

Classroom Quiz System

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Course: G401 – Computer Science with a year in industry

Module: CS39440

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1 Project Description

The Classroom Quiz system will be a web based application that aims to enhance learning in lectures by providing a way for lecturers to create and run quizzes during the lectures.

The application will allow lecturers and other authorised users to run sessions during a lecture in which they can select one of the quizzes they have access to. This session can then be joined by students with a session key where they can answer the questions. Lecturers have a live feed of the results of the question being answered presented in a relevant format for the type of question, for example a bar chart of results for a multiple-choice question.

The project will be split into two main parts, the first is to create an entirely web based application that lecturers can run a simple quiz from as described above. The second part involves developing an add-in for Microsoft PowerPoint that allows the lecturer to create the quiz as part of a set of slides. The slide the lecturer is viewing would then be displayed in the quiz session on the web application. Once a relevant quiz slide appears, the users will be given the quiz options to select an answer in the same way as the first part. The lecturer can then display the results in the same way, though it would not be via the web application as before. This part of the project behaves in much the same way as Qwizdom [1].

The reason for having two parts is that the first would be mostly built for the second part but if built as a standalone part it allows lecturers to create quizzes rather than a set of slides with quizzes within it. Additionally, the second part might be larger in scope than originally anticipated and as such having the first part to extend should the second part become unviable would be appropriate.

Currently the project seems to fit an XP approach, due to its variability, and some of the early work will involve picking the best suited practices within XP to work with.

2 Proposed Tasks

2.1 Research and Spike Work

The first major part of the project involves a significant amount of research into the technologies needed for the project. The first part would be to research into the framework for the web application, and any hosting that is required. The hosting choice would depend somewhat on some choices for the web application, such as does Microsoft Azure support PHP frameworks?

Spike work will most likely need to be performed to test out the frameworks and any deployment methods for the hosting method chosen.

In the second part of the project, more extensive research will need to be done on how to create a Microsoft Office add-in.

Some other initial research will involve what sort of development approach will fit the project, XP is a vague way to describe the process, several of its practices should be chosen and justified.

2.2 Set up work environment for a web application

Due to the project being a web application there is a small amount of initial environment set up needed at the start of the project. This will involve setting up a version control system (most likely Git with Github [2] due to familiarity with the system), the local server, and potentially a non-local environment depending

on research findings. It will also involve setting up the development framework chosen above and its associated testing, development and production environments.

2.3 Development

Split into the two main pieces of work described in Section 1.

2.3.1 Web only system

This is the system that is entirely web based and does not feature Microsoft PowerPoint or the streaming of slides to user's devices, only questions. Sub tasks would involve the creation of an administrative back end for the creation of quizzes, the front end and how questions appear, the session system and how results of quizzes are displayed by the lecturers.

2.3.2 Integrate with Microsoft PowerPoint

Involves replicating much of the Qwizdom functionality for creating sets of slides with questions embedded which can then be answered by students. This would involve the creation of a Microsoft Office Add-in to stream slides to the server which would then show them in the correct session. Questions would be "special" slides which allow users to answer them.

2.4 Testing

Acceptance testing will be quite a large task because the number of students answering a question on Qwizdom can be up to 250 and this project should be able to cope with similar numbers. Some form of automated testing should be carried out here for this.

2.5 Project Meetings and Diary

There will be weekly supervisor meetings in which the progress of the project will be discussed. Additionally, due to the nature of the project, the supervisor can also be thought of as the customer and the discussion of the project can take a somewhat different approach if needed in regards to requirements changing.

A diary will be kept during the development of the project, this will be updated periodically with the work done since the last post. It will be in the form of a blog on WordPress.

2.6 Demonstrations

There are two demonstrations for the project, one mid project and one at the end. They will both involve some preparation most likely in the form of notes or a slideshow alongside the project running at its most up to date level.

3 Project Deliverables

3.1 Mid-Project Demonstration Materials

A set of resources created for the mid project demonstration, in the form of written notes or a set of slides. These will be included as an item in the appendices of the final report.

3.2 Source Code for Web Application

This will include all the code running on the server, and may include some scripts and/or instructions on how to set up the same environment and how to get the web application running.

3.3 Source Code for Microsoft Office Add-in

All the code that is used to create the Add-in alongside instructions on how to run/ compile it. It will also likely include some form of compiled executable that can be run with ease.

3.4 Stories and CRC cards

This will take the form of a set of the stories and the CRC cards used during development and will be part of the appendices of the report.

Note: This may change depending on what development process is taken

3.5 Final Report

This is the report and any appendices created, it is primarily a discussion of the work produced but also includes acknowledgements to other people materials used in the form of a bibliography.

3.6 Final Demonstration

There will be no documentation to hand in, as it is done after the final report is handed in however it should be noted there will be some work to do in preparation for the demo.

4 Bibliography

[1] Qwizdom UK Ltd, "Qwizdom UK," [Online]. Available: <http://qwizdom.com/uk/>. [Accessed February 2017].

Qwizdom is the current service that this project aims to replicate.

[2] Github Inc, "GitHub homepage," [Online]. Available: <http://github.com/>. [Accessed February 2017].

Github offeres free Git based repositories for version control.