The Hybrid Mug

For the first design project, my class was put into groups and we were given the task of designing a coffee mug for people with only one finger. We gave the issue a lot of thought, and came up with this mission statement: "Our mission is to design and create a coffee mug for those who regularly consume hot beverages and also have only one finger, while also allowing the consumer to maintain the privacy of his/her disability as much as possible."

AHP

To start we used the AHP (analytic hierarchy process) to collect customer needs and rank them. We started off with 6 categories of customer needs and ranked them 1-6 according to how important we believed the need to be, with 6 being the most important and 1 being the least important. Then, after filling out the rest of the table by dividing the row category rank by whichever column category rank the box was in, we came up with these which show the weighting of the customer needs.

	Simple	Low Maintenance	Reliability	Heat Control	Portable	Lightweight	**Total**	**Weighting**
Simple	1	0.166666667	0.25	0.2	0.5	0.333333333	2.45	**4.76%**
Low Maintenance	6	1	1.5	1.2	3	2	14.7	**28.57%**
Reliability	4	0.666666667	1	0.8	2	1.333333333	9.8	**19.05%**
Heat Control	5	0.833333333	1.25	1	2.5	1.666666667	12.25	**23.81%**
Portable	2	0.333333333	0.5	0.4	1	0.666666667	4.9	**9.52%**
Lightweight	3	0.5	0.75	0.6	1.5	1	7.35	**14.29%**
Total							51.45	

Concept Generation

Next, we modified our original customer needs into 5 categories that we believed to have the highest possibility of variation. Those categories were easy to use, material, heat control, design, and lid. We made a classification tree by adding options to each category and labeling them as A1, A2, B1, B2, and so on. After doing this, we created a concept generation graph. Here is our graph:

| | Concepts | | | | | | |

exceeded the ideal concept. We summed all of the rankings and gave each combination a net score. We used the net score to rank each combination and decide if it was worth continuing with and modifying or if we should leave it behind.

Concept Selection/Final Design

Finally, we decided on a coffee mug that had a wrist handle, was made out of plastic, used air for insulation, had a medium-width base, and had a latch lid. We called it the Hybrid Mug. Here is what it looked like:

We called it the Hybrid Mug because someone with more than one finger could use it as if it were a regular coffee mug. However, people with one finger or less could also use it by sliding the handle over their wrist. We decided that if we were really producing these mugs, there would be sizes made just like with clothes to accommodate for all wrist sizes. The simple design is beneficial because it doesn't attract attention to the user's disability and the size of the base makes it convenient and cup holder friendly.