

# The **Vinylphile's Nook**

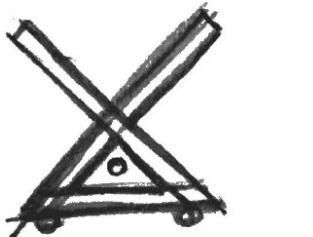
For many vinyl enthusiasts, the current market tends to lack a low-cost, dedicated storage solution that allows for a combination of safe and efficient organization of vinyl records, record player accessories, cable management, and style.

**Brian Nguyen**

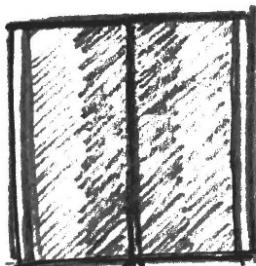
**Design Review #4**

# Original Design from Design Review #1

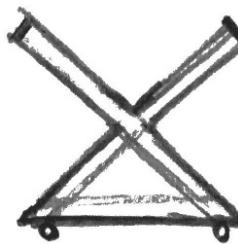
Vinylphile's Nook - Sketch #7  
Brian Nguyen



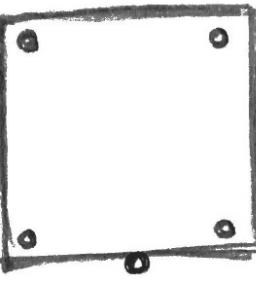
Front Front



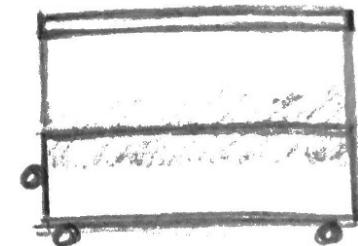
Top Top



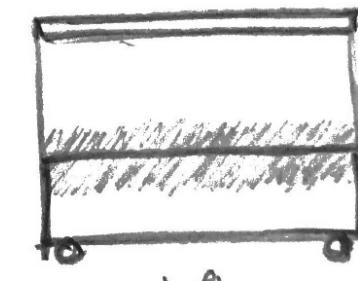
Back Back



Bottom Bottom



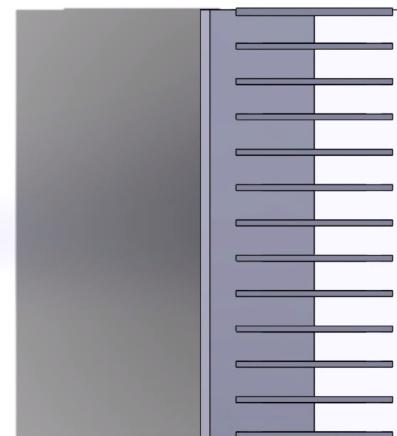
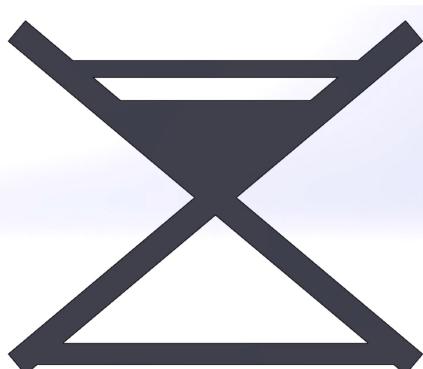
Right Right



