Singleton Pattern Example

Cognizant Deepskilling

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**Project Name**: SingletonPatternExample  
A Java project to implement and test the **Singleton Pattern** for a Logger class.

**Define a Singleton Class**

**Class Name**: Logger

package com.example.singleton;

public class Logger {

    private static Logger instance;

    private Logger() {

    }

    public static Logger getInstance() {

        if (instance == null) {

            instance = new Logger();

        }

        return instance;

    }

    public void log(String message) {

        System.out.println("[LOG] " + message);

    }

}

**Implement the Singleton Pattern**

The Logger class uses a private static variable (instance) to hold the single instance.

The constructor is private to prevent external object creation.

The getInstance() method creates an instance only if it doesn’t already exist.

**Test the Singleton Implementation**

**Test Class Name**: TestLogger

package com.example.singleton;

public class TestLogger {

    public static void main(String[] args) {

        Logger logger1 = Logger.getInstance();

        Logger logger2 = Logger.getInstance();

        System.out.println("Are both instances the same? " + (logger1 == logger2));

        logger1.log("This is a test message from logger1");

        logger2.log("This is a test message from logger2");

        System.out.println("Logger1 hashCode: " + logger1.hashCode());

        System.out.println("Logger2 hashCode: " + logger2.hashCode());

    }

}

Output:



