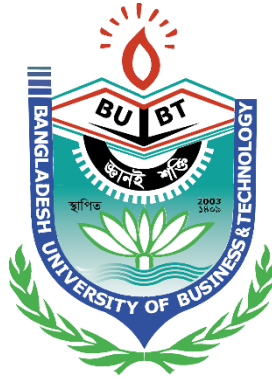


# Bangladesh University of Business & Technology



**Course Title:** Operating System Lab

**Course Code:** CSE-310

**Lab Report On:** Introduction to Shell Scripting

**Lab Report NO:** 02

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## **OBJECTIVE:**

In this lab, we are going to learn and implement the shell scripting.

## **DESCRIPTION:**

**Shell:** A UNIX Shell is a program or a command line interpreter that interprets the user commands which are either entered by the user directly or which can be read from a file and then pass them to the operating system for processing. It is important to note that Shell scripts are interpreted and not compiled, as the computer system interprets them and there is not any need to compile Shell Scripts in order of execution.

**Bash:** Bash is the shell or command language interpreter. It is widely available on various operating systems and is a default command interpreter on most GNU/Linux systems. The name is an acronym for the 'Bourne-Again Shell'.

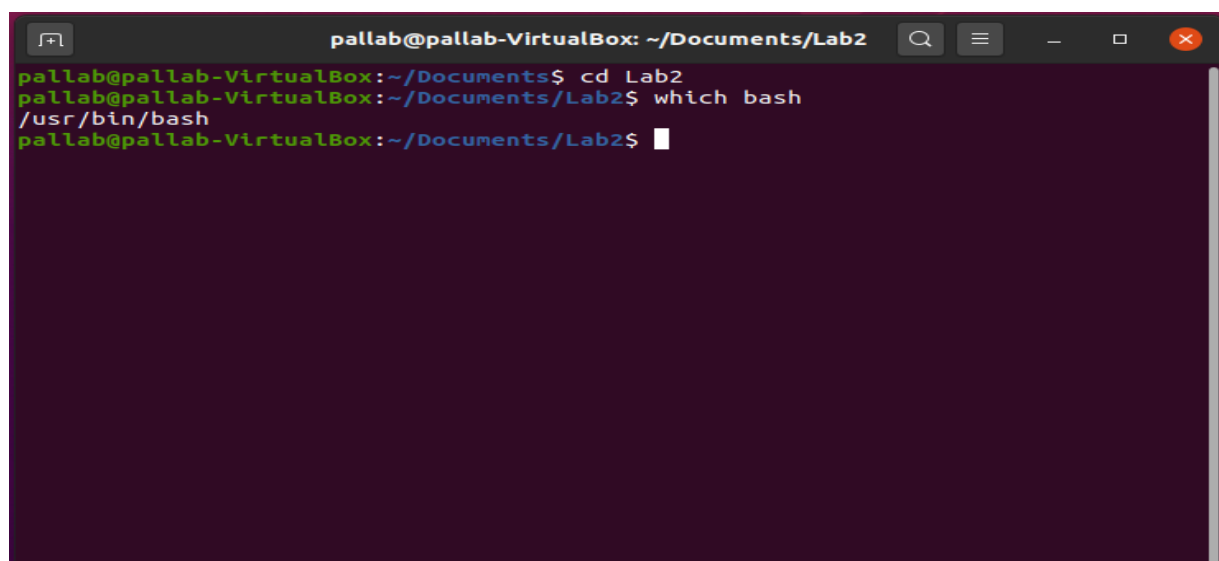
Bash is a command line interpreter that typically runs in a text window where user can interpret commands to carry out various actions. The combination of these commands as a series within a file is known as a Shell Script. Bash can read and execute the commands from a Shell Script.