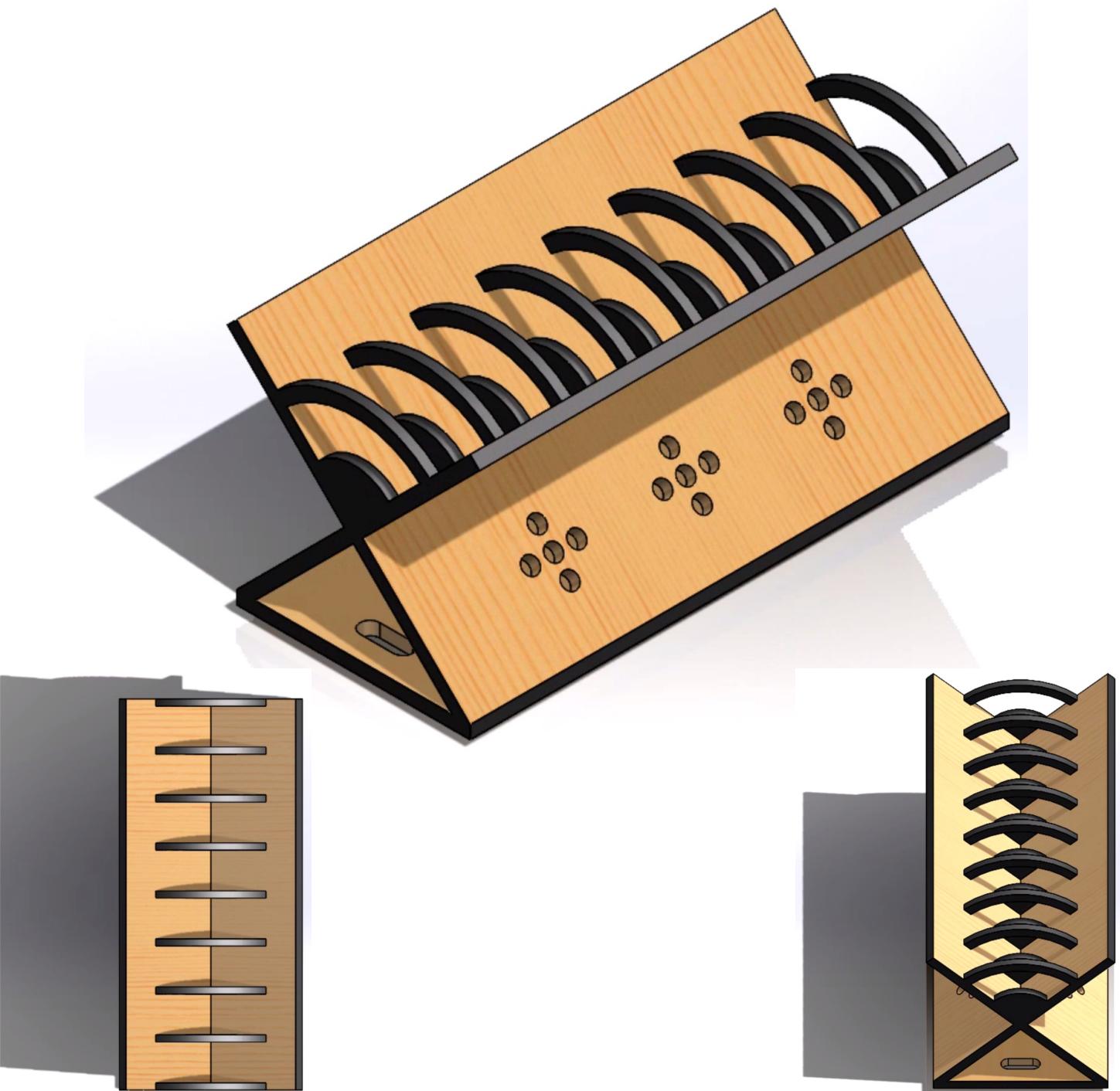
Left Left

**Vinylphile's Nook - Sketch #7**  
**Brian Nguyen**

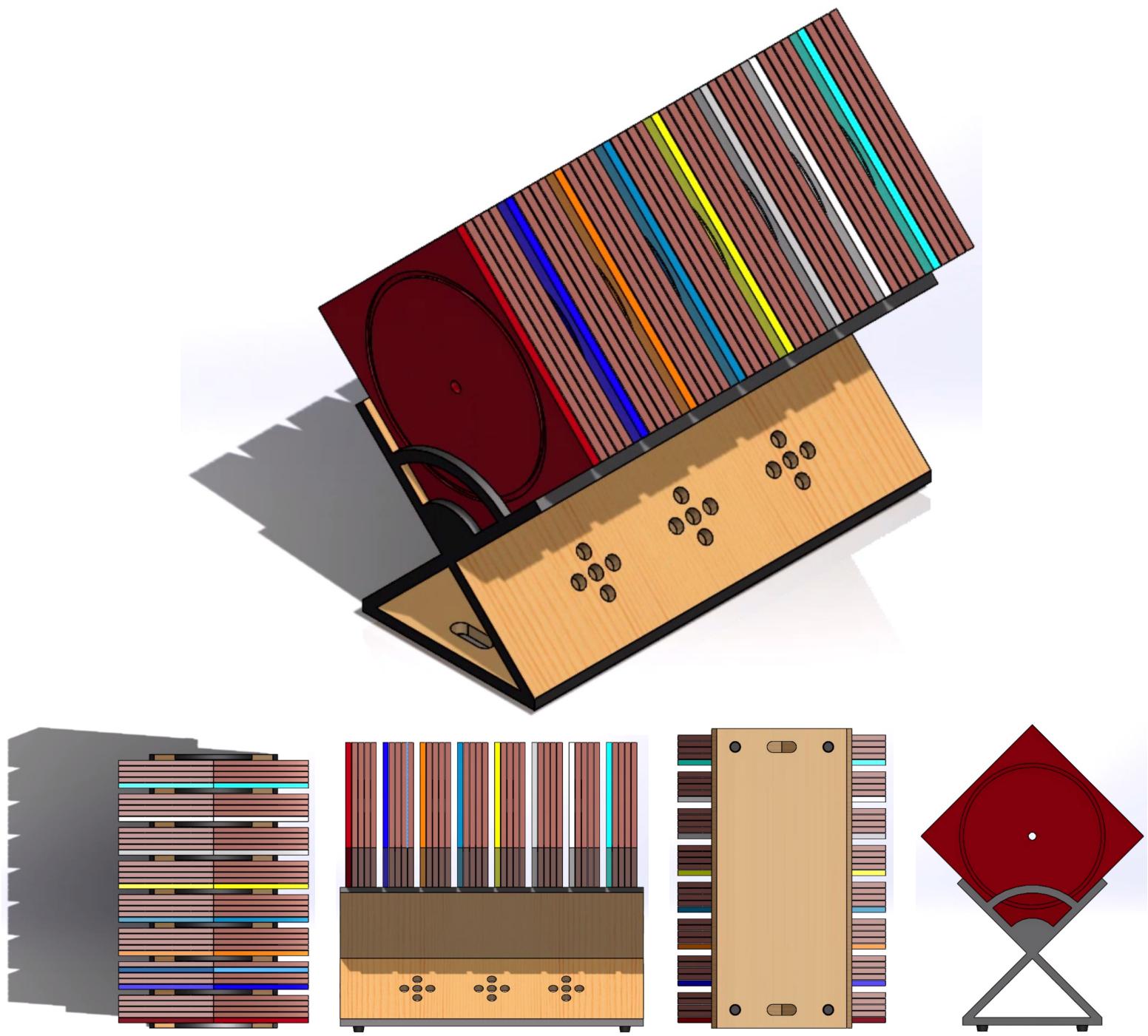
# Chosen Direction from Design Review #2



