

IM3080 Design and Innovation Project (AY2022/23 Semester 1)

Individual Report

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Group No: 1

Project Title: Mobile App – “Ride”, “NyMe” app

Contributions to the Project (1 page)

Designed the backend, consisting of setting up MongoDB database, Node.js and Express for coding out the API, as well as setting up the hosting link on Heroku for enabling the API to be available online, making it easily accessible when designing functions on the frontend.

The MongoDB is a non-SQL online database consists of 3 tables specifically developed and used for this project:

- “User” table that stores username, password and email details
- “Ride” table that stores Ride ID, start and destination locations (as coordinates), and additional attributes that are used in assisting the project’s search algorithms
- “Drive” table that stores the Driver’s start and destination (as coordinates), along with waypoints and Ride ID that the driver user has selected in Recommended Route Screen.

Additionally, contributed certain functions that require connection to the hosted API link, namely functions in Rider Map screens, Recommended Route screen and some parts of the Final Driver Route screen, where it was jointly done with the group leader.

The information in “Ride” table are shown as ride requests by rider users on the driver users’ side, where drivers are able to select their requests and accept them. Upon accepting it, a function in the Final Driver Route Screen will save the driver’s start and destination locations along with the selected Ride IDs into the table.

Similarly, this will update the “Ride” table in the database, where it updates 2 attributes in the “Ride” table for selected Ride ID. Namely, “selected” and “driverID” attributes.

Also, added in session storage feature for authenticating users, where users can keep themselves logged in to the app, this was done by using a React dependency called “AsyncStorage”. This session storage feature was implemented in Login and New User screens, App.js where it controls the app’s navigation, as well as the aforementioned: Rider Map, Recommended Route, Final Driver Route, where functions that require to add new data to the database include the logged in user ID that can be only retrieved from the session storage.

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: Individual and Team Work

As this group project is a 10-man work, it is a large group and therefore everyone's individual part contributes a lot to the project and a lot of teamwork and coordination is heavily required in this project. Through this project, I have learnt to work in a big group project and my own part has greatly contributed to the project.

Additionally, I have also enjoyed working with my team and we enjoyed working together as a team. In a sense, I have formed friendships with them, which was novel to me as I have always been an introverted person. Therefore, this project has broadened my range of friends, as well as making me open up to my groupmates or my newfound friends.

Point 2: Communication

Adding on to the previous point, communication in this group project is one of our pillars for being able to complete this project. As I had to frequently communicate with my group leader as well as other group members on my findings, solutions, even down to assistance, I have learnt to be a more effective communicator. This made me a better group contributor and team player.

Like the previous point, with my improved communication, this made me open up more to my groupmates and the same could be said for them. Eventually, we gained trust in each other, and formed friendships, which motivated us further in completing the project.

Point 3: Design/development of Solutions

During the course of the developmental phase of the project, there were a couple of issues related to programming that occurred in our project. The most notable was being the problem on how could we add new data to the "Drive" table and update the "Ride" table at the same time? The situation was complicated more when we had to add update the selected Ride data with the new Drive ID coming from the "Drive" table.

Through working with most of my group mates, we were able to finally devise a theoretical way in addressing our problem. We changed the existing API a little to get Drive ID right when the Driver adds his journey to the "Drive" table, then using this newly added Drive ID, we were able to update

every selected Ride ID's "DriveID" attribute with the newly added Drive ID from "Drive" table, effectively forming a link between these two tables through this.