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

In [2]:
```
number = input()
n = len(number)
number = int(number)
temp = number
result = 0
while(number!=0):
    digit = number%10
    result = result + pow(digit,n)
    number = int(number/10)
    n = n - 1
if(result == temp):
    print("Disarium Number!")
else:
    print("Not an Disarium Number!")
```

```
135
Disarium Number!
```

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

In [11]:
```
def length(n):
    len = 0
    while(n != 0):
        len = len + 1
        n = n//10
    return len
def disarium(number):
    temp = result = 0
    l = length(number)
    while(number!=0):
        digit = number%10
        result = result + pow(digit,l)
        number = int(number/10)
        l = l - 1
    return result
output = 0
print('Disarium numbers between 1 and 100:')
for i in range(1, 101):
    output = disarium(i)
    if(output == i):
        print(i)
```

```
Disarium numbers between 1 and 100:
1
2
3
4
5
6
7
8
9
89
```

3. Write a Python program to check if the given number is Happy Number?
Ans:

In [14]:
```
def Happy(number):
    digit = result = 0
    while(number != 0):
        digit = number % 10
        result += pow(result,2)
        number //= 10
    return result
number = int(input())
outut = number
while(output != 1 and ouput != 4):
    output = Happy(output)
if(output == 1):
    print("Happy number!")
elif(output == 4):
    print("Not a happy number!")
```

```
44
Happy number!
```

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

In [2]:

```
def Happy(number):
    digit = result = 0
    while(number > 0):
        digit = number % 10
        result += pow(digit,2)
        number //= 10
    return result
print('Happy numbers between 1 and 100:')
for i in range(1, 101):
    output = i
    while(output != 1 and output != 4):
        output = Happy(output)
    if(output == 1):
         print(i),print(' '),
```

```
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
```

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

Ans:

In [3]:

```
def Harshad(number):
    digit = result = 0
    while (number != 0):
        digit = number % 10
        result += digit
        number //= 10
    if (number%result == 0):
        print('Harshad number')
    else:
        print('Not Harshad number')
print('Enter a number: ')
number = int(input())
Harshad(number)
```

```
Enter a number:
1729
Harshad number
```

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

Ans:

In [6]:

```
def Pronic(number):
    flag = False
    for n in range(1, number+1):
        if((n*(n+1)) == number):
            flag = True
            break
    return flag;
print('Pronic numbers between 1 and 100: ')
for i in range(1, 101):
    if(Pronic(i)):
        print(i, ' ',)
```

```
Pronic numbers between 1 and 100:
2
6
12
20
30
42
56
72
90
```