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

I assisted my group leader in orientating my team mates to Git if they needed assistance. This allowed us to quickly start with version control on our application.

Furthermore, it was my suggestion that our project used the React Native framework to create our mobile Application. Other options for app creation such as:

- the Flutter software development kit using the Dart language
- Android studio using languages Java or Kotlin

We eventually chose to work with React Native to both develop our skills in Javascript and JSX, and also because experience in both Javascript and the React frameworks is an invaluable skill in the field of software development in the current market.
I was involved in working with both the Frontend Designers and Backend Engineers of my team in multiple different parts of the project.

User Interface

With guidance from the design team's Figma file, I created the App's Login and Registration interfaces. I also created the project's main Stylesheet, analogous to a website's `.css` file, located at `~/assets/styles`.

Input validation

Because our team elected to not use any form of authentication framework, I was tasked by my group leader to implement some sort of input validation when creating the Login and Registration pages.

Learning that the string comprehension approach would be too computationally slow *and* produce messy code, especially with the React Native framework's already large amount of computational overhead and boilerplate code, I elected to use nested Regular Expressions, or RegEx to validate inputs before they are passed over to our database -- which would help thwart any sort of code injection into our application.

Reflection on Learning Outcome Attainment

Environment and Sustainability

Creating a ride sharing app allowed me to reflect on the importance of minimizing our carbon footprint. By maximising the utility of our fossil fuels, we halt the onset of irreversible climate change, buying the world time to find greener alternatives to creating energy that is implementable at a commercial scale.

Design/Development of Solutions

As mentioned in the *Contributions* section, I had dismissed string comprehension as a form of input validation as it was computationally slow and produced messy code.

Looking for a better way to produce cleaner, more optimized code forced me to think outside of the box, even outside of the techniques I had learned in any of my prior university courses -- which led me to Regular Expressions. It was initially a challenge to comprehend how it worked, as Regex is (frankly) quite unreadable. However, upon searching for tools online to debug and visualise Regex, learning it became more bearable.

This experience reiterated to me the importance considering different solutions to a problem to see what can be learnt from each of them.

Individual and Team Work

As someone who primarily writes programs alone, it was initially a challenge to work with other people *and* be led by someone. It was through team work (and swallowing my pride) that I realized that working alone kept me blind to different views and perspectives to problem solving.