

The background of the slide is a light green color, decorated with stylized, layered green foliage. In the top left, there are delicate, feathery leaves. In the top right, there are larger, more complex leaf structures. On the right side, a large, prominent leaf with a dark green central vein and lighter green outer areas is visible. In the bottom left, there are smaller, rounded leaf shapes. In the bottom right, there are more intricate, layered leaf structures. The foliage is rendered in various shades of green, creating a sense of depth and texture.

Project Report

Group 7

Need Statement

- To design a cost- efficient device to improve precision in agriculture, environmental monitoring, accuracy of analysis-based predictions and utilization of resources for farmers, commercial purposes, Environmental activists, researchers (botanists or climatologist) and public institutions like Ministry of Forest, Environment and Climate Change.

Concepts

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graph TD; Concepts([Concepts]) --> Concept1[Concept 1]; Concepts --> Concept2[Concept 2]; Concepts --> Concept3[Concept 3];
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Stability,
Sturdiness and
User Convenience

Concept 1

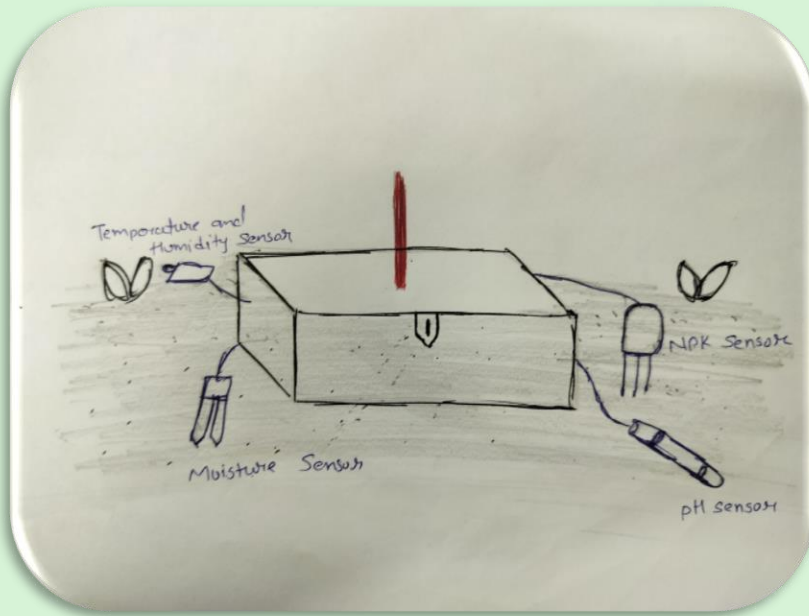
Waterproofing

Concept 2

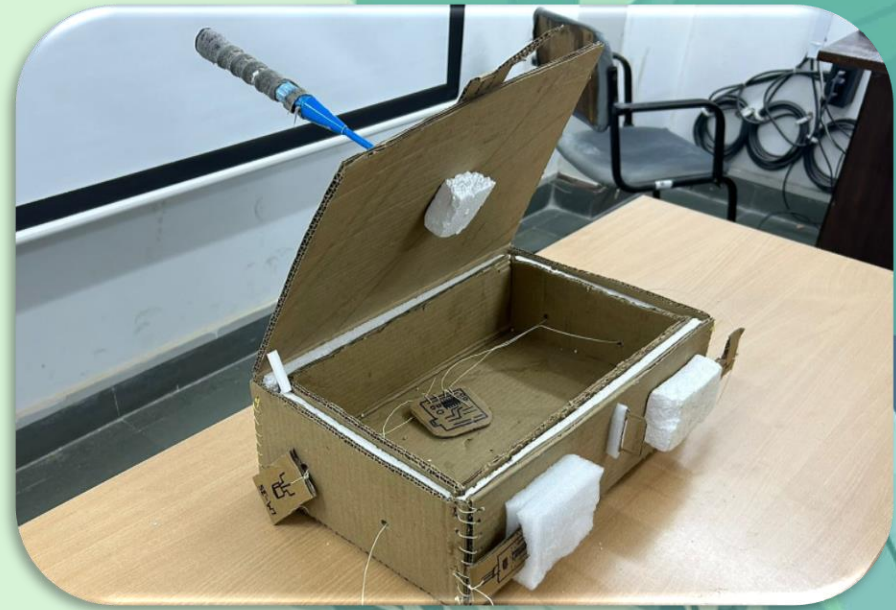
Portable and Light
Weight

Concept 3

Concept 1: Stability, Sturdiness and User Convenience

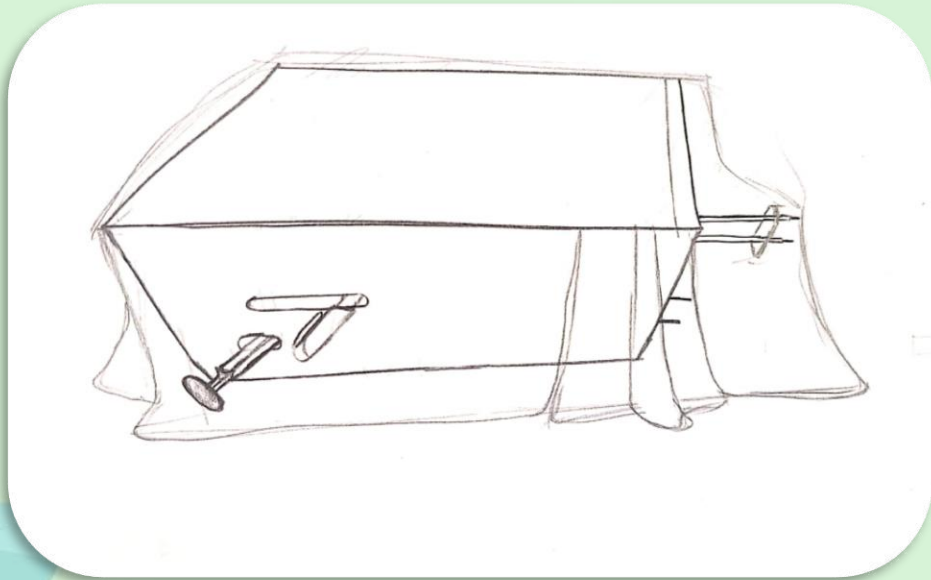


Sketch Of Final Product



