Project 1 - MCQ Quiz Maker

Overview

In education, quiz is an effective assessment tool for teachers to evaluate students' performance and for students to gauge their level of understanding in what they have learned. Therefore, a system that facilitates the creation, management, and execution of quizzes is highly valuable. This project aims to develop such a system for MCQ quizzes.

Users

1. Teacher
2. Student

Functional Requirements

Below are the main function requirements that this project should deliver. The sub-requirements that are highlighted in **yellow** are required only **for 4-members group, not for 3-members group.**

F1. User Registration and Authentication

This requirement focuses on operations related to user accounts. Users must have registered a user account before using the system. The sub-requirements are shown below.

No	Sub-Requirement	User	Description
F1.1	Create user account	Teacher Student	- New users can register an account in the system by filling a registration form. - The registration form should at least request for the following data: - User name - Password - User type (Teacher or Student)
F1.2	Login to a user account	Teacher Student	- Registered user login to the system by typing the username and password - The login is successful when the typed username and password matches the registered username and password stored in its persistent storage. Otherwise, the login is unsuccessful and the user can login again.
F1.3	Logout from a user account	Teacher Student	- Performed only by users who have logged in to the system. - When the user logout, it is directed to the login screen.
F1.4	Delete user account	Teacher Student	Registered user can delete his or her account.

				• By deleting the account, the user can no longer use the deleted account's username and password to enter the system.

F2. Quiz Module

A quiz is an assessment that contains one or many multiple-choice questions (MCQs). This requirement focuses on operations related to quiz and not to the questions in the quiz.

Sub-Requirement	User	Description
Create quiz	Teacher	• User fills in a form to create a new quiz. • The form should at least request for the following quiz properties: ○ Name ○ Topic ○ Draft or Published • Upon completing the form, an identification number (i.e. ID) is auto-generated as a unique identifier to the quiz, and the quiz is saved in a persistent storage.
Edit quiz	Teacher	• User can change the properties of a quiz (e.g. name. topic, etc.) • The changes can be saved into its persistent storage, or be discarded.
Delete quiz	Teacher	• User selects a quiz to be deleted, by quiz name or other means. • After the user confirms its decision to delete, the quiz is deleted from its persistent storage. • User can choose whether to delete all questions in the quiz or otherwise.

F3. Quiz Viewing

This requirement is about how the users can view the quizzes stored in the persistent storage, depending on the type of user.

Sub-Requirement	User	Description
Show own quiz	Teacher	• The Teacher can view all the quizzes he/she created (not other Teacher).
Show new quiz	Student	• The Student can view all the new quizzes he/she has not attempted.
Show attempted quiz	Student	• The Student can view all the quizzes he/she has attempted.

F4. Question Module

This requirement focuses on the operations on MCQs.

Sub-Requirement	User	Description
Add question	Teacher	- User fills in a form to create a new question. - The form should at least request for the following question properties: - The question text - The answer - A list of choices - Upon completing the form, the question is saved into its persistent storage.
Edit question	Teacher	The user can change the properties of a question (e.g. question text, answer, etc.)
Delete question	Teacher	- User selects a question to be deleted, by question number or any other means.. - After the user confirms its decision to delete, the question is deleted from its persistent storage.

F5. Quiz Run (*required for 4-members group only*)

This requirement focuses on the operations for running a quiz.

Sub-Requirement	User	Description
Run quiz	Student	User can run any quiz, whether new or attempted.
Navigate question	Student	User navigates forward or backward to change the question currently presented to him/her.
Answer question	Student	User selects a choice as his/her answer to the question presented at the time of answering.
Change answer	Student	User can change his/her answer for any answered question before submitting the quiz.
Submit quiz	Student	- By submitting the quiz, user confirms the answers to all questions in the quiz. - The answers are evaluated against the true answers designated to the questions. - After evaluation, the number of questions answered correctly is reported.

Non-functional Requirements

The system will be evaluated with respect to its usability under the following point of view:

1. **Efficiency of use**: the average time it takes to accomplish a user's goals, how many tasks a user can complete without any help, the number of operations completed without errors, etc.

2. **Intuitiveness**: how simple it is to understand the interface, buttons, headings, etc.

3. **Low perceived workload**: how many attempts are needed by users to accomplish a particular task.- how positive is the user experience when interacting with the system.

Persistent Storage

Persistent storage is defined as any data storage (e.g. file and database) that retains its data after power to that device is shut off (see [this](#)). This project requires persistent storage for the following data

- User account
- Quiz
- Questions