Testing Plan

Mystery Trivia

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# Revision History

| **Date** | **Description** | **Authors** | **Comments** |
| --- | --- | --- | --- |
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# 1. Introduction

## 1.1 Purpose

The Mystery Trivia Testing plan serves as a critical guide for the development team, its purpose is to provide comprehensive roadmap for executing the test cases with the goal of ensuring that the Mystery Trivia application suite meets all the requirements laid out in the Mystery Trivia requirement specification document explaining the specific steps needed to evaluate the applications functionality and performance. The testing plan helps the development team provide quality assurance and helps identify defects, flaws, or errors in the application and take the appropriate action to address them. The testing plan helps ensure that the application is not only functional but also reliable, secure, and user friendly. Overall the testing plan provides a structured approach to testing and has clear steps required to evaluate the performance of the application and functionality.

## 1.2 References

The Mystery Trivia Testing Plan links test cases with corresponding use cases in the specification document. This allows for a comprehensive evaluation of the application's functionality and performance. It also provides a standardized format for describing each use case and helps the development team track progress throughout the testing process.

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# 2. Functional Testing

## 2.1 Approach

Manual and automated testing will be used for many different test case scenarios. Unit testing will be used to test various scripts and methods within the project. In Unity there is a Unity test framework package that is a tool for testing code in both play and edit mode. Since there are many different functions that require playing, or player input, these test cases will be covered by the test framework package.

## 2.2 Pass / Fail Criteria

For passing a test case, the expected result must be the same as described within their test case. If the test case does not have the expected result, then the test case will fail. Whenever a test case fails, it must be reviewed as to why it did not get the expected result.

## 2.3 Entry / Exit Criteria

The entry criteria for functional testing is that prototype 2 is complete. The exit criteria is that all of the functional test cases have been completed.

## 2.4 Suspension/Resumption Criteria

The suspension criteria for functional testing is when the test fails, or some other bug prevents the desired outcome of the test cases. Testing will resume when these factors have been identified and fixed.

## 2.5 Items to be Tested

Answer Question

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-1 | Answer Question Correctly | Once the pop up question appears, click the correct answer. |
| TC-2 | Answer Question Incorrectly | Once the question appears, click on one of the wrong answers. |
| TC-3 | Answer Question no Answer | Once the question appears, wait for the timer to reach zero. |
| TC-4 | Answer Question after Incorrect | Once the question appears, click on one of the wrong answers. Attempt again with the right answer after failing. |

Play as Guest

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-5 | Play as Guest | On the login screen, click play as a guest button to go to the category scene. |

Start New Game

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-6 | Start New Game | After logging on, click start new game to be prompted with the category scene. |

Load Game

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-7 | Continue | After logging on, click continue to resume where the user last left off. |

Teachers Code

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-8 | Teachers Code invalid | Click on the teachers code category and attempt an invalid code. |
| TC-9 | Teachers Code Valid | Click on the teachers code category and attempt a valid code. |

Login

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-10 | Login Successful | The user has entered all login credentials correctly |
| TC-11 | Login with no email parameter | Once the user attempts to login the user will enter a password and not an email to login in |
| TC-12 | Login with no password parameter | Once the users enters their email, they will try logging in without entering a password |
| TC-13 | Login with invalid email | Once the user attempts to login with an email that was mistyped and not entered correctly |
| TC-14 | Login with invalid password | The user has enter their email but mistyped their password or entered an incorrect password |

Register

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-15 | Register Successful | The user has entered all email, username, and matched passwords correctly |
| TC-16 | Register invalid email | The user has entered an incorrect email or mistyped the email |
| TC-17 | Register no email parameter | The user did not enter an email in the email input field parameter |
| TC-18 | Register no username parameter | The user did not enter a username in the username input field |
| TC-19 | Register password short length | The user did not enter a password that is length six or larger |
| TC-20 | Register password matching | The user has entered a password that does not match confirm password or the user has entered confirm password that does not match password |
| TC-21 | Register Failed | The user did not enter some of the information correctly |

Reset Password

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-22 | Reset Password | On the login screen there’s a “Forgot Password” button that will take you to another screen and have you enter your email that you forgot your password for and if it is valid it will send a reset password link to your email |

Hint Button

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-23 | Hint Button | In a maze scene you are able to click a button that is titled “Hint” and this will deduct 200 points off of your total points and destroy one answer of the incorrect answer and can be used three times per question |
| TC-24 | Hint button not enough points | If the player does not have anything greater than or equal to 200 points the “Hint” button will turn red |

Player Movement

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-25 | Player Movement | In a maze the player will be able to move left, right, up, and down using their arrow keys on their keyboard. |

Leaderboard

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-26 | Leaderboard | Leaderboard successfully shows all scores from all users, Points should be updated correctly. |

Player death

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-27 | Player death | Player death is successfully recorded, and the player returns to the starting position. |

Contact form

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-28 | Contact form | Contact form successfully sends emails. |

Back button

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-29 | Back button | Back button should successfully go back to the previous scene. |

End scene

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-30 | End scene | End scene successfully displays with score and redirection to next level. |

Difficulty selection

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-31 | Difficulty selection normal | After logging on select normal difficulty. |
| TC-32 | Difficulty selection challenging | After logging on select challenging difficulty. |
| TC-33 | Difficulty selection hard | After logging on select hard difficulty. |
| TC-34 | Difficulty selection expert | After logging on select expert difficulty. |

Item pickup

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-35 | Boost pickup | In a maze scene collide with a boost pickup. |
| TC-36 | Chest pickup | In a maze scene collide with a chest. |

Sound testing

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-37 | Change volume option with slider | In a maze scene move the volume slider with the mouse. |
| TC-38 | Change volume option with keys | In a maze scene move the volume slider with the <> keys. |
| TC-39 | Sound effect volume | In a maze scene trigger a sound effect. |
| TC-40 | Mute Button | In a maze scene select the mute button while the application is not muted. |
| TC-41 | Unmute Button | In a maze scene select the mute button while the application is muted. |

# 3. Non-functional Testing

## 3.1 Approach

Non-functional testing will be performed manually using the latest stable build of the application, in the web page environment.