# Initial Model from Design Review #3



# Initial Model Populated with Vinyl Records from Design Review #3



# Customer Requirements

- **Protection:** Must be able to protect vinyl records and accessories from damage during storage
- **Storage Capacity:** Able to store between 40-50 vinyl records and various accessories
- **Weight:** Able to support the weight of 40-50 vinyl records and various accessories
  - $(\sim 7\text{oz vinyl record} + \sim 3\text{oz sleeve}) * 50 = 500\text{oz}$   
 $= 31.25\text{lbs}$
  - ... + 5lbs accessories = **36.25lbs**
- **Universalizability:** Able to store vinyl records of various sizes safely and efficiently
- **Movability:** Able to be moved easily by the consumer
- **Materials:** Wood and metal due to commonality of materials and complements aesthetics of most record players
- **Durability:** Must be able to last VERY long under constant usage
- **Customizability:** Able to be customized easily by the consumer (with paint, malleable, etc.) with options to utilize some or all of the product's parts (with/without drawer, etc.)
- **Aesthetics:** Aesthetically pleasing as both a centerpiece and side piece (as opposed to using a milk crate, etc.)
- **Cost:** Competitive with other organization/storage solutions

# Technical Requirements

- **Storage Capacity:** Able to store between 35-40 vinyl records and various accessories
- **Load:** Able to support the weight of 35-40 vinyl records and various accessories
  - ( $\sim 7$  oz. vinyl record +  $\sim 3$  oz. sleeve) \* 50 = 500 oz.  
= 31.25 lbs.
  - ... + 5 lbs. accessories = **36.25 lbs.**
- **Universalizability:** Able to store vinyl records of various sizes safely and efficiently, most commonly 12" x 12" vinyl record covers
- **Movability:** Able to be moved easily by an adult consumer capable of lifting 50 lbs.
- **Coupling:** Components must be able to be coupled together with common screws and tools (various screwdrivers, Allen wrenches, etc.)
- **Walls/platform/frame/separator material:** Stable enough to support intended maximum load of  $\sim 40$  lbs., and aesthetically contrast with the frame/separator material
- **Retail price:** Intended maximum retail price of \$75
- **Padding material:** Able to securely grip onto various surfaces to prevent sliding, having a low coefficient of friction
- **Assembly/Disassembly:** Able to be assembled/disassembled in under an hour
- **Packaging/Shipping:** Able to be packaged in separate components in a 30" x 12" x 5" box

# Materials and Manufacturing Methods

- **Walls/platform material:** Pine or cedar with either unfinished or treated exteriors
- **Frame/separators material:** Steel, PVC, or HDPE with a matte dark grey/black finish
  - Steel: Pressed and welded sheet metal
  - PVC/HDPE: Injection/blow molded
- **Padding material:** Rubber treated with anti-slip silicon coating
  - Injection molded
- **Coupling material:** Common screws compatible with Phillips/flat-head screwdrivers or Allen wrenches
- Wall slabs would be slotted together into an "X" shape using either tab-and-slot or mortise-and-tenon joints reinforced with basic, common fasteners
- "X" shape would be coupled together with two frame faces on either side with 8 screws on each corner
- Bottom platform would be coupled together with the frame with 4 screws on each corner
- Separators would be slotted into the top with tongue-and-groove profiling
- Rubber pads would be attached to the bottom platform with adhesive

# M

- What are the main differences between these two joints?
- Find out how each joint is made.
- Practice making both joints.
- Consider the pros and cons of each joint.
- Consider how each joint can be used in different situations.



