

OS Lab 3:

24k-0810

```
Activities Terminal Feb 6 8:35 AM student@Lab3W: ~/Desktop

student@Lab3W:~$ cd Desktop
student@Lab3W:~/Desktop$ rm *
rm: cannot remove 'hello': Is a directory
student@Lab3W:~/Desktop$ rm hello
rm: cannot remove 'hello': Is a directory
student@Lab3W:~/Desktop$ rm -r hello
student@Lab3W:~/Desktop$ ls
student@Lab3W:~/Desktop$ /bin/sh
$ date
Fri Feb 6 08:19:20 AM PKT 2026
$ date; pwd
/bin/sh: 2: date:: not found
$ date;pwd
Fri Feb 6 08:19:51 AM PKT 2026
/home/student/Desktop
$ exit
student@Lab3W:~/Desktop$ nano file1.sh
student@Lab3W:~/Desktop$ ./shell.sh
bash: ./shell.sh: No such file or directory
student@Lab3W:~/Desktop$ ./file1.sh
bash: ./file1.sh: Permission denied
student@Lab3W:~/Desktop$ chmod +x
chmod: missing operand after '+'
Try 'chmod --help' for more information.
student@Lab3W:~/Desktop$ chmod +x file1.sh
student@Lab3W:~/Desktop$ ./file1.sh
hello from shelly shell script
student@Lab3W:~/Desktop$ nano file2.sh
student@Lab3W:~/Desktop$ chmod +x file2.sh
student@Lab3W:~/Desktop$ ./file2.sh
hello world
The message is: hello world
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 8:52 AM student@Lab3W: ~/Desktop

The message is: hello world
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ chmod +x file3.sh
student@Lab3W:~/Desktop$ ./file3.sh
Enter a number:
4
./file3.sh: line 10: unexpected EOF while looking for matching '"'
./file3.sh: line 13: syntax error: unexpected end of file
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ y
y: command not found
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ ./file3.sh
Enter a number:
4
You have entered the number: 4
Enter your first name: bashair
You have entered the first name: bashair
Enter your first name and last name: bashair yaqoob
First Name: bashair LastName: yaqoob
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ ./file3.sh
Enter a number:
4
You have entered the number: 4
Enter your first name: s
You have entered the first name: s
Enter your first name and last name: sk
First Name: sk LastName: student@Lab3W:~/Desktop$ ./file3.sh
Enter a number:
4
You have entered the number: 4
Enter your first name: shahira
You have entered the first name: bashair
Enter your first name and last name: bashair yaqoob
First Name: bashair LastName: yaqoob
student@Lab3W:~/Desktop$ nano file3.sh
student@Lab3W:~/Desktop$ ./file3.sh
Enter a number:
4
```

```
Activities Terminal Feb 6 9:14 AM student@Lab3W: ~/Desktop

You have entered the first name: bashair
Enter your first name and last name: bashair yaqoob
First Name: bashair LastName: yaqoob
student@Lab3W:~/Desktop$ nano file4.sh
student@Lab3W:~/Desktop$ chmod +x file4.sh
