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?

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

python

```
def is_disarium(n):
    # Count the number of digits in the given number
    num_digits = len(str(n))

    # Initialize sum to zero
    sum = 0

    # Iterate over each digit in the given number
    for i in range(num_digits):
        # Extract the current digit
        digit = int(str(n)[i])

        # Add the current digit raised to the power of its position
to the sum
        sum += digit**(i+1)

    # If the sum equals the given number, it is a disarium number
    if sum == n:
        return True
    else:
        return False
```

2. Python program to print all disarium numbers between 1 to 100:

scss

```
for i in range(1, 101):
    if is_disarium(i):
        print(i)
```

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

python

```
def is_happy(n):
```

```
    seen = set()
    while n != 1:
        n = sum(int(i)**2 for i in str(n))
        if n in seen:
            return False
        seen.add(n)
    return True
```

4. Python program to print all happy numbers between 1 and 100:

scss
```
for i in range(1, 101):
    if is_happy(i):
        print(i)
```

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

python
```
def is_harshad(n):
    digits_sum = sum(int(i) for i in str(n))
    return n % digits_sum == 0
```

6. Python program to print all pronic numbers between 1 and 100:

scss
```
for i in range(1, 101):
    if i*(i+1) <= 100:
        print(i*(i+1))
```