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

def is\_disarium(num):

temp = 0

for i in range(len(str(num))):

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

return temp == num

num = 25

print("\nIs",num,"is Disarium number?",is\_disarium(num))

num = 89

print("\nIs",num,"is Disarium number?",is\_disarium(num))

num = 75

print("\nIs",num,"is Disarium number?",is\_disarium(num))

num = 125

print("\nIs",num,"is Disarium number?",is\_disarium(num))

num = 518

print("\nIs",num,"is Disarium number?",is\_disarium(num))

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

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?

def check\_happy\_num(my\_num):

remaining = sum\_val = 0

while(my\_num > 0):

remaining = my\_num%10

sum\_val = sum\_val + (remaining\*remaining)

my\_num = my\_num//10

return sum\_val

print("The list of happy numbers between 1 and 100 are : ")

for i in range(1, 101):

my\_result = i

while(my\_result != 1 and my\_result != 4):

my\_result = check\_happy\_num(my\_result)

if(my\_result == 1):

print(i)

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

num = 156;

rem = sum = 0;

#Make a copy of num and store it in variable n

n = num;

#Calculates sum of digits

while(num > 0):

rem = num%10;

sum = sum + rem;

num = num//10;

#Checks whether the number is divisible by the sum of digits

if(n%sum == 0):

print(str(n) + " is a harshad number");

else:

print(str(n) + " is not a harshad number");

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

def isPronicNumber(num):

flag = False;

for j in range(1, num+1):

#Checks for pronic number by multiplying consecutive numbers

if((j\*(j+1)) == num):

flag = True;

break;

return flag;

#Displays pronic numbers between 1 and 100

print("Pronic numbers between 1 and 100: ");

for i in range(1, 101):

if(isPronicNumber(i)):

print(i),

print(" ")