



NORTHERN  
ARIZONA  
UNIVERSITY



# Midpoint Presentation

## Hozhoni Cleaning



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Team 34

# Project Description:

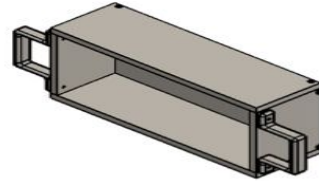
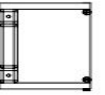
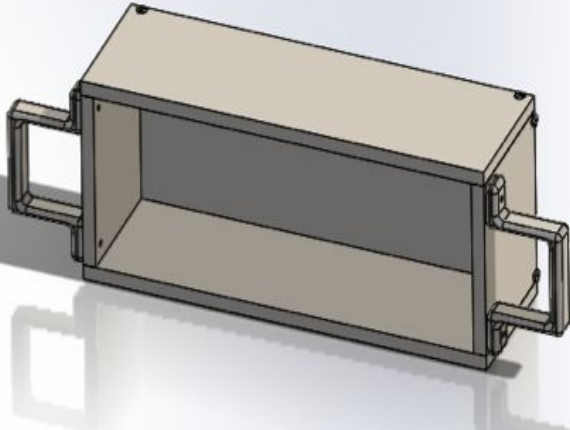
- Hozhoni (ho-sho-nee) Foundation company.
- This Company works to help disabled people.
- Client: Ms. Charlene Turman from the Hozhoni Foundation.
- Create a device that can efficiently carry cleaning supplies for those in wheelchairs.



- Device must be storable and be compatible with different wheelchairs.
- Our goal is to create a system that allows wheelchair users to easily and efficiently carry cleaning supplies.
- The solution must be adaptable for different sizes or types of wheelchairs.



# Updates --- New Design:



## Changes

1- Wood has a water proof.

2- Handles instead of holes.

3- Aluminum belt

4- Hooks.

5- Divider.

6- Joints and wood glue instead of screws.

# Design of Experiment

- Tested the parameter of storage space
- Internal area of oval, rectangular, triangular, and trapezoidal shaped boxes were analyzed

|             |                      |
|-------------|----------------------|
| Oval        | 88.27in <sup>2</sup> |
| Rectangular | 96in <sup>2</sup>    |
| Triangular  | 48in <sup>2</sup>    |
| Trapezoidal | 90in <sup>2</sup>    |

# Manufacturing- Box

Materials: (3) - 6" x 16" panels; Exterior waterproof adhesive

Procedure:

- 1) Account for all required materials
- 2) Apply adhesive to entire surfaces that have the "Dovetail" treatment
- 3) Ensure adhesive is evenly coating all surfaces that will make contact with each other
- 4) Begin assembly starting with the Undersurface base component fitting the sides together accordingly

# Manufacturing- Belt

Materials: 2.5ft Aluminum sheet metal, 0.5yd cotton fabric, 2ft “peel n’ stick” velcro

Tooling Required: Metal shears

Process: 1) Cut 2.5 ft of metal

2) Measure 16in center section

3) Bend ends

4) Wrap and glue fabric around metal piece

5) Apply Velcro

# Testing

- Weigh device: Target 7 lbs
- Measure Dimensions
- Weight Capacity: Target 15lbs

# Responsibilities

- Calvin- Assembly
- Fahad- Attachments/Accessories
- Hussain- Materials
- Amber & Hasan- Belt



HOZHONI  
FOUNDATION, INC.











# Budget

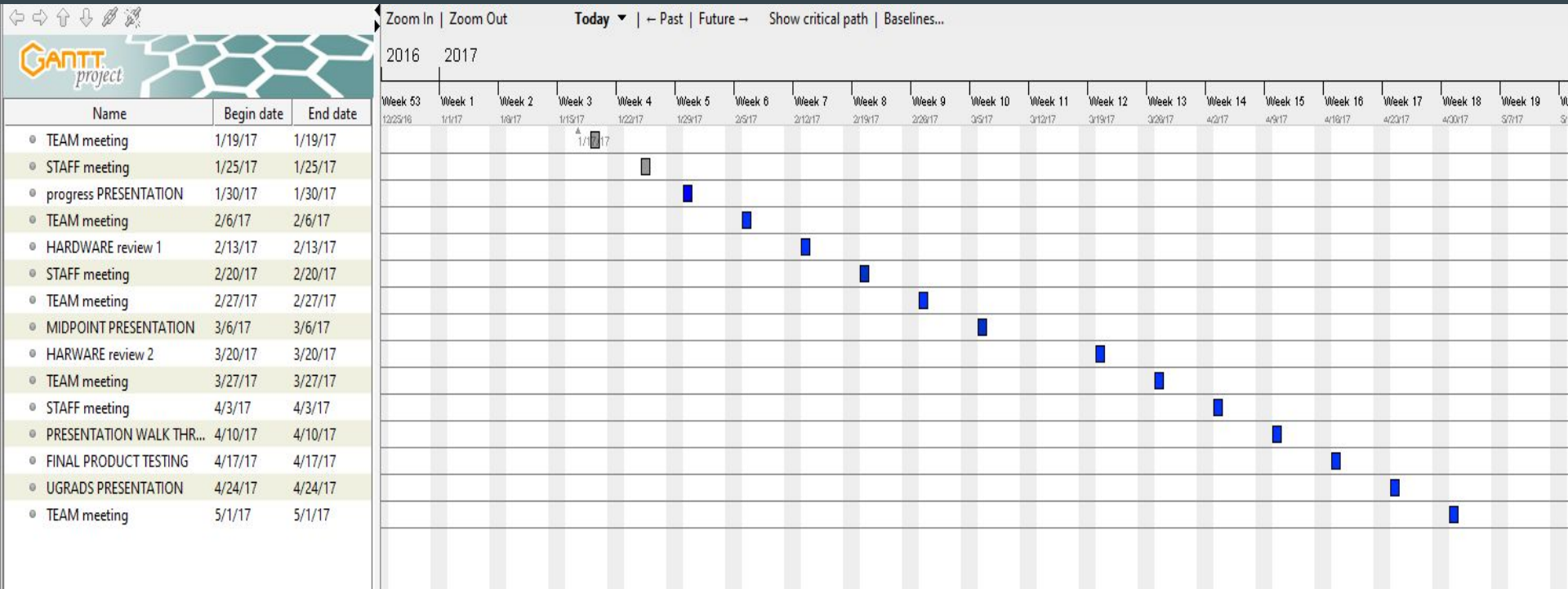
- Total Budget: 1,500\$
- Costs for the Prototype: 82.50\$
- Resulting Balance: 1,417.5\$



# Budget

| Material  | Cost       | Picture   | Material               | Cost    | Picture   |
|-----------|------------|---|------------------------|---------|---|
| Wood X2   | \$12       |  | Velcro                 | \$12    |  |
| Fabric    | \$2.50/ yd |  | Sheet of metal<br>Belt | \$15.50 |  |
| Handle X2 | \$8        |  | Divider                | \$6.50  |  |
| Saw       | \$20       |  | Sanding                | \$6     |  |

# Gantt Chart



# Schedule

- According to our Gantt Chart we are on head with Schedule.

Questions:

