Assignment 9 Solutions

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

In [1]:

```python
Number = int(input("Enter the Number to Check Disarium Number = "))
length = len(str(Number))

Temp = Number
Sum = 0
rem = 0

while Temp > 0:
    rem = Temp % 10
    Sum = Sum + int(rem**length)
    Temp = Temp // 10
    length = length - 1

print("The Sum of the Digits = %d" %Sum)

if Sum == Number:
    print("\n%d is a Disarium Number." %Number)
else:
    print("%d is Not a Disarium Number." %Number)
```

```
Enter the Number to Check Disarium Number = 135
The Sum of the Digits = 135

135 is a Disarium Number.
```

2.Write a Python Program to print all Disarium numbers between 1 to 100 ?

In [2]:

```python
def length_calculation(my_val):
    len_val = 0
    while(my_val != 0):
        len_val = len_val + 1
        my_val = my_val//10
    return len_val
def digit_sum(my_num):
    remaining = sum_val = 0
    len_fun = length_calculation(my_num)
    while(my_num > 0):
        remaining = my_num%10
        sum_val = sum_val + (remaining**len_fun)
        my_num = my_num//10
        len_fun = len_fun - 1
    return sum_val
ini_result = 0
print("The disarium numbers between 1 and 100 are : ")
for i in range(1, 101):
    ini_result = digit_sum(i)
    if(ini_result == i):
        print(i)
```

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

3.Write a Python Program to check if the given number is Happy Number ?

In [3]:

```python
def isHappy(Number):
    sum = 0
    while(Number>0):
        digit = Number%10
        sum= sum + digit**2
        Number = Number//10
    return sum

Number = int(input("Enter the number :"))
result = Number


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

if result == 1:
    print(Number,"Is a Happy Number")
else:
    print(Number," Is a Unhappy Number")
```

```
Enter the number :32
32 Is a Happy Number
```

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

In [4]:

```python
def isHappy(num):
    sum = 0
    while(num>0):
        digit = num%10
        sum= sum + digit**2
        num = num//10
    return sum

print("Happy numbers in range 1 to 100")
result=num=i=0
happyNum = []
for i in range(1,101):
    result = i
    while (result != 1 and result != 4):
        result = isHappy(result)
    if result == 1:
        happyNum.append(i)
print(happyNum)
```

```
Happy numbers in range 1 to 100
[1, 7, 10, 13, 19, 23, 28, 31, 32, 44, 49, 68, 70, 79, 82, 86, 91, 94, 97, 1
00]
```

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

In [5]:

```python
def digitSum(num):
    sum = 0
    while(num>0):
        digit = num%10
        sum= sum + digit
        num = num//10
    return sum

num = int(input("Enter the number :"))
sum = digitSum(num)

if num % sum == 0:
    print(num,"Is a Harshad number")
else:
    print(num,"Is not a Harshad number")
```

```
Enter the number :100
100 Is a Harshad number
```

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

In [6]:

```python
def isPronicNum(num):
    isPronic = False
    for i in range(1,num+1):
        if i*(i+1) == num:
            isPronic = True
            break
    return isPronic

print("Pronic numbers in range 1 to 100")
pronicNum = []
for i in range(1,101):
    if isPronicNum(i):
        pronicNum.append(i)
print(pronicNum)
```

```
Pronic numbers in range 1 to 100
[2, 6, 12, 20, 30, 42, 56, 72, 90]
```