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

Name: Tay Yu Wen

Group No: 6

Project Title: ARvatar

Contributions to the Project (1 page)

- Worked on prototype in Figma with other front-end team members
- Created the 'Edit Profile' page in Unity
- Created the 'Avatar Customisation' page in Unity
- Researched on and instantiated data from database into the Chat List
- Discussed and gave suggestions on the design and flow of certain scenes
- Programmed the various functions in 'Avatar Customisation' page
- Put in some of the icons of accessories in Avatar Customisation page, as well as resized all of them
- Utilised Adobe Illustrator to clean images (remove background, change colors) to be able to convert them into sprites in Unity
- Created containers for different avatar accessories and used script to instantiate clone of accessories as well as destroy previous clone when another was chosen
- Worked with Rushdina to figure out how to make chat boxes automatically resize with the length and width of texts in 'chatUI' scene.
- Set up the masking area and pop-up function to view user's friend's avatar in 'chatUI'
- Create the Toggle Dark/Light mode script with Malvin and implemented it
- Determined the elements that had to be changed in dark mode and added the color codes into the script
- Adjusted colors, sizes, and design in 'Avatar Customisation' page to better fit the app's theme

Overall:

- Repeatedly ensured consistency with Rushdina by adjusting the sizes and positions of elements across all scenes
- Looked for bugs after installing the app on my phone as well as constantly adjusting the design to make it look more sophisticated on phones.
- Worked on project poster with Yuyang

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: Engineering Knowledge

Throughout the project, I had the opportunity to expand my engineering knowledge, particularly in mobile app development, Unity programming, and user interface design.

At the start of the DIP module, after the team had decided on the type of app to create and its additional functions, our first step was to decide on the platform to create it on. Between Android Studio and Unity, our team's research informed us that despite Android Studio being a much better choice for mobile app development, Unity would suit our project more due to its additional functions of reactive 3D avatars and AR. Hence, it is important to consider all aspects of the product when choosing the platform to work on so as to minimise issues that may occur when implementing features.

Additionally, when we were splitting roles, I chose to be a front-end designer as I knew I am lacking in coding skills. However, front-end programming required me to read and write some scripts too, such as the codes for toggling dark and light mode, as well as to instantiate the saved data and avatars in the database. Although I struggled to implement the required codes, after much research and trying different methods, I managed to understand and put up working codes with the help of my teammates.

Furthermore, I learnt much about user interface design. When the front-end team was working on Figma, the scenes came together quickly in terms of how each scene would look and the basic navigation flow. However, implementing those into Unity was not that simple as there was more work to be done in creating and positioning UI elements, building and linking scenes in order, as well as deciding whether some pages should be a scene by itself or a pop-up UI panel. A challenge I faced was trying to visualise where certain UI elements should be placed in scenes that look empty due to all data being spawned in when the game is run. Despite that, my teammates and I worked together and supported each other in ensuring we built a user-friendly and nice-looking app.

Point 2: Communication

Working in a big group of 9 where everyone is working on various things, communication is essential in ensuring cohesion and clarity in our shared objectives, especially in terms of the visual and functional aspects of the app. It is especially critical to establish clear channels of communication when using GitHub due to the constraints where simultaneous work on the same scene gives rise to conflicts. However, instances arose where oversight led to team members unintentionally working on different things on the same scene concurrently, leading to conflicts and the inability to merge into the main branch on GitHub. We were then required to either resolve the conflicts or to re-do the changes that either one of us had made. As this situation had happened several times, I recognised the need for proactive communication no matter how small the matter may seem, to ensure efficiency and preempt such issues.

Additionally, there were times when a few of the team members discussed and decided on something, but due to insufficient communication with others in other subgroups, it led to some confusion and inefficiencies. After each discussion or change implemented, we should have sent it to the group chat to inform everyone of the decisions so as to keep everyone updated and on the same page. Not only will this push for further discussions and ensure that our collective efforts are aligned, but it also reduces potential confusion and increases efficiency and consistency.