

Programming Assignment 9

1. Write a Python program to check if the given number is a Disarium Number?
2. Write a Python program to print all disarium numbers between 1 to 100?
3. Write a Python program to check if the given number is Happy Number?
4. Write a Python program to print all happy numbers between 1 and 100?
5. Write a Python program to determine whether the given number is a Harshad Number?
6. Write a Python program to print all pronic numbers between 1 and 100?

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In [49]: #1. Write a Python program to check if the given number is a Disarium Number?
def disarium_number(num):
    n=num
    digit_count=str(n)
    newnum=0
    for d in range(len(digit_count)):
        newnum+= (int(str(n)[d]))**(d+1)

    if n==newnum :
        print(n, 'is Disarium number')

disarium_number(135)
```

135 is Disarium number

```
In [50]: #2. Write a Python program to print all disarium numbers between 1 to 100?

for i in range(1,101):
    disarium_number(i)
```

1 is Disarium number
 2 is Disarium number
 3 is Disarium number
 4 is Disarium number
 5 is Disarium number
 6 is Disarium number
 7 is Disarium number
 8 is Disarium number
 9 is Disarium number
 89 is Disarium number

```
In [51]: #3. Write a Python program to check if the given number is Happy Number?

def happynumber(num):
    n=num

    digit_count=str(n)
    while(len(digit_count)>1):
        newnum=0
        for d in range(len(digit_count)):
            newnum+= (int(str(n)[d]))**(2)

        digit_count=str(newnum)
        n=newnum
    if n==1 :
        print(num, 'is happy number')

happynumber(19)
```

19 is happy number

```
In [52]: #4. Write a Python program to print all happy numbers between 1 and 100?
for i in range(1,101):
    happynumber(i)
```

1 is happy number
 10 is happy number
 13 is happy number
 19 is happy number
 23 is happy number
 28 is happy number
 31 is happy number
 32 is happy number
 44 is happy number
 49 is happy number
 68 is happy number
 70 is happy number
 79 is happy number
 82 is happy number
 86 is happy number
 91 is happy number
 94 is happy number
 97 is happy number
 100 is happy number

```
In [59]: #5. Write a Python program to determine whether the given number is a Harshad Number
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```
def harshadnumber(num):
    n=num

    digit_count=str(n)
    divisor=0
    for d in range(len(digit_count)):
        divisor+= (int(str(n)[d]))

    if n%divisor==0 :
        print(n, 'is Harsahad number')

harshadnumber(3)
```

3 is Harsahad number

```
In [61]: #6. Write a Python program to print all pronic numbers between 1 and 100?
def pronic(num):
    n=num
    for d in range(1,num):
        print(d*(d+1))
pronic(100)
```

2
 6
 12
 20
 30
 42
 56
 72
 90
 110
 132
 156
 182
 210
 240
 272

306
342
380
420
462
506
552
600
650
702
756
812
870
930
992
1056
1122
1190
1260
1332
1406
1482
1560
1640
1722
1806
1892
1980
2070
2162
2256
2352
2450
2550
2652
2756
2862
2970
3080
3192
3306
3422
3540
3660
3782
3906
4032
4160
4290
4422
4556
4692
4830
4970
5112
5256
5402
5550
5700
5852
6006
6162
6320
6480
6642
6806
6972
7140
7310

7482
7656
7832
8010
8190
8372
8556
8742
8930
9120
9312
9506
9702
9900

In []: