**Exercise 5: Timeout and Performance Testing**

**PeformanceTester.java**

package mypackage;

public class PerformanceTester {

public void performTask() {

System.out.println("Task started...");

try {

Thread.sleep(300);

} catch (InterruptedException e) {

Thread.currentThread().interrupt();

}

System.out.println("Task completed.");

}

}

**performaneTesterTest.java**

package mypackage;

import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.assertTimeout;

import java.time.Duration;

public class PerformanceTesterTest {

PerformanceTester tester = new PerformanceTester();

@Test

void testPerformTaskCompletesWithinTimeLimit() {

System.out.println("Testing if performTask() finishes in under 500ms...");

assertTimeout(Duration.ofMillis(500), () -> {

tester.performTask();

});

System.out.println(" Task completed within the time limit.\n");

}

}