## **Source Code and Output:**

**Bash Location:**

**Input:** which bash

**Output:**

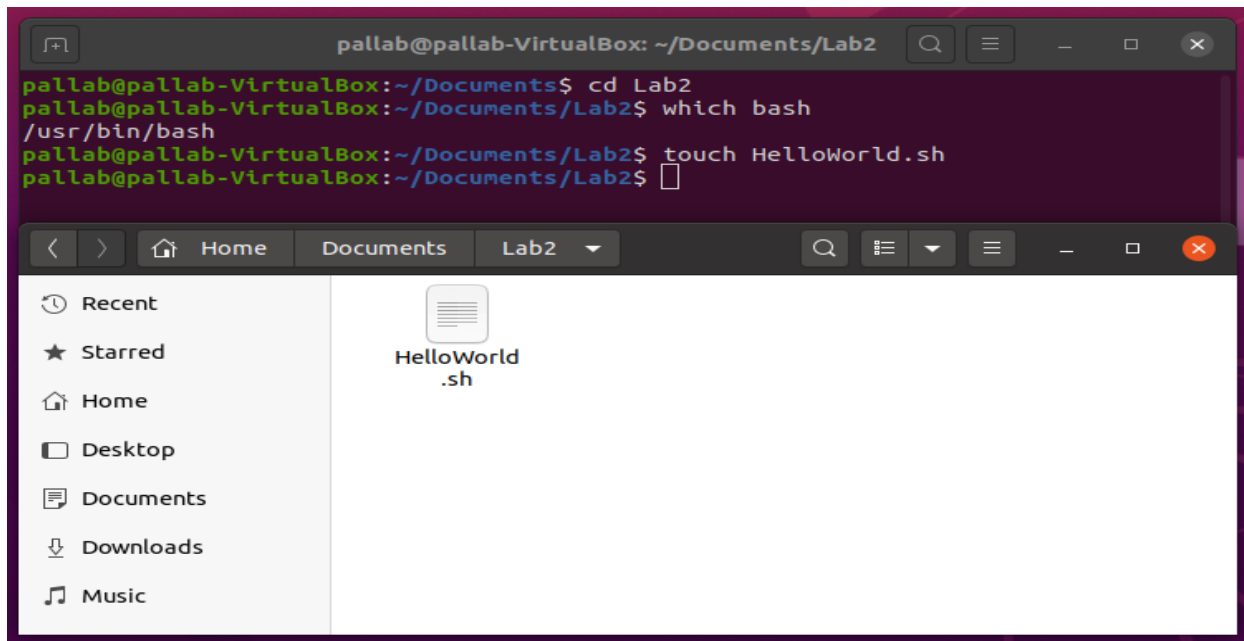
A terminal window titled 'pallab@pallab-VirtualBox: ~/Documents/Lab2'. The window has a dark purple background and a light gray title bar with standard window controls. The terminal shows the following commands and output:

```
pallab@pallab-VirtualBox:~/Documents$ cd Lab2
pallab@pallab-VirtualBox:~/Documents/Lab2$ which bash
/usr/bin/bash
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

## Creating a Shell Script file:

**Input:** touch HelloWorld.sh

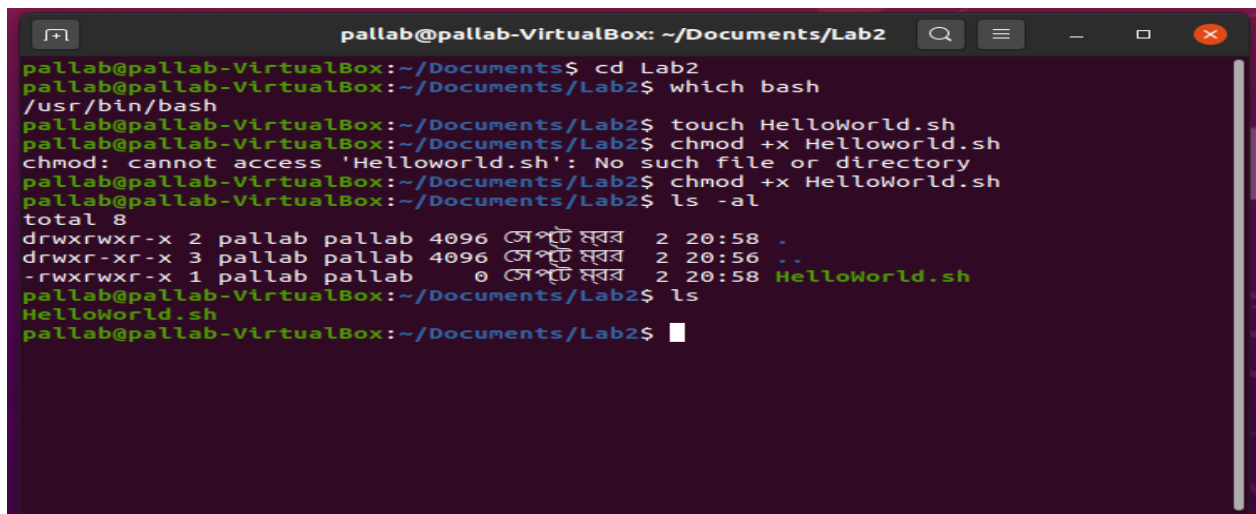
**Output:**



**Change the access permissions of file system objects:**

**Input:** `chmod +x HelloWorld.sh`

**Output:**

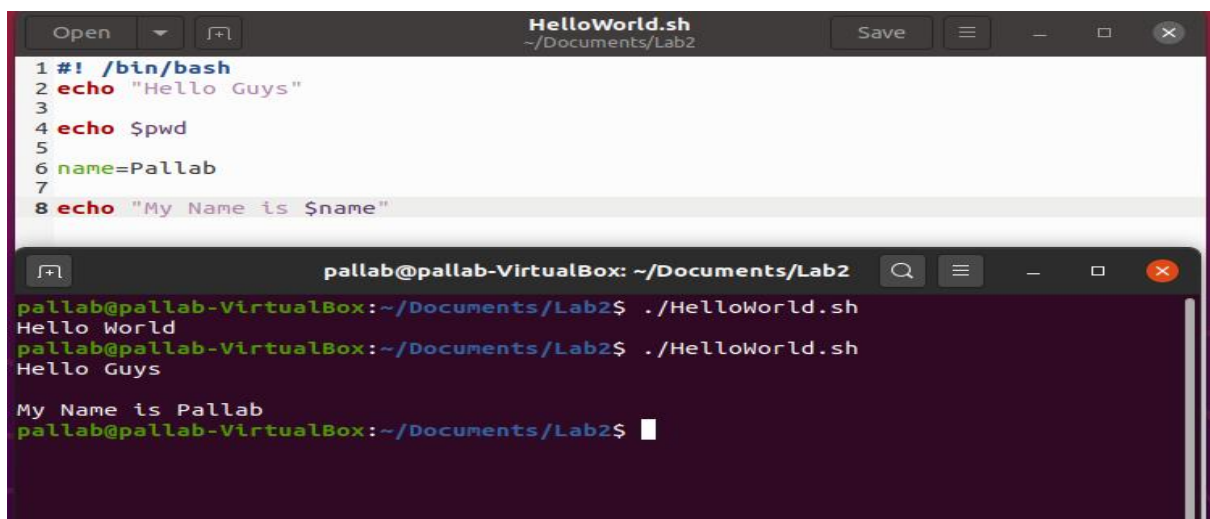


**Run Script and Variable Declaration:**

**Input:** `echo "Hello Guys"`

