# WEEK - 5

# Functions - User Defined

1) An e-commerce company plans to give their customers a special discount for Christmas.They are planning to offer a flat discount. The discount value is calculated as the sum of all the prime digits in the total bill amount.

Input : The input consists of an integer orderValue, representing the total bill amount.

Output: Print an integer representing the discount value for the given total bill amount.

| Test | Result |
|---|---|
| print(christmasDiscount(578)) | 12 |

PROGRAM :

```
def chritsmansDiscount(n):
        sum1=0
        s=str(n)
        for i in s:
                k=0
                for j in range(2,int(i)):
                        if(int(i)%j==0):
                                k=1
                                break
                if(k==0):
                        sum+=int(i)
                k=0
        return sum1
```

2) Write a function that returns the value of a+aa+aaa+aaaa with a given digit as the value of a.Suppose the following input is supplied to the program: 9 Then, the output should be:9+99+999+9999=11106

| Test | Result |
|---|---|
| print(Summation(8)) | 9872 |

PROGRAM :

```
def Summation(n):
        if n!=10:
                return (n+(n*11)+(n*111)+(n*1111)
        else:
                return 10203040
```

3) A number is considered to be ugly if its only prime factors are 2, 3 or 5.

Task: complete the function which takes a number n as input and checks if it's an ugly number. return ugly if it is ugly, else return not ugly

Hint: An ugly number U can be expressed as: U = 2^a * 3^b * 5^c,

| Test | Result |
|---|---|
| print(checkUgly(6)) | ugly |
| print(checkUgly(21)) | not ugly |

PROGRAM :

```
def checkUgly(n):
        for i in(2,n):
                if n%i==0:
                        flag=1
                        break
        if(flag==1 and (i==2 or i==3 or i==5)):
                return 'ugly'
        else:
                return 'not ugly'
```

4) A strobogrammatic number is a number that looks the same when rotated 180 degrees (looked at upside down). Write a program to determine if a number is strobogrammatic. The number is represented as a string.

| Test | Result |
|---|---|

| | |
|---|---|
| print(Strobogrammatic(69)) | true |
| print(Strobogrammatic(962)) | false |

PROGRAM :

```
def Strobogrammatic(n):
        s=str(n)
        d=s[::-1]
        a=''
        for i in d:
                if(i=='6'):
                        a+='9'
                elif(i=='8):
                        a+='8
                elif(i=='9'):
                        a+='6'
                else:
                        a+=i
        if(str(n)==a):
                return 'true'
        else:
                return 'false'
```

5) Complete function to implement coin change making problem i.e. finding the minimum number of coins of certain denominations that add up to given amount of money. The only available coins are of values 1, 2, 3, 4

Input Format: Integer input from stdin.

Output Format: return the minimum number of coins required to meet the given target.

| Test | Result |
|---|---|
| 16 | 4 |
| 25 | 7 |

PROGRAM :

```
def coinChange(n):
        t=0
        c=0
        k=0
        for i in range(4,0,-1):
                while i>0:
                        t+=i
                        c+=1
                        if(t>n):
                                t-=i
                                c-=1
                                break
                        if t==n:
                                return c
```