Final Product

Concept 2: Waterproofing

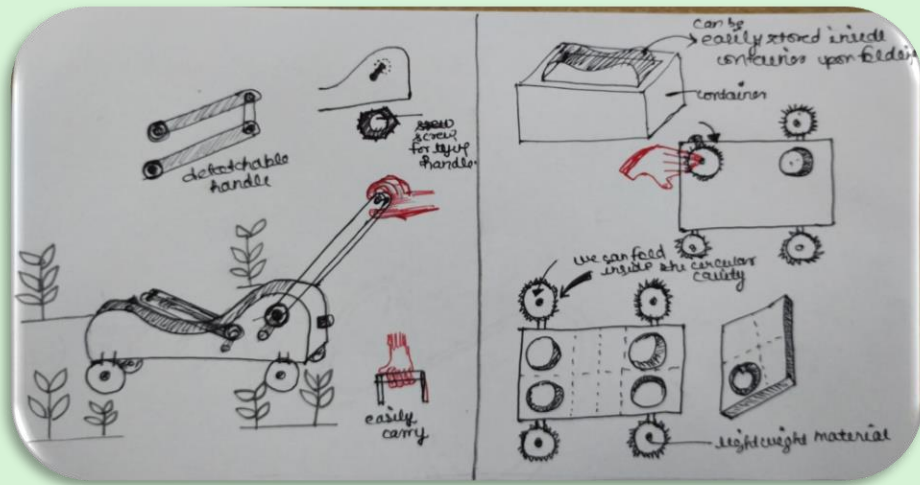


Sketch Of Final Product



Final Product

Concept 3: Portable and Light Weight

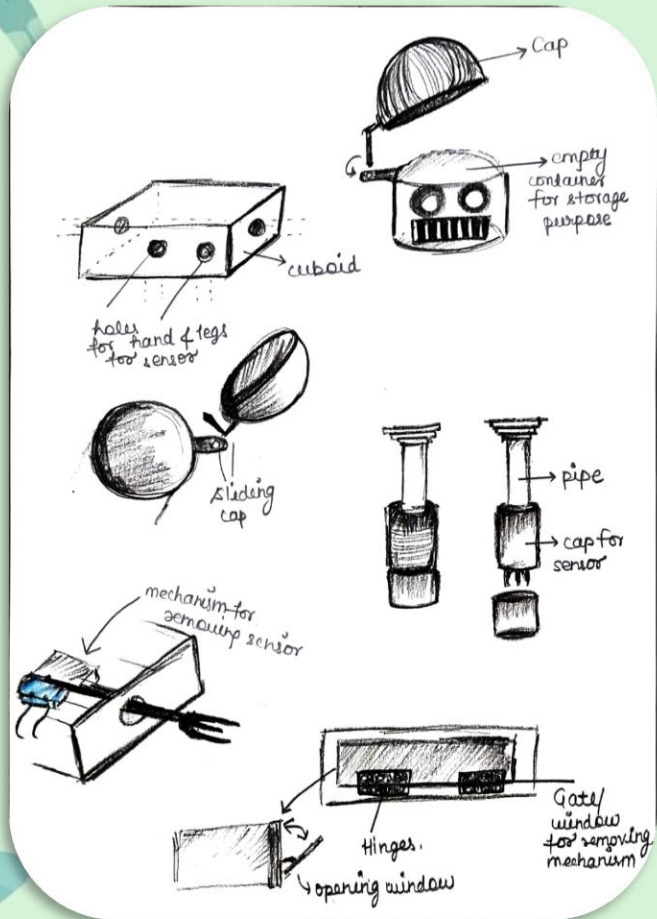


Sketch Of Final Product

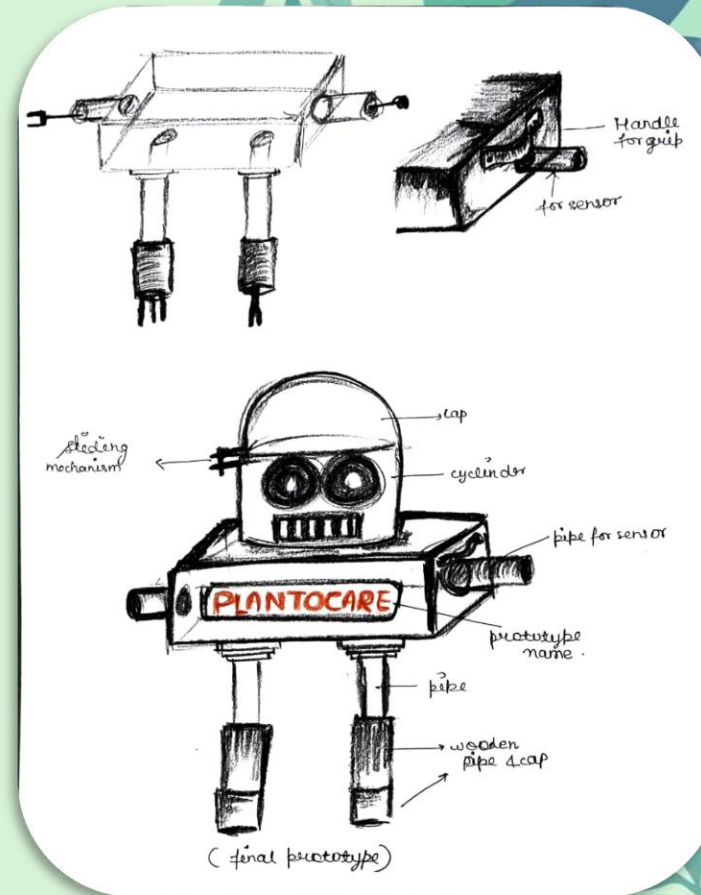


Final Product

Final Concept Sketches



Sketch 1



Sketch 2

How Design Opportunities are addressed?

Waterproofing

Proposed Solution:

- Utilize plastic sheets to cover electrical components.
- Prevent water ingress, reducing the risk of short circuits.
- Protect soft materials from dampness, preventing degradation.

Benefits:

- Enhanced safety for electrical systems.
- Prolonged lifespan of soft materials.
- Reduced maintenance costs.

High-Quality Materials:

- Utilized premium materials to ensure extended product lifespan.
- Usage of bubble wraps ensures durability and reliability for long-term usage.

Portability:

- Designed the with handles to facilitates ease of transportation and handling for users.

Inclusive Design:

- Employed highly contrasting colors to promote inclusiveness.
- Ensures accessibility for users with visual impairments.
- Reflects principles of diversity and equity advocated in class.

User Convenience

Final Prototype



Learnings from the course and the project

- The major takeaway from this course is learning about inculcating design process and aesthetics in every aspect of a project
- We understood the importance of materials in our daily lives and how we can increase the value of a product by choosing the appropriate materials required to suit our specific needs
- We realised that the implementation of an idea into a feasible product requires us to keep ideating, researching and innovating a product and avoid jumping to any solutions
- Lastly, we were exposed to various trade activities and learnt how to use them to make a product while following safety standards

Conclusion and Future Scope

- To conclude, we would like to express how this course has shown us the importance of design process, materials and craftsmanship in every stage of designing a prototype
- Collaborating and working together in making this idea of a plant monitoring system into a fully developed prototype has refined our team management, problem-solving and communication skills
- Future Scope for the product includes reducing its cost to ensure affordability for low-scale farmers, making it sustainable by using eco-friendly products and finally, improving the overall aesthetics

Acknowledgements

- We would like to thank Manasi Ma'am for her learnings and guidance throughout the course and for educating us on the importance of design in all aspects of the prototype
- We would also like to thank the staff of Maker Bhavan, Tinkerer's Lab, and Mechanical Workshop for their advice on our prototype and for their help in the procurement of necessary materials
- Lastly, we would like to thank every single member of our team – Group 7 for their hard work, dedication and perseverance in making this prototype a success