THE SLINGSHOT PROJECT

Team members:

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Background and benchmarking

- There have been many games for children that have been designed
- For our project we want to make it independent in that it will not need human effort to operate
- The project must also ensure safety, portability, simplicity of operation and usability

Project Description

- Client is 'Wonder Factory'
- An organization made up of parents and volunteers in Flagstaff getting an engineering and science center.
- Wonder Factory works is
  - Science
  - Technology
  - Engineering
  - Mathematics
  - Art Subjects
- Provide distinguished items for children's wonder

Project Description

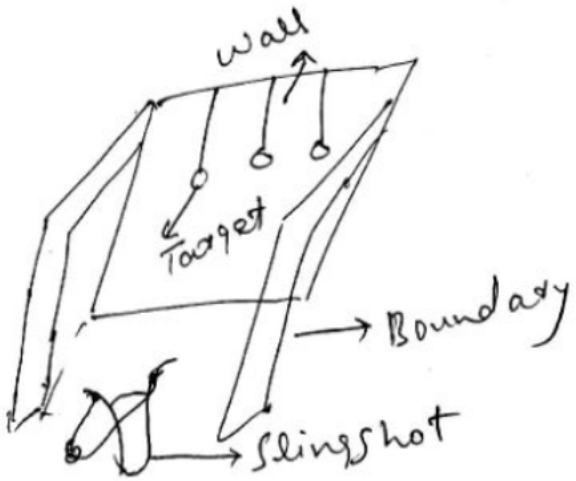
- Our project is to develop a unique thing for wonder factory play space area
- A wow factor game for children's
- Game concept is ‘Slingshot’
- Children will able to indulge themselves
- Multiple Slingshots are available
- This game is a new concept

Project Description

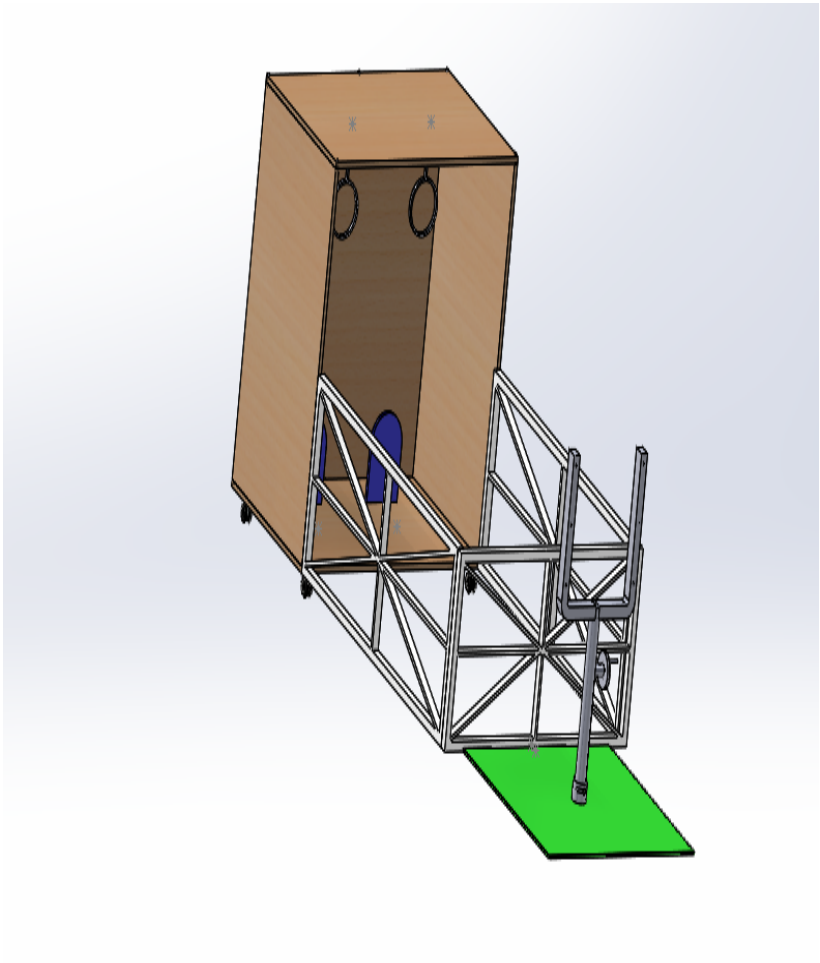
- This game needs
  - Separate play area
  - Target Icons
  - Ball
  - Slingshot
  - Walls

Design Description

- Customized Design. A wall boundary with target icons. A slingshot places in front of play area.



