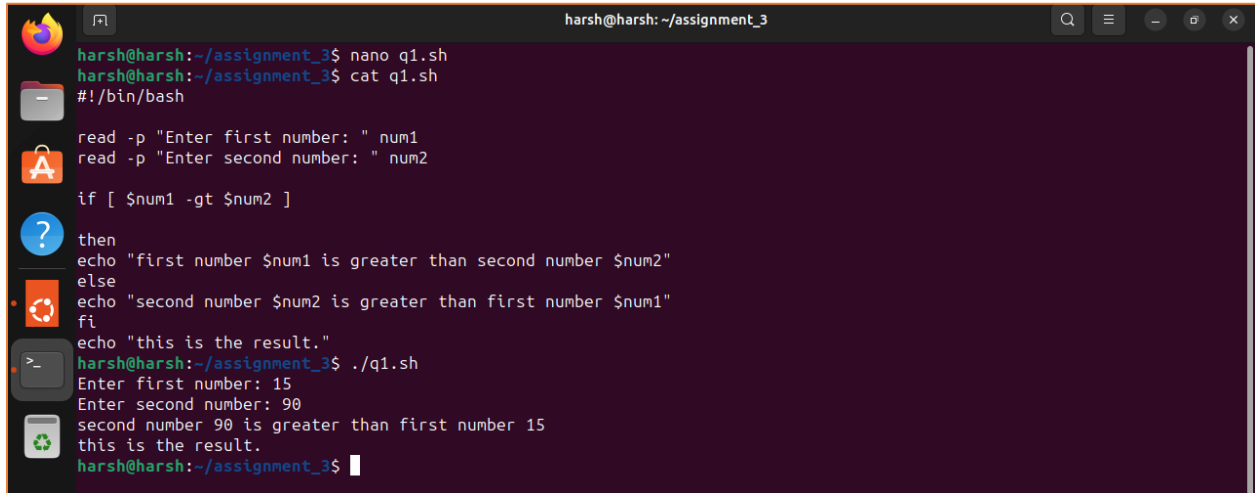


Assignment-3

1. Write a Shell Script to find maximum between two numbers.



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ nano q1.sh
harsh@harsh:~/assignment_3$ cat q1.sh
#!/bin/bash

read -p "Enter first number: " num1
read -p "Enter second number: " num2

if [ $num1 -gt $num2 ]
then
echo "first number $num1 is greater than second number $num2"
else
echo "second number $num2 is greater than first number $num1"
fi
echo "this is the result."
harsh@harsh:~/assignment_3$ ./q1.sh
Enter first number: 15
Enter second number: 90
second number 90 is greater than first number 15
this is the result.
harsh@harsh:~/assignment_3$
```

2. Write a Shell Script to find maximum between three numbers.

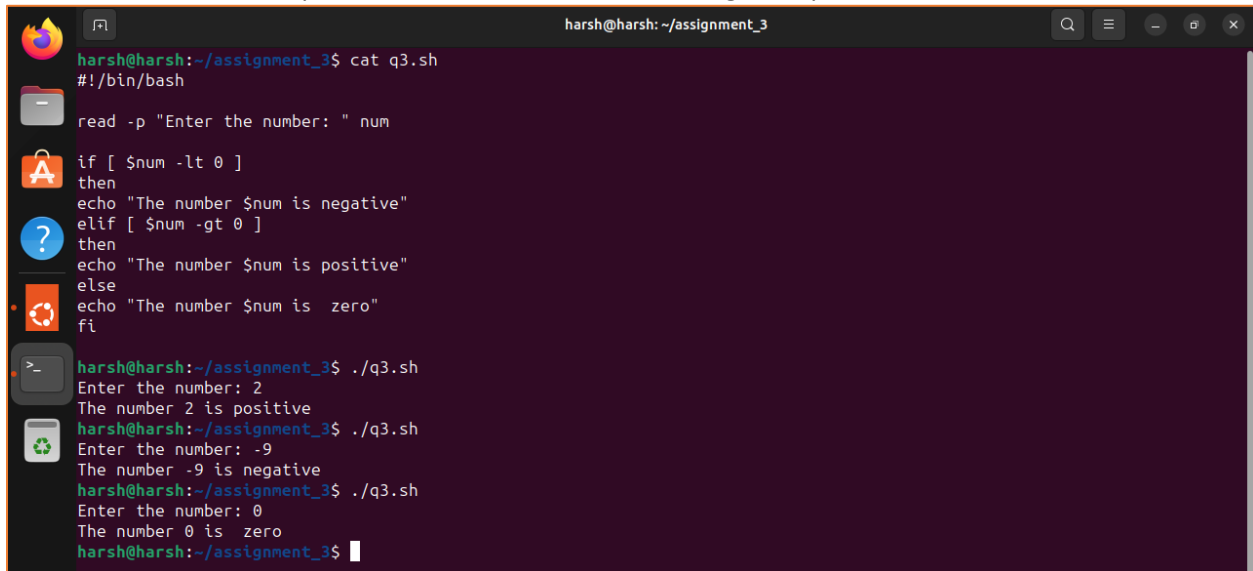


