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2024 - 11 - 20

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Final Project Update Bed Rail Cup Holder

Enjoy our presentation

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Meet The Team!



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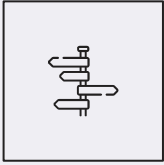
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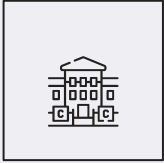
Problem Statement

Overview of our project

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Can access cup independently while laying down



Requires limited arm strength and mobility



Sturdy and accommodate different cup sizes.



Safe and easy to maintain.

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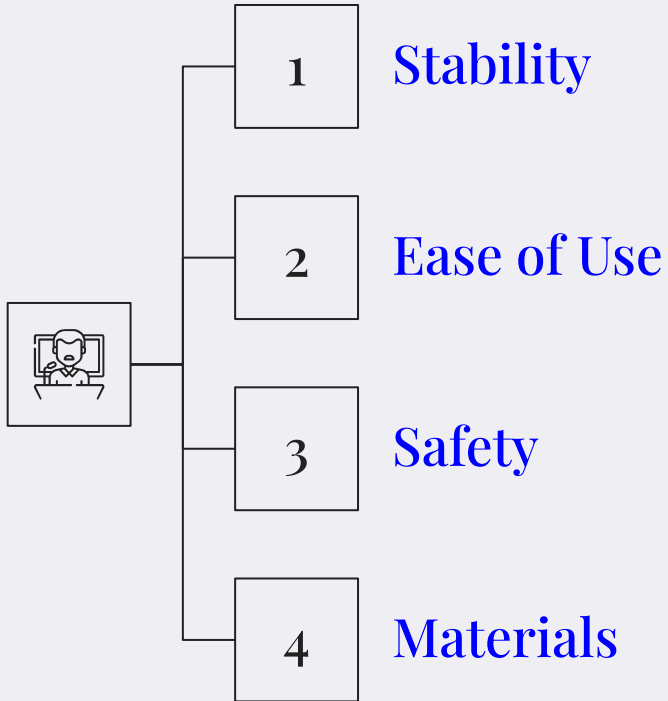
Target Specs+Benchmarking

Post client meeting 1

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Benchmarking



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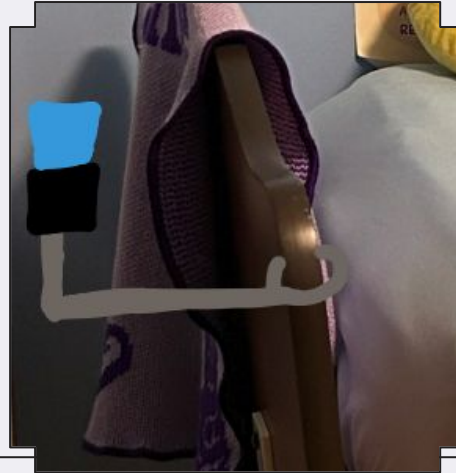
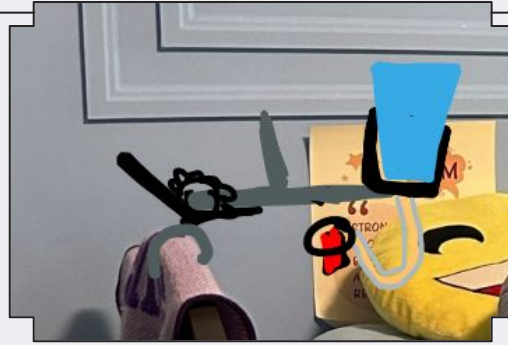
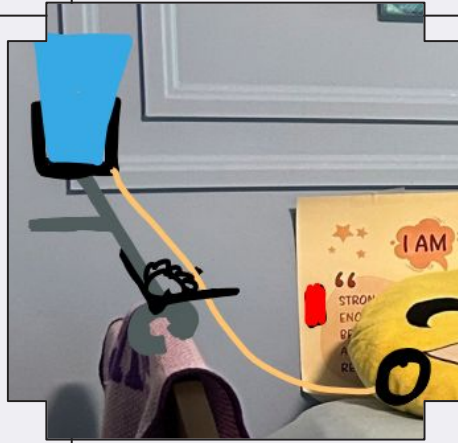
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Initial Sketches