Final Design



- This project will be about designing a game for children known as slingshot
- It will be designed in a way that it can work on itself without any human help
- The project will be designed to provide for:
  - Hands-on opportunity for children
  - Interactive experiences

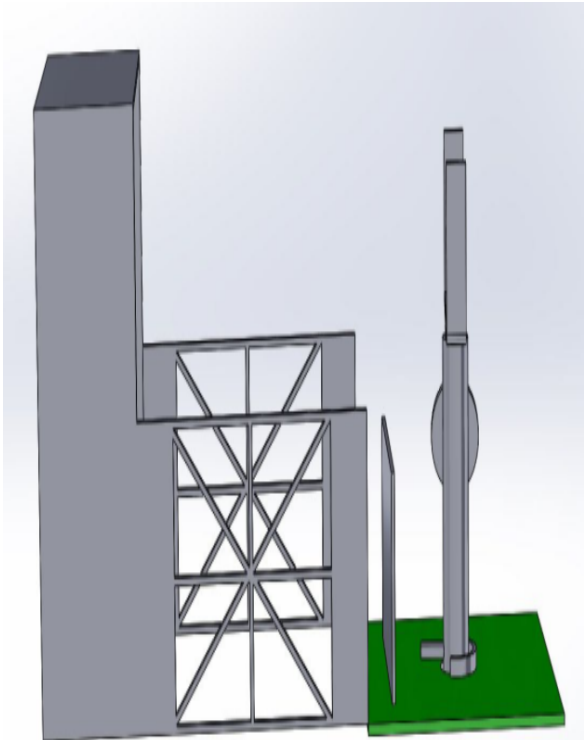
Final Design Description

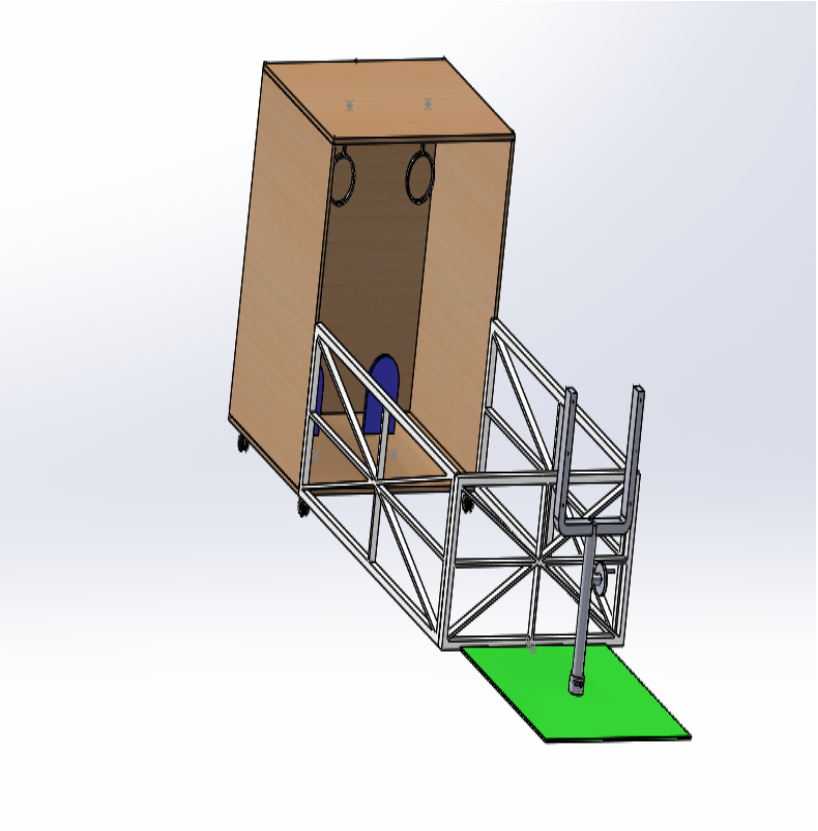
- The slingshot will pass through the ball to hit a boxing ball held on the wooden pole
- For safety purposes it cannot rotate beyond 45 degrees
- At the front there will be a fence to keep the children away from going in front of the slingshot
- The fence will also assist in preventing the ball from going so far once it is rotated
- To enable the game to work on itself without human help we will create a pulley to drag back the slingshot through it again and again without human help