```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q2.sh
#!/bin/bash

read -p "Enter first number: " num1
read -p "Enter second number: " num2
read -p "Enter third number: " num3

if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
echo "$num1 is greatest."
elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
then
echo "$num2 is greater."
else
echo "$num3 is greater."
fi
echo "End of the result."
harsh@harsh:~/assignment_3$ ./q2.sh
Enter first number: 12
Enter second number: 87
Enter third number: 4
87 is greater.
End of the result.
harsh@harsh:~/assignment_3$
```

3. Write a Shell Script to check whether a number is negative, positive or zero.



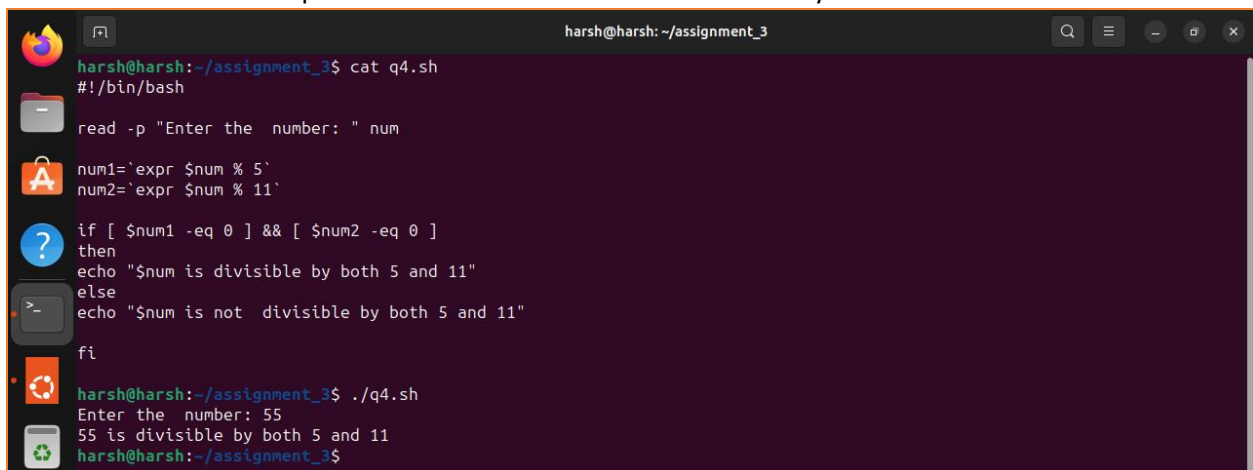
```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q3.sh
#!/bin/bash

read -p "Enter the number: " num

if [ $num -lt 0 ]
then
echo "The number $num is negative"
elif [ $num -gt 0 ]
then
echo "The number $num is positive"
else
echo "The number $num is zero"
fi

harsh@harsh:~/assignment_3$ ./q3.sh
Enter the number: 2
The number 2 is positive
harsh@harsh:~/assignment_3$ ./q3.sh
Enter the number: -9
The number -9 is negative
harsh@harsh:~/assignment_3$ ./q3.sh
Enter the number: 0
The number 0 is zero
harsh@harsh:~/assignment_3$
```

4. Write a Shell Script to check whether a number is divisible by 5 and 11 or not.



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q4.sh
#!/bin/bash

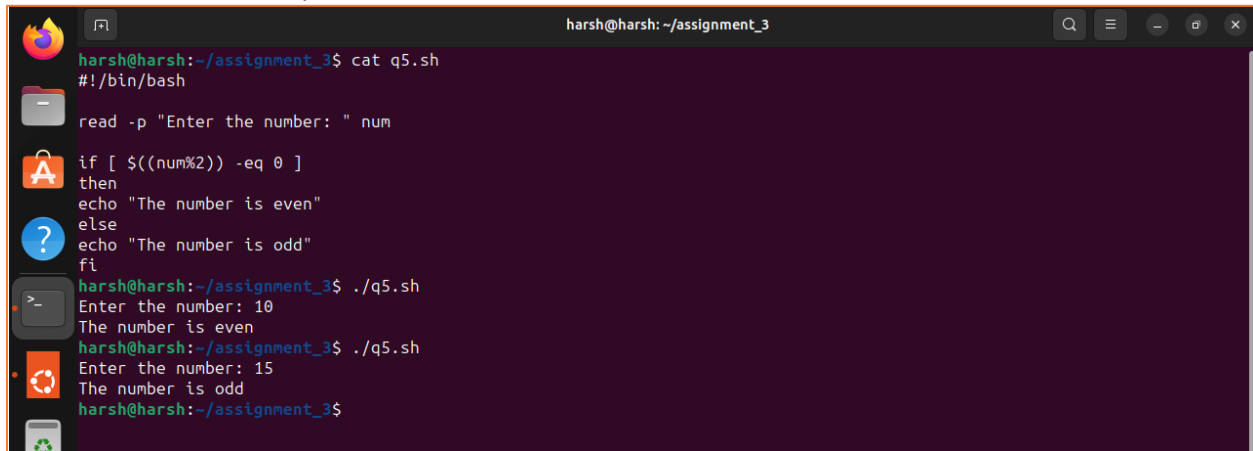
read -p "Enter the number: " num

num1=`expr $num % 5`
num2=`expr $num % 11`

if [ $num1 -eq 0 ] && [ $num2 -eq 0 ]
then
echo "$num is divisible by both 5 and 11"
else
echo "$num is not divisible by both 5 and 11"
fi

harsh@harsh:~/assignment_3$ ./q4.sh
Enter the number: 55
55 is divisible by both 5 and 11
harsh@harsh:~/assignment_3$
```

