



Cable Management 2.0

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Define and Explore

2.8.21

Problem Definition: Cable Management

Goal: create a cable management rack that attaches to my desk

Primary function:

- Must hold cables
- Must organize cable routes
- Must be semi hidden

Secondary function:

- Easy to install and organize
- Stay clean and fit color scheme
- Can be moved to different desk

Constraints:

- Size: must fit all cables yet keep a low profile
- Weight: Must be able to support all cables
- Unit: needs to be decided
- Improv mats: maybe cardboard or wood
- Interface: must attach to table

Cable Management Rack diagram



Cable
raceway



tray/basket

VIVO cable management tray (\$28)

Overview:

- Low profile
- Mounts under desk
- Clean design

Pros:

- Slim
- Clean
- Simple

Cons:

- No organization
- Thin
- No customization



Home Depot rack (\$25)

Overview:

- Strong build
- Open design

Pros

- Simple
- Heavy duty
- Small frame

Cons:

- Cannot hold lots
- Does not hide
- Not under desk



Ikea Signum(\$15)

Overview:

- Large
- Metal
- narrow

Pros:

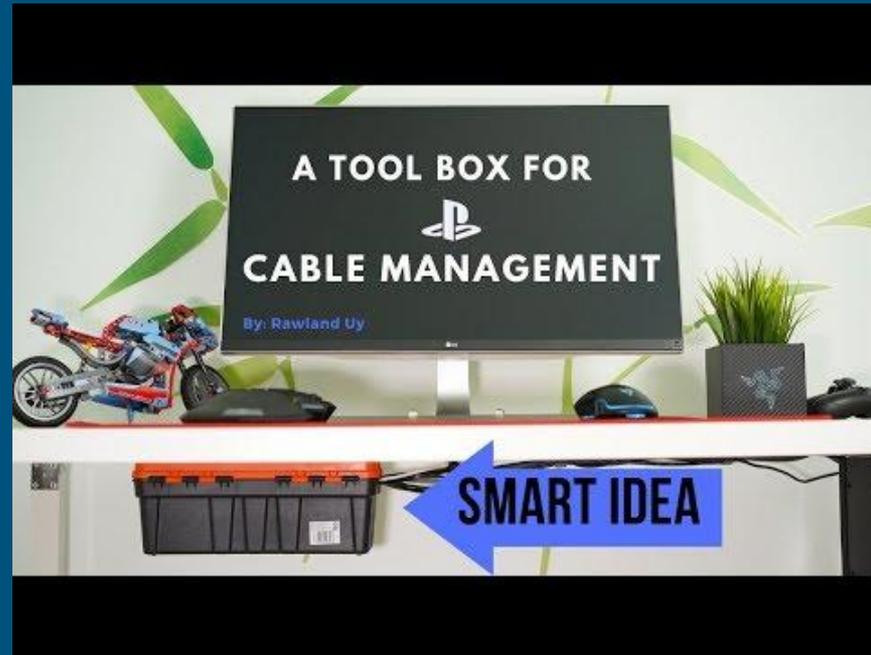
- Narrow
- long
- Organization
- Cheap

Cons:

- Does not hide cables
- flimsy



DIY Videos



Takeaways

- Lots of existing solutions already for 15-30 dollars
- Lots seem to screw in
- Lots of metal
- I need to figure out what material to use
- Thinking about a way to hide cables completely
- Lots of helpful resources/tips on cable management

Ideate and Design

3.2.21

Key Features

Primary functions

- Securely attaches under table
- Holds and organizes cables
- Fits aesthetic

Key Features:

Name: wire tray organizer

Known: rests on the back of the desk

Unknown: what type of metal, what is the weight limit

Name: Under Desk cable organizer

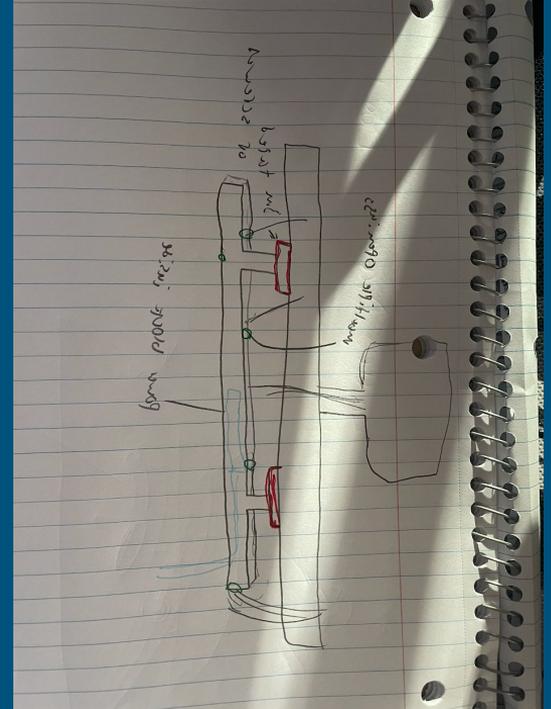
Known: attaches under the desk

Unknown: how large is it, what material is it made out of

Name: cable clips

Known: easily sticks under desk

Unknown: how many would I need to route all may cable, how big of cables could they hold