student@Lab3W:~/Desktop$ ./file4.sh
Twice the number is 20
Twice the Number Plus 1 is 21
./file4.sh: line 6: syntax error near unexpected token `('
./file4.sh: line 6: `(DoubleQPlus1=2*($Num+1))'
student@Lab3W:~/Desktop$ nano file4.sh
student@Lab3W:~/Desktop$ ./file4.sh
Twice the number is 20
Twice the Number Plus 1 is 21
Twice the number plus 1 is 22
./file4.sh: line 8: ((: half=/2: syntax error: operand expected (error token is "/2")
Half the number is
student@Lab3W:~/Desktop$ nano file4.sh
student@Lab3W:~/Desktop$ ./file4.sh
Twice the number is 20
Twice the Number Plus 1 is 21
Twice the number plus 1 is 22
Half the number is 5
student@Lab3W:~/Desktop$ nano file5.sh
student@Lab3W:~/Desktop$ chmod +x file5.sh
student@Lab3W:~/Desktop$ ./file5.sh
Enter First Number: 5
Enter Second Number: 6
./file5.sh: line 3: 6]]: No such file or directory
./file5.sh: line 5: [[5: command not found
5 is equal to 6
student@Lab3W:~/Desktop$ nano file5.sh
student@Lab3W:~/Desktop$ nano file5.sh
student@Lab3W:~/Desktop$ ./file5.sh
Enter First Number: 4
Enter Second Number: 5
4 is smaller than 5
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 9:32 AM student@Lab3W: ~/Desktop

Enter First Number: 5
Enter Second Number: 6
./file5.sh: line 3: 6]]: No such file or directory
./file5.sh: line 5: [[5: command not found
5 is equal to 6
student@Lab3W:~/Desktop$ nano file5.sh
student@Lab3W:~/Desktop$ nano file5.sh
student@Lab3W:~/Desktop$ ./file5.sh
Enter First Number: 4
Enter Second Number: 5
4 is smaller than 5
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ chmod +x file6.sh
student@Lab3W:~/Desktop$ ./file6.sh
Enter the starting balance: 25
Menu options
a)Deposit
b)Withdraw
Enter your selection:a
Enter the deposit amount:25
The final balance is: 25
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ ./file6.sh
Enter the starting balance: 25
Menu options
a)Deposit
b)Withdraw
Enter your selection:a
Enter the deposit amount:25
The final balance is: 50
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ y
y: command not found
student@Lab3W:~/Desktop$ nano file7.sh
student@Lab3W:~/Desktop$ chmod +x file7.sh
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 9:34 AM student@Lab3W: ~/Desktop

a)Deposit
b)Withdraw

Enter your selection:a
Enter the deposit amount:25
The final balance is: 25
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ ./file6.sh
Enter the starting balance: 25
Menu options
a)Deposit
b)Withdraw

Enter your selection:a
Enter the deposit amount:25
The final balance is: 50
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ y
y: command not found
student@Lab3W:~/Desktop$ nano file7.sh
student@Lab3W:~/Desktop$ chmod +x file7.sh
