First Individual Assessment

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You are NOT permitted to ask questions about the assessment, discuss the assessment, or work together on answering the assessment questions with your pair partner, other members of your team, other students in the class, anyone else in person or anyone else via internet or other forums besides the instructor and the IAs.

The technical questions follow below the feedback questions.

This feedback part will not be graded. However, if you do not include a meaningful response, we will not grade the technical questions - which means you will receive 0 for the assessment.

You have 100 total points to allocate among the members of your team. Please assign some number of points (possibly 0, possibly even negative) to each member of your team, including yourself, based on what you believe was that student's relative contribution to the team thus far. Make sure the total is exactly 100. For example, the scores might be

Jane 65

Paula 45

Georgia 10

Starr -20

Briefly explain each of your score assignments. In this example, Jane apparently contributed the most, what specifically did she do? Paula also contributed reasonably well, what did she do? Georgia contributed very little, what specifically did she do or fail to do? Starr not only didn't contribute much if at all, but negatively impacted the team, what happened? How did your team cope? What do you think the teaching staff can do, if anything, to help with this situation?

You should consider contributions to team meetings, team software development and testing, writing the team assignment submissions, setting up and presenting demos, anything else relevant to the team, in awarding the points.

This is also an opportunity (separate from the SEAS course midterm and final evaluations, which you should also submit) to provide feedback about the course. Is there anything that you think should have already been covered but hasn't been? Is there anything that was covered unnecessarily? Is there anything we should make sure to cover in the remainder of the course? Is there anything that should have been presented in a different way? Is there anything else you would change about the course, including contents, teaching methods, delivery, assignments, anything else you think relevant? Briefly explain.

Here are the technical questions:

For the following questions, assume your team decides to add a data collection facility to your team project. Emphasis: Do not really change your team project in any way and do not discuss with your teammates! There are 10 questions. Maximum total 100 points.

Important note: If your team project actually has such a facility, or your team considered including such a facility, you have presumably already discussed with your team. In this case, please bring to my attention and I'll give all the members of your team a different "addon" for your project - and grant extra time for the assessment corresponding to how long it takes me to provide the different addon.

Your data collection facility will operate in the background as part of your software product, recording how the software product is actually used - particularly any erroneous or unexpected workflows (ordering or timing of activities). Analysis of the collected data will help your team improve your product. For the purposes of this assignment consider only the data collection, not analysis.

1. Write a set of user stories, each with its conditions of satisfaction, for the data collection facility. The user stories should be specific to your team project. It is ok to omit the "As a <user role>" part. 20 points.

2. Do you anticipate any challenges in testing the data collection facility arising from observability and/or controllability? Why/why not? 4 points.

3. Using the distinctions drawn in the textbook between fault, error and failure, describe at least one fault, at least one error, and at least one failure that might occur in the implementation of your user stories for the data collection facility. Do not discuss faults, etc. that might occur in the implementation of the main functionality of your team project. 6 points.

4. Pick at least three of your user stories from part 1, and for each describe at least two equivalence classes (and their boundary conditions, if applicable) for testing the implementation of that user story. Keep in mind that test inputs could include any data provided to or retrieved by the data collection facility, not just explicit parameters. 24 points.

5. Describe any feasibility concerns that could arise in testing the data collection facility, including but not limited to the equivalence partitioning/boundary analysis criteria described in part 4. 4 points.

6. Given the equivalence classes and/or boundary conditions from part 4, describe a plausible construction (after your data collection facility has been implemented) of at least one complete test case including test case values, prefix values, postfix values, verification values, exit values, and expected results. 12 points.

7. Characterize the full set of test cases implied by part 4, not just the one constructed in part 6, according to Beizer's "test process maturity levels", and explain why they would best fit that level. If different test cases reflect different levels, explain how/why. 4 points.

8. Explain how the test suite for your data collection facility will fulfill the RIPR model. If you anticipate that any of your test cases will not completely fulfill the RIPR model, describe how/why not. 8 points.

9. Describe how continuous integration works. Then give at least three distinct examples of specific warnings or alerts a static analysis bug finder might give that indicate code smells or likely bugs, not coding style issues, and explain what they mean and why these are considered problems. It is ok to copy the examples from running a bug finder tool on existing code, but you also need to explain them. 16 points.

10. Explain why applying modeling and analysis to your user stories, before implementation, should reduce the need for testing the implementation. However, if up-front modeling and analysis might not reduce the need for testing your data collection facility, explain why not. 2 points.

Points	100
Submitting	a file upload
File Types	pdf, doc, docx, and txt

Due	For	Available from	Until
Oct 23, 2018	Everyone	Oct 16, 2018 at 10:10am	Oct 24, 2018 at 12:10am

+ Rubric