Key feature approach

Key Feature: cable clips

Knowns:

easily sticks under desk

Unknowns:

how many would I need to route all may cable,

how big of cables could they hold

How large of cables can they hold

How much are they

How would u make them

Bread bag holder things could be used

Maybe just use for smaller cables or ones that go short distance

Notes:

Bread bag clips are interesting

Reconsider for size of different cables

And sheer amount

Key Feature: under desk organizer

Knowns:

attaches under the desk

Unknowns:

how large is it, what material is it made out of

How slim is it

How many cables it can hold

How do the cables route

How low does it hang

How do u attach it

Notes:

Figure out how to attach it with minimum damage to desk

Figure out the dimensions

Key Feature: wire tray

Knowns:

rests on the back of the desk

Unknowns:

what type of metal, what is the weight limit

How will this attach

How can this stay out of the way

How does a cable route through it

How many cables can it hold

Hows does it organize the cables

How far does it stick out

What material to prototype with

Notes:

Figure out how large to make it

Figure out the attachment system

Prototype Design

Prototype Goal:

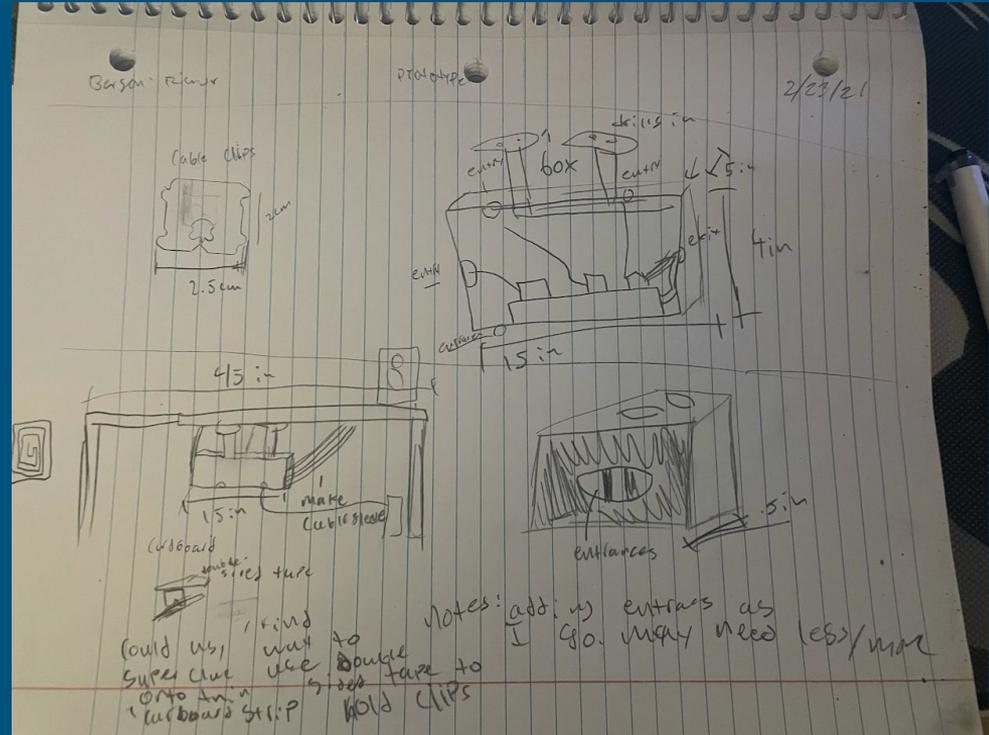
- Learn what size and weight I need
- See if bread holder works

Approach:

- Use cardboard box
- Test with cables

Materials:

- Cardboard
- Double sided tape
- Bread clips
- Wire



Alternate prototype slides

4.6.21

Project Status

Status:

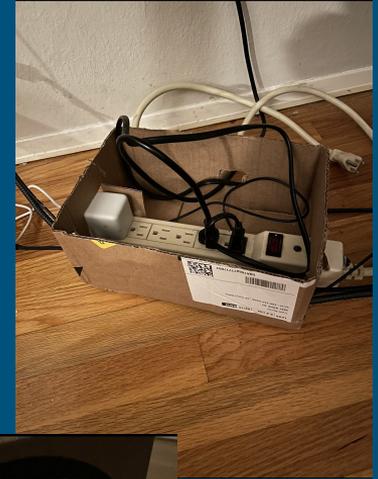
- *So far I have created a rough prototype.*
- *It was not tall enough and I realized that I would not have enough room*

Next Step:

- *While I was brainstorming new ways I could cable manage I realized that it would not be viable to have that large box attached to the bottom of my desk, because it would be attached to a pull out drawer. But behind that is a perfect space where I could find a way to route my cables. I am thinking about making a net or some sort of runway.*

Potential Barrier or difficulties:

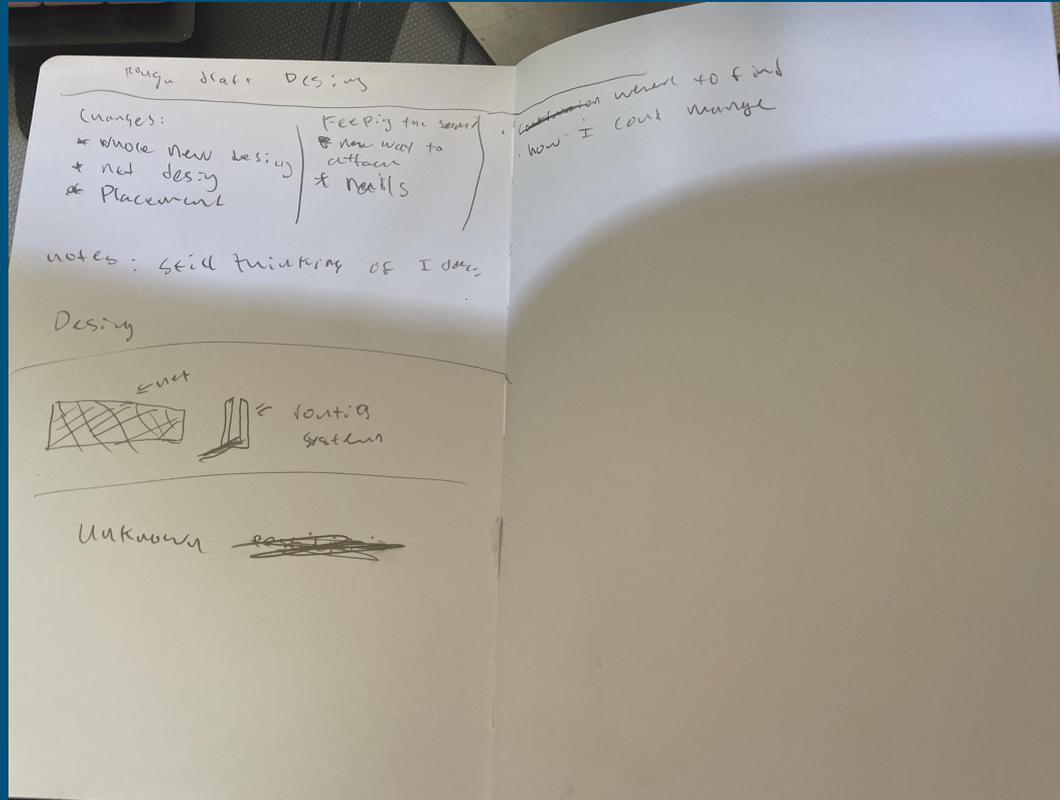
- *Figuring out what materials to use*



Rough Draft

4.26.21

Rough Draft Design



Rough Draft Build

Approach:

- The first thing I needed to do was to cut a slit on the back of my desk
- But my mom wont let me so I had to think of a new approach
- So I asked if I could drill into the desk
- She said no
- So now i'm gonna get a new desk
- And then I will do my original plan

Something I liked:

- Being able to make changes /:
- I liked going through the design process in office hours and coming up with some great Ideas

Something I will not do again:

- Try to mess with furniture

Final Draft
5.11.21

Design

I wanted to make a multilayered design that could not only hold my power strip but route cables while keeping a low profile. I Also wanted to have easy access to all my cables so I left the back side open. The choice of wood on the front guard looks great with my whgiter desk and stays well hidden



