

Deliverable F - Prototype 2

GNG 2101- Introduction to Product Development And Management For Engineers

Submitted by

Section A, Team 7

Aaron MacNeil, 300199522

Andro Hanna, 300211677

Jacob Charron, 300175263

Jake Ratkovic, 300190849

Praise Ebirim, 300081723

Thursday, November 4, 2021

University of Ottawa

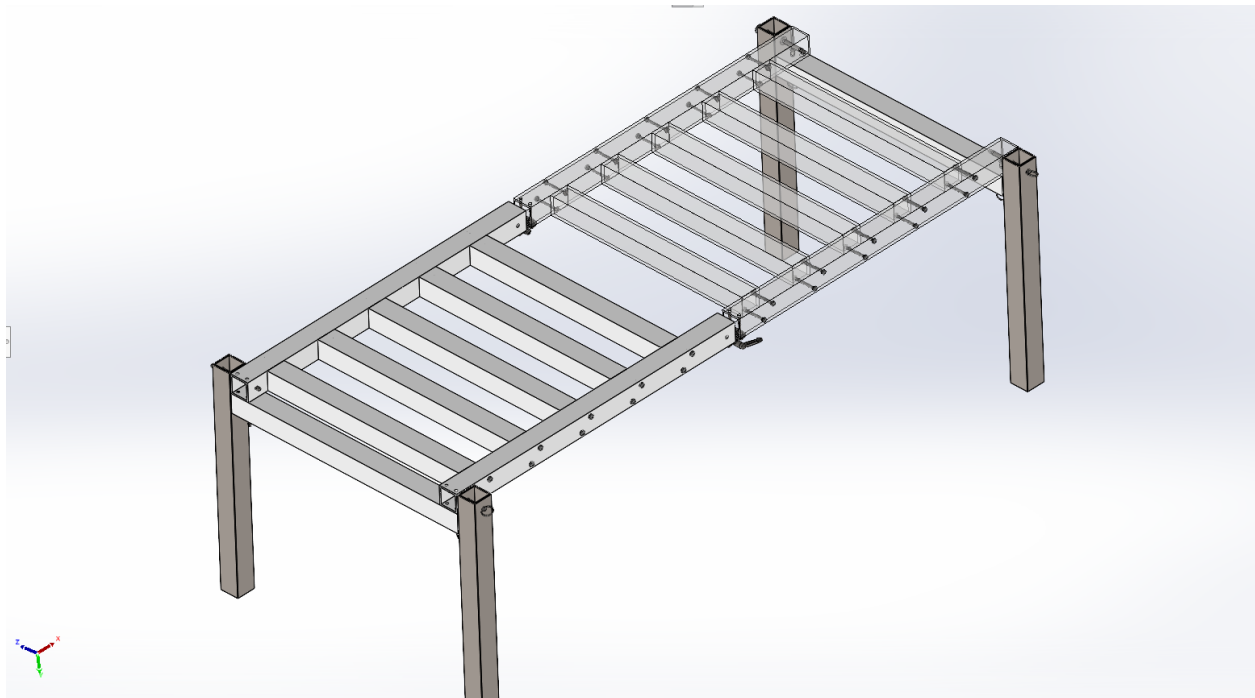
1. Summary of Client Feedback

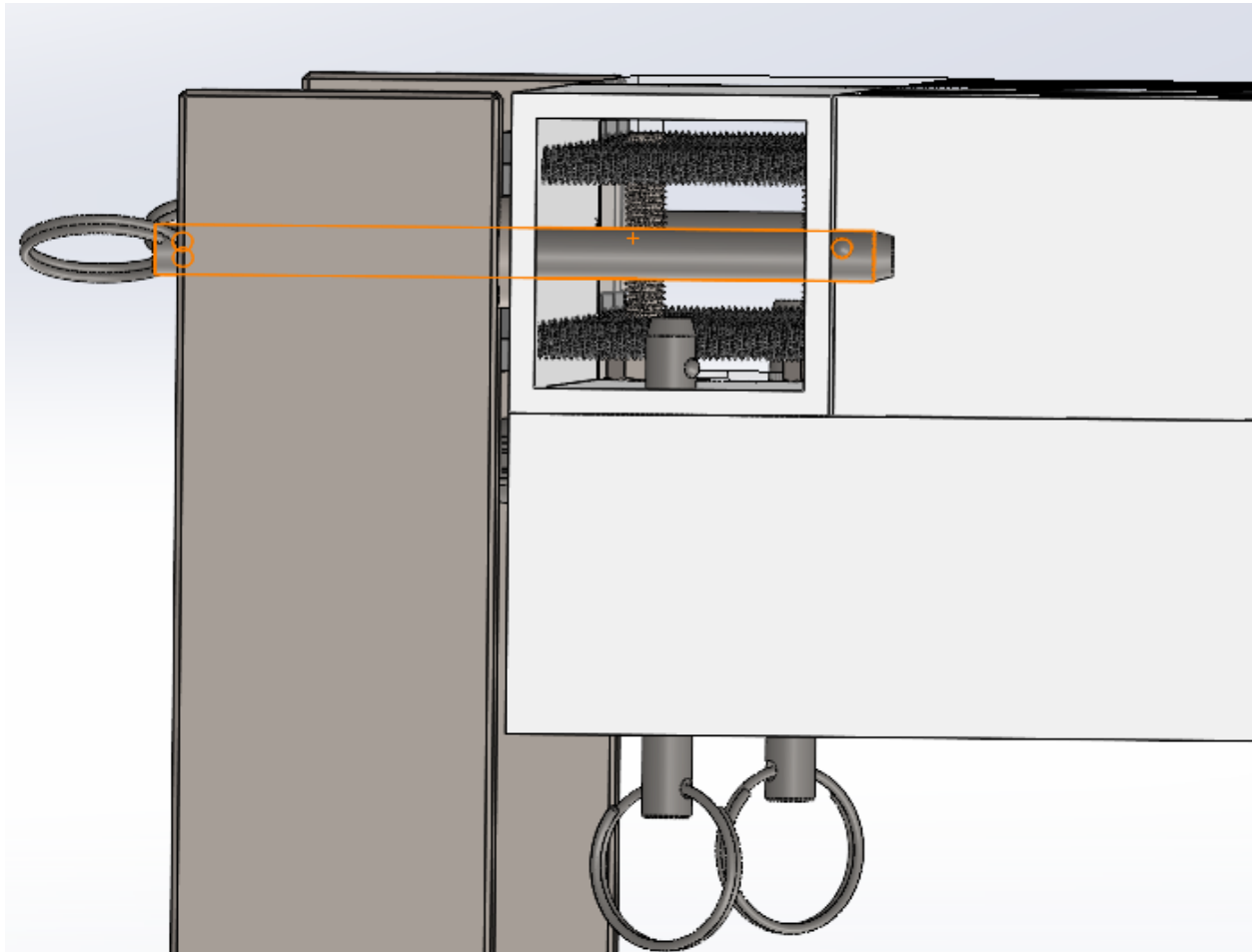
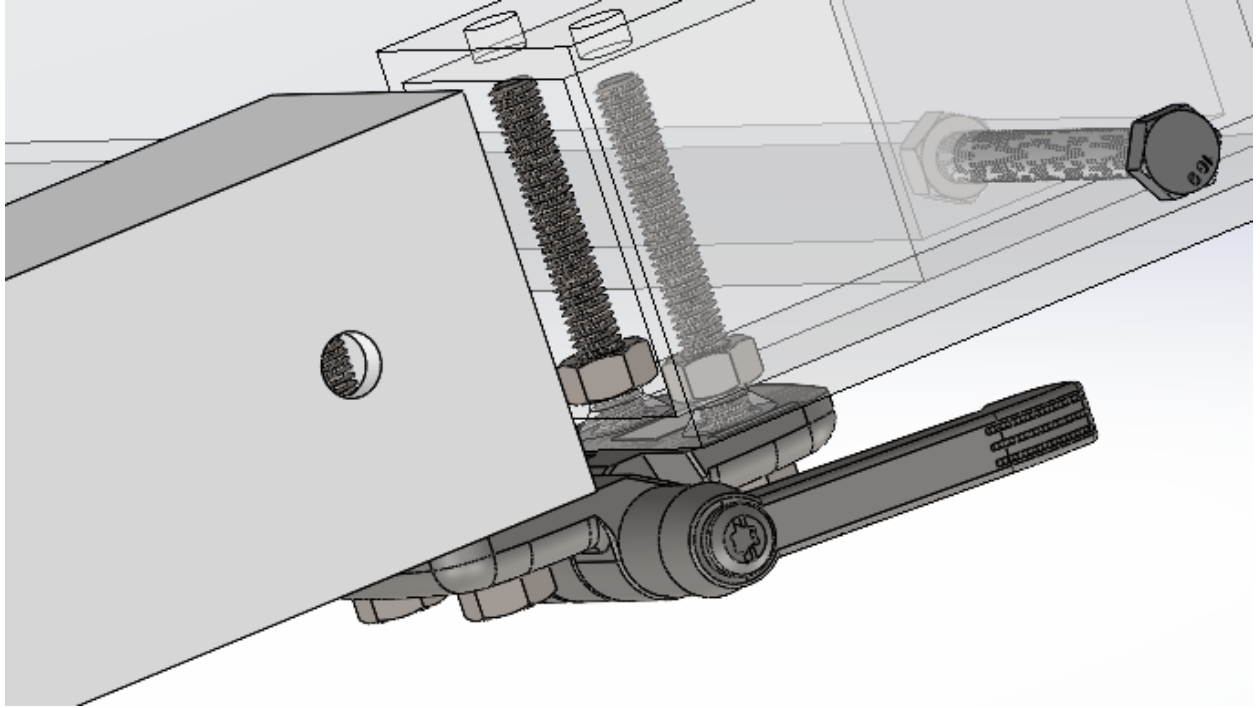
During our third client meeting, the client commended our work and was eager to see the second prototype design. They said to keep up the good work.

