**Python Programming Assignment 4**

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

def factorial(n):

# single line to find factorial

return 1 if (n==1 or n==0) else n \* factorial(n - 1);

num = 5;

print("Factorial of",num,"is",

factorial(num))

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

num = int(input("Display multiplication table of? "))

# Iterate 10 times from i = 1 to 10

for i in range(1, 11):

print(num, 'x', i, '=', num\*i)

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

nterms = int(input("How many terms? "))

n1, n2 = 0, 1

count = 0

# check if the number of terms is valid

if nterms <= 0:

print("Please enter a positive integer")

# if there is only one term, return n1

elif nterms == 1:

print("Fibonacci sequence upto",nterms,":")

print(n1)

# generate fibonacci sequence

else:

print("Fibonacci sequence:")

while count < nterms:

print(n1)

nth = n1 + n2

# update values

n1 = n2

n2 = nth

count += 1

1. Write a Python Program to Check Armstrong Number?

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

sum = 0

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

if num == sum:

print(num,"is an Armstrong number")

else:

print(num,"is not an Armstrong number")

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

# take input from the user

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

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

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

# initialize sum

sum = 0

# find the sum of the cube of each digit

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

if num == sum:

print(num)

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

num = 16

if num < 0:

print("Enter a positive number")

else:

sum = 0

# use while loop to iterate until zero

while(num > 0):

sum += num

num -= 1

print("The sum is", sum)