IM3080 Design and Innovation Project (AY2022/23 Semester 1)
Individual Report

Name: Yap Hui Xin Regine

Group No: 3 (Tubes)

Project Title: Cloud Tubes

Contributions to the Project (1 page)

1. Assigned tasks to members and planned out with team members on the weekly deliverables
2. Represented team to Present progress for 4 Presentations to Supervisors
3. Ensure all members are aware of project progress and their own tasks by initiating meetings when required and updating group chat or Trello
4. Carried out administrative duties (Lab Booking, Communication with Professors, Risk assessment etc.)
5. Implemented Design and Multiple Device (Desktop and Mobile Web) CSS in React
6. Implemented autostart for Python script on Raspberry Pi
7. Acquire components outside school on multiple basis. (For ultrasonic sensors, cotton wool wheels, L Brackets etc.)
8. Implemented Hardware Design (Clouds) for Cloud Tubes with group members
9. Assisted Hardware team to coil and solder wires
10. Assisted Team to take Photos and Videos for Poster and Video
11. Quality Check Photo and Video
12. Group Documentation and Slides with group members

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: Individual and Team Work & Project Management
State the area: Not Sure of how to lead a big technical group for the first time.
When we first started, there were differing views on what the project was going to be like. But there were a few people who knew what they were doing. I was chosen to be lead by an unconventional method, using a game of luck. I was against the idea at first as I am not knowledgeable enough to lead a Group doing Hardware. Since this is my first time handling a group of 9, I was excited for the new challenge, yet I was scared of under assigning and over assigning individuals which can cause them to lose marks. As I do not come from an engineering background and did not do anything related before, I tried to read up on Raspberry Pi, Arduino, and some wiring documentations to understand more about what my team is doing so I can understand terms they will be communicating with.
As we do not have a clear vision of the project, I had vague ideas of how to execute the project, so I had to ask each teammate what they plan to do instead of assigning them personally. At the start I heard after meetings many were not sure of what to do as there were informal meetings held, and it was hard to get information passed on fast. It was hard to keep track of everyone's understanding of what to do. After, teammates came to notify me that they were not aware of certain updates and instructions, so some of the teammates helped to spread the word and ensured everyone know what they are doing the next meeting. At one point I started writing Trello and To do lists to keep track.
There were times I felt responsible for not being able to communicate effectively as I am an awkward and forgetful person, and was scared of taking a misstep, like calling for a group meeting for something minor, or assigning something that is not needed to be done that soon. So being a leader made me think and plan before starting anything, even what to show to professors during presentations during the later stage of the project.
The planning part was the hardest as I am not an organized person in the first place, and planning too far ahead for tasks was hard too as I could not estimate the time needed to do each part of the project as it was unfamiliar to me, hence we only have short term goals.
After the 5th or 6th week, I managed to get a hang of it and tried to be more proactive and tried lead by example by initiating to source for components and trying to help out when I am free when members need help. I have tried to make it habit to know what is going on for each team such that we can gauge how much time we have to do different portions of the project. Plus, I managed to learn along with them, for example I was able to pick up soldering and a bit of React when trying to help. Thus, being leader helped to come out of my comfort zone to engage more with people. In fact, I have also picked up JIRA and Trello while trying to find good project management tools for my

team. I learnt a lot while working with my team as they were cooperative, initiative and willing to help each other when doing our own different tasks.

(b)Point 2: Lifelong Learning

State the area: Understanding how to solve problems when coding

I was new to react and had my teammate to teach me some things, but I was still struggling. I had to google and try out different codes to understand how to do it. Plus, my teammate had to help others as he was more knowledgeable so I had to do some practices on my own to understand.

But in the end, I felt it was time inefficient of me to learn and code React so I focused more on CSS. I tried to leverage on our strengths so we do not waste time learning due to our time constraints in the project, but the exposure it has given me is good enough as I understand React now.

Also, I got to try how to do autostart python and react automatically when raspberry pi starts up, so this project has definitely has given me freedom to explore and try out new things.