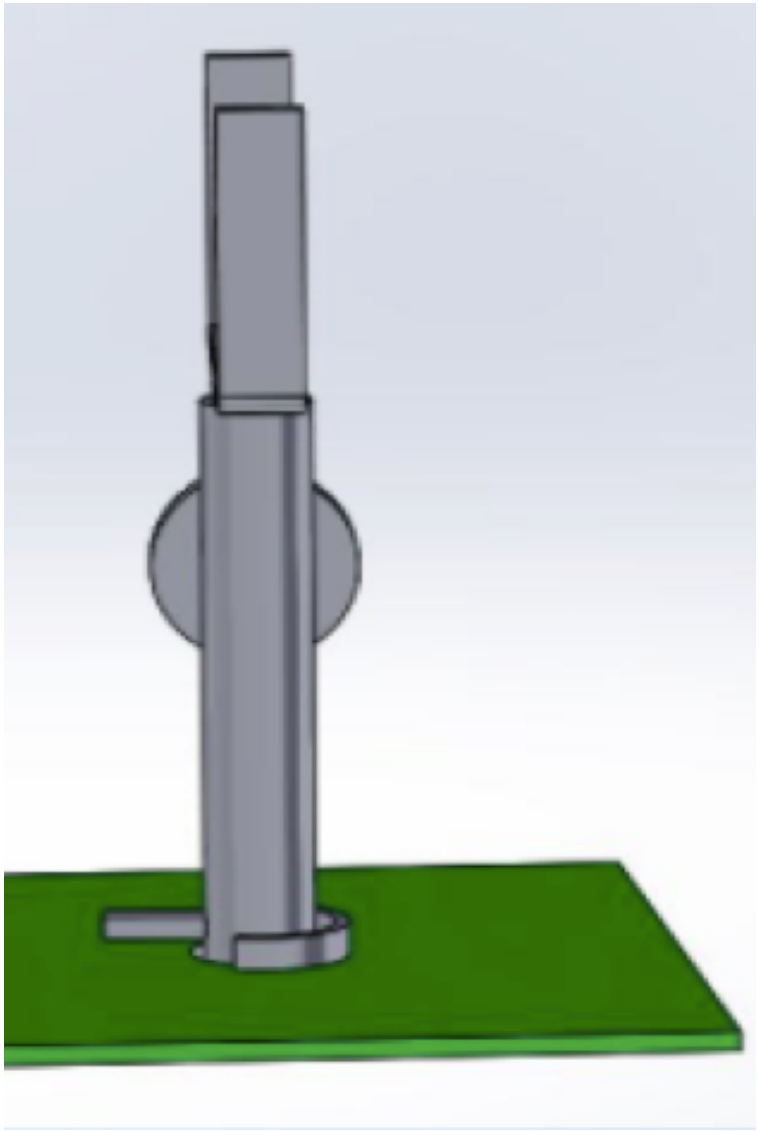
Updates

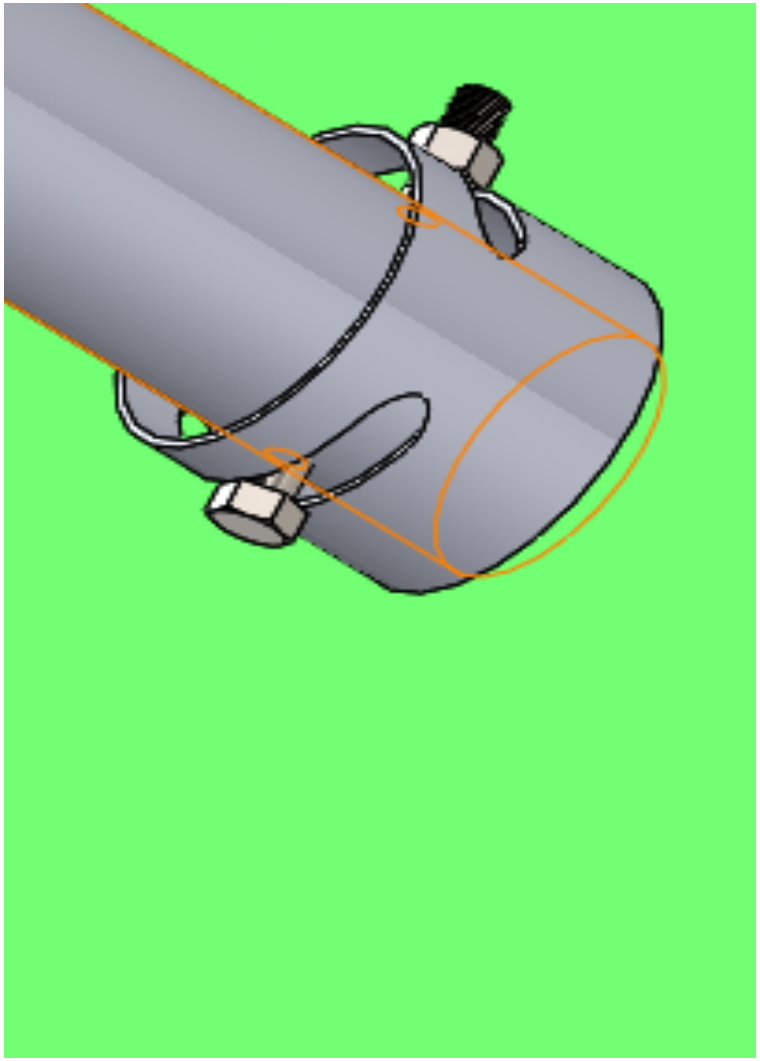
- 1- finishing the slingshot frame.
- 2- Changes on CAD to fit the new form.
- 3- bought the project materials.
- 4-dividing work equally on the team members.

