

Programming Project / C++ – Quiz Game System

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I. Task Description

Student 1 is responsible for managing the quiz system:

- Loading questions from file
- Validating answers and tracking score
- Saving and displaying game history

Student 2 is responsible for interacting with the user:

- Navigating through the game menu
- Answering questions and using help feature
- Viewing leaderboard and help instructions

II. Data Structures Used by the Team

The application uses the following classes:

- Question: Stores the question text, four options, and the correct answer:
 - string question
 - string options[4]
 - char correct
- QuestionManager: Loads and manages a list of Question objects from a file.
- User (Abstract Class): Base class for both Player and Admin.
 - string name
 - virtual method: void interact()
- Player (inherits from User): Plays the quiz, answers questions, uses help, and tracks score.
- Admin (inherits from User): Displays the quiz history from file.

III. File Structure

The following files are used:

questions.txt – Stores quiz questions and answers:

<question>

<option1>

<option2>

<option3>

<option4>

<correct answer letter>

history.txt – Stores past scores as:

<player name> <score>

IV. Interacting with the Application

The console application offers the following features:

1. Play Game – Starts the quiz session with questions loaded from file.
2. Game History – Admin can view past scores of all players.
3. Help Option – A one-time help that shows the correct answer and allows the player to answer again for half points.
4. Score Saving – The player's name and score are recorded in history.txt after the game.