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

Name: Shao Siying

Group No: 7

Project Title: Flowerescent

Contributions to the Project (1 page)

- Brainstormed and researched on the design and presentation of the flowers
- Created a 3D imaging of our initial idea for visualisation
- Making of first flower prototype (white matte flower) after learning from Jiahui
- Learnt and collaborated with Jiahui on our 2nd flower prototype
- Contributed to the trial-and-error of different plastic materials and came up with the best way for flower making
- Helped in the assembling of LEDs into the flower tube
- Shaped a small portion of the base and smoothing of the edge
- Painted the base and steps
- Mass making & assembling of the flowers
    - Curled most of the petals with Jiahui as it is harder to control and we had prior experience from the making of the prototype
    - Trimmed most of the petals as it has to be in accordance to how the petals were curled
- Helped in the marking-up of position of flowers and setting up of flowers onto the base
- Maintenance and fixing of the flowers
- Video-edited the animation video for overall effect
- Helped out with poster making and group report writing
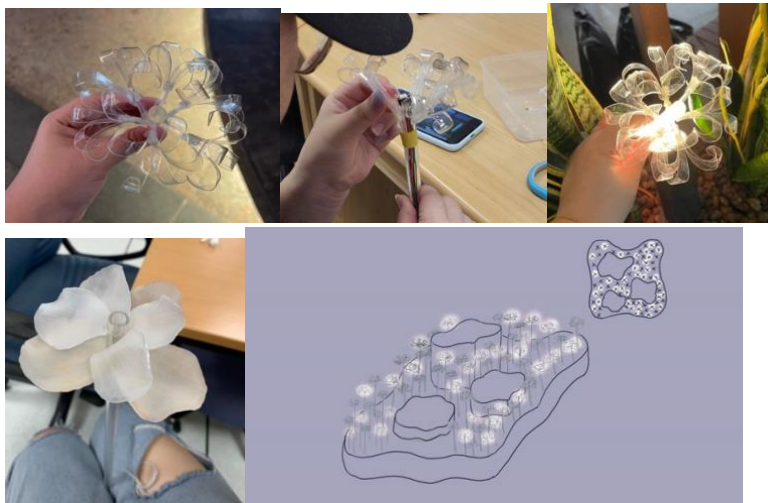
Reflection on Learning Outcome Attainment

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: (b) Problem Analysis, (c) Investigation and (d) Design/development of Solutions
The process of trial-and-error is a clear demonstration of problem analysis, investigation, and development of solutions. During the trial-and-error stage, we encountered the problem of the plastic petals not. Analysing the problem, it was theoritised that the problem could be due to the difference in plastic. Hence, during the investigation stage, I tried and tested the different type of plastic - plastic drinking cups, normal plastic bottles and plastic food containers. After testing, the plastic food containers are the ones that are hard to curl as they are thicker and stiffer. Hence, to solve the problem of not curling, I have developed several steps to help with the process. After heating the plastic petal to slightly flexible, I folded the petal several rounds and hold in the position for about 30 seconds before letting go to fix the shape. If it is still undesirable, I will fold and heat the petal over the flame again to soften and shape the plastic.
Furthermore, there is the problem of the petals not being curled in the right direction as it is hard to control. Hence, I have developed a way to "alter" the petals back to a desirable direction to ease the process pasting them together by trimming them in a certain way.

Point 2: (g) Environment and Sustainability
The entire project is based on the wish and need to raise awareness about plastic pollution. Hence, the plastic flowers that we made are from recycled plastic materials. The stones and the flower stems are also reused from the previous project. During the trial-and-error stage, all the plastic materials that were explored were also recycled. These materials include bubble tea cups, plastic bottles and food containers.

Point 3: (i) Individual and Team Work and (j) Communication
Throughout the entire project, there are several areas for teamwork and communication. For teamwork, the steps of making one flower are tedious and complicated, hence it would require the help from our other team members and is it best to employ a streamline workflow to be efficient and productive. Personally, is it important to be responsible and on time with the task that we are assigned to. This project has also taught me how to communicate effectively with others. During the initial brainstorming stage, the discussion was flooded with different opinions, especially so for design team as art is subjective. Hence it is important to standardise the objectives that we wish to achieve first before moving on to the design. Furthermore, I have learnt to compromise to achieve a balance between aesthetic and feasibility, especially with a tight deadline.