student@Lab3W:~/Desktop$ ./file7.sh
Enter the number of directories to be created: 2
Enter the name of the directory: shahira
Enter the name of the directory: shahirakhan
Enter the name of the directory: khan
Enter the name of the directory: ^Z
[1]+  Stopped                  ./file7.sh
student@Lab3W:~/Desktop$ nano file7.sh
student@Lab3W:~/Desktop$ ./file7.sh
Enter the number of directories to be created: 2
Enter the name of the directory: shahira1
Enter the name of the directory: shahira2
student@Lab3W:~/Desktop$ ls
6]]      file3.sh  file6.sh  shahira  shahirakhan
file1.sh  file4.sh  file7.sh  shahira1
file2.sh  file5.sh  khan     shahira2
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 9:40 AM student@Lab3W: ~/Desktop

b)Withdraw

Enter your selection:a
Enter the deposit amount:25
The final balance is: 50
student@Lab3W:~/Desktop$ nano file6.sh
student@Lab3W:~/Desktop$ y
y: command not found
student@Lab3W:~/Desktop$ nano file7.sh
student@Lab3W:~/Desktop$ chmod +x file7.sh
student@Lab3W:~/Desktop$ ./file7.sh
Enter the number of directories to be created: 2
Enter the name of the directory: shahira
Enter the name of the directory: shahirakhan
Enter the name of the directory: khan
Enter the name of the directory: ^Z
[1]+  Stopped                  ./file7.sh
student@Lab3W:~/Desktop$ nano file7.sh
student@Lab3W:~/Desktop$ ./file7.sh
Enter the number of directories to be created: 2
Enter the name of the directory: shahira1
Enter the name of the directory: shahira2
student@Lab3W:~/Desktop$ ls
6]]      file3.sh  file6.sh  shahira  shahirakhan
file1.sh  file4.sh  file7.sh  shahira1
file2.sh  file5.sh  khan     shahira2
student@Lab3W:~/Desktop$ nano file8.sh
student@Lab3W:~/Desktop$ chmod +x file8.sh
student@Lab3W:~/Desktop$ ./file8.sh
Enter two whole numbers, Separated by space: 2 4
The smallest is:
student@Lab3W:~/Desktop$ chmod +x file8.sh
student@Lab3W:~/Desktop$ nano file8.sh
student@Lab3W:~/Desktop$ nano file8.sh
student@Lab3W:~/Desktop$ ./file8.sh
Enter two whole numbers, Separated by space: 2 4
The smallest is: 2
student@Lab3W:~/Desktop$
```

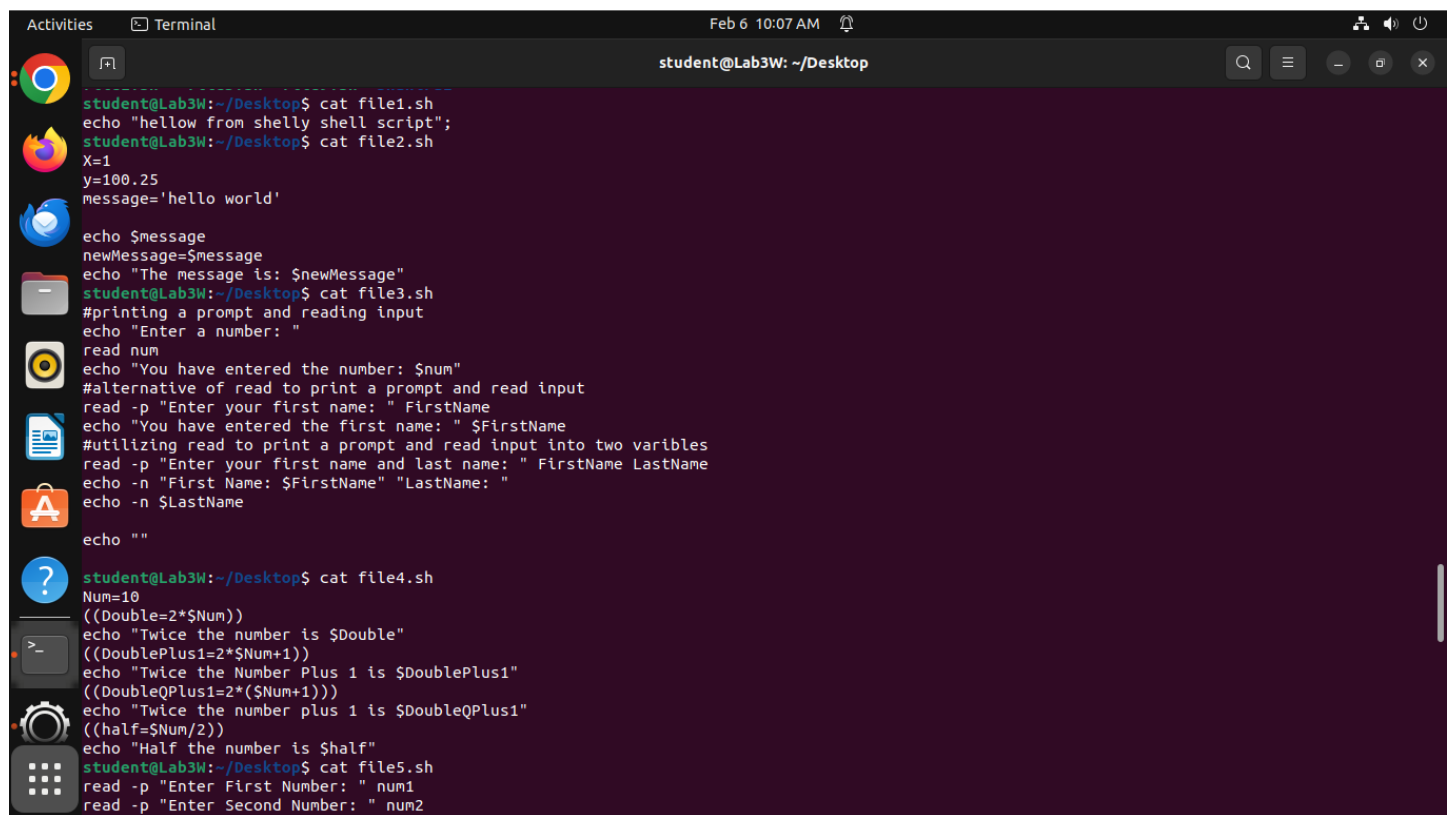
```
Activities Terminal Feb 6 9:53 AM student@Lab3W: ~/Desktop

student@Lab3W:~/Desktop$ ./file8.sh
Enter two whole numbers, Separated by space: 2 4
The smallest is: 2
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ mkdir SRC_DIR
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ cd SRC_DIR
student@Lab3W:~/Desktop/SRC_DIR$ ls
student@Lab3W:~/Desktop/SRC_DIR$ touch text1.txt
student@Lab3W:~/Desktop/SRC_DIR$ touch text2.txt
student@Lab3W:~/Desktop/SRC_DIR$ ls
text1.txt text2.txt
student@Lab3W:~/Desktop/SRC_DIR$ cd ..