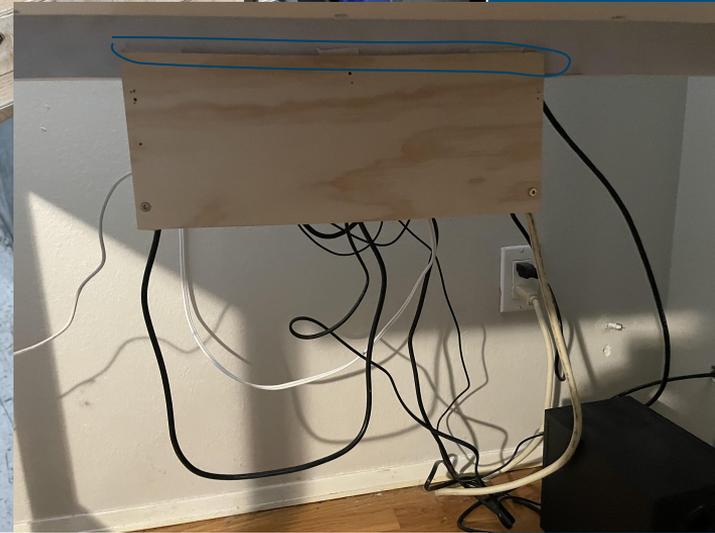
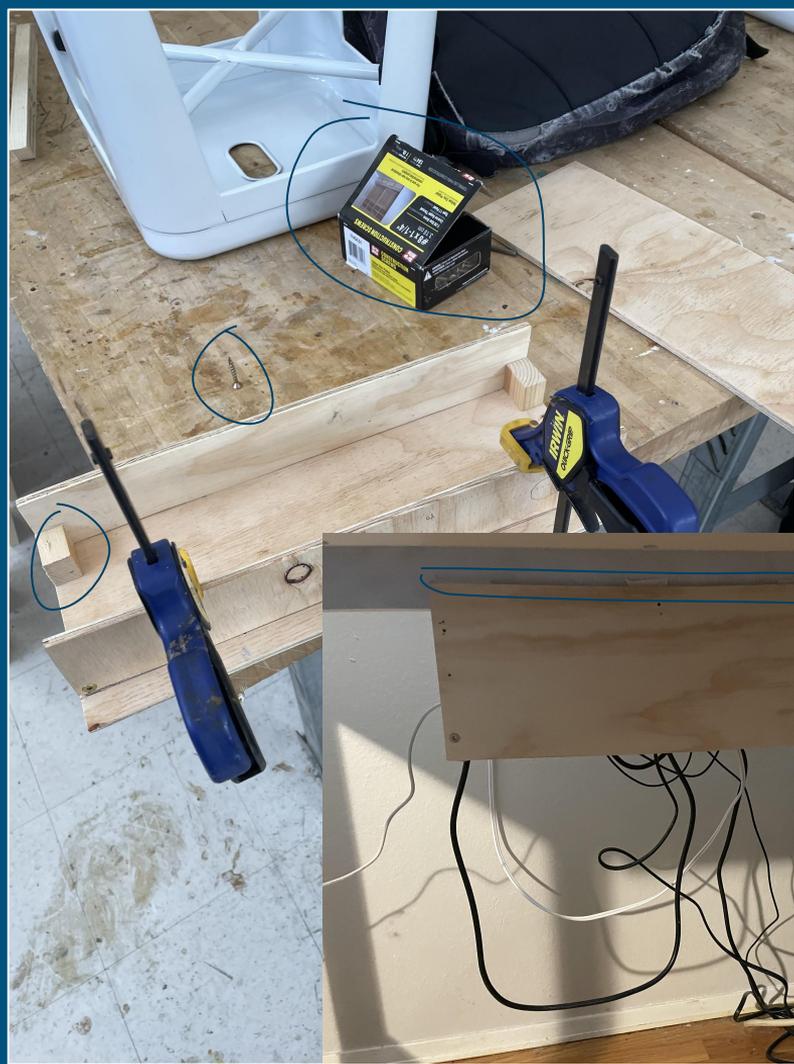
Build

Building this was much harder than I expected. There were a lot of times where some of the wood would split and I would have to make new pieces. I am glad that I was able to work in class and learn all about different tools and methods along the way.



Testing

Throughout the process of building my final piece I had to test lots of different ways to attach my wooden pieces. Some of the screws what I used were too big and would slip my support pieces or some drill bits were too weak and snapped. I also tried out a nail gun and used small nails called brails that worked great for support and going into small pieces of my project. I also tested what to use to hold up my box. Double sided tape was not strong enough so I am using clamps



Evaluation

I really enjoyed this project. I think that I underestimated the effort I would need to put in but I am glad that I put in the work because I am proud of how it turned out. I think I had a lot of ideas and it was good to just concentrate and grind it out. I like how sleek and thin my final is compared to the others. Something I would do differently next time is not procrastinate.

