

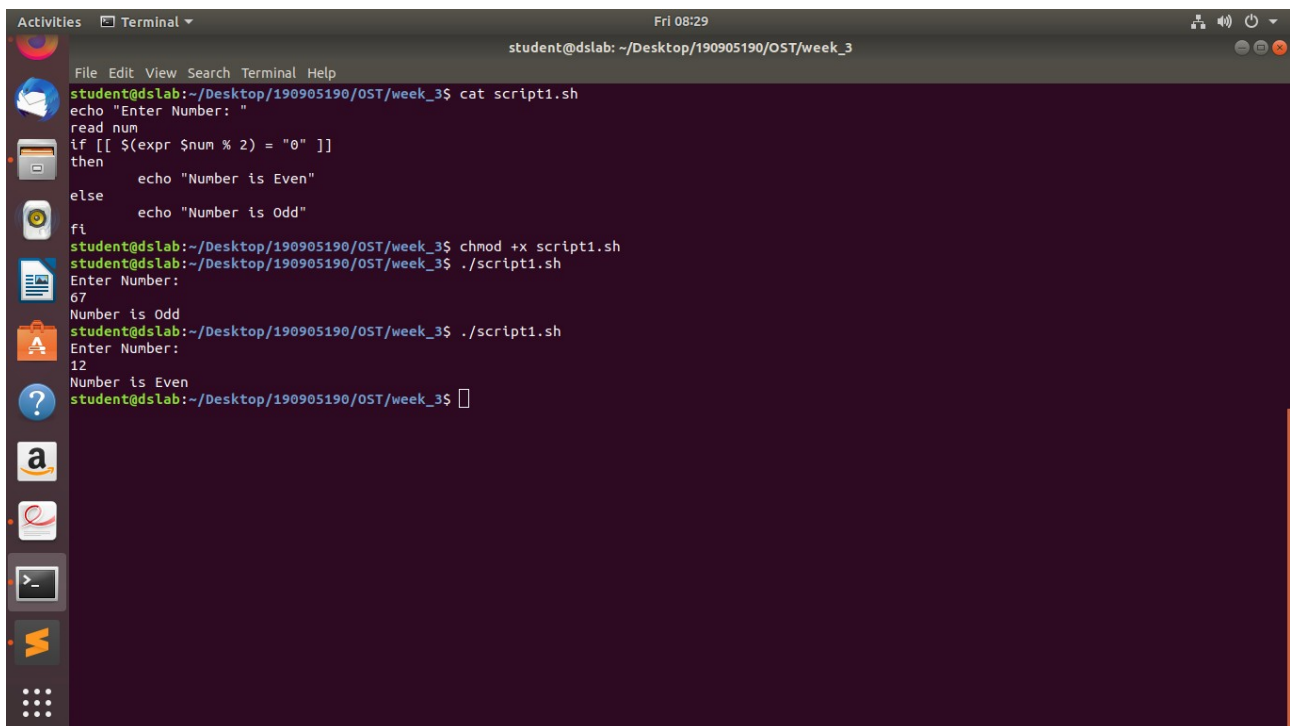
# OST LAB

## Lab 3

Q1)

**Code:**

```
echo "Enter Number: "  
read num  
if [[ $(expr $num % 2) = "0" ]]  
then  
    echo "Number is Even"  
else  
    echo "Number is Odd"  
fi
```



The screenshot shows a terminal window titled "Terminal" with the user "student@dslab" and the current directory "~/Desktop/190905190/OST/week\_3". The terminal displays the following commands and output:

