IM3180 Design and Innovation Project (AY 2023/24 Semester 1)
Individual Report

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Group No: <u>2</u>

Project Title: <u>Pet Home</u>

Contributions to the Project (1 page)

In my role as a member of the Augmented Reality (AR) team for this project, our primary focus was to integrate AR features into the mobile app to enhance user experience. Early in the project, I looked into the capabilities of Echo3D, a cloud platform designed for augmented and virtual reality content management. However, due to the limitations of the free tier, we decided to focus our efforts on ARCore, a robust framework for AR development.

During the implementation of ARCore, I identified a crucial need for hand-tracking functionality to facilitate user interaction with an AR pet. Unfortunately, hand tracking was not supported natively by ARCore, so our team had to look further for a workable solution.

Working together, we were able to locate a third-party solution that gave ARCore the required hand-tracking functionality and integrated it. This breakthrough allows us to improve user experience by creating the interaction with the AR pet.

Using Unity, I added a button to the mobile app interface that allowed users to change the size of the AR pet. With the help of this function, users may visualize how big a puppy will grow to be as an adult pet.

In addition, I helped the project by producing animations for the AR pet, notably a breathing animation for its idle state. Using ARCore's capabilities, this animation intends to make the virtual pet more realistic, making the AR experience more engaging for consumers.

Upon joining the design team to address the evident need for additional support, I quickly made a significant contribution to the team. My main priority was to create visually appealing and user-friendly interfaces. To kickstart the design process, I conducted thorough research on existing apps, ensuring a comprehensive understanding of the ideal user experience and gathering valuable insights to inform our design decisions.

 Subsequently, I dedicated myself to crafting new pages, giving them a modern look that complies with accepted current app design. Concurrently, I worked on elevating the existing pages to match the current app's standard appearance. Taking the initiative to enhance the overall user experience, I restructured the app's flow, simplifying navigation and providing the development team with a detailed roadmap for implementation.

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:___Individual and Team Work___

Throughout the project, the dynamics of both individual and team work played a central role in shaping our collective progress. Working with a larger team introduced new layers of complexity, requiring a careful balance between individual responsibilities and collaborative efforts. The challenge of coordinating tasks and aligning schedules became more pronounced, prompting a heightened focus on efficient time management to meet project milestones. In the limited meetings each week, individual punctuality in completing tasks emerged as a critical factor for the seamless functioning of the team. The experience underscored the importance of adaptability, as I navigated through varying work styles and contributed to a shared objective. This project provided valuable insights into the intricacies of both independent and collaborative work, emphasizing the need for clear communication, shared goals, and a collective commitment to achieving success as a team.

Point 2: ____Communication____

In the context of the AR team, the file size limitations preventing code uploads to GitHub underscored the critical role of real-time communication. The inability to rely on version control tools meant that regular updates and status reports became our primary means of staying synchronized. This experience reinforced the importance of proactive communication within a team, ensuring that everyone was aware of the latest developments, challenges, and potential solutions. The practice of updating each other not only helped maintain a collective understanding of the project's status but also facilitated faster assistance when issues arose. It highlighted the significance of fostering an open environment where team members felt comfortable voicing concerns and seeking support.

Expanding this reflection to the entire team, effective communication emerged as the backbone of our collaborative efforts. Knowing who was facing challenges and promptly addressing those issues became possible through transparent communication channels. This not only streamlined problem-solving but also contributed to a sense of shared responsibility and mutual support within the team.

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