## 3.2 Pass / Fail Criteria

A test case will be considered passed if all steps in the testing case specification document are followed and only the expected results are produced. A test shall be considered failed if it matches the failure criteria, it shall also be considered failed if it produces any results besides the ones documented in the pass criteria.

## 3.3 Entry / Exit Criteria

The Entry Criteria of non-functional testing is following the completion of functional testing.

The Exit Criteria of non-functional testing is the completion of all stated test cases.

## 3.4 Suspension / Resumption Criteria

Testing will stop if a test fails, prompting that test case to be placed under review. A test case under review will entail alteration of either the test case or the application until the case can be passed.

## 3.5 Items to Be Tested

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-42 | Soak test | The application shall be run for 24 contiguous hours, then have TC-1 to TC-4, TC-16, TC-17, TC-19, TC-22, and TC-27 to TC-33 run. |
| TC-43 | Responsiveness test. | The application shall be tested for 0.5 second or lower response time on TC-1 to TC-4, TC-16, TC-17, TC-19, TC-22, and TC-27 to TC-33. |

# 4. Integration Testing

## 4.1 Approach

The integration testing approach is to run all scripts independently in a controlled environment so if one script fails, then the testing will stop, and our team will be notified.

## 4.2 Pass / Fail Criteria

For a passable test run, each test case must be run independently to ensure that all results are met. In addition, if there are any unexpected results, then the test case will be flagged, and our team will immediately start debugging the code.

## 4.3 Entry / Exit Criteria

The entry criteria are solely the execution of non-functional testing.

The exit criteria are the execution of the functional testing.

## 4.4 Suspension / Resumption Criteria

When a test fails, the overall testing will be suspended. Consequently, our team will look as to why our test cases are failing and once we determine what the root cause of the issue is, we will make steps on working on a solution. Then, once the solution is achieved and written down for future reference, testing will continue.

## 4.5 Risks / Issues

Potential issues include asynchronous behavior with the database, the game, and the website. The synchronization of all three may cause dependency issues in pertinence to the scripts. But the testing is to ensure the minimization of any glitches and issues that may arise.

## 4.6 Items to Be Tested

| Test Case ID | Title | Description |
| --- | --- | --- |
| TC-44 | User connect to the playfab | Making sure the user login ID connects to the playfab account. |
| TC-45 | Questions and answer API | Making sure questions and answers API popup correctly. |
| TC-46 | Leaderboard API | Making sure the leaderboard stores points correctly, user ID shows on the leaderboard. |
| TC-47 | Contact API | Making sure in the contact form API sends the message directly to the admin and stored in the database correctly. |

5. Schedule

| Test ID | Tester | Start Date | End Date |
| --- | --- | --- | --- |
| TC-1 - TC-9 | Austin | 4/7/2023 | 4/12/2023 |
| TC-10 - TC-25 | Mohammed Chokr | 4/7/2023 | 4/12/2023 |
| TC-26 - TC-30  TC-44 - TC-47 | Mohammed Rubel | 4/7/2023 | 4/12/2023 |
| TC-31 - TC43 | Jason Marrone | 4/7/2023 | 4/7/2023 |

6. Traceability Matrix

| Requirement ID | Requirement Name | Use Case ID | Test Case ID |
| --- | --- | --- | --- |
| FR1 | Answer Question | UC1 | TC-1 |
| TC-2 |
| TC-4 |
| TC-4 |
| FR2 | Play as Guest | UC2 | TC-5 |
| FR3 | Start New Game | UC3 | TC-6 |
| FR4 | Load Game | UC4 | TC-7 |
| FR5 | Teachers Code | UC5 | TC-8 |
| TC-9 |
| FR6 | Login | UC6 | TC-10 |
| TC-11 |
| TC-12 |
| TC-13 |
| TC-14 |
| FR7 | Register | UC7 | TC-15 |
| TC-16 |
| TC-17 |
| TC-18 |
| TC-19 |
| TC-20 |
| TC-21 |
| FR8 | Reset Password | UC8 | TC-22 |
| FR9 | Hint Button | UC9 | TC-23 |
| TC-24 |
| FR10 | Player Movement | UC10 | TC-25 |
| FR11 | Leaderboard | UC11 | TC-26 |
| FR12 | Player death | UC12 | TC-27 |
| FR13 | Contact form | UC13 | TC-28 |
| FR14 | Back button | UC14 | TC-29 |
| FR15 | End scene | UC15 | TC-30 |
| FR16 | Difficulty selection | UC16 | TC-31 |
| TC-32 |
| TC-33 |
| TC-34 |
| FR17 | Item pickup | UC17 | TC-35 |
| TC-36 |
| FR18 | Sound testing | UC18 | TC-37 |
| TC-38 |
| TC-39 |
| TC-40 |
| TC-41 |