**SINGLETON PATTERN**

CODE:

Logger.java

Public class Logger {

    private static Logger instance;

    private Logger(){

        System.out.println("Logger instance created");

    }

    public static Logger getInstance(){

        if (instance == null){

            instance = new Logger();

        }

        return instance;

    }

    public void log(String message) {

        System.out.println("LOG: " + message);

    }

}

Test.java

public class Test {

    public static void main(String[] args) {

        Logger l1 = Logger.getInstance();

        Logger l2 = Logger.getInstance();

        l1.log("Starting application...");

        l2.log("Application running...");

        // Check if both instances are the same

        if (l1 == l2) {

            System.out.println("Same Logger instances - Singleton works");

        } else {

            System.out.println("Different Logger instances - Singleton failed");

        }

    }

}

OUTPUT:

