

ITS Project Proposal

Members

| <u>Name</u> | Credit | Skills |
|-----------------------------------------|----------------------------|------------------------------|
| Alvin Fabio – aarel3 | 1 credit 4 hours a week | Java, C++, C, Python. |
| Dongzhao Song – dsong84 | 1 credit 4 hours a week | Java, JS, C, SQL |
| Nicholas Tan – ntan43 | 1 credit 4 hours a week | Java, Python, C++, C |
| Dennis Tsui – dtsui9 | 1 credit 4 hours a week | Java, Python, SQLite, C, C++ |

Project Goals

This semester, our goal is to implement additional options for the Quiz App where users get to select the quiz mode, questions by-chapters or random question from the whole textbook. To do that, we plan to modify the Quiz App page to allow user to access the textbook and another option to attempt the quiz. After selecting the quiz option, there will be another 2 options, the by-chapter option or the general option. The by-chapter option will lead you to another page where users can select which chapter they want to work on whereas the general option will bring you straight to the quiz with random questions generated from the textbook. Our second goal is to include textbook references when taking the quiz. Users have the option to open the textbook while taking the quiz. It will be a small change to the UI of the Quiz App to show the option. Our last goal would be to fix the backend of the quiz app by connecting the database to the Quiz App.

Timeline

Week 1-3: Create team charter. Assign team roles and responsibilities

Week 4-10: Implement API and other features if time permits

Week 11: Spring Break

Week 12-15: Test features that are completed. Add new features if time permits

Week 16-17: Final Presentation

Project Description

Our project primarily focuses on building an API which serves as a bridge between the frontend and the backend. As of right now, our QuizApp is not a fully complete program since it lacks the backend features and operations. Our API will fill the void within the backend functionality and opens up possibilities for the implementation of new features in the future iteration of this project.

Since the QuizApp is written in Java, there are several methods that we could use to create our API. One viable method is using MySQL and then utilizing jdbc as the connector, whereas other options can be done through MongoDB.

Further implementation of our API is to connect the QuizApp with the E-Textbook as a source material. The QuizApp will be able to contain questions from the E-Textbook and it will have several feature such as directing the user to the specific material within the textbook that correlates to a particular question, randomizes questions, a rating system where a student could grade a question based on difficulty, as well as a mini forum that student can use to discuss about the questions.

Foreseeable Challenges

Group Challenges:

All members are new, and are not familiar with the existing code. It may need a little time to find the APIs we need to implement. Besides APIs, building connections between E-Textbook and QuizApp might be a challenge.

- Song: Understand some general concepts of Databases and network, lack the experience of implementation. Familiar with Java but lack the experience with Android Studio development. Concentration is System Arch/Information Internetwork, have almost no knowledge about machine learning and AI.
- Dennis: Lack of experience with app design and GUI's in general outside of basic understanding of JavaFX. Familiarity with Java will help bridge this gap of understanding.
- Alvin: Need to do research regarding the functionality of MongoDB and databases in general. Building the bridge between the QuizApp and the E-Textbook might be a challenge on its own.
- Nicholas: Lack of experience in MongoDB and Android Studio, needs some time to learn

Implementation and Teamwork

In addition to the Tuesday 11:30-12:30 meeting we will also meet virtually from 12:00-1:00 every week. If a team member cannot make this meeting then they should let other members know and they can let them know what they missed.

We will be building off the Quiz App from [last semester](#) as well as creating our own individual branches. We will be responsible for merging our progress every week as well as resolving any conflicts. This will be done using MongoDB for the database as well as Java for the app GUI itself.