```
echo $pwd name=Pallab  
echo "My Name is $name"  
./HelloWorld.sh
```

## Output:



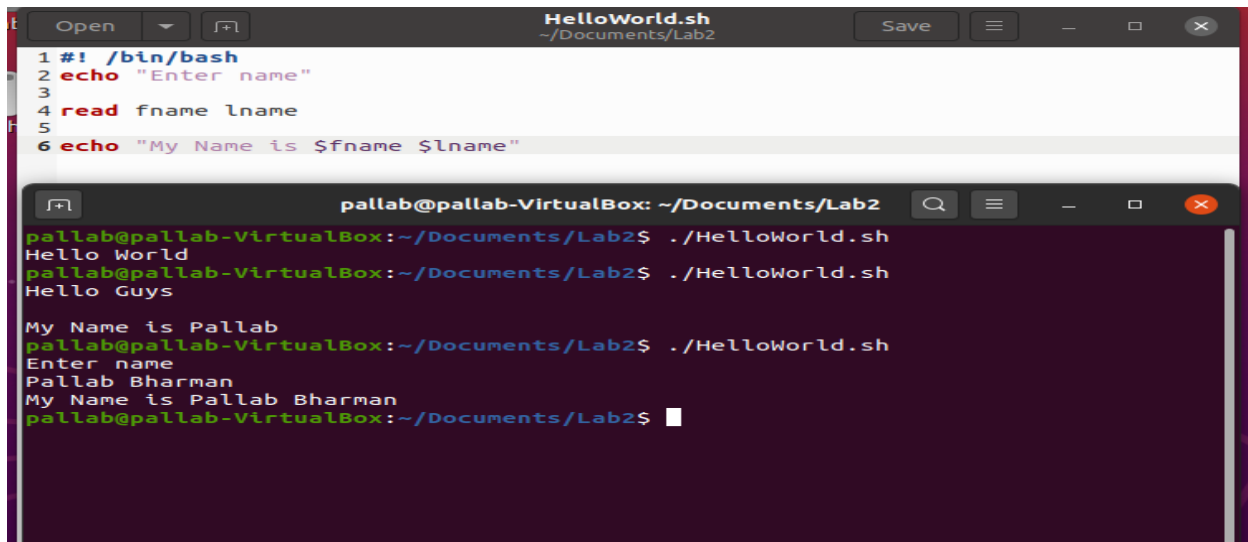
```
1 #!/bin/bash  
2 echo "Hello Guys"  
3  
4 echo $pwd  
5  
6 name=Pallab  
7  
8 echo "My Name is $name"
```

