

Define and Explore

Slide Summary

Jair Zalamanca 9.21.20

Problem Definition: Shoe rack

Primary Functionality:

- Can store any shoe
- Looks like it's part of the room and not out of the ordinary
- Made with simple but good quality materials

Secondary Functionality:

- Easy to clean
- Looks like it's part of the room and not out of the ordinary

Thoughts:

- Would be useful to have
- The product has dynamic mechanisms which is interesting to me
- The project has room enough secondary functionality to grow as needed

Research of existing solutions

Over Door Shoe Rack

Functionality

It's a rack that gets hanged on a door

Pros

- Not too expensive(20+) dollars
- I get to choose out of three doors i have in my room
- Wouldn't take up too much space
- It can hold a lot(dont have that many shoes though)

Cons

- Not the best looking in my opinions

Takeaways

- It would be good for space



Simple shoe rack

Functionality

- It's a rack that holds shoes

Pros

- Can hold a good amount of shoes
- You can find good looking ones

Cons

- Its eh in prizes
- Requires room which I dont think I have enough for these type of racks

Takeaways

- Its too big for my room



Vertical shoe rack

Functionality

It's a rack that's vertical

Pros

- Saves a lot of space
- Doesn't look bad
- From the looks of it it can hold more than shoes

Cons

- Doesn't hold a lot of shoes (but I don't have a lot of shoes)

Takeaways

- A very good space saver and it's one of the best looking ones



Floating shoe rack

Functionality

- Floating racks that stick to the wall

Pros

- Uses little space
- Can hold a good amount of shoes
- Simple to make
- Looks good and can be customized easily

Cons

- Can't think of one

Takeaways

- This probably how i'm going to want it it's simple and nice favorite so far



Takeaway Summary

- I'll probably do the dyi one since the other are too complicated and have cons
- I like the idea of being able to also put extra accessories from the vertical one

Constraints

Size

- 10 ½ by 12 Inches and the thickness of the platform would look best between half to and inch wide

Weight

- I can't have it that heavy or else it will fall also because the shoe so like 2 pounds 3 max because shoes are like two pounds

Unit support or Durability

- I'll probably have something that will stick the platform into the wall because i want it to look like it floating and I would like it to be wood

Made from improvised materials

- I would use Cardboard but the durability is not that good and it can easily be destroyed and i want it to last.

Primary Functionality

1. To hold shoes and any type
2. Look like it part of the room
3. Can Hold a good amount of shoes

Key Features

Name: Floating Rack

Requirements

- Keeps the shoes in place
- Won't break
- Its reachable
- Easy to clean

Thought: I think the best way to keep it on the wall without falling is if i screw the platform onto the wall

No drawing because I couldn't find that one

Phase 1 Prototype Build

Something I will not do again make my prototype/final is make it completely 90 degrees because my wall isn't completely 90 degrees and i want it to fit

Something I liked is how it looks like it's floating and nothing is holding it

Something I learned was a way to be able to insert the nails into the platform and this is important because i'm planning on using wood for my final



Phase 1 Prototype Test



What is the purpose of the prototype

- The main purpose for the test was to figure out if it could hold the weight of the shoe

How did you test your prototype *(User Testing, Simulated Test, and/or Visual Evaluation)*

- The way I tested it was by putting my shoes for 5 minutes to see if it would fall and I also put a weight of five pounds to see how much it can hold for five minutes.



Results

- I'm very happy with the results because it was able to hold both things even with a cardboard wall which was surprising

Phase 1 Prototype Evaluation

What aspects of your design and/or build do you like?

- I like the sizing and the way it holds up weight and the way it looks.

What aspects of your design and/or build do you not like?

- I dont like how when I had the shoes it makes the platform slant and it doesn't look straight afterwards

How are you going to improve your design?

- My dont gave me the idea of having two screws on one side so it can hold up more but now i'm thinking of both sides having two screws and also find a better way to attach the screws to the wall



Rough Draft Build

Something I learned was

- Something I learned from building my draft was that it was almost impossible for me to have the platform float without any support I couldn't do it with real wood

Something I like was

- I like the new way is more sturdy and it doesn't move at all and it still has the floating look

Something I will not do again

- I will not use this wood because when i screw it in it can crack the top or bottom which doesn't make it look nice



Rough Draft Test

The key features my Rough Draft addressed were

- I wanted it to address sturdiness and the floatiness and easy to use because those are the main things when it comes to this

To test my Rough Draft I did a (User Testing, Simulated Test, and/or Visual Evaluation)

- I got a piece of wood and pretend it was the wall and then i got another piece of wood and screwed it on and then i stood it up and put my shoes and waited to see if it has fallen over which it didn't

Results

- It didn't fall or move at all it looked nice floating



Rough Draft Evaluation

What aspects of your design and/or build do you like?

