myinfo.sh
-rwxrwxrwx 1 root root 491 Jul 2 21:51 myls2.sh
-rwxrwxrwx 1 root root 65 Jul 2 17:28 myls.sh
-rwxrwxrwx 1 root root 461 Jul 2 20:52 mytest.sh
-rwxrwxrwx 1 root root 61 Jul 2 14:42 s1.sh
-rwxrwxrwx 1 root root 119 Jul 2 14:42 s2.sh
drwxrwxrwx 1 root root 0 Jul 2 21:45 target_directory
mazen-saad@mazen-saad:/media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$
```

8. Create a script called myinfo where:
- It asks the user about his/her logname.
 - It print full info about files and directories in his/her home directory
 - Copy his/her files and directories as much as you can in /tmp directory.
 - Gets his current processes status.

#Q8

```
touch myinfo.sh
```

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

```
echo "Please enter your logname:"
```

```
read logname
```

```
if [ "$logname" == "$(whoami)" ]
```

```
then
```

```
    echo "Username is correct. 🎉🎉"
```

```
    echo "Full info about files and directories in home directory: "
```

```
    ls -l /home/"$logname"
```

```
    echo "Copying files and directories to /tmp: "
```

```
    cp /home/"$logname"/* /tmp/
```

```
    echo "Current processes status:"
```

```
    ps -u "$logname"
```

```
else
```

```
    echo "Incorrect username."
```

```
fi
```

Terminal =>

```
./myinfo.sh
```

```
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2
mazen-saad@mazen-saad: /media/mazen-saad/New Volume2/5=itl/9=Bash-Shell-Script/day2/Labs/lab2$ ./myinfo.sh
Please enter your logname:
mazen-saad
Username is correct. 🎉
Full info about files and directories in home directory:
total 48
drwxr-xr-x  2 mazen-saad mazen-saad 4096 Jul  2 18:27 Desktop
drwxr-xr-x  5 mazen-saad mazen-saad 4096 Jul  2 17:23 Documents
drwxr-xr-x  2 mazen-saad mazen-saad 4096 Jul  2 13:00 Downloads
drwxr-xr-x  2 mazen-saad mazen-saad 4096 May 25 23:46 Music
-rw-rw-r--  1 mazen-saad mazen-saad 121 Jun 11 22:53 mycv
dr-----  2 mazen-saad mazen-saad 4096 Jun 11 14:03 myteam
-rw-r--r--  1 mazen-saad mazen-saad 3033 Jun 12 21:28 newpasswd
drwxr-xr-x  3 mazen-saad mazen-saad 4096 May 26 00:20 Pictures
drwxr-xr-x  2 mazen-saad mazen-saad 4096 May 25 23:46 Public
drwx----- 11 mazen-saad mazen-saad 4096 Jun 30 09:29 snap
-rw-rw-r--  1 mazen-saad mazen-saad  0 Jun 30 09:15 sudo
-rw-rw-r--  1 mazen-saad mazen-saad  0 Jun  8 23:19 teams.deb
drwxr-xr-x  2 mazen-saad mazen-saad 4096 May 25 23:46 Templates
drwxr-xr-x  2 mazen-saad mazen-saad 4096 May 25 23:46 Videos
Copying files and directories to /tmp:
cp: -r not specified; omitting directory '/home/mazen-saad/Desktop'
cp: -r not specified; omitting directory '/home/mazen-saad/Documents'
cp: -r not specified; omitting directory '/home/mazen-saad/Downloads'
cp: -r not specified; omitting directory '/home/mazen-saad/Music'
cp: -r not specified; omitting directory '/home/mazen-saad/myteam'
cp: -r not specified; omitting directory '/home/mazen-saad/Pictures'
cp: -r not specified; omitting directory '/home/mazen-saad/Public'
cp: -r not specified; omitting directory '/home/mazen-saad/snap'
cp: -r not specified; omitting directory '/home/mazen-saad/Templates'
cp: -r not specified; omitting directory '/home/mazen-saad/Videos'
Current processes status:
  PID TTY          TIME CMD
 2495 ?            00:00:06 systemd
```