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

num = input('enter a number: ')

sum = 0

for i in range(0,len(num)):

sum = sum+int(num[i])\*\*(i+1)

if sum==int(num):

print ('Disarium number')

else:

print ('Not Disarium number')

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

for j in range(1,100):

num = str(j) *#convert number to string so we can work on each digit*

sum = 0

for i in range(0,len(num)):

sum = sum+int(num[i])\*\*(i+1)

if sum==j:

print (sum)

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

def happy(n):

past=[] *#list to store every sum*

while n!=1: *#loop will run until either sum =1 or n in past*

past.append(n)

n=sum(int(i)\*\*2 for i in str(n)) *#sum function used over a generator*

if n in past:

return False

return True

num = int(input('enter a number '))

if happy(num):

print('Happy Number')

else:

print('Not happy number')

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

def happy(n):

past=[]

while n!=1:

past.append(n)

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

if n in past:

return False

return True

for i in range(1,101):

if happy(i):

print(i)

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

def harshad(n): *#function to determine if a number is harshad*

if n%sum(int(i) for i in str(n))==0: *#number should be divisible by sum of its digit*

return True

else:

return False

num = int(input('enter the number'))

if harshad(num):

print ('harshad number')

else:

print ('Not harshad number')

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

def pronic(n): *#function to determine if a number is pronic*

for i in range(n):

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

return True

i+=1

return False

for i in range(1,101):

if pronic(i):

print (i)