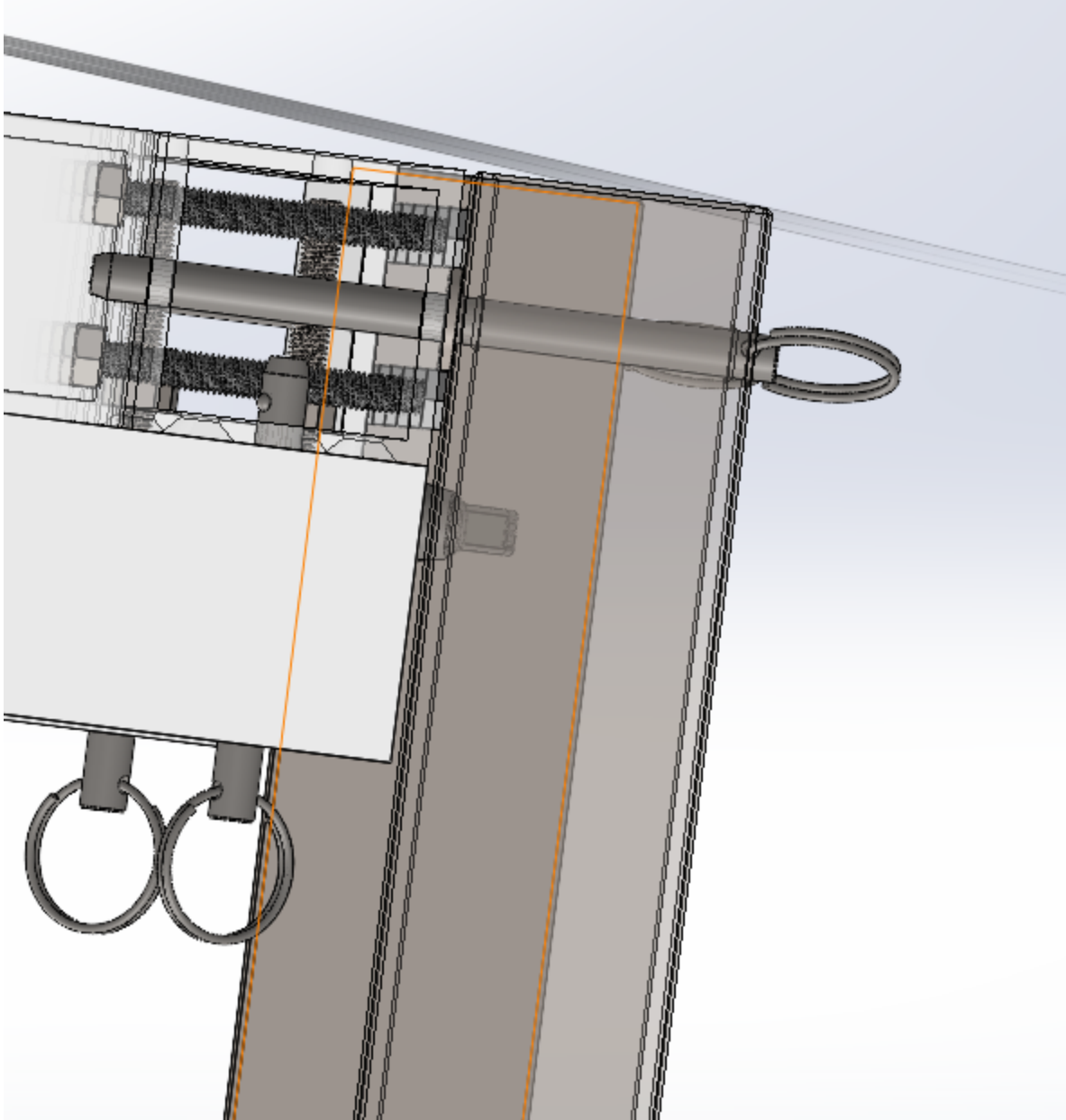
2. Second Prototype Idea

Since the client wanted a very simple way of unfolding the change table, we decided to add lock pins which lock the legs in place and provide a very simple assembly and reduce the assembly time. We also came up with the idea of using pvc pipes which would solve the weight issue. We then added special hinges which lock into place in order to prevent the frame from folding on itself or breaking apart in the middle.