5. Write a Shell Script to check whether a number is even or odd.



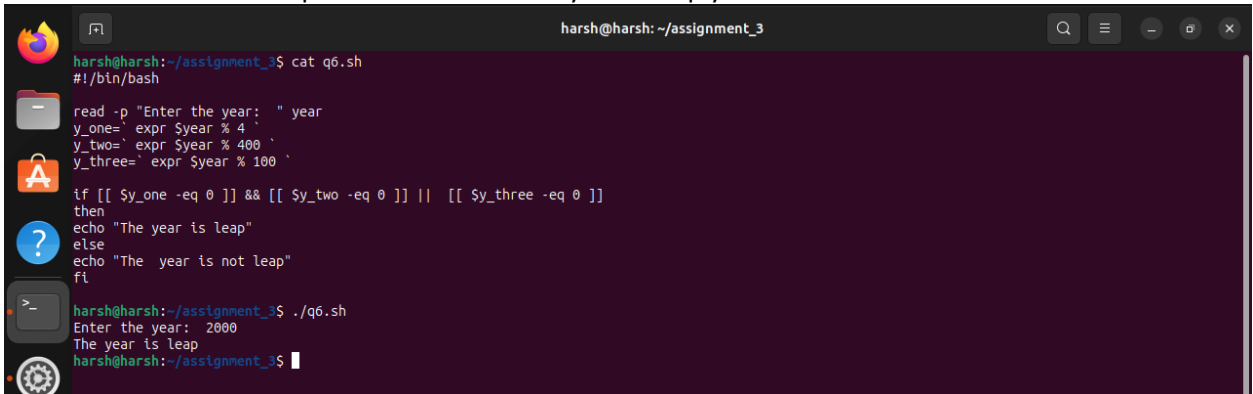
```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q5.sh
#!/bin/bash

read -p "Enter the number: " num

if [ $((num%2)) -eq 0 ]
then
echo "The number is even"
else
echo "The number is odd"
fi

harsh@harsh:~/assignment_3$ ./q5.sh
Enter the number: 10
The number is even
harsh@harsh:~/assignment_3$ ./q5.sh
Enter the number: 15
The number is odd
harsh@harsh:~/assignment_3$
```

6. Write a Shell Script to check whether a year is leap year or not.



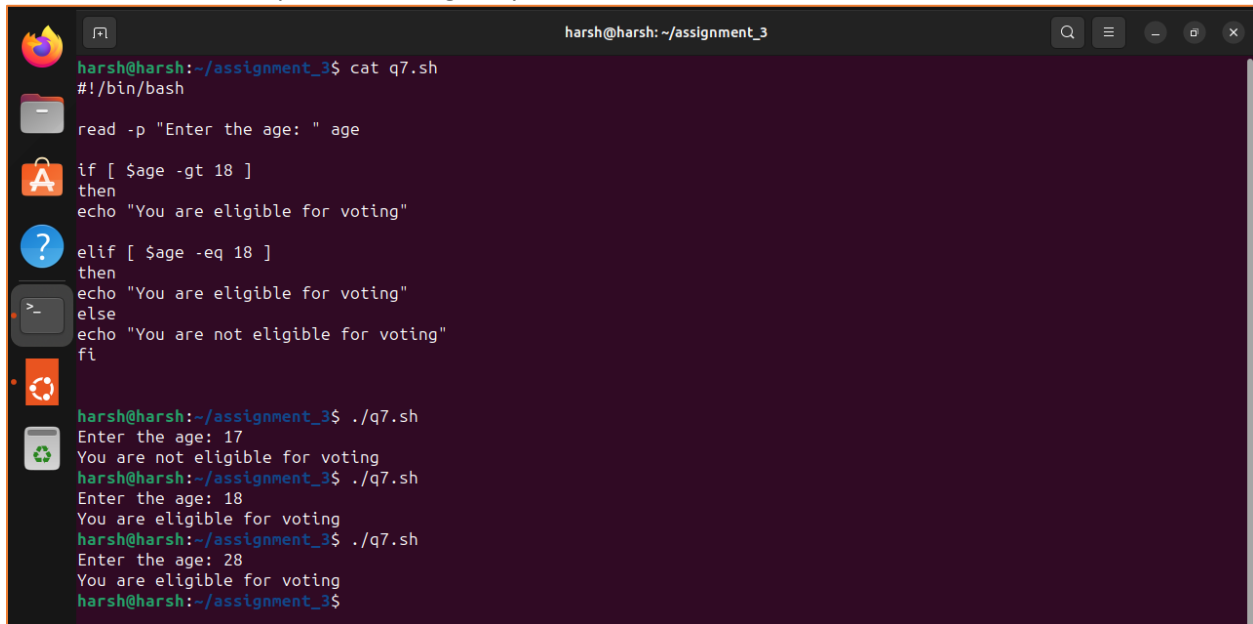
```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q6.sh
#!/bin/bash

read -p "Enter the year: " year
y_one=`expr $year % 4 `
y_two=`expr $year % 400 `
y_three=`expr $year % 100 `

if [[ $y_one -eq 0 ]] && [[ $y_two -eq 0 ]] || [[ $y_three -eq 0 ]]
then
echo "The year is leap"
else
echo "The year is not leap"
fi

harsh@harsh:~/assignment_3$ ./q6.sh
Enter the year: 2000
The year is leap
harsh@harsh:~/assignment_3$
```

