

## Assignment - 11 loops

### 1. Write a python script to calculate sum of first N natural number.

```
n=int(input("Enter range of natural numbers:"))
sum=0
for e in range(1,n+1):
    sum=sum+e
print("Sum is:",sum)
```

#### Output:-

Enter range of natural numbers:5

Sum is: 15

### 2. Write a python script to calculate sum of squares of first N natural numbers.

```
n=int(input("Enter range of natural numbers:"))
sum=0
for e in range(1,n+1):
    sum=sum+e**2
print("Sum is:",sum)
```

#### Output:-

Enter range of natural numbers:5

Sum is: 55

### 3. Write a python script to calculate sum of cubes of first N natural numbers.

```
n=int(input("Enter range of natural numbers:"))
sum=0
for e in range(1,n+1):
    sum=sum+e**3
print("Sum is:",sum)
```

**Output:-**

Enter range of natural numbers:5

Sum is: 225

**4. Write a python script to calculate sum of first N odd natural numbers.**

```
n=int(input("Enter a number:"))
```

```
sum=0
```

```
m=n*2
```

```
for e in range(1,m,2):
```

```
    sum=sum+e
```

```
print("Sum is:",sum)
```

**Output:-**

Enter a number:6

Sum is: 36

**5. Write a python script to calculate sum of first N even natural numbers.**

```
n=int(input("Enter a number:"))
```

```
sum=0
```

```
m=n*2
```

```
for e in range(2,m+2,2):
```

```
    sum=sum+e
```

```
print("Sum is:",sum)
```

**Output:-**

Enter a number:5

Sum is: 30

**6. Write a python script to calculate factorial of a given number.**

```
n=int(input("Enter a number:"))
```

```
fact=1
```

```
for e in range(1,n+1):  
    fact=fact*e  
print("Factorial is:",fact)
```

**Output:-**

Enter a number:5  
Factorial is: 120

**7. Write a python script to count digits in a given number.**

```
n=int(input("Enter a number:"))  
count=0  
while n!=0:  
    n//=10  
    count=count+1  
print("Total number of digits are:",count)
```

**Output:-**

Enter a number:456  
Total number of digits are: 3

**8. Write a python script to calculate sum of digits of a given number.**

```
n=int(input("Enter a number:"))  
sum=0  
while n!=0:  
    digit=n%10  
    sum+=digit  
    n//=10  
print("Sum of digits:",sum)
```

**Output:-**

Enter a number:456

Sum of digits: 15

**9. Write a python script to print binary equivalent of a given decimal number. (do not use bin() method)**

```
decimal_number = int(input("Enter a decimal number: "))  
binary_equivalent = ""  
while decimal_number > 0:  
    remainder = decimal_number % 2  
    binary_equivalent = str(remainder) + binary_equivalent  
    decimal_number //= 2  
print("Binary equivalent:", binary_equivalent)
```

**Output:-**

Enter a decimal number: 5

Binary equivalent: 101

**10. Write a python script to print the octal equivalent of a given decimal number. (do not use oct() method)**

```
decimal_number = int(input("Enter a decimal number: "))  
octal_equivalent = ""  
while decimal_number > 0:  
    remainder = decimal_number % 8  
    octal_equivalent = str(remainder) + octal_equivalent  
    decimal_number //= 8  
print("Octal equivalent:", octal_equivalent)
```

**Output:-**

Enter a decimal number: 15

Octal equivalent: 17