## Tab-and-Slot vs. Mortise-and-Tenon



# Manufacturing

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- Find out how each joint is made.
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- Consider how each joint can be used in different situations.

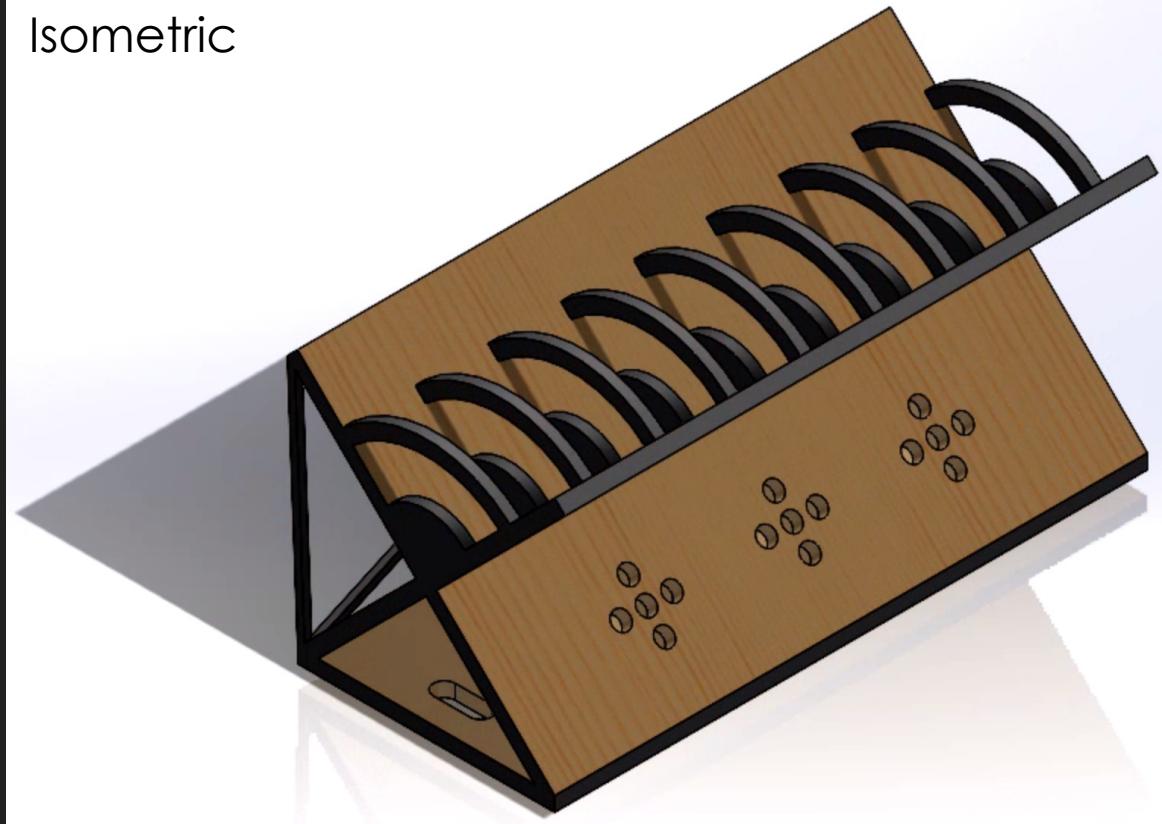


## Shiplap vs. Tongue-and-Groove

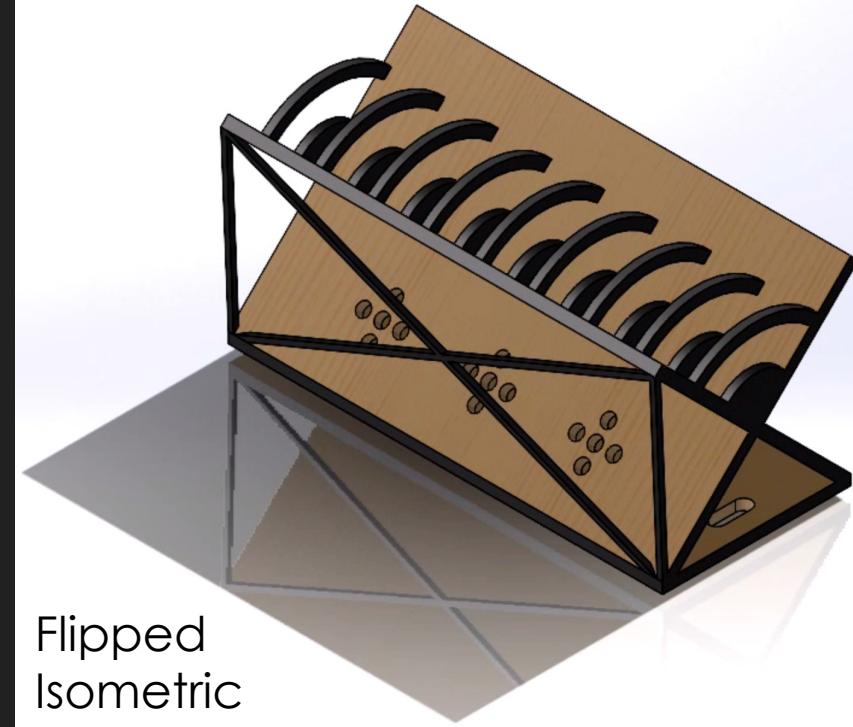


# Final Design

Isometric



Flipped  
Isometric