Changes on CAD









Work done

What is left

- Building the booth.
- Installation of everything.

Contingencies

- The month of April will be our contingencies.

Customer requirements and weighting

Customer requirement	Description
Safety	Anyone can use it without being exposed to any danger
Easy to use	It can be used without so much hustle
STEM concept	It must incorporate Science, Technology, Engineering, and Mathematics
Entertainment	It must have fun to use
Portable	Easy to move from one location to another

Design Meeting Requirements

- Safety
  - Design is safe to use as there is no sharp edge
- Ease to use
  - There is no difficulty in using the project as it is simple and easy to play
- STEM Concept
  - It is using the science technology of slingshot using projectile motion

Design Meeting Requirements

- Entertainment
  - The design is entertaining by playing a throwing game to hit the target
- Portable
  - The design is portable and easy to carry

Engineering requirements

Engineering requirements	Targeted Values
Range of Ball	2 Meters
Height of Ball	1.5 Meters
Angle of slingshot	45°
Weight of Ball	0.5 Kg
Elasticity in Rubber Band	300mm elastic Length
Energy Transmit	1 kJ

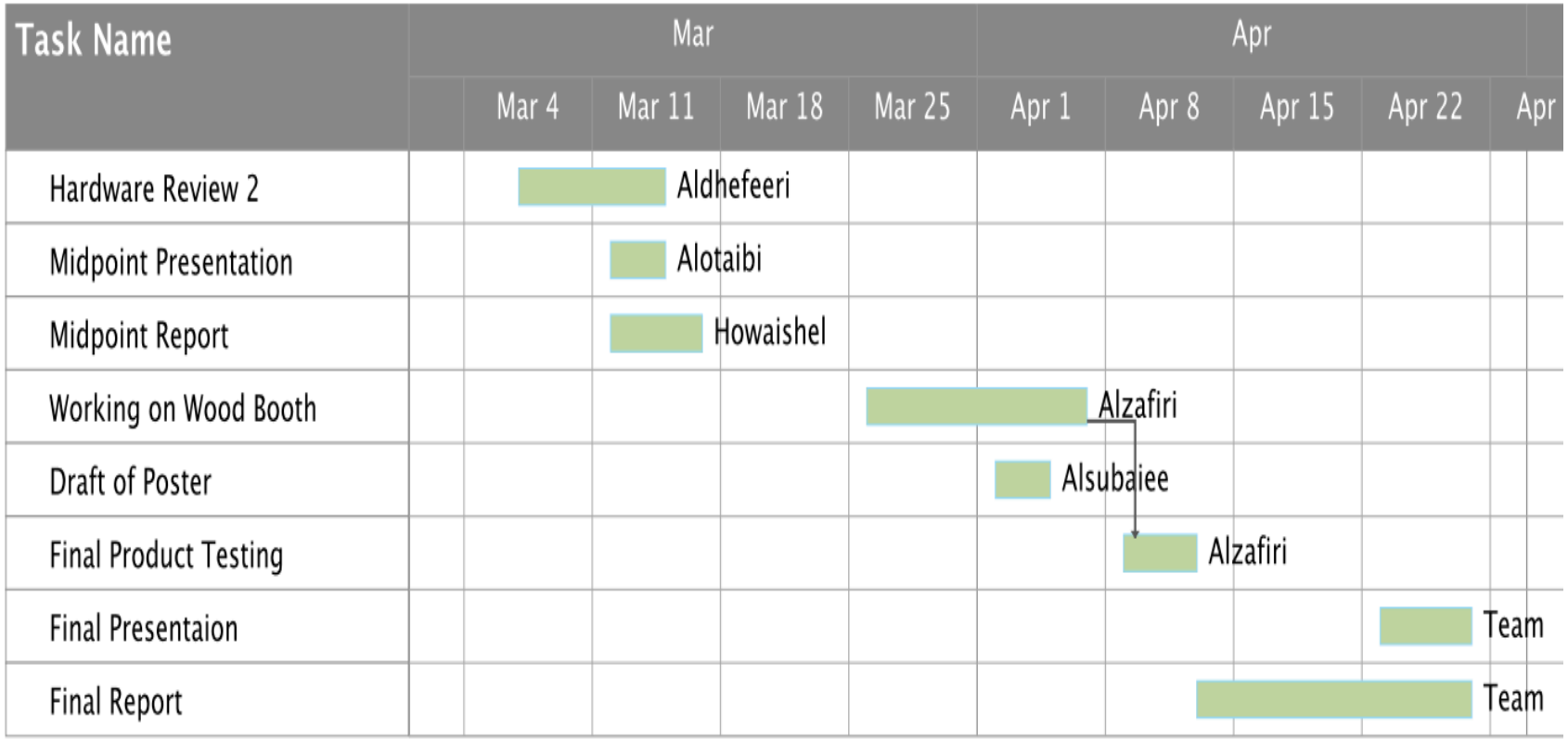
Design Meeting Requirements

- Range of Ball
  - Design has the fence walls to keep the ball within the boundary
- Height of Ball
  - Ball height controls through slingshot throw so the slingshot throw the ball within 1 and half meters
- Angle of Slingshot
  - Slingshot can throw the ball at an angle of maximum 45 degrees

Design Meeting Requirements

- Weight of ball
  - Ball weight is up-to the user but it will be use within 0.5 kg
- Elasticity in Rubber Band
  - Rubber band will have the elasticity 30mm
- Energy Transmit
  - Energy will transmit from the rubber band and that energy will be within the 1 kJ

Gantt Chart for next weeks



Budget

- Total budget is $2500
- Accrual expenses: $750
- Anticipated expenses: $1458.53
  - Material is 45%
  - Manufacturing 40%
  - Prototyping 15%

BOM

BOM SLINGSHOT								
Item #	Part Name	Quantity.	Decryption	Function	Material	Manufacturing Process	Dimension	Price
1.1	Slingshot Rubber	1	Rubber for stretching	Energy will store in the rubber when it will stretch for throw	Rubber	Chemical heating Process	6x9 mm	$7.59
1.2	Slingshot Frame	1	Base to stand up and rubber band will attach to it	Provide the hold for the rubber band to stretch properly and make the throw	Iron	Molding Process	1x 0.2 m	$500

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1.3	**Slingshot clips**	**6**	**To hold slingshot rubber band**	**will hold the rubber band with prong**	**Steel Iron**	**Molded Steel Process**	**16 in**	**$7.29**
1.4	SPI Sponge Ball	1	Ball to throw	Ball that will hit the target when will throw using slingshot	Plastic	Plastic Deformation	2x2 in	$14.95
1.5	Booth	1	Ball hitting it	Will hold the ball from hitting the children	Wood	-	4x4 ft.	$600
1.6	Hook	3	Hook to hold items	Connects the rope with the pulley	Plastic	Plastic Deformation	3 x 3 in	$8.04

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1.7	Pouch	1	Carry items	Ball will hold by this pouch	Leather	Leather Polishing	5 x 3 in	$20-$40
1.8	Fence	1	Boundary walls	Boundary around the gameplay area to keep the ball within the area	Plastic	Plastic Deformation	3 x 3 m	$150-$200
1.9	Boxing Balls	3	Target Icons	Target that will hit by plastic ball for play	Rubber	Chemical heating Process	10 x 10 in	$50-$100
2.0	Pole	3	Standing Up	To tie the targeted balls on the pole	Wooden	Wood Cutting Process	2 x 0.4 m	$75-$100
2.1	Color	1	To dye items	Dye the walls to make them colorful	Powder	Chemical Composition	1 Kg	$35-$65

References

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QUESTIONS?????

THE END…

THANK YOU