```
pallab@pallab-VirtualBox: ~/Documents/Lab2  
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh  
Hello World  
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh  
Hello Guys  
  
My Name is Pallab  
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

## Take User Input:

**Input:** echo "Enter name"  
read fname lname echo  
"My Name is \$fname \$lname"

## Output:



The image shows a code editor window titled "HelloWorld.sh" with the following script:

```
1 #!/bin/bash
2 echo "Enter name"
3
4 read fname lname
5
6 echo "My Name is $fname $lname"
```

Below the editor is a terminal window titled "pallab@pallab-VirtualBox: ~/Documents/Lab2". It shows the script being executed three times:

```
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello World
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello Guys
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallab Bharman
My Name is Pallab Bharman
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

## Array:

**Input:** echo "Enter name"

#read -a name

#echo "My Name is \${name[0]} \${name[1]}"

## Output:



The image shows a code editor window titled "HelloWorld.sh" with the following script:

```
1 #!/bin/bash
2 echo "Enter name"
3 #read fname lname
4 read -a name
5
6 echo "My Name is ${name[0]} ${name[1]}"
```

Below the editor is a terminal window titled "pallab@pallab-VirtualBox: ~/Documents/Lab2". It shows the script being executed four times:

```
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello World
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello Guys
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
My Name is Pallab
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallab Bharman
My Name is Pallab Bharman
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallabi Barman
My Name is Pallabi Barman
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

