**PROGRAMMING ASSIGNMENT 4 PYTHON**

1. Write a Python Program to Find the Factorial of a Number?

#Python Program to Find the Factorial of a Number

num = int(input("Enter the value:"))

factorial = 1

if num < 0:

    print("No")

elif num == 0:

    print("The factorial of 0 is 1")

else:

    for i in range(1,num+1):

        factorial = factorial \* i

    print("The factorial of",num,"is", factorial)

**Enter the value:6**

**The factorial of 6 is 720**

**Enter the value:-1**

**No**

**Enter the value:0**

**The factorial of 0 is 1**

1. Write a Python Program to Display the multiplication Table.

# Python Program to Display the multiplication Table

# Multiplication table from 1 to 12

num = int(input("Enter the value:"))

for i in range (1, 11):

    print(num, 'x', i,  '=', num\*i)

**Enter the value:11**

**11 x 1 = 11**

**11 x 2 = 22**

**11 x 3 = 33**

**11 x 4 = 44**

**11 x 5 = 55**

**11 x 6 = 66**

**11 x 7 = 77**

**11 x 8 = 88**

**11 x 9 = 99**

**11 x 10 = 110**

**Enter the value:2**

**2 x 1 = 2**

**2 x 2 = 4**

**2 x 3 = 6**

**2 x 4 = 8**

**2 x 5 = 10**

**2 x 6 = 12**

**2 x 7 = 14**

**2 x 8 = 16**

**2 x 9 = 18**

**2 x 10 = 20**

1. Write a Python Program to Print the Fibonacci sequence.

# Python Program to Print the Fibonacci sequence

num = int(input("Enter the value:"))

num1= 0

num2 = 1

count =0

if num <= 0:

    print("No")

elif num ==1:

    print("Fibonacci Sequence upto",num)

    print(num1)

else:

    print("Fibonacci sequence")

while count < num:

#    print("num1= ",num1)

#    print("num2 = ",num2)

#    print("num= ",num)

#    print('count= ',count)

    num3=num1+num2

    print("num3 =", num3)

    num1=num2

    num2=num3

    count+=1

**Enter the value:5**

**Fibonacci sequence**

**num3 = 1**

**num3 = 2**

**num3 = 3**

**num3 = 5**

**num3 = 8**

1. Write a Python Program to Check Armstrong Number.

# # Python Program to Check Armstrong Number

num = int(input("Enter the value:"))

n = num

#initialize sum

sum = 0

power = len(str(n))

# find the sum of cube of each digit

while n > 0:

    print ("n= ",n)

    digit = n % 10

    print ("digit= ",digit)

    sum = sum + digit \*\* power

    print("sum= ",sum)

    n = n // 10

    print("n = ", n)

if num == sum:

    print (num, "Armstrong number")

else:

    print(num, "Not Armstrong number")

**Enter the value:371**

**n= 371**

**digit= 1**

**sum= 1**

**n = 37**

**n= 37**

**digit= 7**

**sum= 344**

**n = 3**

**n= 3**

**digit= 3**

**sum= 371**

**n = 0**

**371 Armstrong number**

1. Write a Python Program to Find Armstrong Number in an Interval.

#Python Program to Find Armstrong Number in an Interval

lower = int(input("Enter lower range: "))

upper = int(input("Enter upper range: "))

for num in range(lower,upper + 1):

   sum = 0

   temp = num

   while temp > 0:

       digit = temp % 10

       sum += digit \*\* 3

       temp //= 10

       if num == sum:

            print(num)

**Enter lower range: 100**

**Enter upper range: 800**

**125**

**153**

**216**

**370**

**371**

**407**

**729**

1. Write a Python Program to Find the Sum of Natural Numbers.

# Python Program to Find the Sum of Natural Numbers

num = int(input("Enter a number: "))

if num < 0:

   print("Enter a positive number")

else:

   sum = 0

   # use while loop to iterate un till zero

   while(num > 0):

       sum += num

       num -= 1

   print("The sum is",sum)

**Enter a number: 11**

**The sum is 66**

**Enter a number: 20**

**The sum is 210**