Software Engineering Group Project

User Interface Specification

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| Config Ref: | SE\_QA\_04 |
| Date: | 21st February 2022 |
| Version: | 1 |
| Status: | Draft |

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# Introduction

## Purpose of this Document

The purpose of this document is to define and document the use cases for the Web Quiz project.

## Scope

This document describes the Typical users as well as the use cases of the Quiz maintainer, Quiz master and Quiz Participant, as well as the error conditions.

## Objectives

The objective of this document is to clarify that each user is handled appropriately as well as recognise any errors that may occur from each user’s perspective.

# Typical users

## Quiz Maintainer

The quiz maintainer wants to create Quizzes for their Computer Science introduction to programming class based on the knowledge they have taught in their lectures. They create quizzes that have questions that vary from Multiple choice to True or False that their students can answer when they send the link out publicly. They want to have the ability to create, edit and update, delete, import, and export quizzes.

## Quiz Master

The quiz master has access to quizzes that they want to be able to send out links to as many people as they’d like to give them access to the quiz before starting it. They also want to be able to turn on or off timing and step through each question if the timer is off. Finally, if the quiz needed to be cut short, they should be able to stop the quiz even if all the questions haven’t been answered.

## Quiz Participant

The quiz participant needs to be able to access a link to a quiz that is started by the quiz master and should be able to answer each question from a shared screen. Once the quiz is complete, the participant should receive a mark indicating how well they did in the quiz.

# Use Cases

## Quiz Maintainer

The quiz maintainer should be able to register with a valid email and a password that is longer than 8 characters. Then be able to log in with their new account that they just registered or registered before and be taken to a logged in view where they have access to a Start Quiz, Quizzes, and Create Quiz buttons in the navigation bar. Using the create quiz link they can title the quiz and give it a description as well as indicate how long they want each question to be. They can then pick between Multiple choice and True or False questions to make. They can enter a question and choose how many marks the question should award if it is answered correctly. As well as indicate the correct answer, for Multiple choice they can write 4 possible answers and indicate which is correct whereas with True or False they can only indicate whether the answer is True or if it is False. The quiz maintainer can choose to include an image that will display when the quiz starts. Then if they want, they can choose to change the how much time is allowed for that question. Once the questions are made the quiz maintainer can save the quiz but first, they can preview how the quiz will look when it is started by a quiz master. In this menu they can delete, edit or add more questions if they wish. Once the quiz has been saved, they can view it in the Quiz page where is where they can share the quiz to others who might want to use it with their own class. They can also import and export quizzes as well as delete and edit them if they want.

## Quiz Master

The Quiz master can access a quiz through the start quiz menu or through a link that has been sent to them. Once they are starting a quiz, they can send out a participant link to whoever they want to participate. They can choose to turn on the timer to set a time limit on each question as well as turn it off to manually progress through each question. This is the screen that participants can view. The Quiz master can also stop the quiz at any time if needed.

## Quiz Participant

The Quiz participant should be able to open the quiz link sent to them by the Quiz master which should lead them to a waiting page. Once the Quiz master has started the quiz, the participant will be sent to the first question where they can switch in between a question-and-answer view, if they want to or just an answer view which only shows the answering prompt on their device. Once the quiz is complete, they will receive a mark out of the total possible marks. If the quiz was ended early, they will get a mark out of the total questions marks that have been asked.

