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**1. Find the Factorial of a Number**

# Function to calculate factorial def factorial(n): if n == 0 or n == 1: return 1 else: return n \* factorial(n-1) # Input a number from the user num = int(input("Enter a number: ")) # Display the factorial print(f"The factorial of {num} is {factorial(num)}")

**2. Display the Multiplication Table**

# Input a number from the user num = int(input("Enter a number: ")) # Display the multiplication table print(f"Multiplication table for {num}:") for i in range(1, 11): print(f"{num} x {i} = {num\*i}")

**3. Print the Fibonacci Sequence**

# Function to generate Fibonacci sequence def fibonacci(n): fib\_sequence = [0, 1] for i in range(2, n): fib\_sequence.append(fib\_sequence[-1] + fib\_sequence[-2]) return fib\_sequence # Input the number of terms from the user terms = int(input("Enter the number of terms for the Fibonacci sequence: ")) # Display the Fibonacci sequence print(f"The Fibonacci sequence up to {terms} terms is: {fibonacci(terms)}")

**4. Check Armstrong Number**

# Function to check if a number is an Armstrong number def is\_armstrong(num): order = len(str(num)) sum = 0 temp = num while temp > 0: digit = temp % 10 sum += digit \*\* order temp //= 10 return num == sum # Input a number from the user num = int(input("Enter a number: ")) # Check and display if it's an Armstrong number if is\_armstrong(num): print(f"{num} is an Armstrong number.") else: print(f"{num} is not an Armstrong number.")

**5. Find Armstrong Numbers in an Interval**

# Function to find Armstrong numbers in an interval def armstrong\_in\_interval(start, end): armstrong\_numbers = [] for num in range(start, end + 1): if is\_armstrong(num): armstrong\_numbers.append(num) return armstrong\_numbers # Input the interval from the user start = int(input("Enter the start of the interval: ")) end = int(input("Enter the end of the interval: ")) # Display Armstrong numbers in the interval print(f"Armstrong numbers in the interval {start}-{end}: {armstrong\_in\_interval(start, end)}")

**6. Find the Sum of Natural Numbers**

# Function to calculate the sum of natural numbers def sum\_of\_natural\_numbers(n): return n \* (n + 1) // 2 # Input the number of natural numbers from the user num = int(input("Enter the number of natural numbers: ")) # Display the sum of natural numbers print(f"The sum of the first {num} natural numbers is: {sum\_of\_natural\_