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 **Exercise 1: Implementing the Singleton Pattern**

Scenario:

You need to ensure that a logging utility class in your application has only one instance throughout the application lifecycle to ensure consistent logging.

Steps:

1. Create a New Java Project:

o Create a new Java project named SingletonPatternExample.

2. Define a Singleton Class:

o Create a class named Logger that has a private static instance of itself.

o Ensure the constructor of Logger is private.

o Provide a public static method to get the instance of the Logger class.

3. Implement the Singleton Pattern:

o Write code to ensure that the Logger class follows the Singleton design pattern.

4. Test the Singleton Implementation:

o Create a test class to verify that only one instance of Logger is created and used across the application.  
