

# SWE 437 Preview of Final Exam

## 14 December 2020

Your final exam for SWE 437 will be a **tech-challenge** testing project.

In the next 2.5 hours, you will **analyze** a program at different levels of abstraction; **model** the software components using multiple structures from our course; **design** tests according to **criteria** from our course, **implement** those tests with input values, expected results, and setup and teardown values; and either **automate and run** those tests or **run** those tests by hand.

I am providing a small Java program. The program is self-contained. I am also providing you with an executable version as a web app. You will not need to know anything about web apps to test this program. You will design tests for the external interface (through a browser) and for individual methods. The methods will not have any web dependencies.

You will create three sets of tests, each for a specific software artifact and according to a specific test criterion. Each set of tests will be graded as follows:

1. Correctness and quality of the model (2 pts)
2. Correct application of the criterion specified (3 pts)
3. Correct implementation of the actual tests (2 pts)
4. Correct automated test scripts (when required, 2 or 3 pts)
5. Reporting of the results (1 pt)
6. Neatness and organization—this score will be inversely proportional to how hard I have to work to trace from the software artifact to the model to the abstract tests to the concrete tests (2 pts)

The total number of points will be 35 to match the 35% of the final grade allocated to the final in the syllabus.

### RESOURCES

Each student must work individually—no collaboration, no discussion during the exam period, and no help with design or debugging. I will be available for questions during the exam period. You may access any course materials, including books, the course website, the book website, the coverage web apps on the book website, slides, examples, piazza, etc. You may also use the internet, although frankly, online resources are more likely to confuse you than help you. You may NOT use any person except the professor.

### TECHNOLOGY NEEDED

You will need to draw graphs, and may use any drawing tool, including paper and pencil. You will need access to a browser. You will need to implement and run JUnit tests. You will need to zip files for submission.

### SUBMISSION

1. Submit your final exam by putting all files in a folder named “*MasonID-swe437*,” and zip the contents into one zip file. You should replace “*MasonID*” with your Mason ID, or email address. Thus, my submission would be named “offutt-swe432.zip”. Include the following files:
  - a. Your models, including graphs, tables, etc.
  - b. Your abstract tests, your concrete tests (including input values and any setup and teardown values). I suggest putting all of these together, and CLEARLY LABELED.
  - c. JUnit tests when required. When JUnit tests are included, the information from (b) can be included as comments in the JUnit tests.
2. Submit your zip file into my dropbox file request. You will be able to place your file, but not see it or change it after you submit. If you need to submit a correction, add “-v2” to the file name.

Submit your file through this URL: **To be provided**

### ACCOMMODATION

If you need accommodation, either as specified by the DRC at the beginning of the semester, or due to the pandemic and online nature of the final, contact me by email individually. Online accommodations could include internet access problems or illness. If your internet crashes during the exam period, contact me as SOON AS POSSIBLE through email.