

Assignment 00-RingBufferTest (3 Points)

Motivation and Goal

The first small exercise serves as repetition and introduction to software testing. As precondition, it is expected that you are familiar with writing and running tests using the framework JUnit.

In this exercise, you should achieve following goals:

- Write five or more unit tests for the class `RingBuffer` (initially adapted from R. Sedgewick et al.: Introduction to Programming in Java, Addison-Wesley, 2008.)

Requirements and Setup

- Java JDK 11 or higher: <https://jdk.java.net/>
- Apache Maven: <https://maven.apache.org/download.cgi>
- JUnit 5: <http://www.junit.org/index.html>
Note: Dependencies to the JUnit library are handled by Maven.
- Setup: Download the source code package `exercise00.zip` (from TUWeL). The folder related to this assignment of the exercise contains the code for the class `RingBuffer`, a corresponding test class `RingBufferTest`, and a `pom.xml` for building the project and running the tests with Maven¹. When you run Maven for the first time, all required plugins and dependencies will be downloaded. Usage: `mvn test`

Instructions

- Open the folder `01-RingBufferTest` and run `mvn test` from there. Note: The build will fail, because no tests have been implemented yet.
- Edit the test class `RingBufferTest.java` and implement at least five test cases (test methods) that exercise different aspects of the `RingBuffer` implementation.
 - Include tests for basic usage scenarios (positive cases) and for scenarios where exceptions are expected (negative cases).
 - Make sure your tests pass, unless you found a bug in the implementation.
 - Important: Use the JUnit framework correctly and write good unit tests.
- Follow the recommendations for writing good unit tests in the supplementary material, e.g., chapter 10 in M. Aniche, et al.: *Effective Software Testing*, Manning 2022

¹ <https://maven.apache.org/guides/getting-started/maven-in-five-minutes.html>

Submission

- Please add your name, student-id, and exercise number in a header block at the beginning of every (source code) file.
- Pack the entire repository as zip archive and upload the archive via TUWeL until the submission date (before 23:55).

Keep in mind that incomplete submissions, submissions lacking information required for appraising, and submissions handed in after the deadline or per email will not be accepted.