

Kakaw: Release Summary

Team Kakaw:

Jessie Srinivas

Richelle Choy

Jasmine Tai

Ben Grant

Cody Doyle

Gea Loro

6/6/2023

Key User Stories and Acceptance Criteria:

- **As an educator, I want to have an easy and reliable way to host live quizzes so that I can guarantee that learners will have access.**
 - Quiz sessions can be hosted simply with the click of the “Start” button
- **As an educator, I want to generate numeric join codes so that I can provide learners with a means to join quiz sessions.**
 - Numeric codes for quiz sessions are generated by the server when a host creates a game
 - Field on home page allows typing in a numeric join code
 - Submitting the numeric code connects the player to the quiz session
- **As an educator, I want to provide QR codes to allow learners to easily join the game without typing in the code.**
 - When host creates game, a QR code is generated by the server and displayed for that specific game in the waiting room
 - Players can scan a generated QR code to be directed to the associated game without needing to type in the game’s numeric join code
- **As an educator, I want a timer so that I can maintain a consistent pace on the quiz.**
 - For each question, a timer is displayed at the top of the page to indicate the remaining time left to answer the question
 - Timer’s initial value is set according to the current quiz’s specifications for the time allotted to each question
 - Timer correctly ticks down to 0:00 for both the host and players without major delays
- **As an educator, I want to view the quiz results as grades/scores so that I can understand how well my class understands the material.**
 - When quiz sessions conclude, results page shows the top three scoring participants for the session
 - After quiz sessions conclude, post-game statistics page for the host shows a histogram of overall scores that displays the class performance, including the average score percentage

- **As an educator, I want to save quizzes in some sort of file so I can import them later.**
 - Quizzes can be loaded from correctly structured JSON files and parsed into questions and answers that the server can use
- **As a learner, I want to be able to set my username so that I can make myself an identifiable competitor in the class.**
 - Field on home page allows typing in a username
 - Submitting the username links the player to that username for the duration of the quiz session, as shown by the display
- **As a learner, I want to select what I think is the best answer out of some answer choices given to me so that I can participate in the quiz.**
 - There is an easy-to-use interface available from which players can select answers to a question from within the time limit
 - Players can click on one answer to lock into an answer, which is sent to the server
 - When correct answers are revealed, players can check if their answer is correct through the checkmark and X indicators that are displayed next to each answer
 - If the quiz specifies answer explanations for a given question, they are displayed upon hovering over an answer after the answer reveal
- **As a learner, I want to be able to view the score of other participants, including my own, so that I can gauge how well I understand the material relative to other learners.**
 - Players and host can navigate to a leaderboard page for all players upon completion of each question via a button
 - Leaderboard updates after each question to accurately reflect each player's new placements relative to each other
 - Leaderboard shows both the names and scores of players
 - After quiz sessions conclude, post-game statistics page for the player shows a score and rank based on the percentage of score attained out of the total possible score
 - Post-game statistics page displays a pie chart with numbers of correct and wrong/unanswered questions for the player, with the relevant counts also displayed to the side
- **As an educator, I want to be able to experience a fully functional question editor.**
 - Interested users can navigate to a page where they can create quizzes themselves via an editor within the site
 - Question editor allows users to change:
 - quiz title
 - default time for each question
 - number of questions
 - number of answers for each question (up to a defined limit for answers)
 - question texts
 - answer texts
 - correctness of answers

- answer explanations if desired
 - individual question time if desired
- Question editor allows for created quizzes to be exported into JSON files via a button to export the quiz
- Question editor allows for created quizzes to be immediately utilized for live quiz sessions via a button to start the quiz
- Question editor includes a tutorial function to guide unacquainted users through the quiz creation process
- **As an educator, I want to be able to kick users from a given quiz session so that I can ensure that there are no unwanted trolls.**
 - In the waiting room page, hosts can hover over the names of players who join to display an X button
 - X button furthermore removes the correct associated player from the game and host waiting room upon interaction
 - Kicked player receives notice of being disconnected from the session due to being kicked
- **As an educator, I want to ensure that players do not cheat or mess with the quiz session so that it can be fair to everybody.**
 - Requests are validated for each player to prevent different players trying to use the same URL to pretend to be another person
- **As a learner, I want to be able to join mid-game so that I can participate in the game at any point.**
 - If users wish to join an ongoing game, they can use the numeric join code associated with the quiz to continue at the same place as other players
 - When a new question is displayed, waiting players can be sent into the question and answer view to participate actively, just as all other players normally do

Known Problems:

Frontend:

- Unable to set default or individual question points in quiz editor
- Cannot delete questions or answers in quiz editor
- Timer for a question can be off by a small amount of time (within 1 second)
- If pages load slowly, disconnection page may be shown very briefly while connecting
- Most frontend code uses inline Tailwind CSS classes; we could create some common components to avoid repetition
- It may be unclear that clicking on an answer (once the question is over) switches between the answer and the explanation, especially if the explanation is not written in a way that obviously looks like an explanation

Backend:

- Connection when game doesn't exist will give unexpected results
- Occasionally, games are trusted to exist more than they should
- Testing suite can leave open handles when handling websockets due to running timeout processes

- Backend will occasionally throw an error (but not crash) if a request is received for a game or user that does not exist
- Some of the code in the backend is a bit messy, and not up to convention, could use a refactor
- If players join mid question, the frontend does not get an updated count of the number of players, but it does count new players when they answer the question. This may result in more people answering the question than seemingly are in the game.
- It's not possible for players to export a quiz after the game is over; they would have to ask the host to do that and share the JSON file with them.

Product Backlog:

- As an educator, I want to be able to moderate usernames and avatars so that I can make sure that a safe space can be provided for learners.
- As an educator, I want to be able to share the link to the quiz to students' emails so that they can quickly and efficiently have access to it.
- As an educator, I want to create and save quizzes to use repeatedly in the future using an account so that I can reuse or share them.
- As an educator, I want to be able to add images and videos to the questions so that I can improve the learners' understanding of the question.
- As an educator, I want to export quizzes in a readable format so that learners can review quiz questions off the app on their own time.
- As a learner, I want to be able to create an avatar so that I can compete with the rest of the class as a more distinct player.
- As a learner, I want to go through quizzes with different game modes so that I can determine how well and quickly I can understand the material in a new environment.
- As a learner, I want to be able to select/view open sourced quizzes created by other teachers/users so that I can use them for my own studying.