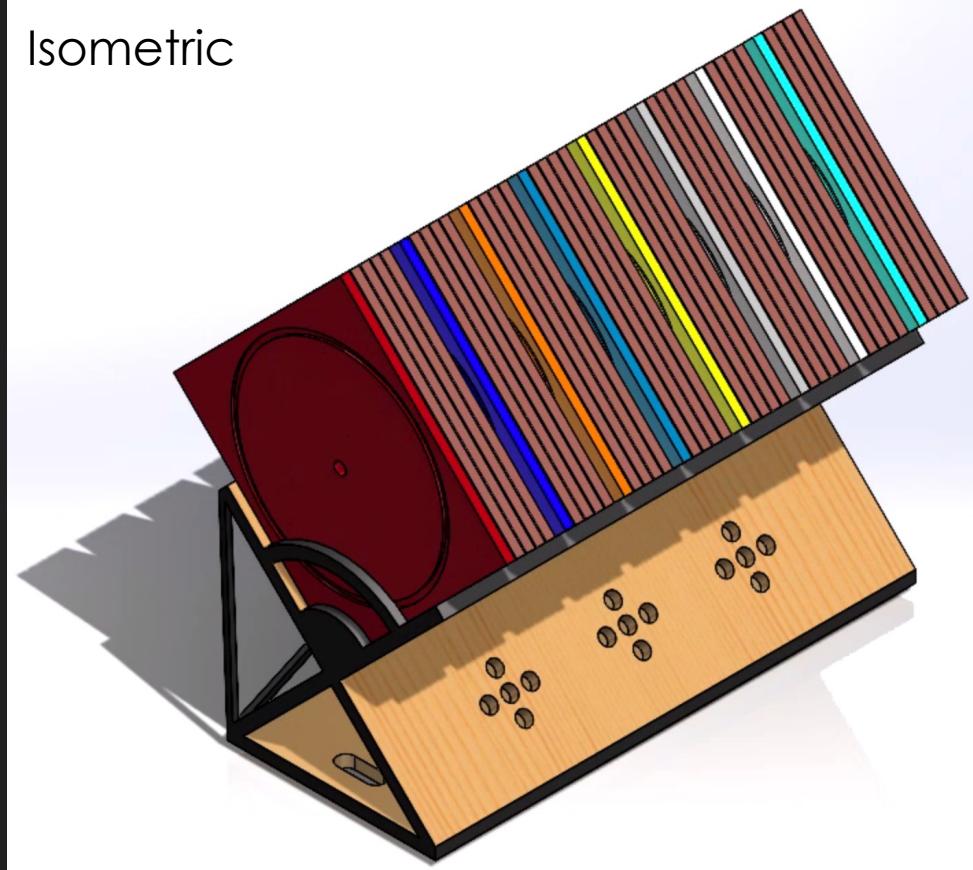


Back Side

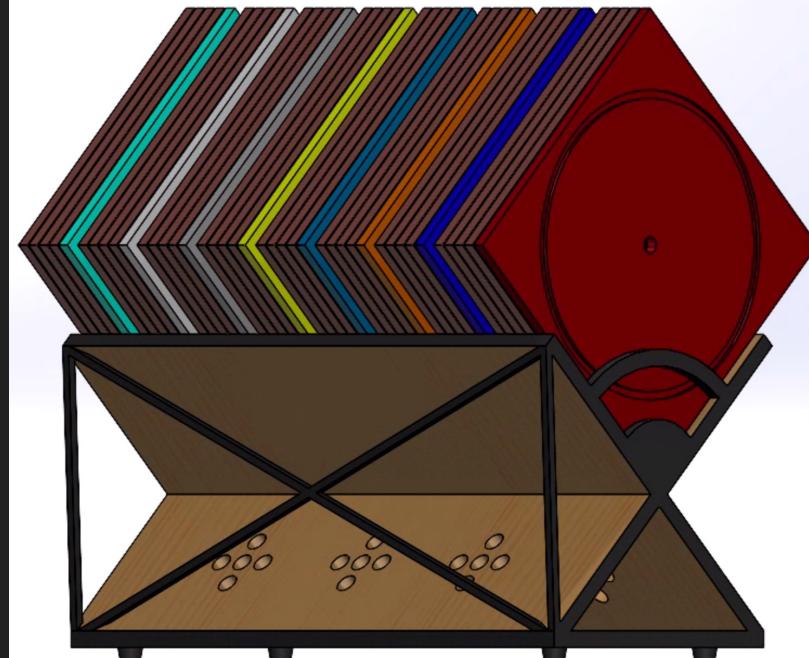


# Populated with Vinyl Records

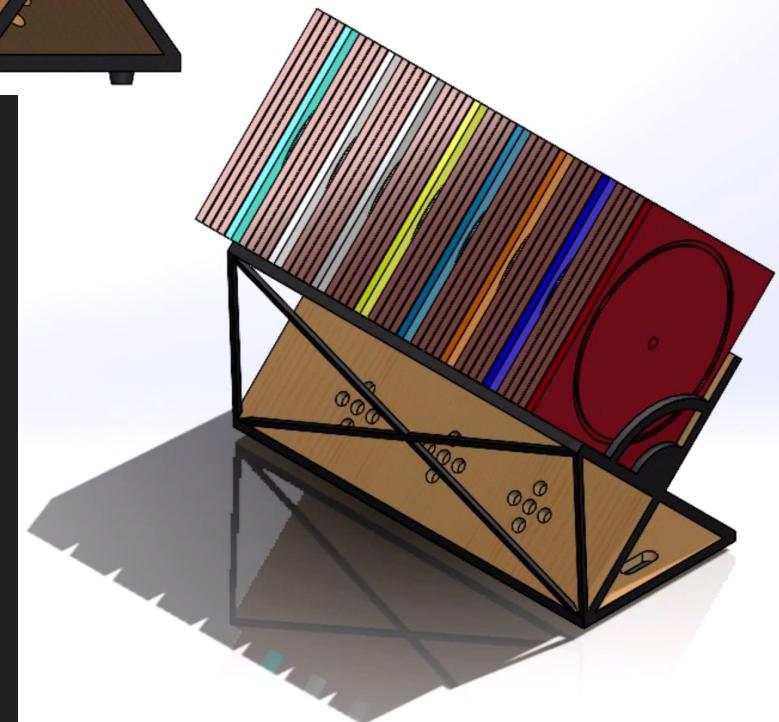
Isometric



Flipped  
Isometric



Back Side