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ mkdir DST_DIR
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ rm -r DST_DIR
student@Lab3W:~/Desktop$ ls
6]] file3.sh file6.sh file9.sh shahira1 SRC_DIR
file1.sh file4.sh file7.sh khan shahira2
file2.sh file5.sh file8.sh shahira shahirakhan
student@Lab3W:~/Desktop$ chmod +x file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
bash: ./file9.sh: bin/bash: bad interpreter: No such file or directory
student@Lab3W:~/Desktop$ pwd
/home/student/Desktop
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
cp: cannot create regular file 'home/student/Desktop/DST_DIR': No such file or directory
cp: cannot create regular file 'home/student/Desktop/DST_DIR': No such file or directory
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
student@Lab3W:~/Desktop$ ls
6]] file2.sh file5.sh file8.sh khan shahira2
DST_DIR file3.sh file6.sh file9.sh shahira shahirakhan
file1.sh file4.sh file7.sh home shahira1 SRC_DIR
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 10:06 AM student@Lab3W: ~/Desktop

student@Lab3W:~/Desktop/SRC_DIR$ touch text2.txt
student@Lab3W:~/Desktop/SRC_DIR$ ls
text1.txt text2.txt
student@Lab3W:~/Desktop/SRC_DIR$ cd ..
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ mkdir DST_DIR
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ rm -r DST_DIR
student@Lab3W:~/Desktop$ ls
6]] file3.sh file6.sh file9.sh shahira1 SRC_DIR
file1.sh file4.sh file7.sh khan shahira2
file2.sh file5.sh file8.sh shahira shahirakhan
student@Lab3W:~/Desktop$ chmod +x file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
bash: ./file9.sh: bin/bash: bad interpreter: No such file or directory
student@Lab3W:~/Desktop$ pwd
/home/student/Desktop
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
cp: cannot create regular file 'home/student/Desktop/DST_DIR': No such file or directory
cp: cannot create regular file 'home/student/Desktop/DST_DIR': No such file or directory
student@Lab3W:~/Desktop$ nano file9.sh
student@Lab3W:~/Desktop$ ./file9.sh
student@Lab3W:~/Desktop$ ls
6]] file2.sh file6.sh home shahira2
DST_DIR file3.sh file7.sh khan shahirakhan
file10.sh file4.sh file8.sh shahira SRC_DIR
file1.sh file5.sh file9.sh shahira1
student@Lab3W:~/Desktop$ nano file10.sh
student@Lab3W:~/Desktop$ chmod +x file10.sh
student@Lab3W:~/Desktop$ ./file10.sh
student@Lab3W:~/Desktop$ ls
6]] file2.sh file6.sh home shahira2
DST_DIR file3.sh file7.sh khan shahirakhan
file10.sh file4.sh file8.sh shahira SRC_DIR
file1.sh file5.sh file9.sh shahira1
student@Lab3W:~/Desktop$ cat file1.sh
echo "hello from shelly shell script";
```

File content:

A terminal window titled "student@Lab3W: ~/Desktop" with a dark background and light text. The window shows the contents of five shell scripts: file1.sh, file2.sh, file3.sh, file4.sh, and file5.sh. The scripts demonstrate basic shell operations like echo, read, and arithmetic. On the left side of the terminal, there is a vertical dock with icons for various applications including a web browser, a file manager, a terminal, and a help icon.