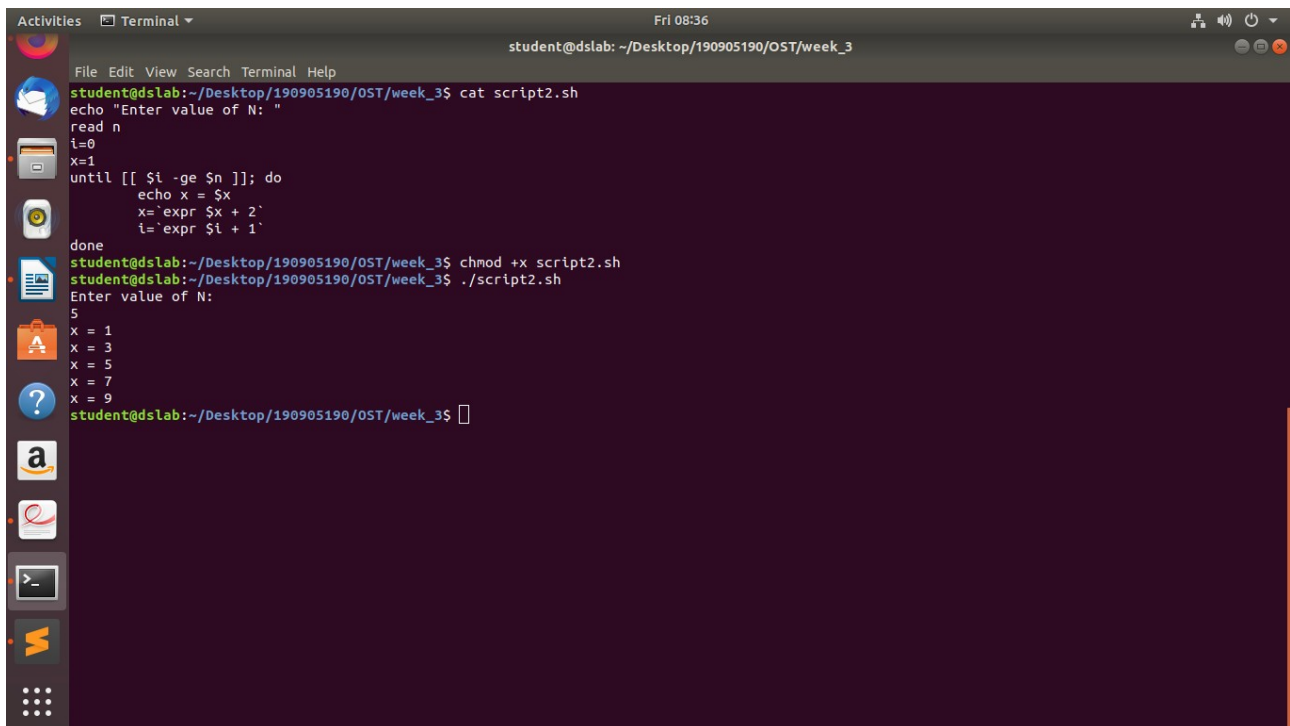
```
student@dslab:~/Desktop/190905190/OST/week_3$ cat script1.sh  
echo "Enter Number: "  
read num  
if [[ $(expr $num % 2) = "0" ]]  
then  
    echo "Number is Even"  
else  
    echo "Number is Odd"  
fi  
student@dslab:~/Desktop/190905190/OST/week_3$ chmod +x script1.sh  
student@dslab:~/Desktop/190905190/OST/week_3$ ./script1.sh  
Enter Number:  
67  
Number is Odd  
student@dslab:~/Desktop/190905190/OST/week_3$ ./script1.sh  
Enter Number:  
12  
Number is Even  
student@dslab:~/Desktop/190905190/OST/week_3$
```

The terminal window includes a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The left sidebar shows various application icons, and the top status bar displays the time as "Fri 08:29".

Q2)

**Code:**

```
echo "Enter value of N: "  
read n  
i=0  
x=1  
until [[ $i -ge $n ]]; do  
    echo x = $x  
    x=`expr $x + 2`  
    i=`expr $i + 1`  
done  
,
```



```
student@dslab: ~/Desktop/190905190/OST/week_3  
File Edit View Search Terminal Help  
student@dslab:~/Desktop/190905190/OST/week_3$ cat script2.sh  
echo "Enter value of N: "  
read n  
i=0  
x=1  
until [[ $i -ge $n ]]; do  
    echo x = $x  
    x=`expr $x + 2`  
    i=`expr $i + 1`  
done  
student@dslab:~/Desktop/190905190/OST/week_3$ chmod +x script2.sh  
student@dslab:~/Desktop/190905190/OST/week_3$ ./script2.sh  
Enter value of N:  
5  
x = 1  
x = 3  
x = 5  
x = 7  
x = 9  
student@dslab:~/Desktop/190905190/OST/week_3$
```

