**IM3080 Design and Innovation Project (AY2021/22 Semester 1)**

**Individual Report**

Name: Thiam Wenzhi\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group No: Grp 7\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Title: joiNTU\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Contributions to the Project** (1-2 page)

Week 1-2: Brainstorming and planning of ideas

Week 3: Began to refresh myself on Android Studio and started to learn how to use Firebase as it was the database that we have decided to use for our project. Learnt how to connect an android project to firebase as well as how to read data from the database as well as write data to the database by the end of week 3.

Week 4-6: Started implementing part of the backend for the 1.0 Booking system. The code at week 5 was able to allow users to pick their location, tutorial tables, date and timeslot and send this information to the database after the user completed the booking process. The booking information then can be viewed within the app and our database. Week 6 was then spent integrating Desmond’s code to allow users to book multiple sessions as well as some bug fixing. Code at week 6 allowed users to book multiple study sessions and have them reflected in the database and application. There were still some bugs displaying all the booking information in the app at this point of time. Code was then passed to Desmond and Zhao Sheng for further Booking 2.0 modifications and frontend implementation.

Total lines of Java code: 612

Week 7-9: Started implementing the backend for the 2.0 Gather function after we decided to expand the community aspect of our application. The code at week 8 allowed users to create group activities indicating the activity name, time, venue and pax required. These sessions were then displayed in a recycler view. Other users can view sessions created and click into these activities to join if they were interested. If a user decides to join the activity, the number of participants would be updated real time in both the app and the database. The created sessions and joined sessions are all reflected on the database as well. Week 9 was then spent on allowing users to join multiple group activities as well as adding some validation i.e., the user should not be able to join a session if it is already full, or has already joined this activity. The code was then handed over to Kaili for frontend implementation.

Total lines of Java code: 540

Also helped to troubleshoot and change a small portion of Jiajun’s code which then enabled Avatars to be successfully uploaded to Firebase Storage and displayed accordingly in the application.

Total lines of Java code: 23

Was a presenter for week 8 presentation as well.

Week 10-13: Started implementing the backend for the filter function. The code by week 12 was able to perform a basic search on the Gather 2.0 group activities so that users can filter out activities that they were not interested in.

Total Lines of Java code: 46

Week 12 and 13 was also used for further troubleshooting and bug fixing for the backend, mainly the filter function but unfortunately while the filter was functional there were some bugs that we could not fix.

Concurrently, week 13 was also spent contributing to the review of technology portion of the group report.

**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:**

1. Engineering knowledge
2. Problem Analysis
3. Investigation
4. Design/development of Solutions
5. Modern Tool Usage
6. The Engineer and Society
7. Environment and Sustainability
8. Ethics
9. Individual and Team Work
10. Communication
11. Project Management and Finance
12. Lifelong Learning

Point 1: Lifelong Learning

Coming into this project, I had very little experience with Android Studio and no experience with Firebase at all hence I was worried that I could not contribute much to the coding portion of the project. However, since I was coming into this project with little experience, I spent the extra time to watch tutorials online and study source codes that other people published online. With so many resources available online, I was able to familiarize myself with Android Studio and Firebase fairly quickly and was able to contribute to various backend codes for the application. A big takeaway from this project was knowing how much my coding improved over the course of 13 weeks and how much I was able to learn independently just from online resources alone. It was also the first time I had to be part of such a big coding project involving backend, frontend and design so it provided a valuable experience for the future.

Point 2: Problem Analysis

While there were many tutorials and source codes online, the source codes still had to be studied and manipulated such that it was able to fit the context of our application. There were also times that there were no tutorials and source codes available for the functions that we wanted to implement hence problem analysis had to be done. For this project, I picked up the habit of planning everything down before I started the actual coding because it helped me stay on track and allowed me to better visualize the whole problem after it has been broken down into smaller components. The knowledge of data structures and algorithms prior to this module also helped because after breaking down the problem, I could then easily identify which data structure or loops to apply to get the results I wanted which helped sped up the process.