```
student@Lab3W:~/Desktop$ cat file1.sh
echo "hellow from shelly shell script";
student@Lab3W:~/Desktop$ cat file2.sh
X=1
y=100.25
message='hello world'

echo $message
newMessage=$message
echo "The message is: $newMessage"
student@Lab3W:~/Desktop$ cat file3.sh
#printing a prompt and reading input
echo "Enter a number: "
read num
echo "You have entered the number: $num"
#alternative of read to print a prompt and read input
read -p "Enter your first name: " FirstName
echo "You have entered the first name: " $FirstName
#utilizing read to print a prompt and read input into two variables
read -p "Enter your first name and last name: " FirstName LastName
echo -n "First Name: $FirstName" "LastName: "
echo -n $LastName

echo ""
student@Lab3W:~/Desktop$ cat file4.sh
Num=10
((Double=2*$Num))
echo "Twice the number is $Double"
((DoublePlus1=2*$Num+1))
echo "Twice the Number Plus 1 is $DoublePlus1"
((DoubleQPlus1=2*($Num+1)))
echo "Twice the number plus 1 is $DoubleQPlus1"
((half=$Num/2))
echo "Half the number is $half"
student@Lab3W:~/Desktop$ cat file5.sh
read -p "Enter First Number: " num1
read -p "Enter Second Number: " num2
```

```
Activities Terminal Feb 6 10:07 AM
student@Lab3W: ~/Desktop

echo "Twice the number plus 1 is $DoubleQPlus1"
((half=$Num/2))
echo "Half the number is $half"
student@Lab3W:~/Desktop$ cat file5.sh
read -p "Enter First Number: " num1
read -p "Enter Second Number: " num2
if [[ $num1 < $num2 ]]; then
    echo "$num1 is smaller than $num2"
elif [[ $num1 > $num2 ]]; then
    echo "$num1 is greater than" $num2
else
    echo "$num1 is equal to" $num2
fi
student@Lab3W:~/Desktop$ cat file6.sh
read -p "Enter the starting balance: " balance
echo "Menu options"
echo "a)Deposit"
echo "b)Withdraw"; echo
read -p "Enter your selection:" selection
case $selection in
    a|A) read -p "Enter the deposit amount:" deposit
        (( balance = $balance + $deposit ))
        ;;
    b|B) read -p "Enter the withdraw amount:" withdraw
        (( balance = $balance - $withdraw ))
        ;;
    *) echo "ERROR!Invalid input was provided"
        ;;
esac
echo "The final balance is: $balance"
student@Lab3W:~/Desktop$ cat file7.sh
read -p "Enter the number of directories to be created: " numDir