Post client meeting 1

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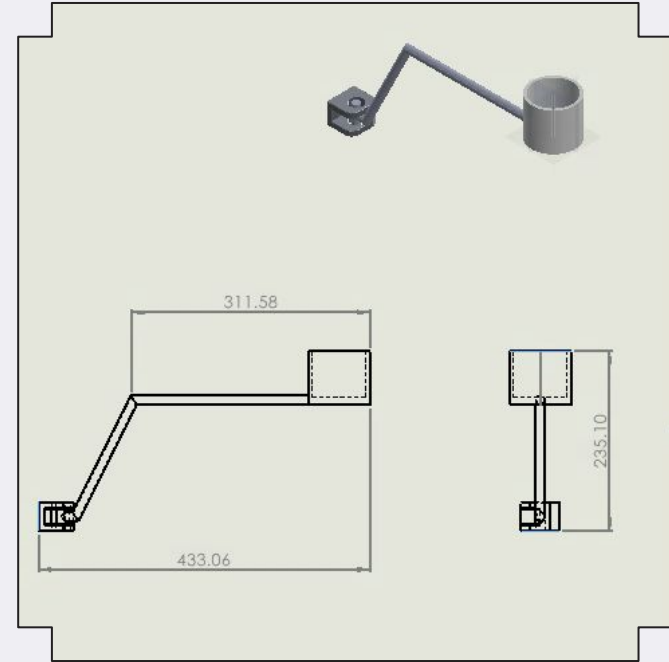
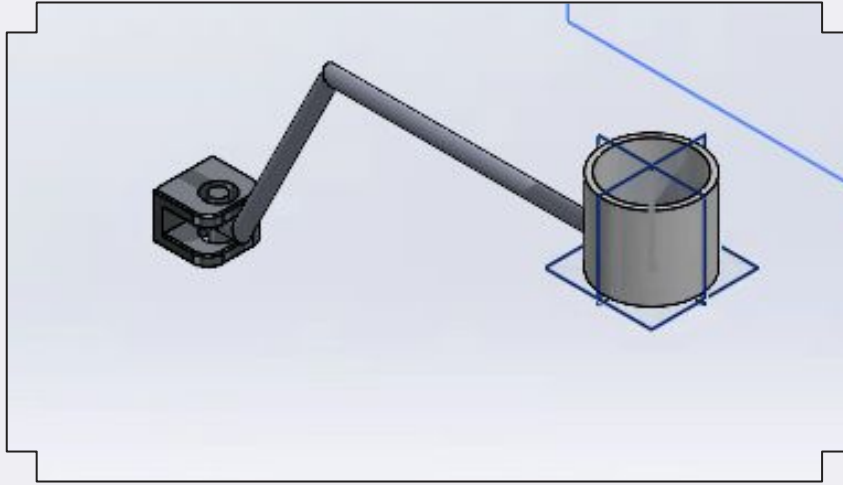


Feedback from Client:

- Did not like placement
- Liked the simplicity of the design
- Unsure if the cup holder can be independently adjusted.

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Initial Low-Fidelity Prototype



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Before the Physical Prototypes

- Material considerations
- Calculations for hinge, rod, and cup holder
- Plans on high fidelity testing

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Decisions Made

Post client meeting 1

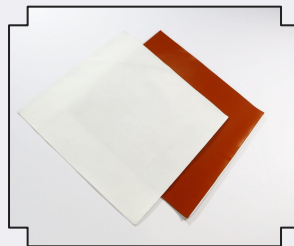
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Reviewing Decisions Made