7. Write shell script to check eligibility of candidate for voter id card

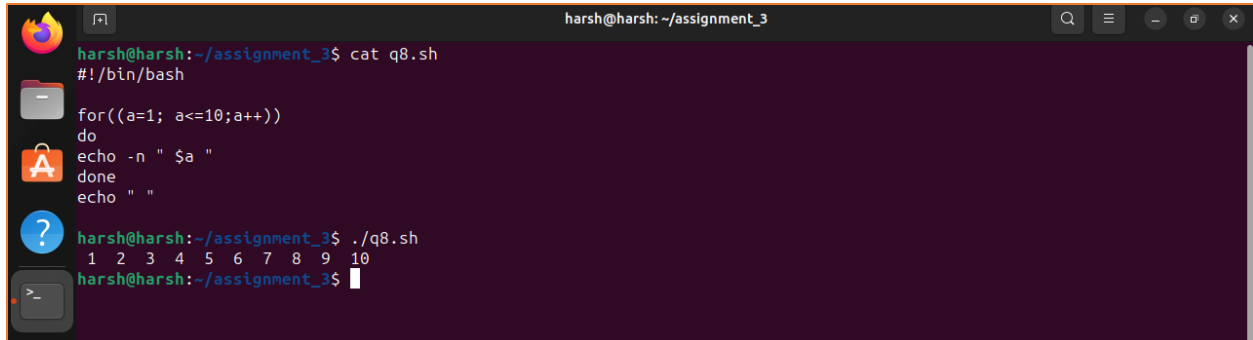


```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q7.sh
#!/bin/bash
read -p "Enter the age: " age
if [ $age -gt 18 ]
then
echo "You are eligible for voting"
elif [ $age -eq 18 ]
then
echo "You are eligible for voting"
else
echo "You are not eligible for voting"
fi
harsh@harsh:~/assignment_3$ ./q7.sh
Enter the age: 17
You are not eligible for voting
harsh@harsh:~/assignment_3$ ./q7.sh
Enter the age: 18
You are eligible for voting
harsh@harsh:~/assignment_3$ ./q7.sh
Enter the age: 28
You are eligible for voting
harsh@harsh:~/assignment_3$
```

8. Shell Script to display the first 10 natural numbers.

Expected Output :

1 2 3 4 5 6 7 8 9 10



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q8.sh
#!/bin/bash
for((a=1; a<=10;a++))
do
echo -n " $a "
done
echo " "
harsh@harsh:~/assignment_3$ ./q8.sh
1 2 3 4 5 6 7 8 9 10
harsh@harsh:~/assignment_3$
```

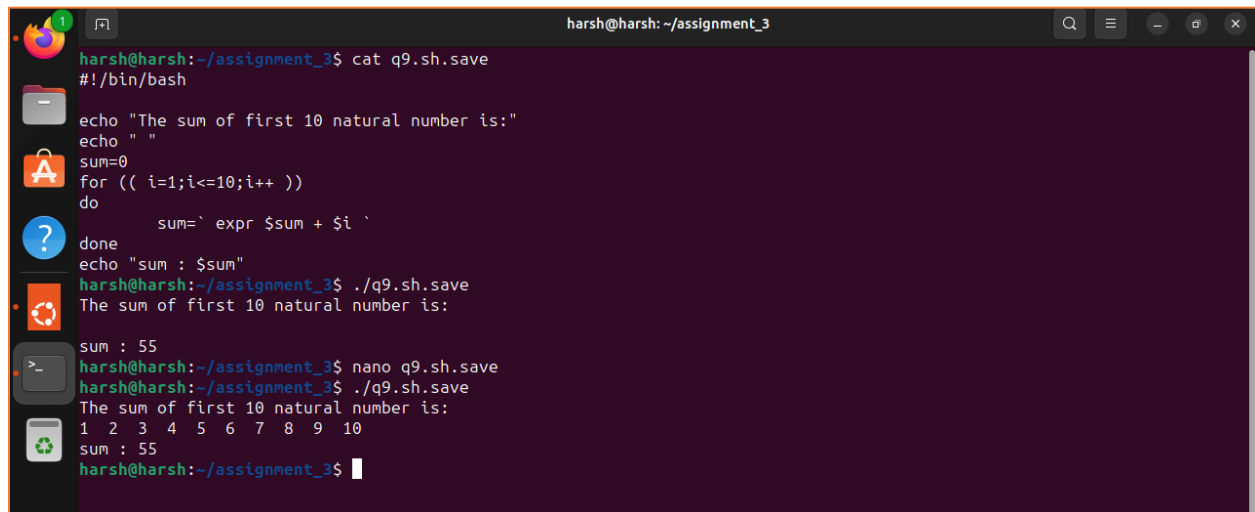
9. Shell Script to compute the sum of the first 10 natural numbers.

Expected Output :

The first 10 natural number is :

1 2 3 4 5 6 7 8 9 10

The Sum is : 55

A terminal window titled 'harsh@harsh: ~/assignment_3' showing the execution of a shell script 'q9.sh.save'. The script calculates the sum of the first 10 natural numbers. The output displayed is: 'The sum of first 10 natural number is:', 'sum : 55'.

```
harsh@harsh:~/assignment_3$ cat q9.sh.save
#!/bin/bash

echo "The sum of first 10 natural number is:"
echo " "
sum=0
for (( i=1;i<=10;i++ ))
do
    sum=`expr $sum + $i `
done
echo "sum : $sum"
harsh@harsh:~/assignment_3$ ./q9.sh.save
The sum of first 10 natural number is:

sum : 55
harsh@harsh:~/assignment_3$ nano q9.sh.save
harsh@harsh:~/assignment_3$ ./q9.sh.save
The sum of first 10 natural number is:
1 2 3 4 5 6 7 8 9 10
sum : 55
harsh@harsh:~/assignment_3$
```

10. Shell Script to display n terms of natural numbers and their sum.

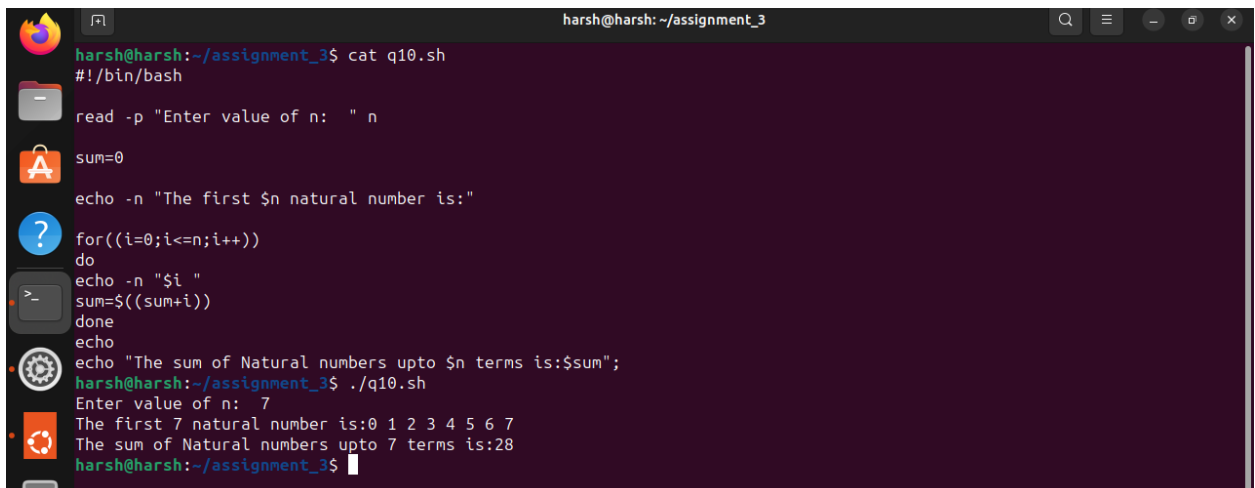
Test Data : 7

Expected Output :

The first 7 natural number is :

1 2 3 4 5 6 7

The Sum of Natural Number upto 7 terms : 28

A terminal window titled 'harsh@harsh: ~/assignment_3' showing the execution of a shell script 'q10.sh'. The script prompts the user for a value 'n' and calculates the sum of the first 'n' natural numbers. The output displayed is: 'The first 7 natural number is:0 1 2 3 4 5 6 7', 'The sum of Natural numbers upto 7 terms is:28'.

```
harsh@harsh:~/assignment_3$ cat q10.sh
#!/bin/bash

read -p "Enter value of n: " n

sum=0

echo -n "The first $n natural number is:"

for((i=0;i<=n;i++))
do
    echo -n "$i "
    sum=$((sum+i))
done
echo
echo "The sum of Natural numbers upto $n terms is:$sum";
harsh@harsh:~/assignment_3$ ./q10.sh
Enter value of n: 7
The first 7 natural number is:0 1 2 3 4 5 6 7
The sum of Natural numbers upto 7 terms is:28
harsh@harsh:~/assignment_3$
```

11. Shell Script to read 10 numbers from the keyboard and find their sum and average.

Test Data :

Input the 10 numbers :

Number-1 :2

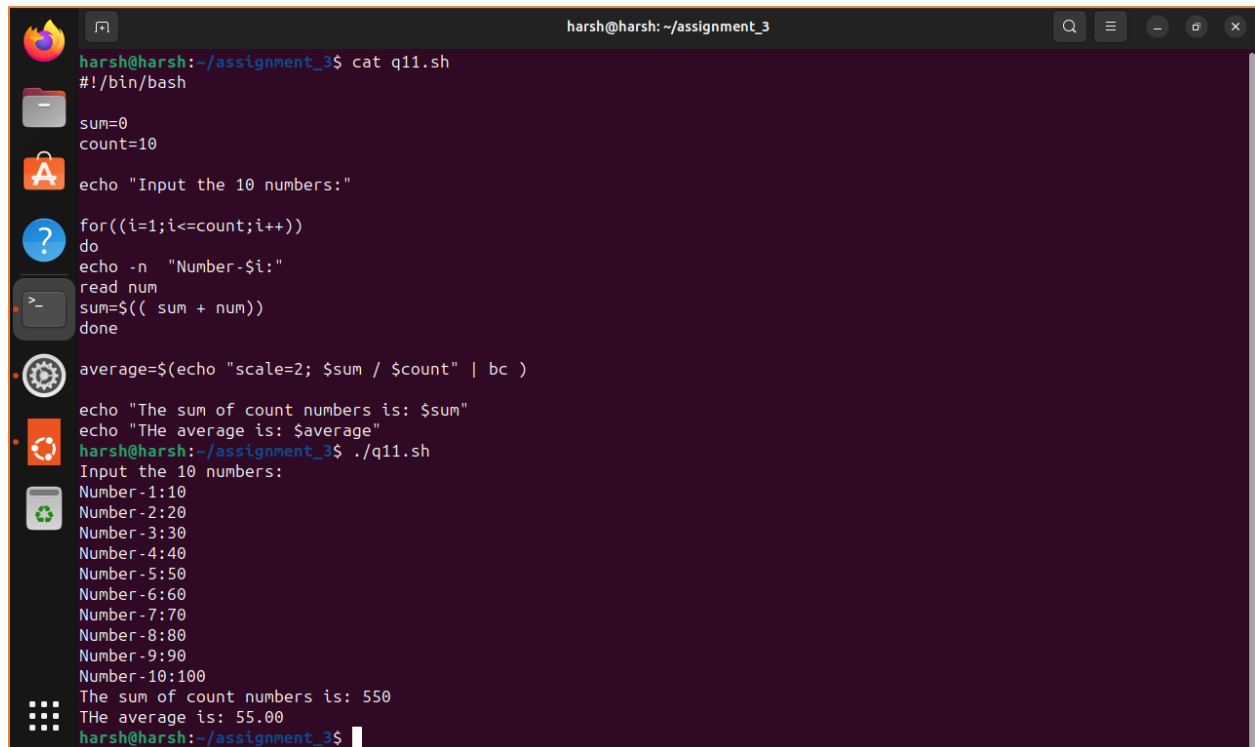
...

Number-10 :2

Expected Output :

The sum of 10 no is : 55

The Average is : 5.500000



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q11.sh
#!/bin/bash
sum=0
count=10
echo "Input the 10 numbers:"
for((i=1;i<=count;i++))
do
echo -n "Number-$i:"
read num
sum=$(( sum + num))
done
average=$(echo "scale=2; $sum / $count" | bc )
echo "The sum of count numbers is: $sum"
echo "The average is: $average"
harsh@harsh:~/assignment_3$ ./q11.sh
Input the 10 numbers:
Number-1:10
Number-2:20
Number-3:30
Number-4:40
Number-5:50
Number-6:60
Number-7:70
Number-8:80
Number-9:90
Number-10:100
The sum of count numbers is: 550
The average is: 55.00
harsh@harsh:~/assignment_3$
```