while [[ $numDir > 0 ]]
do
    read -p "Enter the name of the directory: " dirName
    mkdir $dirName
    if [[ $? = 1 ]]; then

```

```
Activities Terminal Feb 6 10:08 AM
student@Lab3W: ~/Desktop

esac
echo "The final balance is: $balance"
student@Lab3W:~/Desktop$ cat file7.sh
read -p "Enter the number of directories to be created: " numDir
while [[ $numDir > 0 ]]
do
    read -p "Enter the name of the directory: " dirName
    mkdir $dirName
    if [[ $? = 1 ]]; then
        echo "Directory creation failed"
    fi
    (( numDir-- ))
done
student@Lab3W:~/Desktop$ cat file8.sh
Min() {
    if [[ $1 -lt $2 ]]; then
        Smallest=$1
    else
        Smallest=$2
    fi
}
read -p "Enter two whole numbers, Separated by space: " N1 N2
Min $N1 $N2
echo "The smallest is: " $Smallest
student@Lab3W:~/Desktop$ cat file9.sh
#!/bin/bash
SRC_DIR="/home/student/Desktop/SRC_DIR"
DST_DIR="/home/student/Desktop/DST_DIR"
if [ ! -d "$DST_DIR" ]; then
    mkdir -p "$DST_DIR"
fi
for file in "$SRC_DIR"/*; do
    cp "$file" "$DST_DIR"
done
```

```
Activities Terminal Feb 6 10:08 AM student@Lab3W: ~/Desktop

else
    Smallest=$2
fi
}
read -p "Enter two whole numbers, Separated by space: " N1 N2
Min $N1 $N2
echo "The smallest is: " $Smallest
student@Lab3W:~/Desktop$ cat file9.sh
#!/bin/bash

SRC_DIR="/home/student/Desktop/SRC_DIR"
DST_DIR="/home/student/Desktop/DST_DIR"

if [ ! -d "$DST_DIR" ]; then
    mkdir -p "$DST_DIR"
fi

for file in "$SRC_DIR"/*; do
    cp "$file" "$DST_DIR"
done

if [ ! -d "$SRC_DIR" ]; then
    echo "error: source directory does not exist"
    exit 1
fi
student@Lab3W:~/Desktop$ cat file10.sh
#!/bin/bash

process_data() {
    input_file=$1
    output_file=$(cut -f 1,3 $input_file | grep 'foo' | sort -n)
    echo $output_file
}

for file in /home/student/Desktop/SRC_DIR/*.txt; do
    processed_data=$(process_data $file)
    echo $processed_data > "${file}_processed.txt"
done
student@Lab3W:~/Desktop$
```

Activity 1:

```
Activities Terminal Feb 6 10:13 AM
student@Lab3W: ~/Desktop

for file in "$SRC_DIR"/*; do
    cp "$file" "$DST_DIR"
done

if [ ! -d "$SRC_DIR" ]; then
    echo "error: source directory does not exist"
    exit 1
fi

student@Lab3W:~/Desktop$ cat file10.sh
#!/bin/bash

process_data() {
    input_file=$1
