Assignment THREE
A full software engineering custom project with your team

Purpose

Apply a complete software engineering process and learn how to work with a team to product high quality deliverables including code. Understand how quality can be planned into a system development and how it can be measured and demonstrated.

What you need to do

In general, you will work with your team, divide work, review other's work, and ensure the project is finished on time for demonstration to the class (however, see Note 1 below). Your deliverables will be:

1. Complete full and specific requirements with numbered atomic requirements (1 to n), a single Use Case Model, Use Case Narratives for each major event or use case.

2. Design the system, divide it into components that allow separate development by team members. Design to be described in a complete UML Class Diagram with all key classes fully defined, including constructors, data attributes, accessors, mutators. Complete UML Sequence Diagram for one or two critical use case narratives showing how the system will implement the case case / event. Show clearly how information is used, passed, generated, verified, etc.

3. Plan your testing approach and define specific repeatable test cases that can be repeated as necessary. Understand how the test cases map to the system requirements. Demonstrate that all system requirements have been tested and what the results were (pass, fail, incomplete).

4. Complete code under accurate configuration management. Know what the final working system consists of (components and versions). Document how much code you generated (you may want to track this over time, not just at the end).

5. Conduct and record results from formal Code Reading Inspections for all system components. Optional, do formal inspections of other deliverables such as requirements and tests.

6. Explain the quality of the final system using formal metrics or measures. How many bugs have you found; how many have been corrected; how many may remain in the system (and how do you know)?

7. Prepare a team demonstration and presentation, approximately 10 minutes, to show your final system, explain what you observed and measured during the project, and comment on what you would do differently, more, or less of in your next team software engineering project.

8. Your Basecamps should be organized with a standard structure (to be provided). Use Basecamp to organize your team and team communications. You may wish to include measures of your team activity as part of your final presentation. Did you learn anything about team work and communication from these measures?

Note 1: Do not feel you must complete everything in your original plan. You can get good (very good) points for complete requirements, good design showing how all could be implemented, tests for the whole system, and an accurate report on what works and what is incomplete or buggy.

Custom Project v1.0 (original)
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