Materials



Safety



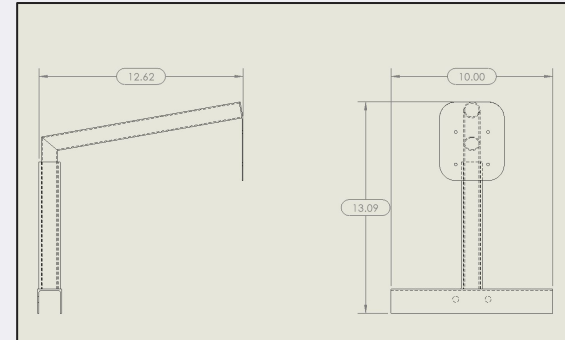
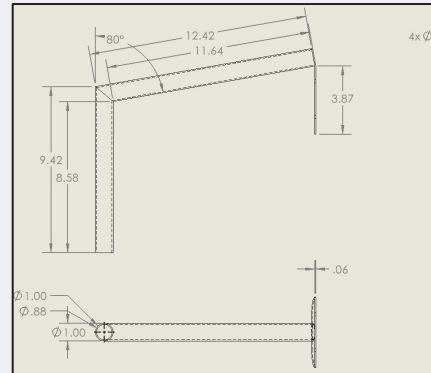
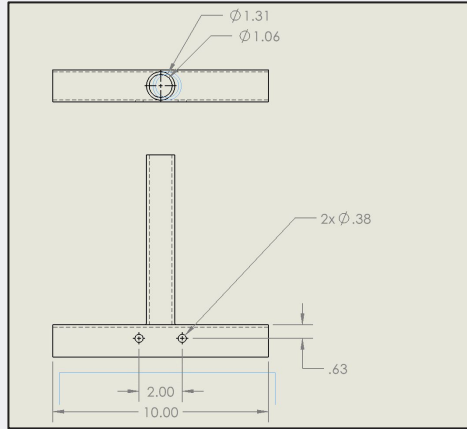
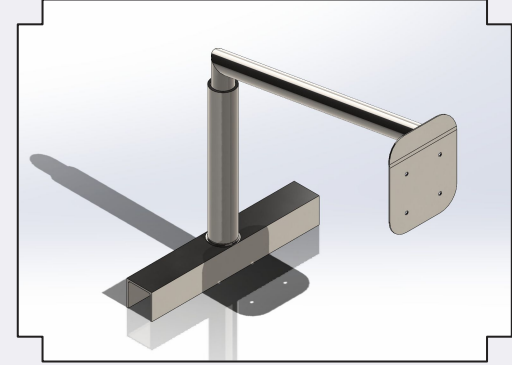
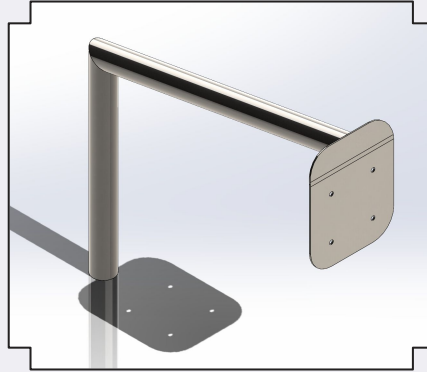
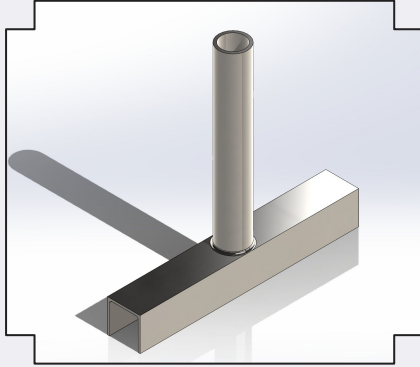
Adjustability



Attachment

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Low-Fidelity Prototype



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Prototype 1

Presented during client meeting 2

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Prototype 2

Presented during client meeting 3

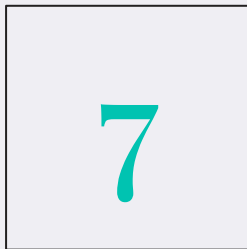
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Prototype 3

Will be presented during design day

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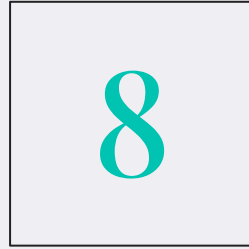
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2024



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BOM

Final bill of materials

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|-----|---|---------------------------------|---------------------------|------------------------------|-----|
| | | | | | |
| { } | Item | Price (CAD) | Quantity & Spec | Total (CAD) | |
| | 2"x2" angle iron | \$5.00 | 12" | | |
| | 1" OD pipe | \$5.00 | 12" | | |
| | 1 1/4" OD pipe | \$5.00 | 12" | | |
| | Residual piece of 16 gauge plate | \$2.00 | 1 | | |
| | Spray Paint (Blue) | \$15.00 | 1 | | |
| | Block of Wood | N/A (scrap piece in Makerspace) | | | |
| | Carbon Steel Clevis Pin | \$2.39 | 1/4" Diameter | | |
| | Zinc Eye Bolt with Nut | \$1.39 | 3/8" - 16 Thread, 4" long | Just Materials: \$35.78 | |
| | Solidworks Standard Term Licence - 3 Month | \$1140.00 | 1 | Complete Total: \$1175.78 | { } |
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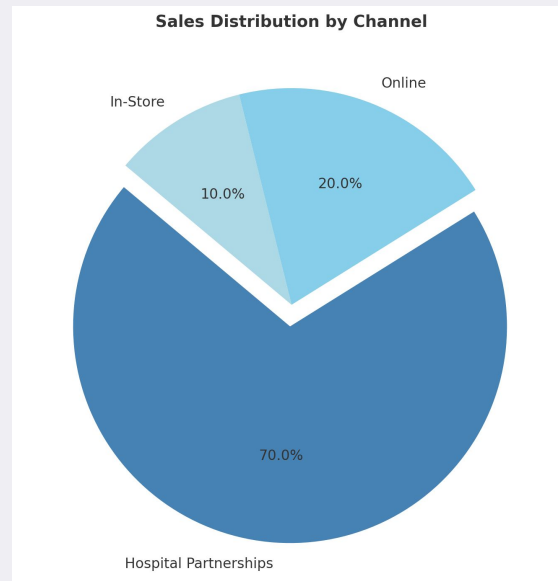
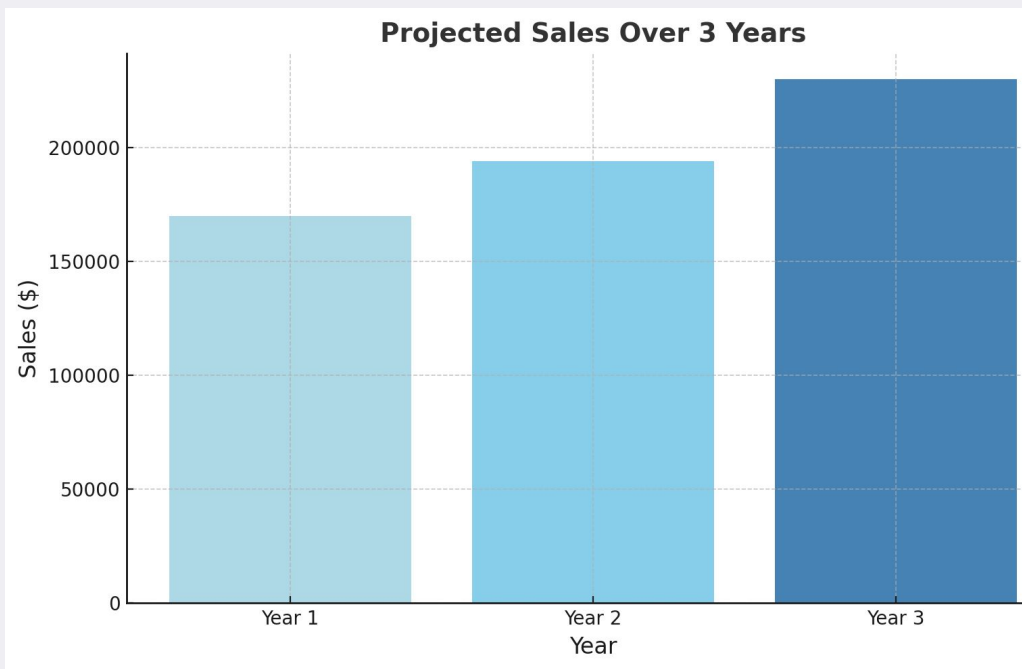