### Q3)

#### Code:

```
echo 'ax^2 + bx + c = 0. Enter values of a, b, c'
read a
if [ $a = 0 ]; then
    echo "Not a quadratic equation.";
    exit 0;
fi
read b
read c
f=0
root1=0
root2=0
square_root=0
imgp=0.0
D=`expr $b \* $b - 4 \* $a \* $c`

if [[ D -ge 0 ]]; then
    f=0
    square_root=`echo "scale=4; sqrt($D)" | bc`
else
    f=1
    D=`expr $D - 2 \* $D`
    echo $D
    square_root=`echo "scale=4; sqrt($D)" | bc`
fi
case $f in
    "0")
        root1=`echo "scale=4; $b-2*$b+$square_root" | bc`
        root1=`echo "scale=4; $root1*0.5/$a" | bc`
        root2=`echo "scale=4; $b-2*$b-$square_root" | bc`
        root2=`echo "scale=4; $root2*0.5/$a" | bc`
        echo "Roots: $root1 , $root2"
        ;;
    "1")
        imgp=`echo "scale=4; $square_root*0.5/$a" | bc`
        root1=`echo "scale=4; $b-2*$b+$square_root" | bc`
        root1=`echo "scale=4; $root1*0.5/$a" | bc`
        echo "Roots: $root1 + i$imgp , $root1 - i$imgp"
        ;;
esac
```

