Introduction

Background/Problem Statement

Outdoor clothes drying method is often disrupted by rain causing:

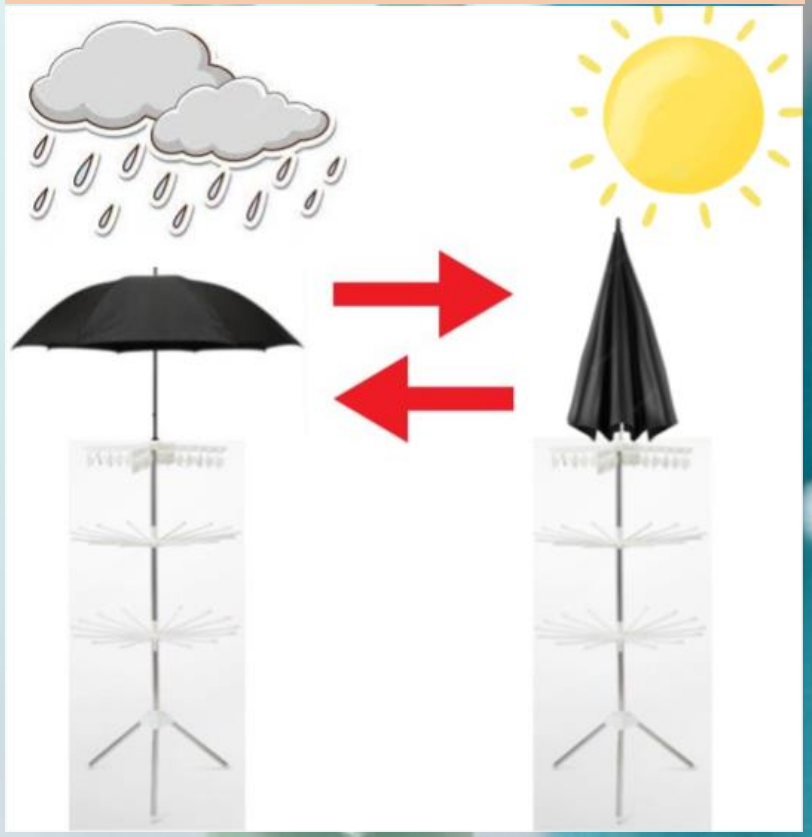
- Inconvenience - Forcing users to constantly monitor the weather
- Damage to laundry - risk wetting their clothes

Objectives

- Allow users a sense of calmness even when away.
- No need to hurriedly return home to protect their laundry from rain.

