

## Design Project 1

The goal of design project 1 was to design and produce a coffee mug for disabled individuals whom only have one finger, while maintaining the customer's privacy of his/her disability. In order to find a solution to this problem, we, as engineering design students, researched and analyzed current coffee mug designs and designed a coffee mug for people with hand disabilities. Through this design process, we used an analytical hierarchy process which enables them to rank the customer needs and a concept generation tree in order to figure out the different possible designs. After the possible designs have been selected, prototyping and testing were done in order to select the best design by using the CAD software provided to us (Solid Works) and the design was 3D printed.

**Customer Needs and Ranking Table**

	Simple	Low Maintenance	Reliability	Heat Control	Portable	Lightweight
Simple	1	0.166666667	0.25	0.2	0.5	0.333333333
Low Maintenance	6	1	1.5	1.2	3	2
Reliability	4	0.666666667	1	0.8	2	1.333333333
Heat Control	5	0.833333333	1.25	1	2.5	1.666666667
Portable	2	0.333333333	0.5	0.4	1	0.666666667
Lightweight	3	0.5	0.75	0.6	1.5	1

**Concept Generation Table**

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## Final Design

