

IM3080 Design and Innovation Project (AY 2021/22 Semester 1)  
Individual Report

Name: Justin Chong

Group No: 6

Project Title: Cohab

### **Contributions to the Project**

- As group leader, organized schedules and split up tasks among the group
- Helped come up with our initial app design in Figma
- Set up the React Native and Expo frameworks
- Coded the Calendar and Login screens
- Set up React Navigation and the drawer menu

### **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: Modern Tool Usage**

For this project, we were required to use Github for version control and tracking. Most of our group members did not have any experience using Github, or in fact using any version control or tracking software. There was a very steep learning curve, especially as Git uses a command line interface, which can be very unfamiliar to people who are more used to graphical interfaces.

Of course, Github was made a requirement of this project for a reason. It is the standard version control software today and is used in most large companies. Regardless of how difficult it is to learn, it is necessary if we want to work in any programming related job in the future. Modern tools like Github are ubiquitous in the industry today, and learning new tools is a part of the job. This project was useful practice in having to learn and understand how to use tools that we are unfamiliar with.

## **Point 2: Design/development of Solutions**

About halfway through our project, we found ourselves with a problem. We had originally planned to design 3D room and furniture objects in Blender, and then import them into our React Native app. We had found a few third-party libraries that seemed promising, but did not adequately test them out at the start since we were focussing on getting our first prototype down. Only after finishing designing our 3D objects did we realize that the original library we wanted to use was not suitable for our use-case. The library only allowed us to manipulate a single 3D object on a screen, whereas we just needed multiple objects on the same screen, without requiring many of the finer functions the library provided.

We had to find a solution before we could progress, since there was no point designing more objects if they could not be implemented correctly. At first, we tried looking for other libraries that could do what we wanted, but to no avail. It seemed that our use case was extremely uncommon. Once we had exhausted the possibility of finding a library that would work, we had to give up on our original plan and think of a new solution. We considered a few options, but eventually settled on a 2.5D display, where we would use 2D images to represent 3D objects. By using multiple images and layering them on top of each other, we could create a 3D effect. This solution worked, but it meant much more work on the coding end to deliver a functional product.

In the end, however, despite all the extra work we had to put in, we learnt a lot from the experience, not just from a technical standpoint, but also in terms of planning and preparation. Although our solution worked well in the end, it caused us a lot of frustration that could have been avoided with better planning. In the future, we should make sure that our plan can be executed instead of trying to rectify things halfway through.