Classroom Assignment: Fibonacci Series

Learning Objective:

Understand and apply basic programming constructs in TypeScript to compute the Fibonacci sequence using iterative methods.

Expected Completion Time:

Best Case: 15 min

Average Case: 20 min

Assignment Details:

Create a TypeScript program that defines a function to compute the nth Fibonacci number using a loop (iterative approach).

Assignment Requirements:

1. Implement a function named `fibonacci` that accepts an argument `n`, which is a non-negative integer, and returns the nth Fibonacci number.
2. Use a loop to compute the Fibonacci number. Initialize two variables to store the first two Fibonacci numbers and update these iteratively up to `n`.
3. Provide example calls to the `fibonacci` function with different integers to demonstrate the function's functionality.

Expected Outcome:

Upon completion, you should be able to:

- Understand the concept of loops in TypeScript.
- Compute Fibonacci numbers efficiently for a range of inputs, demonstrating the iterative approach to solving common algorithmic problems.