**Exercise 1: Implementing the Singleton Pattern**

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);

}

public static void main(String[] args) {

Logger logger1 = Logger.getInstance();

Logger logger2 = Logger.getInstance();

logger1.log("Starting application.");

logger2.log("Running some tasks.");

if (logger1 == logger2) {

System.out.println("Same instance used.");

} else {

System.out.println("Different instances.");

}

}

}

OUTPUT :

A screenshot of a computer

AI-generated content may be incorrect.