Edesign DEM Project –

We learned how to work as a team and how to brainstorm our ideas and then implement them to get the satisfactory results for the users. In this process we learned about many things like AHP table, CAD and then making a final report on it.

A Market Specific One Fingered Mug for Disabled People

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Abstract

In the world of modern medicine, amputations are not a rare thing. In fact, approximately 185000 amputations occur in the US yearly. 10% of the upper body amputations are located in the hand, of which the loss of fingers are the most common. 54% of americans drink coffee as week. The mug produced in this project will serve to cater to these criteria, thus "A Market Specific One Fingered Mug for Disabled People."

Safe, user-friendly, durable.

Introduction

A coffee mug is an apparatus used by people to consume coffee. These normal mugs require the use of a complete set of fingers to be used comfortably. This becomes a problem when a person has been in an accident in which loss of fingers occurs. In order to provide a more comfortable way of using the mug without disrupting daily activities too much, we set forth to create a new mug.

Literature Review

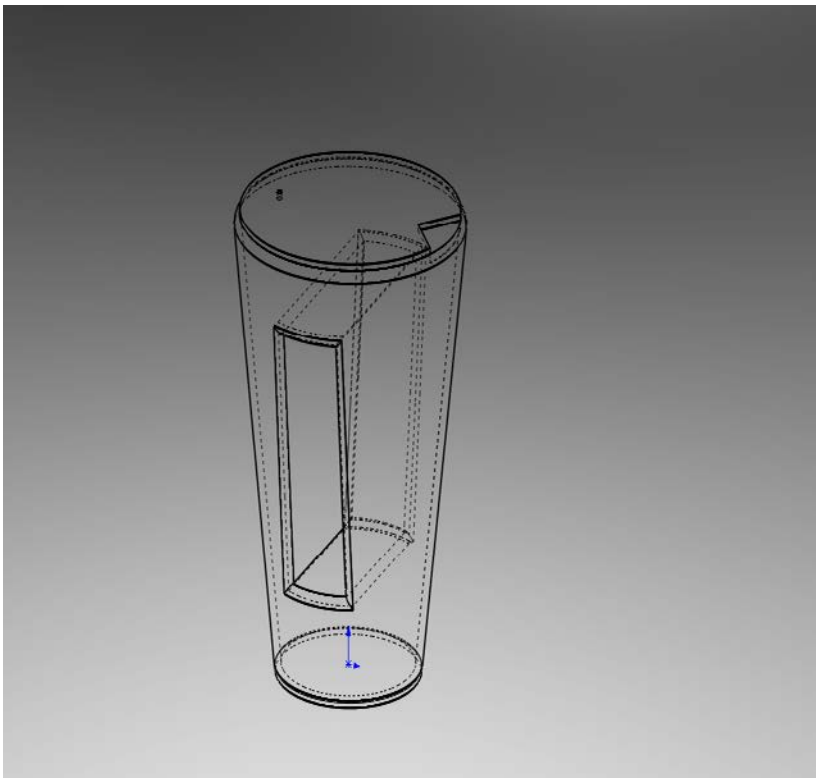
We first scoured the internet for already existing products for the disabled. What did they seek to rectify? What did they prioritise in providing for their customers? In doing this we constructed a base to start our project on. This also meant we would avoid the failings of the various products on the internet. Such as mugs that allowed the user to hook their fingers on a resized handle. This would not work if the only finger remaining on the hand was a pinkie, it wouldn't be able to support the cup's weight. Thus by using information already available to us and out there, we were able to get out design process up and running.

Design Process

To start off the design process, we had a brainstorm in which we came up with potential customer needs, and subsequently ranked them. We looked at other products online to see what was out on the market. We also drew inspiration on these, and seeked to improve what already existed. The customer needs were safe, user-friendly, durable, portable and aesthetically pleasing.

Next, we went a step further and assigned numbers to the subcategories of customer needs. We tabulated these and compared them with each other. This resulted in a variety of different mug designs we could have used. Using the numbers from the previous tables, we found the mug design that we would eventually prototype using clay. Unhappy with the clay, we turned to solidworks instead to produce a better prototype. As we were satisfied that the prototype would succeed, we decided that would be our final product.

Design Result



This is the final culmination of the design, which we considered fulfilled all the conditions we set ourselves.

Conclusion & Summary

We believe the mug created in this case has been successful, and if used by a one fingered person, extremely helpful. It will have fulfilled all the categories of safe, user-friendly, durable, portable and aesthetically pleasing.

Reference

http://www.amputee-coalition.org/limb-loss-resource-center/resources-by-topic/limb-loss-statistics/limb-loss-statistics/