# Additional Views



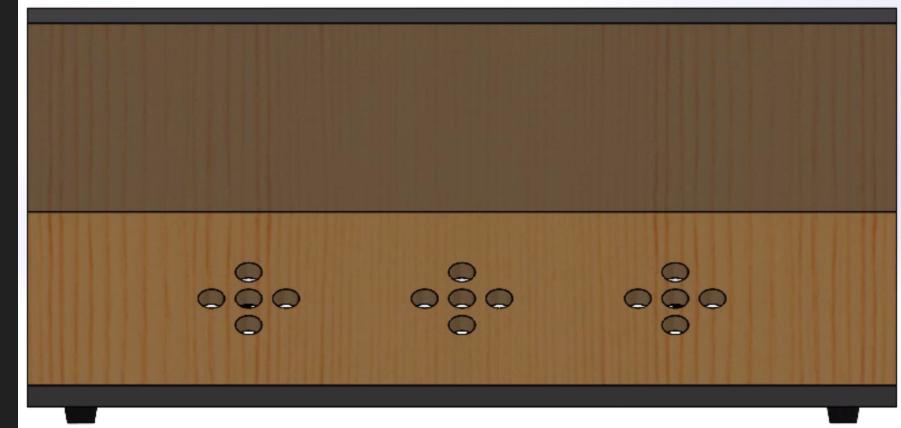
Top



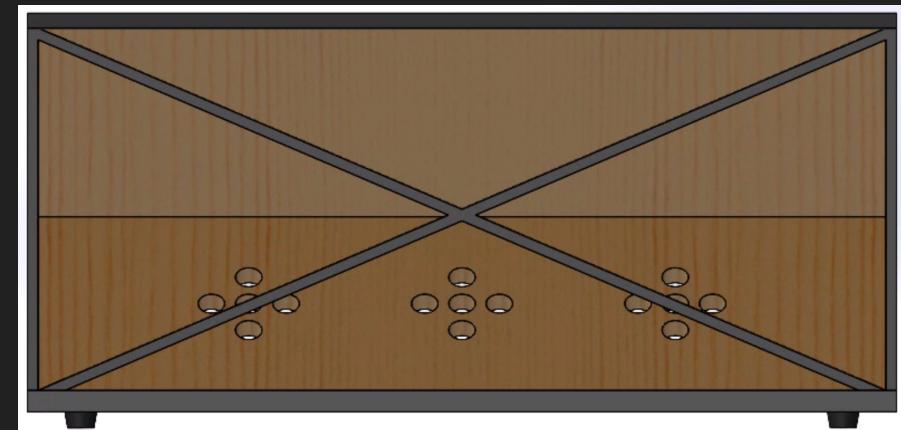
Bottom



Left Side



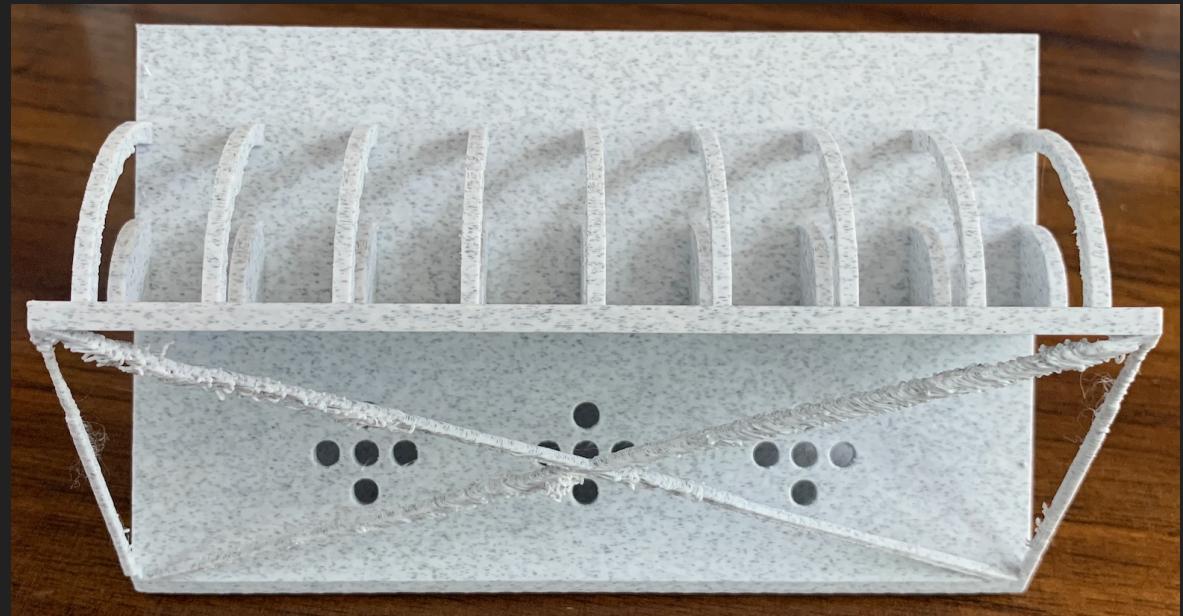
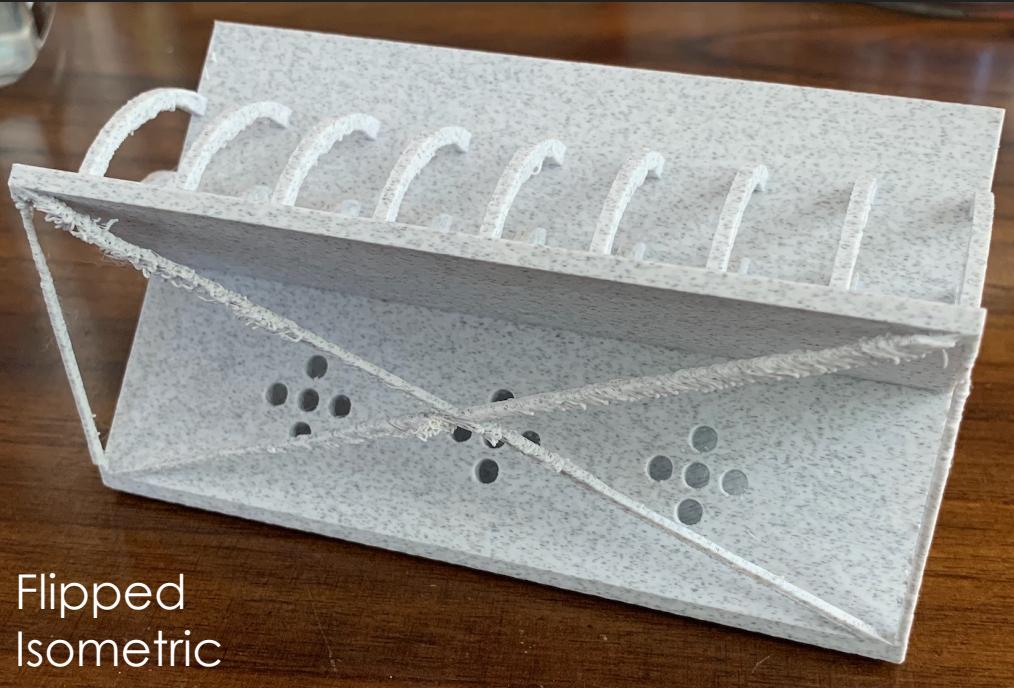
Front



