

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

## Individual Report

Name: Tea Mi Wen

Group No: 7

Project Title: Flowerescent

### Contributions to the Project (1 page)

- ✓Initial sketch for plastic flowers and stage-based floor plan ideas
- ✓Flower mockups with recycled materials (different plastics)
- ✓Handmade flowers reduplication (learnt petal making skills)
- ✓Assisting LED team to assemble LEDs into flower tubes (learnt wire soldering skills)
- ✓Assisting audio team to assemble sensors on stone
- ✓Stone painting
- ✓Assisting base shaping with smoothing edges (learnt how to saw)
- ✓Assisting flower setup on the base and LED light & pressure sensor testing
- ✓ Flower maintenance and base & stone painting
- ✓ Assisting LED & audio team to complete circuit routing and sensor installation
- ✓ Assisting in preparation for poster, group report and video



## 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

I completed the Arduino basic online module from NTU Learn. It was a great hands-on experience when I connected the circuits following instructions. I also reviewed the soldering skills in my high school. I would say that practice makes perfect to boost the productivity of soldering. I never imagined that I could use a saw to shape the base with the assistance of my teammates. The entire process must be careful and patient.

### Point 2: Problem Analysis

The fair distribution of work for every teammate is an initial problem that we faced so we needed to produce a standardized timeline for our progress. Next, it was understandable when everyone did not exactly agree with each other's opinion, especially in subjective design concepts. To stick to the duration, the compromise happened when we could not really combine ideas together to reach a solution where everyone benefits. Luckily, we had common goals to fulfil the professor's demand so we were still able to stay on the same line. Moreover, I appreciated the opportunity to analyse the imperfections in my design ideas and contribute to practicing other teammates' ideas.

### Point 3: Design/Development of Solutions

At first, we worried about our design would be constrained by the circuit and electronic elements. So, we did the measurement of all design components and informed LED and audio teammates to do adjustments in the wire soldering. We solved this problem by extending and covering the wires tidily under the boards. Applying environmental-friendly concepts, we reuse some of the materials from the previous project to save time and money, including plastic tubes and polystyrene cubes. After trial and error, I learned how to input the long wires connected to the LED without getting stuck into the plastic tubes (flower stalks).

### Point 4: Individual and Team Work

I realised that teamwork is a baton relay when everyone has different free time to work on this project. To keep the project in progress, we took turns coming to work in the lab to assemble flowers. I aimed my own target after a clear distribution of work. In the entire process, I always kept updating my teammates on my progress. I helped position the pressure sensors from the audio team on the stones and do the stone painting. After we finished setting up the flowers on the base, I helped to do flower maintenance as some petals were dropped during the installation. I also offered help to my LED teammate to connect LED components with flowers. My teammates were tolerant of me throughout the project, and I am grateful for their support.