**Software Major Work Documentation Matthew Hill**

**Problem Definition**

My app, ‘Custom Quizzer’ solves the issue of paywalls and in app purchases in self-customisable quizzes for Saint Augustine’s students. Apps with such paywalls and in app purchases include Kahoot, Quizlet and Blooket. My app aims to provide students from Saint Augustine’s to test their knowledge and education. The app will function as a self-customisable quiz where users can either test themselves or others by making their own quiz or using the example quizzes provided. The quiz will check all answers given from the user and compile their score and provide feedback on their understanding and progress of the topic. My app utilises Excel spreadsheets to compile questions in the quiz, so the user of the app must have at minimum, a limited knowledge within Excel spreadsheets in order to create their own quizzes. The primary issue that is to be tackled with my app is that it allows Saint Augustine’s students to compile their own quizzes with their own topics that they want to be tested on without facing paywalls, in app purchases and advertisements.

**Legal and ethical considerations**

My app, ‘Custom Quizzer’ does not require any personal information as there is no log in or registering features, therefore it doesn’t breach any of the user’s data and privacy. The software is somewhat accessible as it functions as a knowledge quiz on certain areas the user is studying or trying to extend their knowledge on. However, the user must be able to operate Excel spreadsheets in order to compile their own sets of quiz questions, options and answers, this limitation of my software should be minimal as the extent of usage on Excel spreadsheets is limited and only requires a basic knowledge of Excel for the user to type their quizzes into the file. ‘Custom Quizzer’ is similar to other online quiz applications and webpages that allow you create and test yourself on your own topics. This could result in some issues regarding intellectual property. However, as the concept of an online customisable quiz is very common it cannot be claimed as intellectual property of one person, therefore ‘Custom Quizzer’ is not an infringement of any intellectual property.

**Functional and non-functional requirements**

|  |  |
| --- | --- |
| Functional: | Non-functional: |
| The quiz will not have any paywalls or in app purchases | App will have simple multiple-choice quiz not requiring a tutorial |
| Users must make custom questions through an Excel file | The app will compile questions inputted by user from an Excel csv file |
| App will allow user to select topic of quiz | A choice of 4 subjects the user can choose to be quizzed on |
| The app will give user feedback on how they performed on the quiz | Once completed, the quiz will provide the user with a score out of 5 |
| User should be notified once quiz is completed | The quiz will print ‘Quiz completed’ and prompt the user to view their score on the quiz |

**Development Log**

**Test Table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test ID** | **Category** | **Test Case Description** | **Input to Provide** | **Expected Output** | **Actual Output** | **Pass/Fail** | **Action Taken** |
| Test 1 | Path Coverage | Verify initialization of the main window | Run the application | Main window opens with default settings | Main window opens with default settings | Pass | N/A |
| Test 2 | |  | | --- | | Path Coverage |  |  | | --- | |  | | |  | | --- | | Verify loading of quiz topics |  |  | | --- | |  | | |  | | --- | | Run the application and check for topic buttons |  |  | | --- | |  | | |  | | --- | | Buttons for Physics, Biology, Mathematics, and Italian appear |  |  | | --- | |  | | |  | | --- | | Buttons for Physics, Biology, Mathematics, and Italian appear |  |  | | --- | |  | | Pass | N/A |
| Test 3 | Path Coverage | |  | | --- | | Verify selection of quiz topic |  |  | | --- | |  | | |  | | --- | | Click on a quiz topic (e.g., Physics) |  |  | | --- | |  | | |  | | --- | | Opens the quiz frame with the title "Physics Quiz" |  |  | | --- | |  | | |  | | --- | | Opens the quiz frame with the title "Physics Quiz" |  |  | | --- | |  | | Pass | |  | | --- | | N/A |  |  | | --- | |  | |
| Test 4 | Boundary Value | Check behaviour with no questions in a topic | Select a subject without any questions assigned | Should display a message “no questions available” | No message is displayed | Fail | Check for empty question lists and display messages |
| Test 5 | Boundary Value | Verify behaviour at the end of the quiz | Finish the quiz | Displays ‘Quiz completed!’  Your score: | Displays ‘Quiz completed!’  Your score: | Pass | N/A |
| Test 6 | Faulty data | Input a non-integer as option index | Modify quiz data to include non-integer correct option index | Should handle or reject invalid data | Handles or rejects invalid data | Pass | N/A |
| Test 7 | Path coverage | Verify score increment on correct answer | |  | | --- | | Answer a question correctly |  |  | | --- | |  | | |  | | --- | | Increments score by 1 |  |  | | --- | |  | | |  | | --- | | Increments score by 1 |  |  | | --- | |  | | Pass | N/A |
| Test 8 | Path coverage | |  | | --- | | Verify no score increment on wrong answer |  |  | | --- | |  | | Answer a question incorrectly | Score stays the same | Score stays the same | Pass | N/A |
| Test 9 | Exception handling | |  | | --- | | Verify handling of index out of range |  |  | | --- | |  | | Change  current\_  question\_  index to an out-of-range value | Should be able to handle out of range value | Crashes or is unable to handle out of range value | Fail | Check for current question index |
| Test 10 | Faulty data | Verify handling of invalid quiz data | Provide quiz data with missing ‘subject’ or ‘question’ areas | Should be able to handle invalid or missing quiz data | Unable to load questions or missing quiz data will impact app | Fail | Check invalid or missing quiz data will not effect app |