3. Document your latest prototype



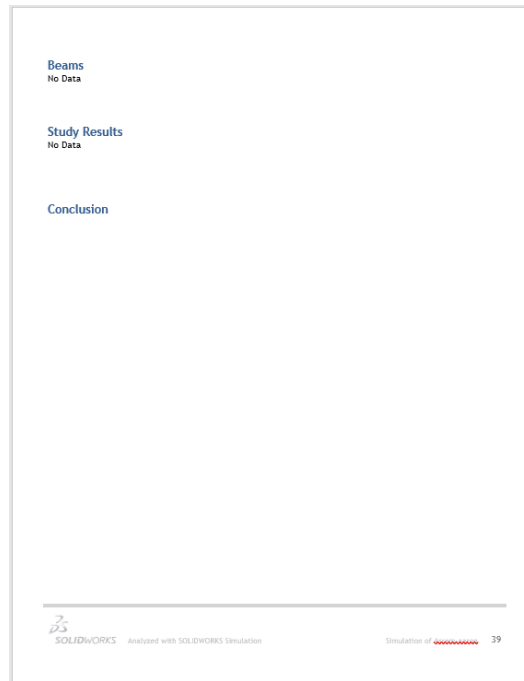




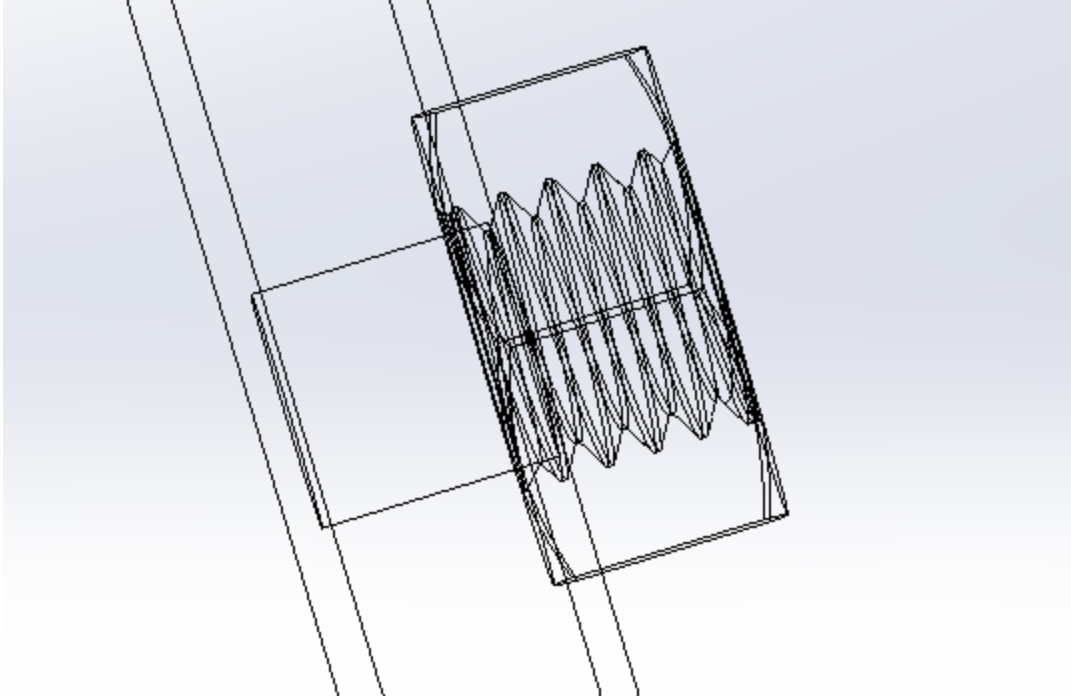
In this prototype , we have lock pins which simplify the building process while providing support. We also have the ribs going through the middle in order to distribute the weight and support the person laying down. The whole frame is made of pvc pipes that are able to hold the weight asked. The whole is maintained by nuts and screws.

4. Prototype Testing and Results.

Since that was our first time using the solidworks simulation tab, we think our simulation is false since it did not produce any result in the word document created by it. As well , the simulation stated that all the bolts failed, which is not a logical result for a solid, fastened assembly using 6mm diameter bolts.



So for this part even after 1.5 hours of simulation , we can't define anything. The only thing we can say is that the nuts failed due to an imperfection with the ribs in the assembly.



As you can see the nut is going over the inner part of the rib which caused the mesh to fail and produce a false report.

But we managed to get a BOM (bill of materials) which gives us an overview of the amount of materials needed to make it.

| + | A | B | C | D |
|---|----------|-----------------------|---|------|
| | ITEM NO. | PART NUMBER | DESCRIPTION | QTY. |
