CODING BLOCKS
Code Your Way To Success

Assignment: Closures

By Kartik Mathur

Assignment Consists of 2 Questions

1. Counter Module using Closures.
2. Memoized Fibonacci Function Using Closures

Question 1: “Counter Module Using Closures”

Create a createCounter() function that can perform three methods:

1. increment(): Increases the counter by 1 and prints the new value.
2. decrement(): Decreases the counter by 1 and prints the new value.
3. getCount(): Returns the current count value.

Ensure that the counter value remains private and cannot be accessed directly.

Implementation Details:

1. The counter value should not be directly accessible from outside the function.
2. Use closures to maintain the state of the counter.
3. Test the implementation by creating an instance and calling the methods.

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Question 2: “Memoized Fibonacci Function Using Closures”

Create a memoizedFibonacci() function that optimizes Fibonacci number calculations by caching previously computed results using closures.

Implementation Details:

1. Use a closure to maintain a cache object that stores previously computed Fibonacci numbers.
2. If a Fibonacci number is already in the cache, return it directly instead of recalculating it.
3. Implement the function efficiently using recursion.
4. Test the implementation by computing Fibonacci numbers multiple times and observing performance improvements.