    output_file=$(cut -f 1,3 $input_file | grep 'foo' | sort -n)
    echo $output_file
}

for file in /home/student/Desktop/SRC_DIR/*.txt; do
    processed_data=$(process_data $file)
    echo $processed_data > "${file}_processed.txt"
done
student@Lab3W:~/Desktop$ nano activity1.sh
student@Lab3W:~/Desktop$ chmod activity1.sh
chmod: missing operand after 'activity1.sh'
Try 'chmod --help' for more information.
student@Lab3W:~/Desktop$ chmod +x activity1.sh
student@Lab3W:~/Desktop$ ./activity1.sh
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
Welcome to the world of shell scripting
student@Lab3W:~/Desktop$
```

```
Activities Terminal Feb 6 10:17 AM
student@Lab3W: ~/Desktop

student@Lab3W:~/Desktop$ cat activity1.sh
for i in {1..10}
do
    echo "Welcome to the world of shell scripting"
done
student@Lab3W:~/Desktop$
```


Activity 2:

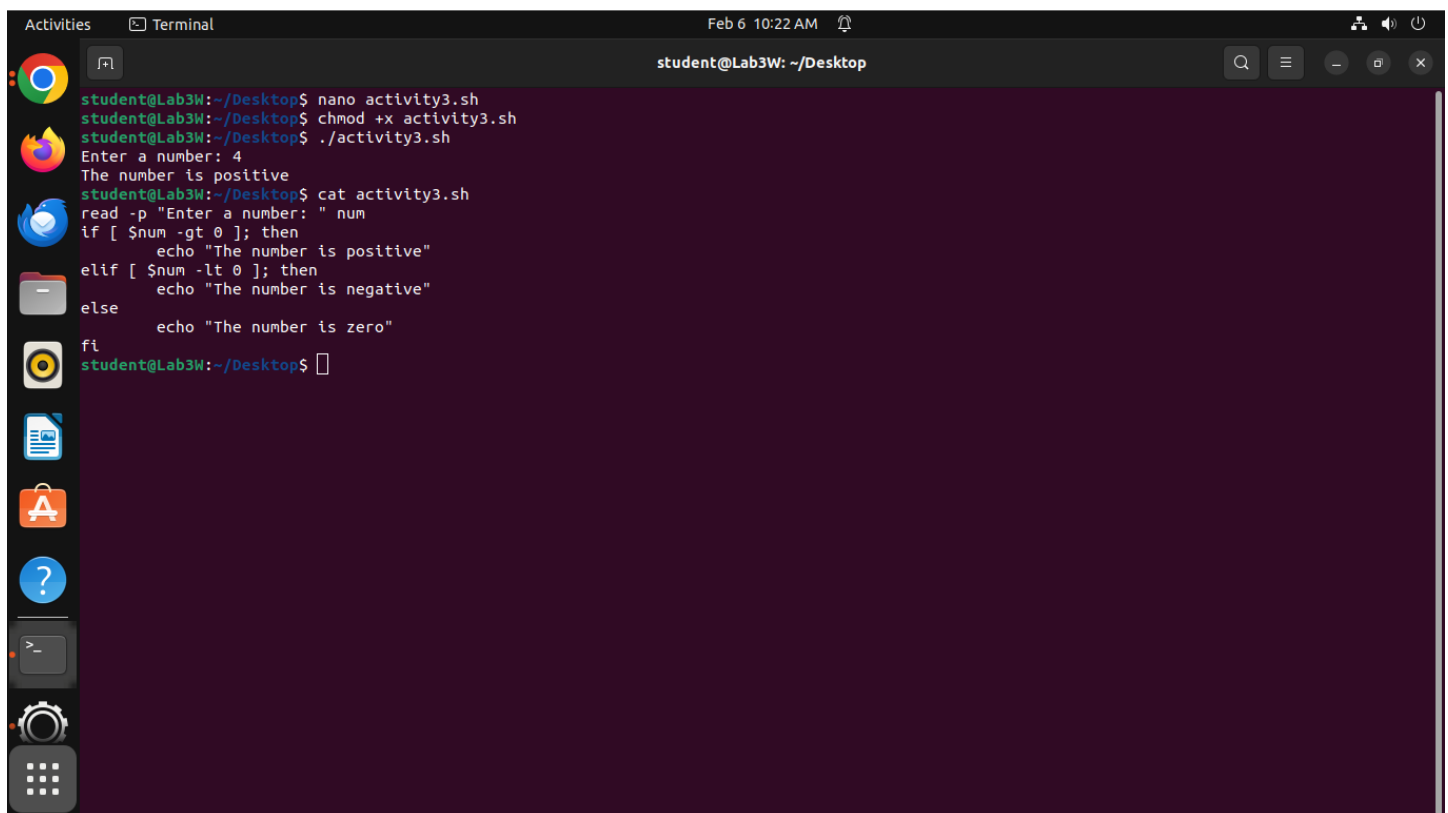
```
? Welcome to the world of shell scripting
Welcome to the world of shell scripting
student@Lab3W:~/Desktop$ nano activity2.sh
student@Lab3W:~/Desktop$ chmod +x activity2.sh
student@Lab3W:~/Desktop$ ./activity2.sh
Enter your name: shahira
Enter your degree program: CS
Enter your batch number: 24K
Enter your course title: OS
Name: shahira
Degree Program: CS
Batch number: 24K
Course title: OS
student@Lab3W:~/Desktop$
```

Activities Terminal Feb 6 10:18 AM

student@Lab3W: ~/Desktop

```
student@Lab3W:~/Desktop$ cat activity2.sh
read -p "Enter your name: " name
read -p "Enter your degree program: " degree
read -p "Enter your batch number: " batch
read -p "Enter your course title: " course
echo "Name: $name"
echo "Degree Program: $degree"
echo "Batch number: $batch"
echo "Course title: $course"
student@Lab3W:~/Desktop$
```

Activity 3:



```
Activities Terminal Feb 6 10:22 AM student@Lab3W: ~/Desktop
student@Lab3W:~/Desktop$ nano activity3.sh
student@Lab3W:~/Desktop$ chmod +x activity3.sh
student@Lab3W:~/Desktop$ ./activity3.sh
Enter a number: 4
The number is positive
student@Lab3W:~/Desktop$ cat activity3.sh
read -p "Enter a number: " num
if [ $num -gt 0 ]; then
    echo "The number is positive"
elif [ $num -lt 0 ]; then
    echo "The number is negative"
else
    echo "The number is zero"
fi
student@Lab3W:~/Desktop$
```