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

Ans.

def checkDisariumNumber():

in\_num = input('Enter a Number: ')

sum = 0

for item in range(len(in\_num)):

sum = sum + int(in\_num[item])\*\*(item+1)

if sum == int(in\_num):

print(f'{in\_num} is a Disarium Number')

else:

print(f'{in\_num} is a Not Disarium Number')

checkDisariumNumber()

checkDisariumNumber()

OUTPUT:

Enter a Number: 175

175 is a Disarium Number

Enter a Number: 100

100 is a Not Disarium Number

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

Ans.

def calculateLength(n):

length = 0;

while (n != 0):

length = length + 1;

n = n // 10;

return length;

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;

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

for i in range(1, 101):

result = sumOfDigits(i);

if (result == i):

print(i),

OUTPUT:

Disarium numbers between 1 and 100 are

1

2

3

4

5

6

7

8

9

89

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

Ans.

def checkHappyNumber():

in\_num = input('Enter a Number: ')

in\_num\_duplicate = in\_num

trackNumber = set()

while True:

if in\_num != '1' and str(in\_num) not in trackNumber:

trackNumber.add(in\_num)

sum = 0

for ele in range(len((in\_num))):

sum = sum + int(in\_num[ele])\*\*2

in\_num = str(sum)

elif str(in\_num) in trackNumber:

print(f'{in\_num\_duplicate} is not a Happy Number')

break

else:

print(f'{in\_num\_duplicate} is a Happy Number')

break

checkHappyNumber()

checkHappyNumber()

OUTPUT:

Enter a Number: 125

125 is not a Happy Number

Enter a Number: 100

100 is a Happy Number

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

Ans.

def isHappyNumber(num):

rem = sum = 0;

while (num > 0):

rem = num % 10;

sum = sum + (rem \* rem);

num = num // 10;

return sum;

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

for i in range(1, 101):

result = i;

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

result = isHappyNumber(result);

if (result == 1):

print(i),

print(" "),

OUTPUT:

List of happy numbers between 1 and 100:

1

7

10

13

19

23

28

31

32

44

49

68

70

79

82

86

91

94

97

100

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

Ans.

def checkHarshadNumber():

in\_num = input('Enter a Number: ')

sum = 0

for item in range(len(in\_num)):

sum = sum + int(in\_num[item])

if int(in\_num) % sum == 0:

print(f'{in\_num} is a Harshad Number')

else:

print(f'{in\_num} is a Not Harshad Number')

checkHarshadNumber()

checkHarshadNumber()

OUTPUT:

Enter a Number: 125

125 is a Not Harshad Number

Enter a Number: 100

100 is a Harshad Number

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

Ans.

def isPronicNumber(num):

flag = False;

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

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

flag = True;

break;

return flag;

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

for i in range(1, 101):

if (isPronicNumber(i)):

print(i),

print(" "),

OUTPUT:

Pronic numbers between 1 and 100:

2

6

12

20

30

42

56

72

90