Back

# 3D-Printed Model

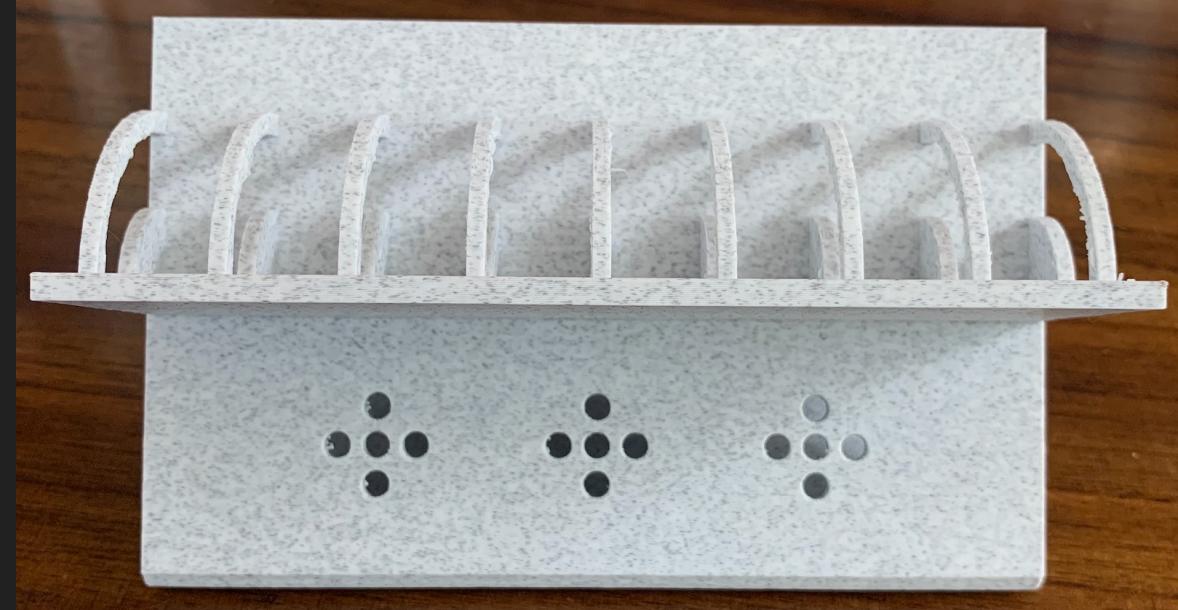
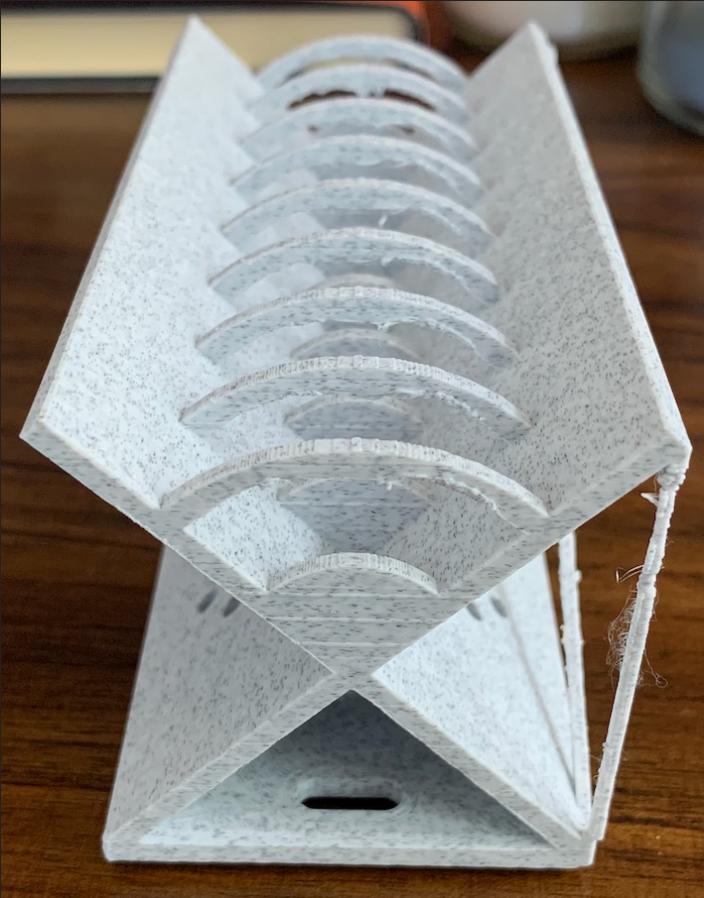
Isometric



Back

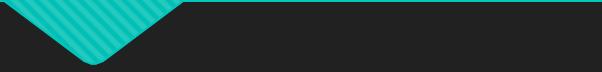
# 3D-Printed Model

Right Side



Front

The  
**Vinylphile's Nook**



Brian Nguyen  
Design Review #3