Economics

Projected Sales

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Projected Sales



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Trials and Tribulations

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Trials and Tribulations

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Clients Setup Needs



Clients Personal Desires

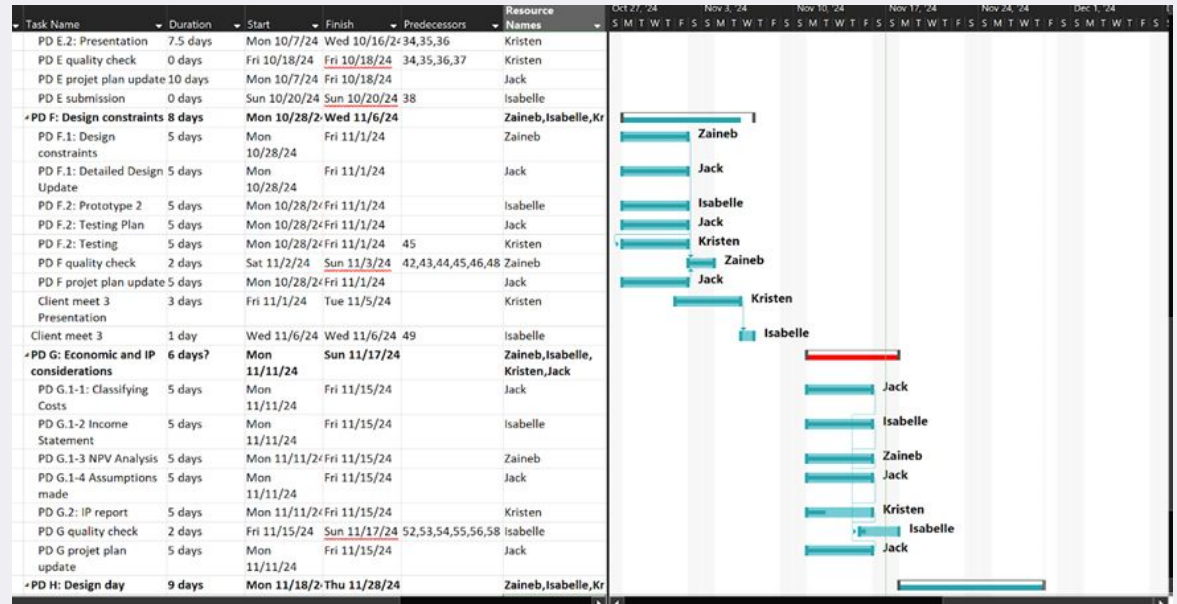


Trials and Tribulations Cont.

Extra Functions



Timeline/Scheduling Issues



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Live Demonstration

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2024

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Thanks!

Does anyone have any questions?

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