| | 1 | Leg piece | | 4 |
| | 2 | 98320A280 | Zinc-Plated Steel Ring-Grip Quick-Release Pin | 4 |
| | 3 | 96659A107 | 18-8 Stainless Steel SAE Washer | 4 |
| | 4 | Rod | | 2 |
| | 5 | ChangeTableFrame 7 | | 4 |
| | 6 | 98320A265 | Zinc-Plated Steel Ring-Grip Quick-Release Pin | 4 |
| | 7 | 1604A43 | Lever-Lock Position Hinge | 2 |
| | 8 | ribs | | 10 |
| | 9 | 91310A128 | High-Strength Class 10.9 Steel Hex Head Screw | 40 |
| | 10 | 90592A016 | Steel Hex Nut | 48 |
| | 11 | 91310A127 | High-Strength Class 10.9 Steel Hex Head Screw | 8 |

Project Plan Update:

Deliverable F - Prototype 2 ☆ 👤 📡 🔗 ⋮ ✕

GNG2101 +

New ▾ **AM** Aaron M. + #763928979 by Aaron M. on 28 Sep

📅 13 Oct – 4 Nov (17d) ⌚ Approvals ▶ 0:00 **4 subtasks** 📎 Attach files 📏 Add dependency 🔄 6

- ✓ **JR** client meet 3 feedback summary **Completed**
- ✓ 👤 feedback summary statement **Completed**
- ✓ 👤 list of revisions **Completed**
- ✓ **JC** 2nd prototype development **Completed**
- ✓ **AH** documentation of 2nd prototype **Completed**
- ✓ 👤 visual representations **Completed**
- ✓ 👤 purpose and fuctionality statements **Completed**
- ✓ **PE** prototype testing **Completed**
- ✓ 👤 performance evaluation against target specifications **Completed**
- ✓ 👤 documentation of test results **Completed**

+ Add task ▾

Click to add the description

September

AM Aaron MacNeil 28 Sep

AM Add a comment... 📎 @ 😊 Aa

