

Name: \_\_\_\_\_ Section: \_\_\_\_\_

CSSE 220---Object-Oriented Software Development  
Exam 1 – Small Problems, Maps, and 2D Arrays, Spring 2025

**Allowed Resources for this part.** Class resources (course website), your labs, homework, Oracle's Java documentation (API). You may only use a search engine (like Google) to search within Oracle's Java website - all others use, including accessing websites other than those mentioned above, is not allowed.

**Instructions.** Any communication with anyone other than the professor during the exam may result in a failing grade for the course. The use of genAI is not allowed.

**Important. There are no extensions allowed for Take-Home exam and no grace period. Submission must be done BEFORE 11:59 on Sunday – you should not submit the last minute because the autograder may take time or you may lose connection.**

You must get these problems working on your computer, i.e., passing all the provided JUnit tests. Almost all the credit for the problems will be for code that passes the JUnit tests. **Comments are not required however update the javadoc with your name and citation.** If you do not get an operation to pass all the JUnit tests, comments may help understand enough so that you might possibly earn partial credit, but this is not guaranteed.

Submit all modified .java files via Gradescope.

#### Problem Descriptions

##### Small Problems Part (20 points)

- Implement the code for the three operations found in *SmallProblems.java*.
- Instructions are included in the comments of each method. These Javadoc comments are also provided in PDF format in the provided zip file.
- Your score for this part: (20 \* percentage of JUnit tests passed)
- Upload *SmallProblems.java* to Gradescope.

##### Maps and 2D Array Problems Part (20 points)

- Implement the code for the three operations found in *MapAnd2DArrayProblems.java*.
- Instructions are included in the comments of each method. These Javadoc comments are also provided in PDF format in the provided zip file.
- Your score for this part: (20 \* percentage of JUnit tests passed)
- Upload *MapAnd2DArrayProblems.java* to Gradescope.

**Testing: JUnit Tests are available for both parts (RunAllTests.java files).**