IM3080 Design and Innovation Project (AY2021/ Semester 1)
Individual Report

Name: Rachel Kwek

Group No: 6

Project Title: Cohab

Contributions to the Project (1-2 page)

At the start of the project, everyone brainstormed together to come out with ideas for the project. We decided on Cohab, a one-stop platform for all things related to communal living which serves to provide convenience for cohabitants by allowing them to organize household and financial matters or life events in a centralized application.

I suggested to craft a survey to gather information on whether our idea would be a need for people living together, as well as the functions they would want in the application. I then proceeded to craft a Google Form survey where everyone of us sent out to our peers in school. After the survey, I was in charge of organizing the results from the survey. Even though I did not present in week 3, I was part of the presentation team, together with Justin, Jeremy and Ophelia where I designed the slide and added in the details of the survey that we conducted.

After the presentation in week 3, we were split into 3 different teams, the UI team, 3D team and Figma team. I was in the 3D team with Khin, Bryce, Jeremy and Ophelia for 3 weeks where we had to design the functions to be represented by certain furniture. I was in charge of the design for the task function in the form of a cafe board. I used Blender as the platform to design the 3D furniture for the Home screen of our application. At the start, I came out with a task board design from scratch. However, I was not fully satisfied, thus I used a template online and modified certain edges, plains, and colors to fit the theme of the room.

After the presentation in week 6, we combined into development team where we began coding the front-end of the screens for the various functions. I was in the Task screen's front-end development from week 6 to week 11 together with Ophelia and Jeremy. I spent quite a while in the Task screen development team as there were many buttons that would lead to different pop-up modals to be created.

For the Task screen, I implemented the look of the task cards and the landing page based on the Figma prototype. I created the 3 tabs, “My task”, “Others” and “Completed” so users can click to view which sections they want in the Task screen.

When we were importing the date picker library, there was an issue where on android, the dropdown bar could be contained within the modal container whereas for IOS, it would exceed the limits of the container. Hence, I had to research on how to fix the issue. With help from Ji Xiang, I managed to change the pop-up modals so that the layout of the date picker could fit both IOS and android phone. To standardize the task cards with the designs of the chore cards, I changed the styles of the task cards.

I was in the presentation team in week 8 with Danielle and Zi Yi, where I did the slides outline for the presentation and presented on the front-end coding parts to show the progress of our function pages.

From week 11 to week 12, I was in the avatar team with Ophelia and Ji Xiang where I did the in-app tutorial for users. I overlayed the dog avatar into the group screen and used the Copilot library to implement the steps for the avatar tutorial. To make the avatar stand out, I also added a speech bubble above the avatar to prompt users to click.

From week 12 to week 13, I was in the poster team with Ophelia where I came out with various poster designs for marketing purposes. After drafting out the poster designs, I combined my work with Ophelia, where we came out with a poster from the combination of our ideas. After gathering feedback from the team, we changed the color to fit the theme of the presentation slides and the arrangement of the icons to fit the flow of the poster.

Towards the end, everyone came together to write the final group report where I wrote the parts for the objectives, avatar tutorial in Group and Home screens, Task screen, libraries that the task and avatar team used and the conclusion.

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 Teamwork
(j) Communication
(k) Project Management and Finance
(l) Lifelong Learning

Point 1: Individual and Teamwork

This was the first time working in a group of 11 and I would say that it was a new experience for me. When the group was first formed, it was a mixture of people from the junior college background and polytechnic background. At the start, everyone was still unfamiliar with each other and working with 11 people, we all had very different opinions and ideas. Hence, our meetings were sometimes inefficient as our discussions would sometimes lead to no conclusion on certain matters and we would have minor disagreements. However, this situation improved when we got to know each other better, started setting objectives to be done and having task delegations. Even though there were certain disagreements, I felt that it was necessary for the betterment of the team as we all were working towards the same goal of achieving the final product.

For this project, I was in various sub teams when we split for different weeks. I was in the 3D design team for 3 weeks, Task screen front-end coding team for 5 weeks, avatar team for 2 weeks and the poster team for 2 weeks. Being in the different teams gave me a new opportunity to work with a different group of people.

Some key learnings from working in a team is that it enables me to gain new perspectives. When deciding on the functions, the team might have missed out on certain limitations and the feasibility of the solution. With more members, we will be able to consider more possibilities and come out with more comprehensive features for the application. Working in a team also helps to boost productivity. With the weekly meetings that we set on Mondays and Wednesdays and the regular objective setting, it helps me to stay focused on the final goal of creating a feasible and workable application. I feel that this was a great opportunity for me to experience what it was like working in a big group.

As an individual, what I learnt from my peers through this project is that I had to always have a ready to learn and pro-active mindset. Even though many of us had quizzes and assignments due, we still were very much focused in completing the required task. From their actions, I felt motivated to do better and also to take this project as not only as a requirement for the module but as a project that we would be proud of and could be further developed to launch in the market.

Point 2: Modern Tool Usage

Through this project, I got to experience many different modern tools in building a mobile application, mainly GitHub, Visual Studio Code and Blender. GitHub which allows real-time collaboration when coding, Visual Studio Code which allows the use of React Native language and Blender which allows me to create 3D objects.

As there were 11 people in the group, I was initially unsure on how we could all work on the coding together considering the Covid situation. However, our group discovered that there was a platform called GitHub where we could commit our codes and collaborate with our peers. As I was new to GitHub, it was a challenge for me at the start to learn the commands to pull, push, clone and commit changes. With the help of team members such as Ji Xiang and Justin that have experience in GitHub, I managed to learn the various commands to ease our collaboration with one another. I faced many challenges along the way where sometimes my files or other team members' files would be corrupted when importing certain libraries. When such cases occur, GitHub helped me as it serves as a backup for me to re-clone the folder while still retaining most of the uncorrupted codes. One good function of GitHub is the ability to revert commits. This came in handy during the coding phase of the project as it helped the team to revert changes that could corrupt the main files. GitHub helped to keep the working progress of the team up to date and provided ease of access for me.

Another tool that we used during this project is Visual Studio Code. Visual Studio Code can be used to code in any programming language such as C++, Python, JavaScript and React Native without switching editors which was why our group decided to use this. To allow the application to work on both android and IOS, our team chose to use React Native language code. It was a new experience for me as what I have learnt in school was C++, python, and java. However, with background in the other language codes, I was able to pick up React Native language relatively fast. One of the greatest challenges that I faced while using the React Native codes was the implementation of the libraries such as Modal, Picker and Copilot. It was difficult for me at the start as I had ideas on what to do, however, it was difficult to execute the implementation. I turned to YouTube tutorial videos and the guides

online on how to use the libraries where I was able to understand the purpose of the codes and hence, able to integrate them into our application.

Other than coding, I was also able to explore a new graphics software toolset outside of Unity. As the team came to a consensus to make the furniture in the room for our application 3D, we decided to use Blender. Even though I had used a similar program, Unity, Blender was still quite challenging for me as the controls and settings were more complicated than Unity. I started off watching beginner tutorials online to build simple shapes and changing the properties. I then tried to recreate a task board, where I was able to get the design out. However, I was not satisfied with the final look. Hence, I went to search for a template and modified the colors as well as the shadow and edges of the shapes to fit the room.

It was a fruitful experience as I managed to get hands-on experience on the various tools. As many of these tools are required in the skill set in the working industry, I feel that these would boost my technical skills and prepare me for the working industry.