**PROGRAM 2**

1. Defined as a function F as Fn = Fn-1 + Fn-2. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed.

**SOURCE CODE**

def fn(n):

if n == 1:

return 0

elif n == 2:

return 1

else:

return fn(n-1) + fn(n-2)

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

if num > 0:

print("fn(",num,") = ",fn(num),sep ="")

else:

print("error in input")

**OUTPUT**

Enter a number : 6

fn(6) = 5

Enter a number : asc

Try with numeric value

Enter a number : -3

Input should be greater than 0

1. Develop a python program to convert binary to decimal, octal to hexadecimal using functions.

**SOURCE CODE**

def BinToDec(b):

return int(b,2)

def OctToHex(o):

return hex(int(o,8))

bnum = input("enter the binary number: ")

dnum = BinToDec(bnum)

print("\nEquivalent Decimal value = ",dnum)

onum = input("enter the octal number: ")

hnum = OctToHex(onum)

print("\nEquivalent Hexadecimal value = ",hnum[2:].upper())

**OUTPUT**

Enter the binary number : 1010

Equivalent Decimal value = 10

Enter the octal number : 73

Equivalent hexadecimal value = 3B

**PROGRAM 3**

1. Write a Python program that accepts a sentence and find the number of words,digits, uppercase letters and lowercase letters.

**SOURCE CODE**

sentence = input("enter a sentence: ")

wordList = sentence.split(" ")

print("this sentence has", len(wordList), "words")

digCnt = upCnt = loCnt = 0

for ch in sentence:

if '0' <= ch <= '9':

digCnt += 1

elif 'A' <= ch <= 'Z':

upCnt += 1

elif 'a' <= ch <= 'z':

loCnt += 1

print("This sentence has", digCnt, "digits", upCnt, "upper case letters", loCnt, "lower case letters")

**OUTPUT**

enter a sentence :

John went to market

This sentence has 4 words

This sentence has 0 digits 1 upper case letters 16 lower case letters

1. Write a Python program to find the string similarity between two given strings

**SOURCE CODE**

str1 = input("Enter String 1 \n")

str2 = input("Enter String 2 \n")

if len(str2) < len(str1):

short = len(str2)

long = len(str1)

else:

short = len(str1)

long = len(str2)

match\_count = 0

for i in range(short\_string\_length):

if str1[i] == str2[i]:

match\_count += 1

print("Similarity between two said strings: ")

print(match\_count/long\_string\_length)

**OUTPUT**

Enter String 1

HAPPY

Enter String 2

GOOGLE

Similarity between two said strings:

0.0

Enter String 1 : SWEET

Enter String 2 : SWEET

Similarity between strings "SWEET" and "SWEET" is : 1.0

Enter String 1 : FACE

Enter String 2 : FACEBOOK

Similarity between strings "FACE" and "FACEBOOK" is : 0.6666666666666666