Test Plan and Report

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System Test Scenarios:
All Scenarios are based on User Stories documented in the Release Summary.

A. 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.
B. As an educator, I want to generate numeric join codes so that I can provide learners with a means to join quiz sessions.
C. As an educator, I want to provide QR codes to allow learners to easily join the game without typing in the code.
D. As an educator, I want a timer so that I can maintain a consistent pace on the quiz.
E. 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.
F. As an educator, I want to save quizzes in some sort of file so I can import them later.
G. As a learner, I want to be able to set my username so that I can make myself an identifiable competitor in the class.
H. 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.
I. 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.
J. As an educator, I want to be able to experience a fully functional question editor.
K. 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.

All Scenarios are isolated, starting at the homepage of the application
Scenario A: Host Quiz - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. Click the 'Start' button
6. The host should see the first question of their quiz with a ticking down timer

Scenario B: Generate Code - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. The host should see the code on the top banner of the page

Scenario C: Generate QR Code - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. The host should see the QR code on the top banner of the page

Scenario D: Question Timer - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. Click the 'Start' button
6. The host should see the first question of their quiz with a ticking down timer
7. Waiting until the timer ends will reveal the answers

Scenario E1: Scoring - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. Join with a player using the code and a username.
6. Click the 'Start' button
7. The host and player should see the first question of their quiz with a ticking down timer
8. The player selects an answer, and the host ends the game by pressing 'End Guessing'.
9. The host then presses 'View Leaderboard' to see the current scores.

Scenario E2: Scoring - Pass
1. Follow Scenario E1 to the end
2. Press the 'continue' button, and continue through the quiz answering questions as the player
3. At the end of the quiz, press the continue button again to see the post game statistics
4. The host should see a histogram displaying the distribution of scores from the participants

Scenario F1: Save Quizzes - Pass
There is a json format that is passed to the server for processing into a quiz, this is already held and can be modified by the user.

Scenario F2: Save Quizzes - Pass
1. Select the "Host your own Quiz!" link
2. Select the 'Create Quiz' button
3. Enter a name in the box with the placeholder 'Quiz name'
4. Select the 'Add Questions' button
5. Click the 'Download Quiz' button
6. The browser should download a json file containing the title inserted in step 3

Scenario G: Player Username - Pass
1. Following scenario A up to test 4 to host a quiz
1. In a separate instance, enter the game's code into the textbox with the placeholder 'Code'
2. Enter the desired username in the textbox with the placeholder 'Username'
3. Click the 'Join' button
4. The user should see 'You entered a game!' on their screen with their selected Username on the host's screen under 'Participants'.

Scenario H: Answering Questions - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. Join with a player using the code and a username.
6. Click the 'Start' button
7. The host and player should see the first question of their quiz with a ticking down timer
8. The player selects an answer, and the host ends the game by pressing 'End Guessing'.
9. The player will get an alert confirming a correct or incorrect answer

Scenario I: Player Scoreboard - Pass
1. Follow Scenario H to step 9.
2. The player clicks on their screen to end the alert.
3. The player clicks 'View Leaderboard'.
4. The player should see the list of players and their scores with themselves marked as 'You'

Scenario J1: Quiz Editor Initialization - Pass
1. Select the "Host your own Quiz!" link
2. Select the 'Create Quiz' button
3. Enter a name in the box with the placeholder 'Quiz name'
4. Select the 'Add Questions' button
5. The user should see the 'Start Quiz' button

Scenario J2: Quiz Editor Add Questions - Pass
1. Select the "Host your own Quiz!" link
2. Select the 'Create Quiz' button
3. Enter a name in the box with the placeholder 'Quiz name'
4. Select the 'Add Questions' button
5. Select the 'Add Question' button
6. Click the '+' sign to expand the editing box
7. Type out the question body in the box with the placeholder 'Add your question body here'
8. Click the 'Add Answer' button
9. Type out an answer to the question, and mark it as correct if it is.
10. The user should be able to repeat steps 5 to add more questions and steps 7 to 9 to enter their information.

Scenario J3: Quiz Editor Change Default Timer - Pass
1. Select the "Host your own Quiz!" link
2. Select the 'Create Quiz' button
3. Enter a name in the box with the placeholder 'Quiz name'
4. Click the + or - buttons in the 'Set default timer box'
5. Click Add Questions
6. Click the 'Download Quiz' button
7. The 'timeDefault' should be set to the number selected

Scenario K: Kick Players - Pass
1. Select the "Host your own Quiz!" link
2. Click the 'Select File' button
3. Select a quiz json file to upload
4. Click the 'Upload' button
5. Using the quiz code on the top banner and a random username, join in a separate instance as described in Scenario G.
6. The host hovers their cursor over the player's name to reveal a red button on the corner.
7. Click this red button for the player to be removed.
8. The player should see 'Disconnected' and the host should no longer see the player in 'Participants'.

Unit Tests:
Automated Tests were created for both the frontend and backend located in the **./frontend/__tests__ folder** and the **./backend/src/__tests__** folder respectively. Documentation for the tests is found in the folder **./documentation/test-suites** with the corresponding documentation in the named folder (frontend/backend).

The backend testing suite has no failing tests, but it can result in hanging handles caused by timeout processes in the backend upon websocket disconnect.
The frontend testing suite has no failing tests.