EECS3311 Group Project

Fall 2024

Deliverable 3

Purpose of the Third Deliverable

We assume you have already finished the development of your project, in this deliverable, we will focus on the testing of your project. The purpose of this deliverable is to practice the use of different software quality assures, software testing, and static analysis techniques to improve the quality of your project. You are expected to finish the following tasks in this deliverable.

1. Write at least 10 different Junit-based test cases for non-GUI Java classes. Your test cases should achieve an average code coverage (across all the classes) larger than 80% (on the non-GUI Java classes).
2. Run the auto-test generation tool *Randoop* on your project to generate test cases (for non-GUI java classes) and further compare the auto-generated tests to your tests regarding code quality and coverage.

For *Randoop*, please follow the attached tutorial to run it on your own course project.

Assigned

March 22nd, 2024 (please check e-class regularly for any updates or revisions).

Due

This assignment is due **April 6th, 2024 by 11:55 pm** (midnight-ish) by submitting online. Please check e-class regularly for any updates regarding the submission process), one submission per group.

Late Penalty

Late project will be accepted for up to two days after the due date, with weekends counting as a single day. **Submissions late up to 24 hours will incur a penalty of 20%, and submissions up to 48 hours will incur a penalty of 30%.** No submissions after 48 hours of the deadline are accepted. The same time windows hold if there is an extension is given by the instructor.

Group Effort

This stage of the project is expected to be a group effort, with each member of the group contributing equally in a reasonable fashion. If it is determined that you are guilty of cheating on the assignment, you could receive a grade of zero with a notice of this offense submitted to the Dean of your home faculty for inclusion in your academic record.

What to Hand in

Your submission, as noted above, will be in the form of an archive (e.g. zip) file. Please check e-class regularly for any changes related to the submission process. You are to complete the deliverable by:

a) Your project (i.e., source code + test cases)
   1. You are expected to create a test folder under your project and write at least 10 test cases for each non-GUI java class, and overall, the code coverage of your tests should be higher than 80% (on the non-GUI classes).
   2. Repot (~1 page) of the code coverage (image) of your manual written tests.

b) The output of Randoop:
   1. You are expected to create another test folder, i.e., Randoop, to store all the auto-generated tests.
   2. Repot (~1 page) the code coverage (image) of these automatically generated tests.

c) A report (1-2 pages) that presents the comparison between the manual written test cases and the ones generated by *Randoop* regarding the code coverage, mutation score, readability, usefulness.