The University of Texas at El Paso
Department of Computer Science
CS 4374/5374 – Software Construction
Instructor: Dr. Bhanukiran Gurijala
Fall 2024

Project Part 2

Objective: The main objective of this project is for the teams to implement the reviewed design from the design activities performed in the previous part (part 1), perform a code review, develop a test plan, and perform testing of the implementation.

Description:

Every team will plan and accomplish the following during their second sprint in the project:

1. Perform a design review using your design review checklist if applicable.
2. Pick one of the techniques (PPP, Design by Contract, and Test-first) for bridging your CRC to code and apply it in defining your contracts. You are free to use a combination of techniques instead of just one. Every team must show how they used each technique to bridge CRC to code with at least one example demonstrating the usage of each technique. For example, pick one technique for one contract.
3. Implement the designed system.
4. Use the code review checklist and coding standard documents to review the implementation.
5. Develop a test plan document that documents how your team plans to perform unit testing, integration testing, and system testing. The template is provided.
6. Test your implementation to ensure its correctness.

Check-in for the Sprint will be scheduled during the last week of October (tentatively, 10/28 & 10/29). More information will be posted on Blackboard. The check-in for the Sprint will also be graded (about 50 points). Please make sure your team is prepared to show these items during the check-in session:

- **Sprint Schedule:** Complete the planning section of the sprint schedule, which includes identifying tasks and planning the time required for each.
- **Source Code** for **half** of the designed features.
- **Bridging techniques:** applying the bridging techniques we've discussed in class to half of your designed features.
- **Test Plan:** Please complete the sections Testing Approach and Test Cases for half of the designed features.

Final Deliverables:

The following are the deliverables at the end of sprint 2 of the project:

1. Completed Sprint schedule (Planning and Monitoring Report)
2. Completed Test plan document
3. Updated design document using one or more of the techniques for bridging your CRC to code.
4. Source code implementation of the designed system.
5. Report capturing at least the following sections:
   a. **Project Explanation**: provide an overview of the project.
   b. **Solution design**: How did the team approach the designing solution? Assumptions made. Brief justification about choices made. Comment on the completeness of the design for identified features. Briefly explain why one or a combination of techniques was chosen for bridging your CRC to code.
   c. **Implementation**: Briefly describe how the solution design was translated to implementation.
   d. **Reviews**: Explain how the team conducted reviews of design/code. Briefly describe how the team checked each part of the design/code review checklist.
   e. **Testing**: Explain how the team tested the implementation to verify its correctness. Approaches used. Provide screenshots of sample runs of the system while testing.
   f. **Sprint Retrospection** (Retrospect as a team): What went well? What needs improvement? What did the team learn? Action items, if any, for the next sprint.

Submission Instructions:

1. Upload all deliverables on Blackboard.
2. Only one submission per team is enough
3. The due date for submission is Tuesday, November 5 at 11:59 PM