Assignment - 9

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

```python
In [1]: num = int(input())
        see = s = 0;
        len = len(str(num))

        n = num;

        while(num > 0):
            see = num%10;
            s += int(see**len);
            num = num//10;
            len -= 1;

        if(s == n):
            print( "Is a disarium number");
        else:
            print("Is not a disarium number");

        25
        Is not a disarium number
```

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

```python
In [9]: def Length1(n):
            length = 0;
            while(n != 0):
                length = length + 1;
                n = n//10;
            return length;

        def sumall(num):
            rem = sum = 0;
            len = Length1(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 = sumall(i);

            if(result == i):
                print(i),

        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?

```python
In [3]: def check_happy(num):
            rem = sum = 0;

            while (num>0):
                rem = num%10
                sum = sum +(rem*rem)
                num = num//10
            return sum

        num = 55
        result = num
        while (result != 1 and result!=4):
            result = check_happy(result)

        if (result == 1):
            print(str(num),"is a happy number")

        elif (result == 4):
            print(str(num),"is not a happy number")

        55 is not a happy number
```

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

```python
In [8]: def check_happy2(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 = check_happy2(result)
            if (result == 1):
                print(i)

        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
```

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

```python
In [16]: def harshad(num):
             sum = 0
             a = num
             while a > 0:
                 sum = sum + a %10
                 a = a //10
             return num%sum ==0
```

```python
In [17]: harshad(12)
```

```
Out[17]: True
```

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

```python
In [19]: import math

         def check_pronic(num):
             i = 0
             while (i<=(int)(math.sqrt(num))):
                 if (num == i*(i+1)):
                     return True
                 i = i + 1
             return False

         i = 0
         while (i<=200):
             if check_pronic(i):
                 print (i)
             i = i +1

         0
         2
         6
         12
         20
         30
         42
         56
         72
         90
         110
         132
         156
         182
```

```python
In [ ]:
```