- I like how it has the float look on it that was biggest concern out of all of this and that its sturdy

What aspects of your design and/or build do you not like?

- If anything how i'm going to have to put another layer to the wall and the screws after math

How are you going to improve your design?

- I'm going to improve my design by getting a little bit of thicker wood



Final Iteration

Iteration 1 - *Area of Focus*

I chose to focus on this area because

- Because if I didn't focus on this area specifically it could come out the wood and crack it

My approach

- Pre drilled holes and were the were going to go so they can be straight and use the screw after

The results

- It came out good no cracks happened



Iteration 2 - *Area of Focus*

I chose to focus on this area because

- It was going to be the most important in my opinion since the whole of mine was to make it look like it was floating

My approach

- I used one long piece of wood to drill each platform to it and the on to the wall so it would still have the floating look and make it possible for it to stay on the wall

The results

- It came our great it gives the look i wanted and its really sturdy



Iteration 3 - *Area of Focus*

I chose to focus on this area because

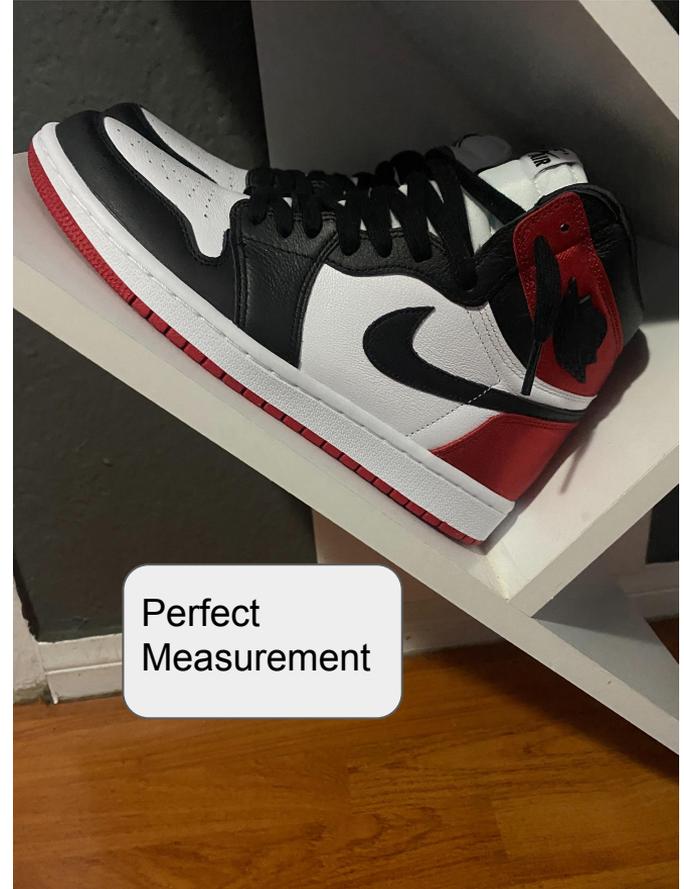
- The look of the entire design because it wanted to make it look nice but also fit well i didn't want bigger spaces or just a normal look

My approach

- I went with a staircase look and i measured everything so it won't be too big the shoes can fit and have multiple amount of platforms

The results

- I really like how it came out i dont know how much better I could have gotten



Project Functionalities

Primary Functionalities

Sturdiness

- I did address this because i've used it and it doesn't move

Storage quantity

- I able to put basically every shoe i have on to it

Easy access

- Is probably by far the most useful thing in my room



Secondary Functionalities

Easy clean

- Yes because I have already cleaned it and it pretty easy to clean

Looks like furniture/part of the room

- Yes I like hoe even tho its kinda big it doesn't get much attention cause it looks natural



Concluding Thought

Project Reflection

Aspects of my project that I like

- I love the design I came up with and how convenient it is.

Aspects of my project that were difficult

- The most difficult part I think was trying to pre-make the holes to screw them in only because it had to be very precise

What I would do differently next time

- I'll try not to be stubborn on having only one idea and explore more

