

OST LAB

LAB 3 ASSIGNMENT SUBMISSION

1. Find whether the given number is even or odd.

```
echo "---- EVEN OR ODD IN SHELL SCRIPT ----"
echo -n "Enter a number:"
read n
echo -n "RESULT: "
if [ `expr $n % 2` == 0 ]
then
    echo "$n is even"
else
    echo "$n is Odd"
fi
```



The screenshot shows a code editor window titled "evenodd.sh" with the file path "~/200905044/Week3". The editor contains the same shell script as shown in the previous block. The script is written in a syntax-highlighted format with colors: pink for echo, red for if/then/else/fin, and purple for the expression. The editor interface includes a top bar with "Open", "Save", and window control buttons. The bottom status bar shows "sh", "Tab Width: 8", "Ln 19, Col 4", and "INS".

```
evenodd.sh
~/200905044/Week3

echo "---- EVEN OR ODD IN SHELL SCRIPT ----"

echo -n "Enter a number:"

read n

echo -n "RESULT: "

if [ `expr $n % 2` == 0 ]
then
    echo "$n is even"
else
    echo "$n is Odd"
fi
```

sh Tab Width: 8 Ln 19, Col 4 INS

```
Student@prg19: ~/200905044/Week3
File Edit View Search Terminal Help
Student@prg19:~/200905044/Week3$ ./evenodd.sh
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:21
RESULT: 21 is Odd
Student@prg19:~/200905044/Week3$ ./evenodd.sh
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:24
RESULT: 24 is even
Student@prg19:~/200905044/Week3$ ./evenodd.sh
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:0
RESULT: 0 is even
Student@prg19:~/200905044/Week3$ ./evenodd.sh
---- EVEN OR ODD IN SHELL SCRIPT ----
Enter a number:101
RESULT: 101 is Odd
Student@prg19:~/200905044/Week3$
```

2. Print the first 'n' odd numbers.

echo Enter n value as range to print odd numbers.

read n

i=1

while [\$i -le \$n]

do

if [! `expr \$i % 2` -eq 0]

then

echo \$i

fi

i=`expr \$i + 1`

done

```
Open ▾  oddnums.sh  Save  ≡  -  +  ×
~/200905044/Week3

echo Enter n value as range to print odd numbers.
read n
i=1
while [ $i -le $n ]
do
if [ ! `expr $i % 2` -eq 0 ]
then
echo $i
fi
i=`expr $i + 1`
done
```

sh ▾ Tab Width: 8 ▾ Ln 11, Col 6 ▾ INS

```
Student@prg19: ~/200905044/Week3
File Edit View Search Terminal Help
Student@prg19:~/200905044/Week3$ gedit oddnums.sh
Student@prg19:~/200905044/Week3$ chmod +x oddnums.sh
Student@prg19:~/200905044/Week3$ ./oddnums.sh
Enter n value as range to print odd numbers.
20
1
3
5
7
9
11
13
15
17
19
Student@prg19:~/200905044/Week3$ ./oddnums.sh
Enter n value as range to print odd numbers.
5
1
3
5
Student@prg19:~/200905044/Week3$
```

3. Find all the possible quadratic equation roots using case.

```
echo Enter the coefficient of x^2:
read a
echo Enter the coefficient of x:
read b
echo Enter the constant term:
read c
```

```

f=`echo "-($b)" | bc`
p=`expr 2 \* $a`
if [ $a -ne 0 ]
then
    d=`echo "\(\ ($b \* $b\) - \($4 \* $a \* $c\) \)" | bc`
    if [ $d -lt 0 ]
    then
        x=`echo "-($d)" | bc`
        s=`echo "scale=2; sqrt ( $x )" | bc`
        echo The first root is:
        echo "($f + $s i) / $p"
        echo The second root is:
        echo "($f - $s i) / $p"

    elif [ $d -eq 0 ]
    then
        res=`expr $f / $p`
        echo The root is: $res
    else
        s=`echo "scale=2; sqrt( $d )" | bc`
        res1=`echo "scale=2; ( $f + $s) / ( $p )" | bc`
        res2=`echo "scale=2; ( $f - $s) / ( $p )" | bc`
        echo The first root is: $res1
        echo The second root is: $res2
    fi
else
    echo Coefficient of x^2 can not be 0.
fi

```

Open ▾

quadRoots.sh
~/200905044/Week3

Save

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```
echo Enter the coefficient of x^2:
read a
echo Enter the coefficient of x:
read b
echo Enter the constant term:
read c
f=`echo "-($b)" | bc`
p=`expr 2 \* $a`
if [ $a -ne 0 ]
then
    d=`echo "\(\ ($b \* $b\) - \($4 \* $a \* $c\) \)" | bc`
    if [ $d -lt 0 ]
    then
        x=`echo "-($d)" | bc`
        s=`echo "scale=2; sqrt ( $x )" | bc`
        echo The first root is:
        echo "($f + $s i) / $p"
        echo The second root is:
        echo "($f - $s i) / $p"

    elif [ $d -eq 0 ]
    then
        res=`expr $f / $p`
        echo The root is: $res
    else
        s=`echo "scale=2; sqrt( $d )" | bc`
        res1=`echo "scale=2; ( $f + $s ) / ( $p )" | bc`
        res2=`echo "scale=2; ( $f - $s ) / ( $p )" | bc`
        echo The first root is: $res1
        echo The second root is: $res2
    fi
else
    echo Coefficient of x^2 can not be 0.
fi
```

sh ▾ Tab Width: 8 ▾ Ln 31, Col 7 ▾ INS

```
Student@prg19: ~/200905044/Week3
File Edit View Search Terminal Help
Student@prg19:~/200905044/Week3$ gedit quadRoots.sh
Student@prg19:~/200905044/Week3$ ./quadRoots.sh
Enter the coefficient of x^2:
3
Enter the coefficient of x:
5
Enter the constant term:
10
The first root is:
(-5 + 9.74 i) / 6
The second root is:
(-5 - 9.74 i) / 6
Student@prg19:~/200905044/Week3$ ./quadRoots.sh
Enter the coefficient of x^2:
5
Enter the coefficient of x:
20
Enter the constant term:
30
The first root is:
(-20 + 14.14 i) / 10
The second root is:
(-20 - 14.14 i) / 10
Student@prg19:~/200905044/Week3$ ./quadRoots.sh
Enter the coefficient of x^2:
1
Enter the coefficient of x:
4
Enter the constant term:
4
The root is: -2
Student@prg19:~/200905044/Week3$
```

4. Find the factorial of a given number.

```
echo "Enter a number:"
read num
fact=1
while [ $num -gt 1 ]
do
    fact=$((fact * num)) #fact = fact * num
    num=$((num - 1))    #num = num - 1
done
echo $fact
```

```
factorial.sh
~/200905044/Week3
Save

echo "Enter a number:"
read num
fact=1
while [ $num -gt 1 ]
do
    fact=$((fact * num)) #fact = fact * num
    num=$((num - 1))    #num = num - 1
done
echo $fact
```

sh Tab Width: 8 Ln 8, Col 5 INS

```
Student@prg19: ~/200905044/Week3
File Edit View Search Terminal Help
Student@prg19:~/200905044/Week3$ gedit factorial.sh
Student@prg19:~/200905044/Week3$ chmod +x factorial.sh
Student@prg19:~/200905044/Week3$ ./factorial.sh
Enter a number:
5
120
Student@prg19:~/200905044/Week3$ ./factorial.sh
Enter a number:
10
3628800
Student@prg19:~/200905044/Week3$ ./factorial.sh
Enter a number:
15
1307674368000
Student@prg19:~/200905044/Week3$ ./factorial.sh
Enter a number:
0
1
Student@prg19:~/200905044/Week3$
```

THANK YOU!