IM3080 Design and Innovation Project (AY2023/24 Semester 1)
Individual Report

Name: Li Tianchu

Group No: 6

Project Title: ARvatar

Contributions to the Project (1 page)

- Setting up Project, including Unity project initialization, database on Firebase, as well as required Unity plugins that needed for development.
- Setting up GitHub, created GitHub repository, gitignore, taught others how to use GitHub, updated GitHub README.
- Setting up project standards, such as code standard, and program architecture in Unity.
- Setting up build environment, including Unity build support, JDK, Android SDK, and Gradle, for building to Android platform.
- Created software engineering diagrams (Use case diagram, activity diagram and software infrastructure diagram) to model the requirements.
- Contributed to backend development, creating backend APIs for database operations in the App, mainly for the messaging function of the App.
- Contributed to frontend development, helped in developing UI transitions, calling backend APIs, and displaying data at frontend UI.
- Initiated the design and development of the AR chatting function.
- Contributed to fixing page layout, character animation and character lighting, such as inconsistent UI design, character orientation, etc.
- Helping teammates to debug various aspects of the project, mainly on issues related to GitHub, database, and programming.
- Conducted QA testing to finish up the project, documented and reported bugs and improvement areas in Trello, included screenshots and steps to reproduce.
- Debugging the App, helped fix many issues regarding visuals, logic, and user experience.
- Helped with report writing.
- Assisted and guided other members in the technical implementation of the project.

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

Point1: Problem Analysis:

I analyzed the project by making UML diagrams, it helps showing how the software should work to allow others to have a better understanding of the requirements. When doing the project, I had to handle many problems in both frontend and backend. In the backend, I assisted in developing APIs to handle messages in the database. This required me to understand how databases work and solve problems to make things run smoothly. On the front end, I had to figure out issues with how the user interface looked and how data was displayed. By attending to various problems and aspects of software development, I learned how software is developed from start to finish, which greatly improved my problem-solving skills.

Point2: Design/Development of Solutions:

I went through the full process of literature review, brainstorming ideas, and executing ideas. I realized that a well-defined problem and innovative solution can be more important than the execution itself. This experience reinforced the importance of a design phase in the project life cycle and how it can affect the success of the project.

Point3: Individual and Team Work

Through the process, I understood the importance of team collaboration for the project to be successful. During the development, I helped set up GitHub version control system for better team collaboration and code sharing and realized the importance of version control. I also did QA testing on edge cases and reported those bugs on group Trello page, so that others know what should be solved. My experience of working with the team enhanced my teamwork spirit as well as my task management abilities.