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# RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

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Department of Computer Science & Engineering

## LAB REPORT

Topic: Shell Script (Conditional Statements, Loops)

Course No: CSE 3202

Course Name: Sessional Based on Operating Systems

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Date of Lab: 21<sup>st</sup> Mar 2022

Date of Submission: 4<sup>th</sup> Apr 2022

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## Program No. 1

### Program Topic: Arithmetic Operations

#### CODE

```
#!/bin/bash

read -p "Enter a: " a
read -p "Enter b: " b

echo "Addition:" $((a+b))
echo "Subtraction:" $((a-b))
echo "Multiplication:" $((a*b))
echo "Division:" $((a/b))
echo "Remainder:" $((a%b))
```

#### OUTPUT



```
sr_naim@SRN: /mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./arithmetic_operations.sh
Enter a: 20
Enter b: 10
Addition: 30
Subtraction: 10
Multiplication: 200
Division: 2
Remainder: 0
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$
```

## Program No. 2

### Program Topic: Even/ Odd Determination

#### CODE

```
#!/bin/bash

read -p "Enter an integer: " x

if [ $((x%2)) -eq 0 ]
then
    echo $x is even
else
    echo $x is odd
fi
```

#### OUTPUT



```
sr_naim@SRN: /mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./even_odd_input.sh
Enter an integer: 23
23 is odd
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./even_odd_input.sh
Enter an integer: 24
24 is even
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./even_odd_input.sh
Enter an integer: 0
0 is even
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./even_odd_input.sh
Enter an integer: 1
1 is odd
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$
```

## Program No. 3

Program Topic: Generating Prime Numbers within a Range.

### CODE

```
#!/bin/bash
c=0
read -p "Enter starting number: " s
read -p "Enter ending number: " e

for ((i=s;i<=e;i++))
do
    for ((j=2;j<i;j++))
    do
        if [ $((i%j)) -eq 0 ]
        then
            c=$((c+1))
        fi
    done
    if [ $c -eq 0 ] && [ $i -ne 1 ]
    then
        echo $i
    fi
    c=0
done
```

### OUTPUT



```
sr_naim@SRN: /mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./generate_prime.sh
Enter starting number: 1
Enter ending number: 50
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./generate_prime.sh
Enter starting number: 60
Enter ending number: 90
61
67
71
73
79
83
89
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$ ./generate_prime.sh
Enter starting number: 1
Enter ending number: 10
2
3
5
7
sr_naim@SRN:/mnt/c/Users/hp/CSE 3202/Lab 2/Lab Tasks$
```

### Discussion:

- To read user input with a prompt message we use this command.  
`read -p "Message" variable`
- To calculate arithmetic operations, we need to use double first brackets followed by a dollar sign  
`=$((a+b))`
- For if else conditioning, we need to be careful about the condition and bracket orientation. There must be a space after the starting and before the ending of 3<sup>rd</sup> bracket  

```

if [ condition ]
    then
        #code
    else
        #code
fi

```
- For loop operations, indexing is mandatory as no brackets are used.  

```

for ((start;condition;stepsize))
do
    #code
done

```