1. Write a Python Program to Find the Factorial of a Number?

def factorial\_iterative(n):

factorial = 1

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

factorial \*= i

return factorial

# Example usage

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

result = factorial\_iterative(number)

print(f"The factorial of {number} is {result}")

1. Write a Python Program to Display the multiplication Table?

def display\_multiplication\_table(num):

for i in range(1, 11):

print(f"{num} x {i} = {num \* i}")

# Example usage

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

display\_multiplication\_table(number)

1. Write a Python Program to Print the Fibonacci sequence?

def print\_fibonacci\_sequence(n):

# Initialize the first two terms

a, b = 0, 1

count = 0

# Print the Fibonacci sequence

while count < n:

print(a, end=' ')

# Update the terms

a, b = b, a + b

count += 1

# Example usage

num\_terms = int(input("Enter the number of terms: "))

print\_fibonacci\_sequence(num\_terms)

1. Write a Python Program to Check Armstrong Number?

def is\_armstrong\_number(num):

# Convert the number to a string to easily iterate over its digits

num\_str = str(num)

num\_digits = len(num\_str)

# Calculate the sum of the digits raised to the power of the number of digits

sum\_of\_powers = sum(int(digit) \*\* num\_digits for digit in num\_str)

# Check if the sum of the powers is equal to the original number

return sum\_of\_powers == num

# Example usage

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

if is\_armstrong\_number(number):

print(f"{number} is an Armstrong number.")

else:

print(f"{number} is not an Armstrong number.")

1. Write a Python Program to Find Armstrong Number in an Interval?

def is\_armstrong\_number(num):

num\_str = str(num)

num\_digits = len(num\_str)

sum\_of\_powers = sum(int(digit) \*\* num\_digits for digit in num\_str)

return sum\_of\_powers == num

def find\_armstrong\_numbers(start, end):

armstrong\_numbers = []

for num in range(start, end + 1):

if is\_armstrong\_number(num):

armstrong\_numbers.append(num)

return armstrong\_numbers

# Example usage

start\_interval = int(input("Enter the start of the interval: "))

end\_interval = int(input("Enter the end of the interval: "))

armstrong\_numbers\_in\_interval = find\_armstrong\_numbers(start\_interval, end\_interval)

print(f"Armstrong numbers in the interval [{start\_interval}, {end\_interval}]: {armstrong\_numbers\_in\_interval}")

1. Write a Python Program to Find the Sum of Natural Numbers?

def sum\_of\_natural\_numbers(n):

if n < 1:

return "Please enter a positive integer."

return n \* (n + 1) // 2

# Example usage

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

sum\_natural\_numbers = sum\_of\_natural\_numbers(number)

print(f"The sum of the first {number} natural numbers is {sum\_natural\_numbers}")