## Use case table

| ***Use case ref.*** | ***Title*** | ***Description*** |
| --- | --- | --- |
| 1.0 | Quiz Maintainer account creation | To create an account the user must first click the register button located at the top right of the screen. From here, a valid email address and a password must be entered. The password must be entered again for validation. If the user misses any data or enters any invalid information then an error message will display and the user cannot continue. When the form has been filled in correctly, the user will be returned to the welcome screen. |
| 1.1 | Quiz Maintainer login | To login, an account must first be created [see use case 1.0]. The user can login to an existing account by clicking the login located at the bottom of the screen, or alternatively by clicking the login button on the navigation bar at the top of the screen. The user must enter the account details in the corresponding boxes and click the login button to finalize. |
| 1.2 | Quiz Maintainer create quiz | If a quiz maintainer wants to create a quiz then they must first login [see use case 1.1]. Once logged in, click the create quiz button. This will take the user to the quiz creation form. Here, a quiz title and description must be entered. The default question timer can also be altered here. Click next when ready to continue.  The question type can be changed using the dropdown menu at the top of the screen. The rest of the form will be altered to accommodate the question type. A question and mark must be entered, as well as at least 2 answers for a multiple-choice question, and 1 correct answer. An accompanying image can be uploaded if needed. To move on to the next question, click next. When finished, click the save button to move on to the preview screen. |
| 1.3 | Quiz Maintainer preview quiz | When a quiz maintainer has created at quiz [see use case 1.2] the user will be greeted with a preview of the quiz. From here the user can use the numbers and arrows along the bottom of the screen to change which page question is being previewed. To edit a question, click the edit button at the top left. When a user clicks the edit button they will be taken to the corresponding question where they can edit the details of that question. A question can be deleted with the delete button at the top right. The plus along the bottom can be used to add a question, and the floppy disk next to it can be clicked to save the quiz. |
| 1.4 | Quiz Maintainer view quizzes | To view saved quizzes as a quiz maintainer, the user must first be logged in as a quiz maintainer [see use case 1.1]. Once logged in, the user can click the quizzes button located on the navigation bar at the top right to view a list of saved quizzes. From here, the user can change the sort criteria of the list by using the dropdown menu at the top of the form. The share icon next to the name of each quiz allows the user to create a link to the quiz. The export button to the right of the share button allows the user to export a saved quiz, clicking the pencil icon will take the user to the edit screen, and the bin icon will delete the quiz. A quiz can be imported using the button located at the bottom. |
| 1.5 | Quiz Maintainer edit quiz | To edit a quiz, the user must first be logged in [see use case 1.1] and at least 1 quiz must have been created already [see use case 1.2]. Go to the quiz list [see use case 1.4] and click the pencil icon that corresponds to the quiz you want to edit. This will open the selected quiz in the quiz creation form seen in case 1.2 where the user can make alteration to the quiz. When the desired changes have been made, the user can click the save button to be taken to the preview screen [see use case 1.3] to finalize the changes. |
| 1.6 | Quiz Maintainer delete quiz | To edit a quiz, the user must first be logged in [see use case 1.1] and at least 1 quiz must have been created already [see use case 1.2]. Go to the quiz list [see use case 1.4] and click the dustbin icon that corresponds to the quiz you wish to delete. The user will be presented with a dialogue that asks you to confirm the deletion. Click yes to continue to delete the quiz. |
| 1.7 | Quiz Maintainer start quiz | To start a quiz, the user must be logged in [see use case 1.1] and at least 1 quiz must have been created already [see use case 1.2] Click the start quiz button on the navigation bar at the top. The user will be presented with a list of created quizzes. The dropdown menu at the top can be used to change the sort order. Click the share icon next to the quiz title to copy the link to the quiz. A quiz can be imported by clicking the import button at the bottom of the screen. To start the quiz, click the start button next to correct quiz.  You will then be presented with the quiz lobby screen. The total amount of users connected will be displayed at the top left. The timer can be toggled on or off using the switch located at the top right. The code to the quiz will be displayed below the quiz title and description, along with a link for the quiz participants to use. When all users have connected, click the start button to begin the quiz.  When the quiz has started, you can use the arrow located at the bottom to manually move on to the next question, skipping the timer. You can also end the quiz prematurely with the end quiz button. At the end of the quiz the participants will be given their scores independently. |
| 2.0 | Quiz Master account creation | To create an account the user must first click the register button located at the top right of the screen. From here, a valid email address and a password must be entered. The password must be entered again for validation. If the user misses any data or enters any invalid information, then an error message will display and the user cannot continue. When the form has been filled in correctly, the user will be returned to the welcome screen. |
| 2.1 | Quiz Master login | To login, an account must first be created [see use case 2.0]. The user can login to an existing account by clicking the login located at the bottom of the screen, or alternatively by clicking the login button on the navigation bar at the top of the screen. The user must enter the account details in the corresponding boxes and click the login button to finalize. |
| 2.2 | Quiz Master view quizzes | To view saved quizzes as a quiz master, the user must first be logged in as a quiz master [see use case 2.1]. Once logged in, the user can click the quizzes button located on the navigation bar at the top right to view a list of saved quizzes. From here, the user can change the sort criteria of the list by using the dropdown menu at the top of the form. The share icon next to the name of each quiz allows the user to create a link to the quiz. The export button to the right of the share button allows the user to export a saved quiz. A quiz can be imported using the button located at the bottom. |
| 2.3 | Quiz Master start quiz | To start a quiz, the user must be logged in [see use case 2.1] and at least 1 quiz must have been created already [see use case 2.2] Click the start quiz button on the navigation bar at the top. The user will be presented with a list of created quizzes. The dropdown menu at the top can be used to change the sort order. Click the share icon next to the quiz title to copy the link to the quiz. A quiz can be imported by clicking the import button at the bottom of the screen. To start the quiz, click the start button next to correct quiz.  You will then be presented with the quiz lobby screen. The total amount of users connected will be displayed at the top left. The timer can be toggled on or off using the switch located at the top right. The code to the quiz will be displayed below the quiz title and description, along with a link for the quiz participants to use. When all users have connected, click the start button to begin the quiz.  When the quiz has started, you can use the arrow located at the bottom to manually move on to the next question, skipping the timer. You can also end the quiz prematurely with the end quiz button. At the end of the quiz the participants will be given their scores independently. |
| 3.0 | Quiz Participant join quiz | The user must use the link generated by the quiz maintainer when the quiz is created [see use case 1.2] to join the quiz. When the participant has joined, they will be greeted with a splash screen containing the title and description of the quiz along with message to wait for the quiz master to start the quiz. |
| 3.1 | Quiz Participant taking quiz | The participant must first have joined the session [see use case 3.0] and the quiz master must have started the quiz [see use case 2.3] before the participant will be moved to the questions. When the quiz has started, the user will be greeted with the question displayed along the top of the dialogue, along with the image uploaded during creation.  The user can select as many answers as desired during a multiple-choice question but can only selected one answer on a true or false question.  The view toggle button at the bottom can be used to switch display modes, question view shows the answers and the accompanying image, whereas answer view shows only the answers.  Once all questions have been answered the participant will be take to a page where their score will have been calculated for them. |

## UML Use case diagramDiagram Description automatically generated

Figure 1: Use case diagram

# Error Conditions

The first error condition is triggered when a user attempts to register without inputting an email or password. Similarly if a user tries to log in without an email or password they will trigger the same error. If they try to log in without valid credentials then they will not be given access to log in. The next error condition is if a user attempts to create a quiz without a title or description they will be asked to do so. The Multiple choice and True or False questions error conditions are similar in that they require the Quiz master to input a question, a mark and indicate the correct answer before they can add the question to the quiz.

REFERENCES

DOCUMENT HISTORY

| *Version* | *Issue No.* | *Date* | *Changes made to document* | *Changed by* |
| --- | --- | --- | --- | --- |
| 1.0 | N/A | 21/02/2022 | N/A - original version | Olh20 |
| 1.1 | N/A | 24/02/2022 | UM use case diagram added | Toc27 |
| 1.2 | N/A | 25/02/2022 | Use case table added | Toc27 |