1. Write a Python program to check if the given number is a Disarium Number?

import math

def digitsCount(Number):

length = 0

while Number != 0:

length = length + 1

Number = Number // 10

return length

def digitsSum(Number, length):

Sum = 0

rem = 0

while Number > 0:

rem = Number % 10

Sum = Sum + math.pow(rem, length)

Number = Number // 10

length = length - 1

return Sum

Number = int(input("Enter the Number to Check Disarium Number = "))

length = digitsCount(Number)

Sum = digitsSum(Number, length)

print("The Sum of the Digits = %d" %Sum)

if Sum == Number:

print("%d is a Disarium Number." %Number)

else:

print("%d is Not a Disarium Number." %Number)

1. Write a Python program to print all disarium numbers between 1 to 100?

#calculateLength() will count the digits present in a number

**def** calculateLength(n):

    length = 0;

**while**(n != 0):

        length = length + 1;

        n = n//10;

**return** length;

#sumOfDigits() will calculates the sum of digits powered with their respective position

**def** sumOfDigits(num):

    rem = sum = 0;

    len = calculateLength(num);

**while**(num > 0):

        rem = num%10;

        sum = sum + (rem\*\*len);

        num = num//10;

        len = len - 1;

**return** sum;

result = 0;

#Displays all disarium numbers between 1 and 100

**print**("Disarium numbers between 1 and 100 are");

**for** i **in** range(1, 101):

    result = sumOfDigits(i);

**if**(result == i):

**print**(i),

1. Write a Python program to check if the given number is Happy Number?

def is\_Happy\_num(n):

past = set()

while n != 1:

n = sum(int(i)\*\*2 for i in str(n))

if n in past:

return False

past.add(n)

return True

print(is\_Happy\_num(7))

print(is\_Happy\_num(932))

print(is\_Happy\_num(6))

1. Write a Python program to print all happy numbers between 1 and 100?

#isHappyNumber() will determine whether a number is happy or not

**def** isHappyNumber(num):

    rem = sum = 0

    #Calculates the sum of squares of digits

**while**(num > 0):

        rem = num%10;

        sum = sum + (rem\*rem);

        num = num//10;

**return** sum

#Displays all happy numbers between 1 and 100

**print**("List of happy numbers between 1 and 100: ");

**for** i **in** range(1, 101):

    result = i

    #Happy number always ends with 1 and

    #unhappy number ends in a cycle of repeating numbers which contains 4

**while**(result != 1 **and** result != 4):

        result = isHappyNumber(result)

**if**(result == 1):

**print**(i+’ ‘)

1. Write a Python program to determine whether the given number is a Harshad Number?

# Harshad Number

# Reading number

number = int(input('Enter number: '))

# Making copy of number for later use

copy = number

# Finding sum of digit

digit\_sum = 0

while number:

digit\_sum += number%10

number //= 10

# Checking divisibility & making decision

if copy%digit\_sum == 0:

print('%d is Harshad Number' % (copy))

else:

print('%d is Not Harshad Number' % (copy))

1. Write a Python program to print all pronic numbers between 1 and 100?

def checkPronic(Number):

i = 0

flag = 0

while i <= Number:

if Number == i \* (i + 1):

flag = 1

break

i = i + 1

return flag

minPro = int(input("Enter the Minimum Pronic Number = "))

maxPro = int(input("Enter the Maximum Pronic Number = "))

print("\nThe List of Pronic Numbers from {0} and {1}".format(minPro, maxPro))

for i in range(minPro, maxPro):

if(checkPronic(i) == 1):

print(i, end = ' ')