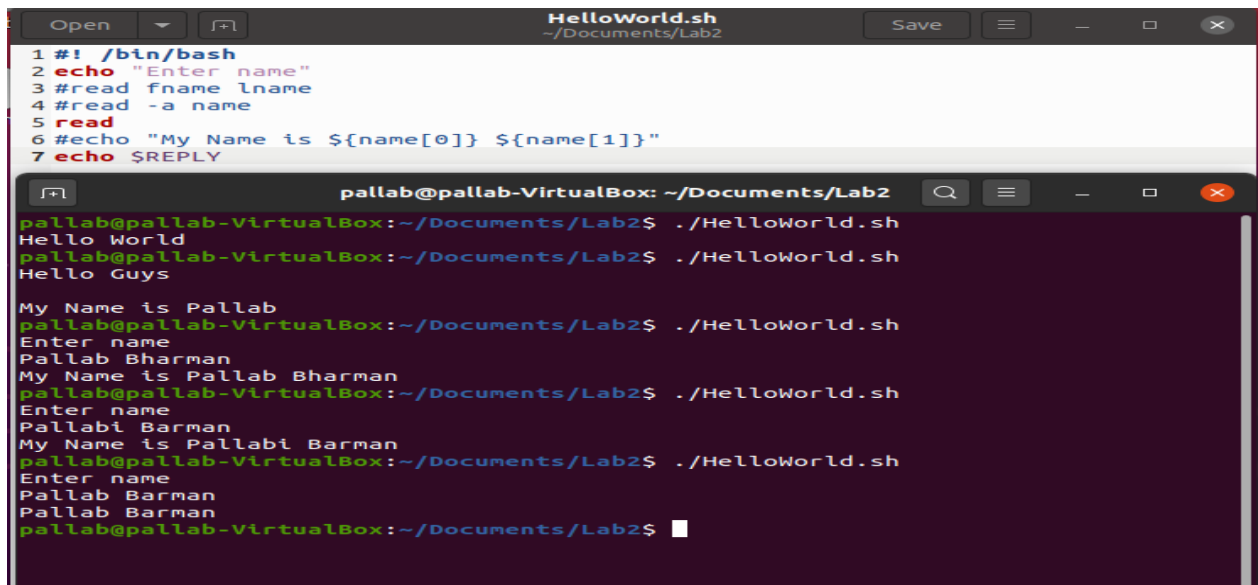
## Showing Output using REPLY

**Input:** echo "Enter name"

read

echo \$REPLY

**Output:**



```
1 #!/bin/bash
2 echo "Enter name"
3 #read fname lname
4 #read -a name
5 read
6 #echo "My Name is ${name[0]} ${name[1]}"
7 echo $REPLY

pallab@pallab-VirtualBox: ~/Documents/Lab2
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello World
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Hello Guys
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
My Name is Pallab
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallab Bharman
My Name is Pallab Bharman
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallabi Barman
My Name is Pallabi Barman
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./HelloWorld.sh
Enter name
Pallab Barman
Pallab Barman
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

**If Else for Integer: Input:**

price=200

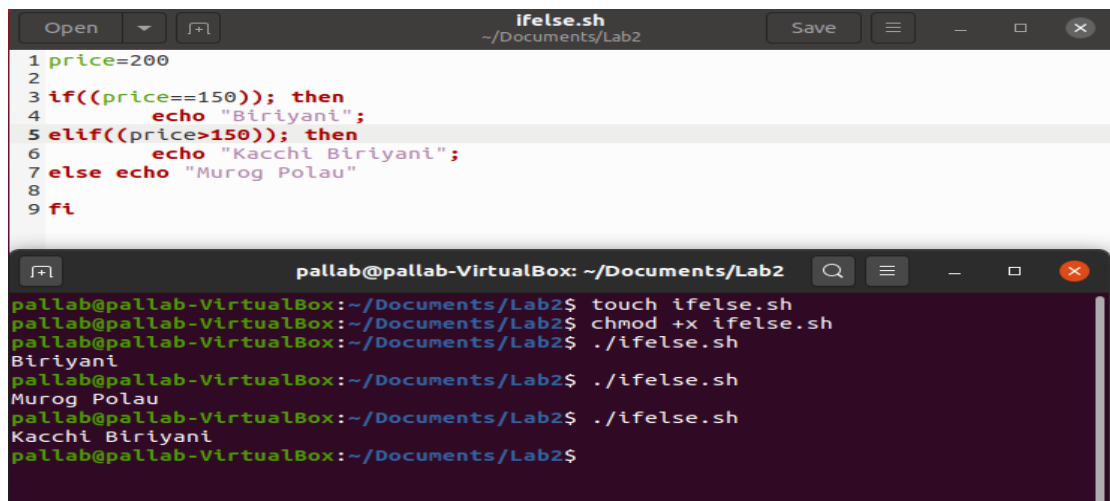
if((price==150)); then

echo "Biryani";

elif((price>150)); then

```
echo "Kacchi Biryani";  
else echo "Morog Polau"  
fi
```

### Output:



```
1 price=200  
2  
3 if((price==150)); then  
4     echo "Biryani";  
5 elif((price>150)); then  
6     echo "Kacchi Biryani";  
7 else echo "Murog Polau"  
8  
9 fi  
  
pallab@pallab-VirtualBox: ~/Documents/Lab2  
pallab@pallab-VirtualBox:~/Documents/Lab2$ touch ifelse.sh  
pallab@pallab-VirtualBox:~/Documents/Lab2$ chmod +x ifelse.sh  
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./ifelse.sh  
Biryani  
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./ifelse.sh  
Murog Polau  
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./ifelse.sh  
Kacchi Biryani  
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

### If Else for String:

#### Input:

```
word="P"  
  
if [[ $word == "P" ]]; then  
  
echo "It is P"  
  
elif [[ $word < "P" ]]; then
```



```
echo "It is O"
else echo "It is Q"
Fi
```

### Output:



The image shows a screenshot of a virtual machine environment. At the top, a text editor window titled 'ifelse.sh' is open, showing a shell script. The script sets a price to 200, then uses an if-elif-else structure to print 'Biryani', 'Kacchi Biryani', or 'Murog Polau' based on the price. It then sets a word to 'P' and uses another if-elif-else structure to print 'It is P', 'It is O', or 'It is Q' based on the word. At the bottom, a terminal window shows the execution of the script, which outputs 'It is P'.

```
1 #price=200
2 #if((price==150)); then
3 #     echo "Biryani";
4 #elif((price>150)); then
5 #     echo "Kacchi Biryani";
6 #else echo "Murog Polau"
7 #fi
8 word="P"
9
10 if [[ $word == "P" ]]; then
11     echo "It is P"
12 elif [[ $word < "P" ]]; then
13     echo "It is O"
14 else echo "It is Q"
15 fi
```

```
pallab@pallab-VirtualBox: ~/Documents/Lab2
pallab@pallab-VirtualBox:~/Documents/Lab2$ ./ifelse.sh
It is P
pallab@pallab-VirtualBox:~/Documents/Lab2$
```

### Discussion:

1. In this lab, we learned and implemented shell scripts.
2. We have used terminal and text editor to implement the codes.
3. No error was found in the action.