12. Shell Script to display the cube of the number up to an integer.

Test Data :

Input number of terms : 5

Expected Output :

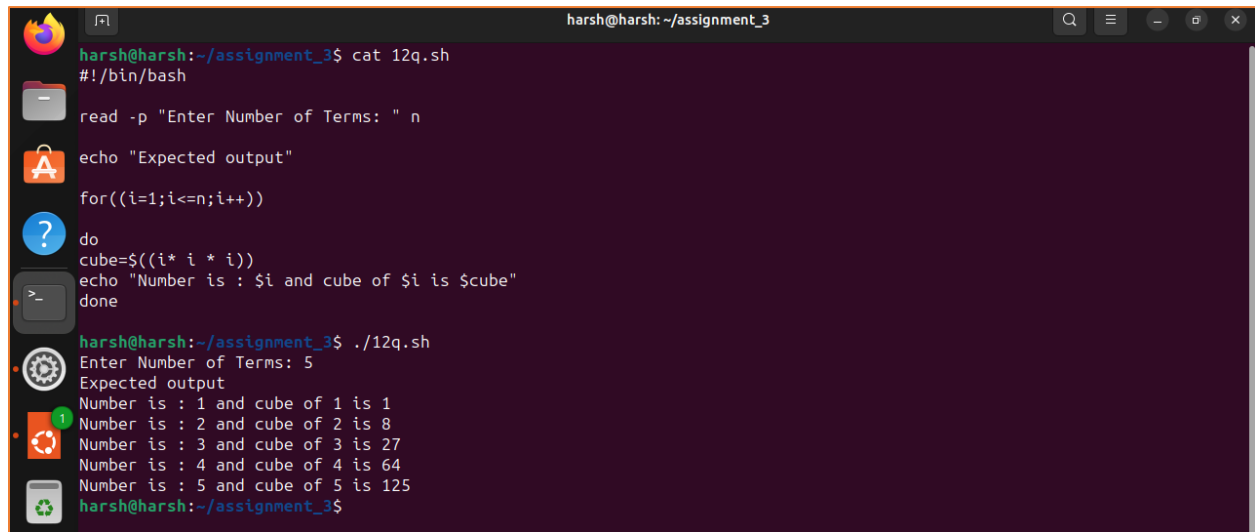
Number is : 1 and cube of the 1 is :1

Number is : 2 and cube of the 2 is :8

Number is : 3 and cube of the 3 is :27

Number is : 4 and cube of the 4 is :64

Number is : 5 and cube of the 5 is :125

A screenshot of a Linux terminal window titled 'harsh@harsh: ~/assignment_3'. The terminal shows the execution of a shell script named '12q.sh'. The script prompts the user to enter the number of terms, which is 5. It then displays the expected output, showing the cube of each number from 1 to 5. The terminal output is as follows:

```
harsh@harsh:~/assignment_3$ cat 12q.sh
#!/bin/bash

read -p "Enter Number of Terms: " n

echo "Expected output"

for((i=1;i<=n;i++))
do
cube=$((i * i * i))
echo "Number is : $i and cube of $i is $cube"
done

harsh@harsh:~/assignment_3$ ./12q.sh
Enter Number of Terms: 5
Expected output
Number is : 1 and cube of 1 is 1
Number is : 2 and cube of 2 is 8
Number is : 3 and cube of 3 is 27
Number is : 4 and cube of 4 is 64
Number is : 5 and cube of 5 is 125
harsh@harsh:~/assignment_3$
```

13. Shell Script to display the multiplication table for a given integer.

Test Data :

