

## **Project 4 – Individual Reflection**

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Project 4 of the course was one of the most challenging projects for me. It wasn't a hard challenge but rather required me to challenge myself at every step and milestone of the project. It required critical thinking, reflection on past milestones, realizing what could be improved and learning from them.

Starting off, the team collectively had to understand the client, her needs and difficulties and pick a area of her daily life we would like to help out with. This required thorough brainstorming after reviewing the notes taken from 2 sessions with the client. This was our first team decision and a tricky one that would define our whole project. We understood the emphasis on the client meeting notes as it proved helpful. This led to the most critical phase of our project.

Having picked painting as the area we wanted to focus on, we now had to develop a design solution. This began by deciding what functions, constraints, and objectives we wanted our design to achieve. The How/Why ladder allowed us to express ourselves and our multiple chain of thoughts freely. We were able to interlink and recognize the essential objectives and constraints. Hearing the reasoning of each team member behind the decided objectives helped us narrow down and finalize. Several sketches and prototypes later, we had to decide on which solution was better suited among the 5.

We used a variety of tools, such as a Morph Chart and a rated Pugh matrix to list out between 6-8 criteria to judge the solutions. This opened our options as we sought to combine 2 prototypes to construct a final design solution.

We tested our design in several ways such as stress analysis, spring displacement, among others. They were conducted in sound ways and verified. However, I feel we could have emphasized more on and tested the safety features of the design. We didn't repeat decision making later on, but we did ensure all the essential objectives and constraints were implemented.

It was after these several meetings that I realized how being organized and noting down the steps taken was instrumental in reaching the point. I'm not a very organized student in terms of writing everything down but this experience showed me how it could display different viewpoints of the same plan. The multiple team meetings along with design review was a great experience which showed how every opinion and feedback can help in refinement even in the most minute ways. In hindsight I also believe we could have done better with regards to physical prototyping as well as test plans that didn't involve metrics to ensure our design solution ticked all the boxes. 1P13 has been a long journey with a lot to learn from and I hope

to apply everything I learned from the projects, the students and TAs I networked with, into my future endeavours.