IM3180 Design and Innovation Project (AY2023/24 Semester 1)
Individual Report

Name: Tan Whye Hong Brandon

Group No: Group 2

Project Title: PetHome

Sceneform (Research):

I was part of the Augmented Reality (AR) team (Hsin-Kai, Gina, and I) where we started with researching on implement AR for Android Apps. There are many developer tools available with one of the more promising ones being Sceneform. Sceneform is a developer tool that helps to render 3D scenes in AR apps. When we tried to implement the tutorials, we received many errors and after many attempts at debugging, we realized it has deprecated recently and that we had to use other tools like ARCore.

Chat:

I was also part of the Chat team (Duong, Zhi Ming, and I) where we started with defining what we want from the chat feature which is to allow the user to send messages to multiple users and access the messages from other devices by signing into the same account. Along the way there were many hurdles to overcome.

At the start, we had to decide which tutorial to follow. Even though there are many tutorials available, it is very challenging as few offered the features we want and even fewer has code that can still work due to Android having many frequent updates resulting in code that might have worked a few years back being deprecated and no longer working. To overcome this, we decided to watch the top three tutorials to have gist of how it works.

Along the way, there was an error that occurred with many in the comment section raising similar issues and the instructor not responding. To overcome this, I decided to go through the code and understand the intended logic. After some analysis, I realized that the instructor had a wrong definition for one of the variables which somehow worked in his example. I tweaked the definition to what I believe is right and got it to work.

Another issue encountered was that the way the instructor saved images for profile pictures has been deprecated resulting in errors. To address this issue, I commented out image portion to focus on implementing the chat functionality and raised this issue to my teammates. Fortunately, my teammate Duong was able to a fix.

Reflection on Learning Outcome Attainment

Reflect on your experience during your project and the achievements you have relating to <u>at least two</u> 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: Communication
One of the main issues I encountered was that the way the instructor in the tutorial implemented the saving of image into the database is deprecated. At that point, I wasn't sure that the tutorial's example will lead to a working messaging feature as there's a chance it might be deprecated too. Given the circumstances, I decided to prioritize testing the messaging feature over getting the picture to work. As the development of the chat was behind schedule, I voiced out my situation to my teammate for help. After a few days, I was able to finish implementing and testing the messaging feature to know that it works, around the same time my teammate has found a fix to the image issue. I believe that communication has allowed me to ensure that I can deliver my work on top without having to cut corners.

Point 2: Lifelong Learning
The project requires me to research and implement a technology that I have never learnt before where there is no structured curriculum like in other courses. During this experience, I got the chance to try learning something new on my own which I believe is very important for lifelong learning. I have also learnt the importance of SMART goals which comes in very useful when under a lot of stress and unknowns with limited time.