

DAY 28:

ASSIGNMENT 1:

Task 1: Singleton

Implement a Singleton class that manages database connections. Ensure the class adheres strictly to the singleton pattern principles.

ANSWER:

```
// Singleton class to manage database connections

public class DatabaseConnectionManager {

    // Private static instance of this class (eager initialization)
    private static final DatabaseConnectionManager instance = new DatabaseConnectionManager();

    // Private constructor to prevent instantiation
    private DatabaseConnectionManager() {
        System.out.println("Database Connection Manager initialized.");
    }

    // Public method to provide access to the single instance
    public static DatabaseConnectionManager getInstance() {
        return instance;
    }

    // Dummy method to simulate database connection
    public void connect() {
        System.out.println("Connected to the database.");
    }

    // Dummy method to simulate closing database connection
    public void disconnect() {
        System.out.println("Disconnected from the database.");
    }
}
```

```
// Main method to test the Singleton class

public static void main(String[] args) {

    // Get the only instance of DatabaseConnectionManager

    DatabaseConnectionManager dbManager1 = DatabaseConnectionManager.getInstance();

    dbManager1.connect();


    // Try to get another instance and perform operations

    DatabaseConnectionManager dbManager2 = DatabaseConnectionManager.getInstance();

    dbManager2.disconnect();


    // Check if both instances are the same

    if (dbManager1 == dbManager2) {

        System.out.println("Both instances are the same.");

    } else {

        System.out.println("Instances are different.");

    }

}

}
```