

IM3080 Design and Innovation Project (AY23/24 Semester x1)

Individual Report

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Group No: 4

Project Title: Jam Stream

Contributions to the Project (1 page)

For my contribution to the project, I made the “Chatroom” UI screen/page of the “RadioRooms” feature, as well as the backend storing of messages and users in each room.

I created multiple functions in the creation of the Chatroom Screen. I created a “getRoomDetails” function where I can get information of the room from Firebase, such as the room name and number of users and display the information accordingly in the app.

I also created a “getMessages” function where the app can retrieve all the messages from a specified room and display the messages in the app using chat bubbles. The chat bubbles are modular and will appear whenever a user sends a message to the chatroom. The function is dynamic and will update whenever a change to Firebase is made. Each chat bubble can show the display name of users, the message itself, as well as the timestamp in UNIX time. I created an algorithm that will determine whether the chat bubbles will appear on the left side of the chatroom or the right side of the chatroom.

I created a “sendMessage” function that will take in the user’s message input from the keyboard, and send the relevant information such as username, timestamp, and the message itself to the database. This function works hand in hand with the “getMessages” function and the app will be updated with information whenever these functions are called.

I also made a feature where whenever a user clicks the join room button, their username will be recorded in Firebase and whenever the user clicks the leave room button, their records will be removed from Firebase. In the case when the owner of a RadioRoom clicks the leave room button, I made it so that an alert prompt appears and that if the owner leaves the room, the room will be deleted.

Reflection on Learning Outcome Attainment

Reflect on your experience during your project and the achievements you have relating to at least two of the points below:

- (a) Engineering knowledge
- (b) Problem Analysis
- (c) Investigation
- (d) Design/development of Solutions
- (e) Modern Tool Usage
- (f) The Engineer and Society
- (g) Environment and Sustainability
- (h) Ethics
- (i) Individual and Team Work
- (j) Communication
- (k) Project Management and Finance
- (l) Lifelong Learning

Point 1: Engineering Knowledge

Using my prior knowledge of programming languages such as Java, C++, and C, I was able to learn the JavaScript language which is needed in the development of the project relatively quickly. The Framework used for the project is React, which requires knowledge of JavaScript, HTML and CSS.

In React, I used Procedural Programming where certain functions are called in order. There is a need to develop algorithms that can solve problems. For instance, I must be able to convert UNIX time to HH:MM and vice versa and determine if a message received from firebase is the user's own message or another users' message.

Point 2: Modern Tool Usage

The tools used in the project are Microsoft Visual Studio Code (VSC), GitHub, Figma and Firebase. Prior to this module, I have previously learnt how to use VSC and GitHub, but I have never used Figma or Firebase.

In Figma, I learnt how the layout of a mobile app can be designed before making the app by code, and it is better to do so than coming up with the layout on the fly. In previous modules where I have to make and design a mobile app, I had to play around with the layout on the front end while simultaneously work on the back end of the screen.