Class Activity: Quiz Software

Summary

Design software that allows instructors to create quizzes for their classes. An instructor can teach multiple classes, and students may be enrolled in multiple classes. Quiz questions can be multiple choice, short answer, multiple answer, and true/false. When creating a quiz, the instructor must assign point value to each question. The students can review and modify their answers before submitting them for grading. Instructor can grade submitted answers.

Requirements

- 1. The system will allow instructors to create quizzes for classes they teach.
- 2. Only instructors can create quizzes.
- 3. The students can only access quizzes for the classes in which they are enrolled.
- 4. A quiz can have a combination of the following question types:
 - a. Multiple choice
 - b. True/false
 - c. Short answer
 - d. Multiple answer
- 5. An instructor can set a deadline for the quiz to be completed.
- 6. An instructor will have an opportunity to review quiz questions before finalizing the quiz.
- 7. Students can only access finalized quizzes.
- 8. Students will have an opportunity to review and modify their answers before submitting the answers for grading.
- 9. Students cannot modify their answers after submitting them for grading.
- 10. Instructors can only access students answers after they were submitted for grading.

Instructions

Form teams of 2-3 people and go through the Requirements Review, Conceptual Design, and Technical Design phases of software design (as instructed later in this document). Keep documentation for each design phase using space provided (let me know if you need additional paper) This activity will count toward participation credit for this class. Submit one design per team and write team members' names on the design.

Requirements Review

Review the project summary and requirements. Ask me follow-up questions that would lead to identifying missing requirements or clarifications on existing requirements. If you can't come up with those questions right away, move on to the next part (the questions may come up during the design process). Document any follow up questions and/or clarifications in the Requirements section.

Conceptual Design

Identify the components of the system and their responsibilities. If you are struggling, you can start with "user stories". If you have any follow up questions about requirements at this point, please ask and document new requirements and/or clarifications in the Requirements section. Document your "design artifacts", such as user stories, components, and their responsibilities as part of the Conceptual Design documentation.

Technical Design Phase 1

Use abstraction technique to identify important attributes and behaviors of the components you identified in the Conceptual Design phase. Identify relationships between the components. Document the components, their attributes, behaviors, and relationships between components in a hand drawn UML diagram (or use drawio.com).

If you have any follow up questions about requirements at this point, please ask and document new requirements and/or clarifications in the Requirements section. Consider how changes in requirements may change your Conceptual Design. Document any changes to the Conceptual design in the Conceptual Design section.

Technical Design Phase 2

Use your UML diagram and write interfaces for the system components in Java. Do <u>not</u> implement any methods now, just create the interfaces and document them using Javadoc style comments. Note, that since you are working in groups, you can easily divide this work between group members. A good strategy for dividing the work is to put all components in an ordered list and each team member takes a component from the top of the list. When you are done with your component, grab the next component that is at the top of the list.

If you have any follow up questions about requirements at this point, please ask and document new requirements and/or clarifications in the Requirements section. Consider how changes in requirements may change your Conceptual Design and Technical Design and document those changes (if any changes occurred) in the appropriate section.