**ANSWERS**

**Q1. Write a Python program to check if the given number is a Disarium Number?**

**Ans.** Please find below the code to check if the given number is a disarium number:

def is\_disarium\_number(n):

num\_str = str(n)

power = 1

sum = 0

for digit in num\_str:

sum += int(digit) \*\* power

power += 1

return sum == n

number = int(input("Enter a number: "))

if is\_disarium\_number(number):

print(f"{number} is a Disarium number.")

else:

print(f"{number} is not a Disarium number.")

**Q2. Write a Python program to print all disarium numbers between 1 to 100?**

**Ans.** Please find below the code to print all disarium numbers between 1 to 100:

def is\_disarium\_number(n):

num\_str = str(n)

power = 1

sum = 0

for digit in num\_str:

sum += int(digit) \*\* power

power += 1

return sum == n

print("Disarium numbers between 1 and 100:")

for i in range(1, 101):

if is\_disarium\_number(i):

print(i, end=" ")

**Q3. Write a Python program to check if the given number is Happy Number?**

**Ans.** Please find below the code to check if the given number is happy number:

def is\_happy\_number(n):

seen = set()

while n != 1 and n not in seen:

seen.add(n)

n = sum(int(digit) \*\* 2 for digit in str(n))

return n == 1

number = int(input("Enter a number: "))

if is\_happy\_number(number):

print(f"{number} is a Happy number.")

else:

print(f"{number} is not a Happy number.")

**Q4. Write a Python program to print all happy numbers between 1 and 100?**

**Ans.** Please find below the code to print all happy numbers between 1 and 100:

def is\_happy\_number(n):

seen = set()

while n != 1 and n not in seen:

seen.add(n)

n = sum(int(digit) \*\* 2 for digit in str(n))

return n == 1

print("Happy numbers between 1 and 100:")

for i in range(1, 101):

if is\_happy\_number(i):

print(i, end=" ")

**Q5. Write a Python program to determine whether the given number is a Harshad Number?**

**Ans.** Please find below the code to determine whether the given number is a Harshad number:

def is\_harshad\_number(n):

num\_str = str(n)

digit\_sum = sum(int(digit) for digit in num\_str)

return n % digit\_sum == 0

number = int(input("Enter a number: "))

if is\_harshad\_number(number):

print(f"{number} is a Harshad number.")

else:

print(f"{number} is not a Harshad number.")

**Q6. Write a Python program to print all pronic numbers between 1 and 100?**

**Ans.** Please find below the code to print all pronic numbers between 1 and 100:

def is\_pronic\_number(n):

for i in range(1, n + 1):

if i \* (i + 1) == n:

return True

return False

print("Pronic numbers between 1 and 100:")

for i in range(1, 101):

if is\_pronic\_number(i):

print(i, end=" ")