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

In [1]:
```python
def is_disarium_number(number):
    # Convert the number to a string to extract digits
    num_str = str(number)
    num_length = len(num_str)

    # Calculate the sum of digits powered with their respective positions
    sum_digits = sum(int(num_str[i]) ** (i + 1) for i in range(num_length))

    # Check if the number is a Disarium number
    return sum_digits == number

# Example number
input_number = 89

# Check if the number is a Disarium number
if is_disarium_number(input_number):
    print(f"{input_number} is a Disarium number")
else:
    print(f"{input_number} is not a Disarium number")

```

```
89 is a Disarium number
```

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

In [2]:
```python
def is_disarium_number(number):
    num_str = str(number)
    num_length = len(num_str)
    sum_digits = sum(int(num_str[i]) ** (i + 1) for i in range(num_length))
    return sum_digits == number

# Find and print Disarium numbers between 1 and 100
print("Disarium numbers between 1 and 100:")
for i in range(1, 101):
    if is_disarium_number(i):
        print(i)

```

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

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

In [4]:

```python
def is_happy_number(number):
    def get_next_number(n):
        # Calculate the sum of squares of digits
        total_sum = 0
        while n > 0:
            digit = n % 10
            total_sum += digit ** 2
            n //= 10
        return total_sum

    seen = set()
    while number != 1 and number not in seen:
        seen.add(number)
        number = get_next_number(number)

    return number == 1

# Example number
input_number = 19

# Check if the number is a happy number
if is_happy_number(input_number):
    print(f"{input_number} is a Happy Number")
else:
    print(f"{input_number} is not a Happy Number")

```

```
19 is a Happy Number
```

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

In [5]:

```python
def is_happy_number(number):
    def get_next_number(n):
        # Calculate the sum of squares of digits
        total_sum = 0
        while n > 0:
            digit = n % 10
            total_sum += digit ** 2
            n //= 10
        return total_sum

    seen = set()
    while number != 1 and number not in seen:
        seen.add(number)
        number = get_next_number(number)

    return number == 1

# Find and print happy numbers between 1 and 100
print("Happy numbers between 1 and 100:")
for i in range(1, 101):
    if is_happy_number(i):
        print(i)

```

```
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
```

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

In [6]:

```python
def is_harshad_number(number):
    # Convert number to string to extract digits
    digits_sum = sum(int(digit) for digit in str(number))

    # Check if the number is divisible by the sum of its digits
    return number % digits_sum == 0

# Example number
input_number = 18

# Check if the number is a Harshad number
if is_harshad_number(input_number):
    print(f"{input_number} is a Harshad Number")
else:
    print(f"{input_number} is not a Harshad Number")

```

```
18 is a Harshad Number
```

In [ ]:

```python

```