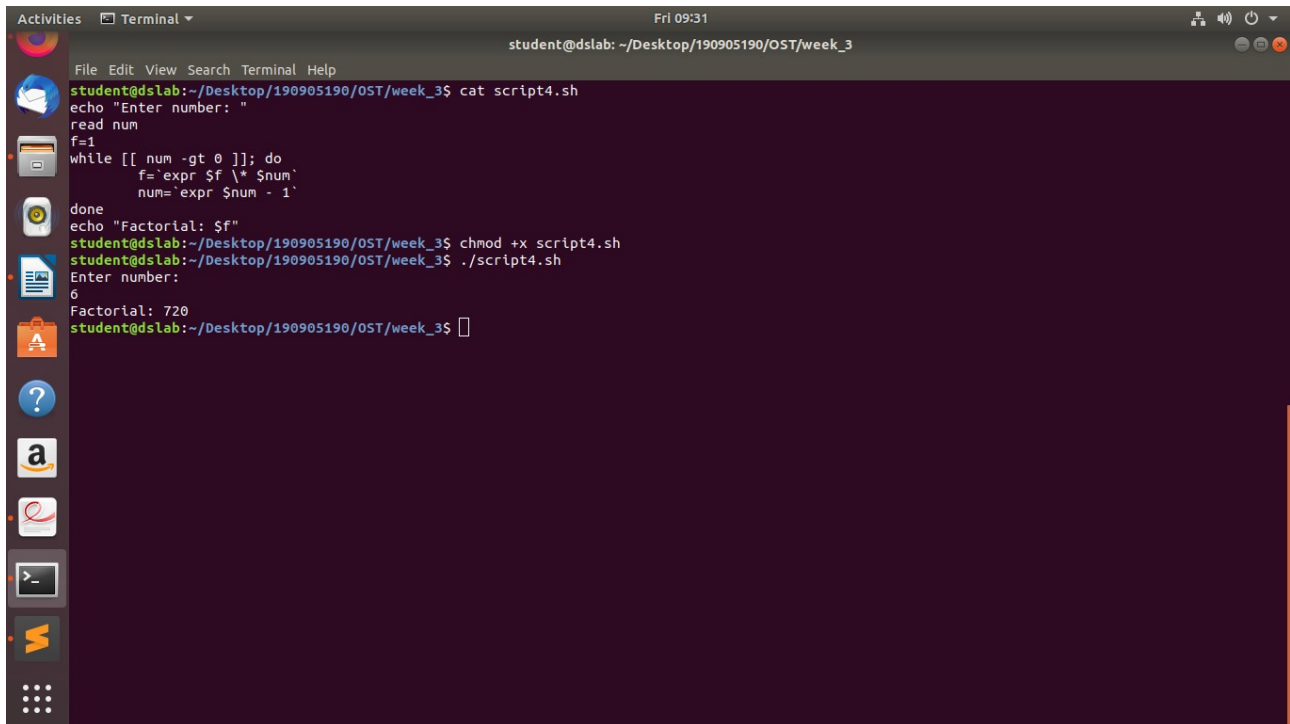
```
Activities Terminal Fri 09:25 student@dslab: ~/Desktop/190905190/OST/week_3
File Edit View Search Terminal Help
read a
if [ $a = 0 ]; then
    echo "Not a quadratic equation.";
    exit 0;
fi
read b
read c
f=0
root1=0
root2=0
square_root=0
imgp=0.0
D=`expr $b \* $b - 4 \* $a \* $c`
if [[ D -ge 0 ]]; then
    f=0
    square_root=`echo "scale=4; sqrt($D)" | bc`
else
    f=1
    D=`expr $D - 2 \* $D`
    echo $D
    square_root=`echo "scale=4; sqrt($D)" | bc`
fi
case $f in
    "0")
        root1=`echo "scale=4; $b-2*$b+$square_root" | bc`
        root1=`echo "scale=4; $root1*0.5/$a" | bc`
        root2=`echo "scale=4; $b-2*$b-$square_root" | bc`
        root2=`echo "scale=4; $root2*0.5/$a" | bc`
        echo "Roots: $root1 , $root2"
        ;;
    "1")
        imgp=`echo "scale=4; $square_root*0.5/$a" | bc`
        root1=`echo "scale=4; $b-2*$b+$square_root" | bc`
        root1=`echo "scale=4; $root1*0.5/$a" | bc`
        echo "Roots: $root1 + i$imgp , $root1 - i$imgp"
        ;;
esac
student@dslab:~/Desktop/190905190/OST/week_3$
```

```
Activities Terminal Fri 09:24 student@dslab: ~/Desktop/190905190/OST/week_3
File Edit View Search Terminal Help
student@dslab:~/Desktop/190905190/OST/week_3$ chmod +x script3.sh
student@dslab:~/Desktop/190905190/OST/week_3$ ./script3.sh
ax^2 + bx + c = 0. Enter values of a, b, c
1
4
4
Roots: -2.0000 , -2.0000
student@dslab:~/Desktop/190905190/OST/week_3$ ./script3.sh
ax^2 + bx + c = 0. Enter values of a, b, c
1
5
5
Roots: -1.3820 , -3.6180
student@dslab:~/Desktop/190905190/OST/week_3$ ./script3.sh
ax^2 + bx + c = 0. Enter values of a, b, c
2
1
1
7
Roots: .4114 + i.6614 , .4114 - i.6614
student@dslab:~/Desktop/190905190/OST/week_3$
```

Q4)

**Code:**

```
echo "Enter number: "  
read num  
f=1  
while [[ num -gt 0 ]]; do  
    f=`expr $f \* $num`  
    num=`expr $num - 1`  
done  
echo "Factorial: $f"
```



The screenshot shows a terminal window titled "Terminal" with the user "student@dslab" and the current directory "~/Desktop/190905190/OST/week\_3". The terminal displays the following commands and output:

```
student@dslab:~/Desktop/190905190/OST/week_3$ cat script4.sh  
echo "Enter number: "  
read num  
f=1  
while [[ num -gt 0 ]]; do  
    f=`expr $f \* $num`  
    num=`expr $num - 1`  
done  
echo "Factorial: $f"  
student@dslab:~/Desktop/190905190/OST/week_3$ chmod +x script4.sh  
student@dslab:~/Desktop/190905190/OST/week_3$ ./script4.sh  
Enter number:  
6  
Factorial: 720  
student@dslab:~/Desktop/190905190/OST/week_3$
```

The terminal window has a dark purple background and a light blue border. The left sidebar shows various application icons, including a terminal icon, a file manager icon, and a web browser icon. The top bar displays the time "Fri 09:31" and system status icons.