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::

```java
// 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.");
```

```java
    }


    // 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.");
        }
    }
}
```