Input the number (Table to be calculated) : 15

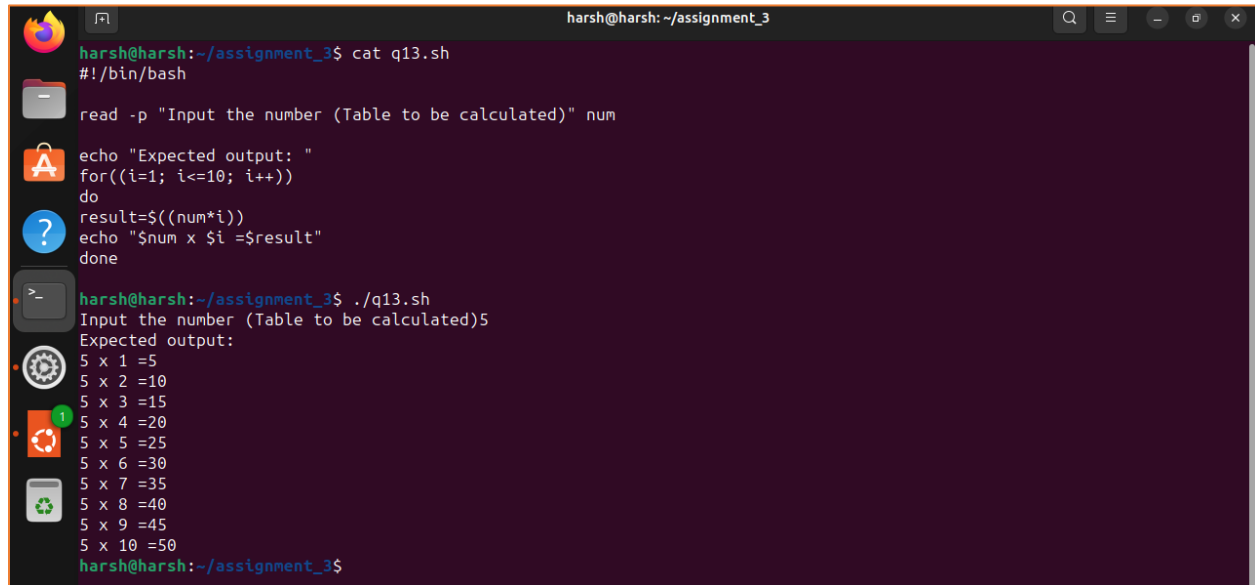
Expected Output :

15 X 1 = 15

...

...

15 X 10 = 150



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q13.sh
#!/bin/bash
read -p "Input the number (Table to be calculated)" num
echo "Expected output: "
for((i=1; i<=10; i++))
do
result=$((num*i))
echo "$num x $i =$result"
done
harsh@harsh:~/assignment_3$ ./q13.sh
Input the number (Table to be calculated)5
Expected output:
5 x 1 =5
5 x 2 =10
5 x 3 =15
5 x 4 =20
5 x 5 =25
5 x 6 =30
5 x 7 =35
5 x 8 =40
5 x 9 =45
5 x 10 =50
harsh@harsh:~/assignment_3$
```


14. Shell Script to display the multiplier table vertically from 1 to n.

Test Data :

Input upto the table number starting from 1 : 8

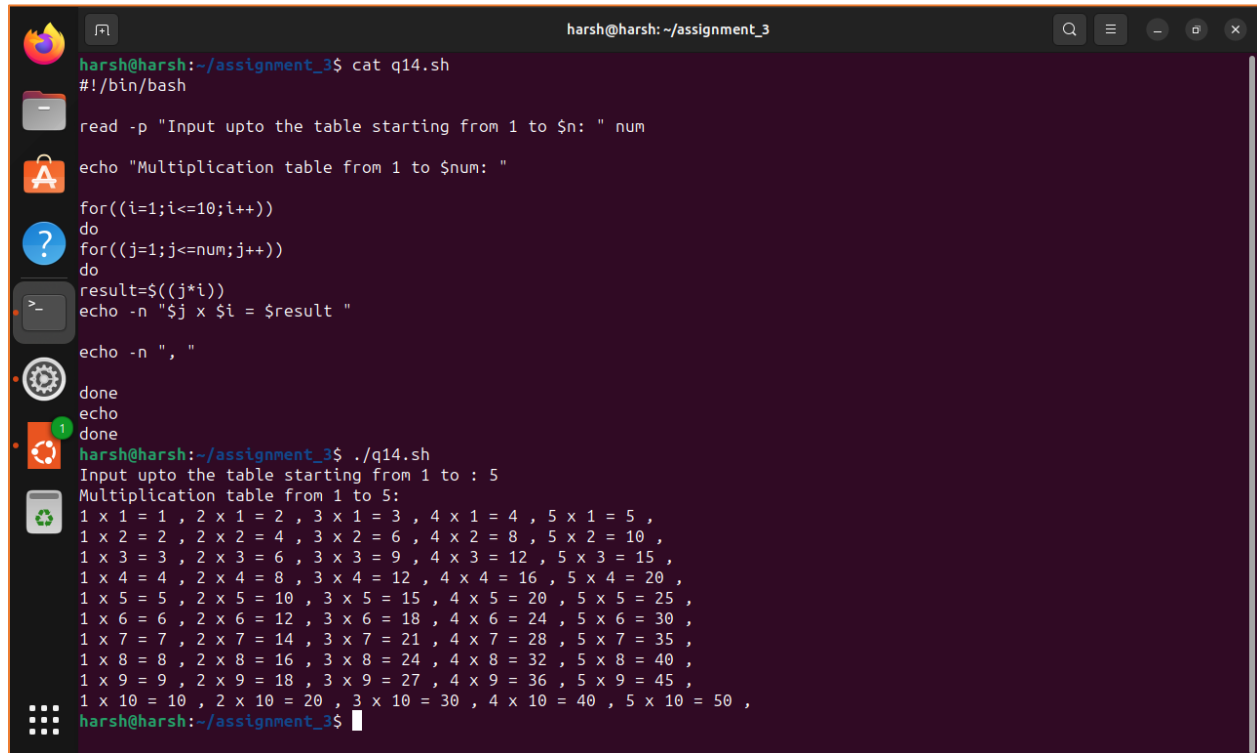
Expected Output :

Multiplication table from 1 to 8

1x1 = 1, 2x1 = 2, 3x1 = 3, 4x1 = 4, 5x1 = 5, 6x1 = 6, 7x1 = 7, 8x1 = 8

...

1x10 = 10, 2x10 = 20, 3x10 = 30, 4x10 = 40, 5x10 = 50, 6x10 = 60, 7x10 = 70, 8x10 = 80



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q14.sh
#!/bin/bash

read -p "Input upto the table starting from 1 to $n: " num

echo "Multiplication table from 1 to $num: "

for((i=1;i<=10;i++))
do
for((j=1;j<=num;j++))
do
result=$((j*i))
echo -n "$j x $i = $result "
echo -n ", "
done
echo
done
done

harsh@harsh:~/assignment_3$ ./q14.sh
Input upto the table starting from 1 to : 5
Multiplication table from 1 to 5:
1 x 1 = 1 , 2 x 1 = 2 , 3 x 1 = 3 , 4 x 1 = 4 , 5 x 1 = 5 ,
1 x 2 = 2 , 2 x 2 = 4 , 3 x 2 = 6 , 4 x 2 = 8 , 5 x 2 = 10 ,
1 x 3 = 3 , 2 x 3 = 6 , 3 x 3 = 9 , 4 x 3 = 12 , 5 x 3 = 15 ,
1 x 4 = 4 , 2 x 4 = 8 , 3 x 4 = 12 , 4 x 4 = 16 , 5 x 4 = 20 ,
1 x 5 = 5 , 2 x 5 = 10 , 3 x 5 = 15 , 4 x 5 = 20 , 5 x 5 = 25 ,
1 x 6 = 6 , 2 x 6 = 12 , 3 x 6 = 18 , 4 x 6 = 24 , 5 x 6 = 30 ,
1 x 7 = 7 , 2 x 7 = 14 , 3 x 7 = 21 , 4 x 7 = 28 , 5 x 7 = 35 ,
1 x 8 = 8 , 2 x 8 = 16 , 3 x 8 = 24 , 4 x 8 = 32 , 5 x 8 = 40 ,
1 x 9 = 9 , 2 x 9 = 18 , 3 x 9 = 27 , 4 x 9 = 36 , 5 x 9 = 45 ,
1 x 10 = 10 , 2 x 10 = 20 , 3 x 10 = 30 , 4 x 10 = 40 , 5 x 10 = 50 ,
harsh@harsh:~/assignment_3$
```

15. Shell Script to display the n terms of odd natural numbers and their sum.

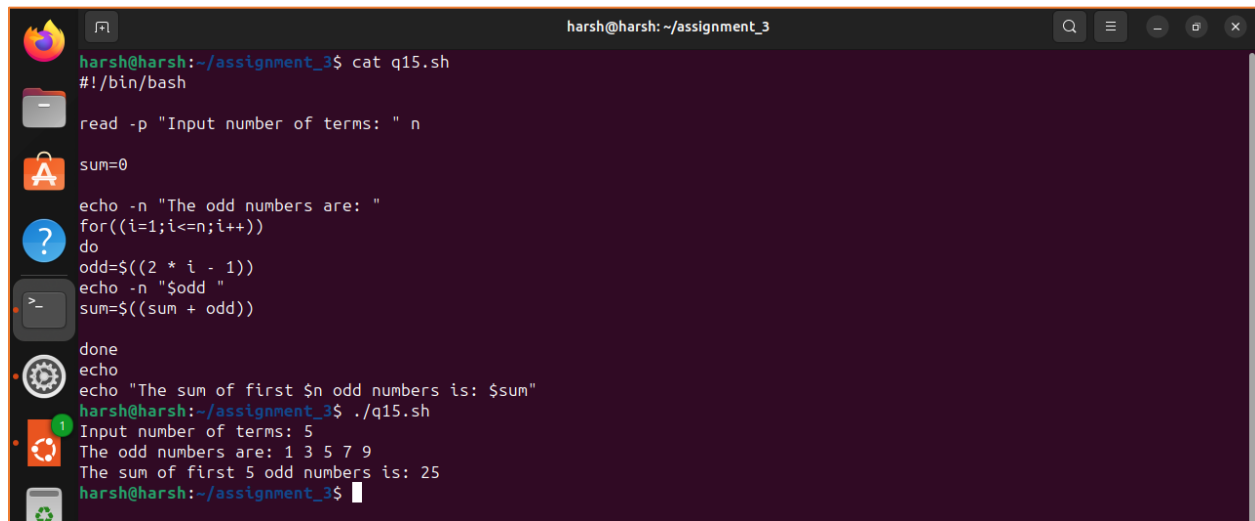
Test Data

Input number of terms : 10

Expected Output :

The odd numbers are : 1 3 5 7 9 11 13 15 17 19

The Sum of odd Natural Number upto 10 terms : 100



```
harsh@harsh: ~/assignment_3
harsh@harsh:~/assignment_3$ cat q15.sh
#!/bin/bash
read -p "Input number of terms: " n
sum=0
echo -n "The odd numbers are: "
for((i=1;i<=n;i++))
do
    odd=$((2 * i - 1))
    echo -n "$odd "
    sum=$((sum + odd))
done
echo
echo "The sum of first $n odd numbers is: $sum"
harsh@harsh:~/assignment_3$ ./q15.sh
Input number of terms: 5
The odd numbers are: 1 3 5 7 9
The sum of first 5 odd numbers is: 25
harsh@harsh:~/assignment_3$
```