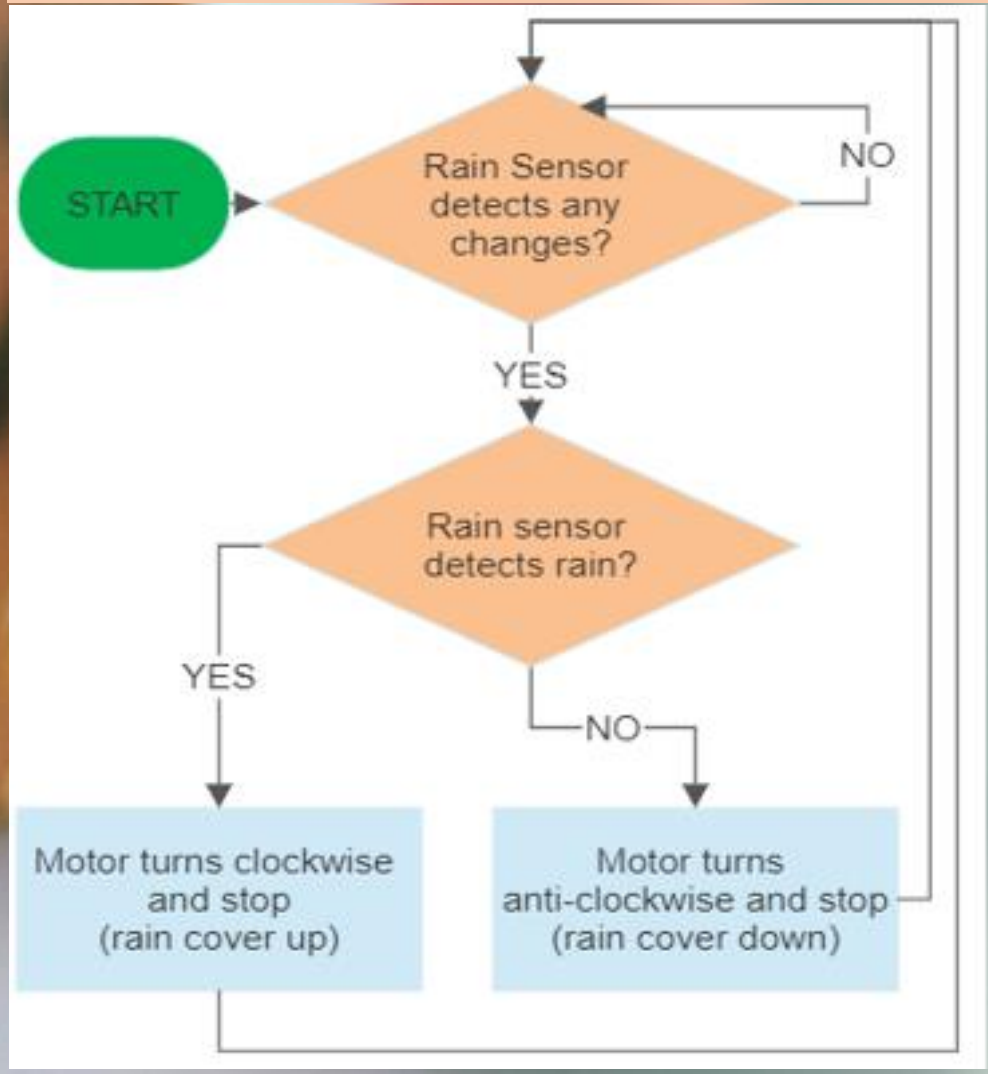
Experimental Setup/Methodology

System Architecture



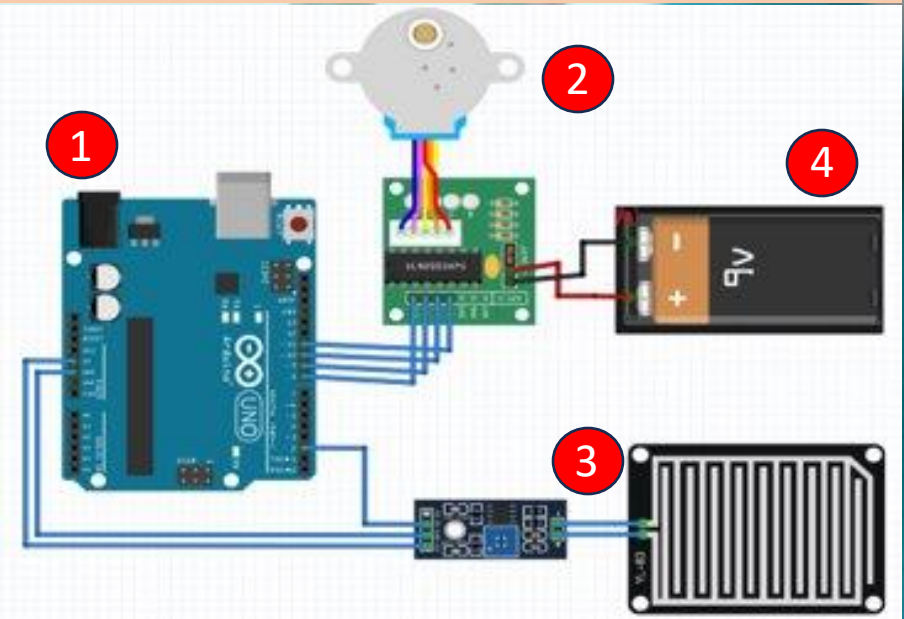
- Sunny = Rain cover closed
- Rainy = Rain cover open

Flowchart



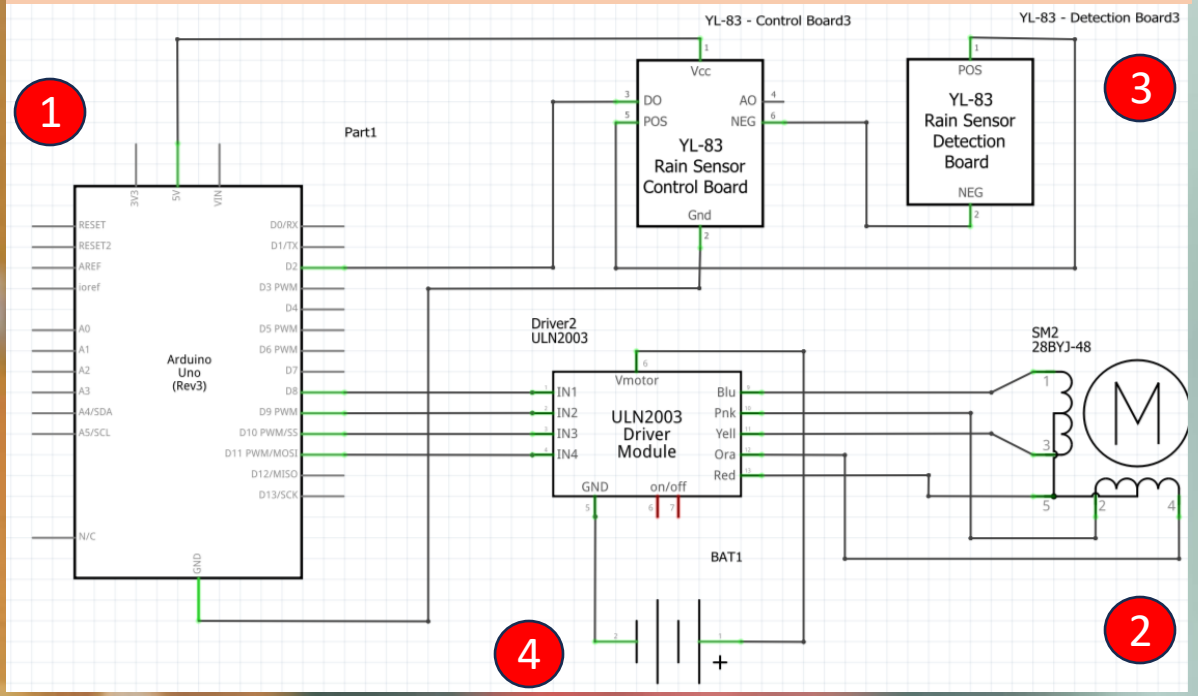
Experimental Setup/Methodology

Connection Diagram



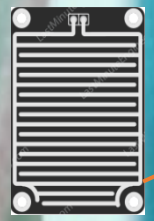
1. Arduino UNO
2. Stepper Motor
3. Rain Sensor
4. 9V battery

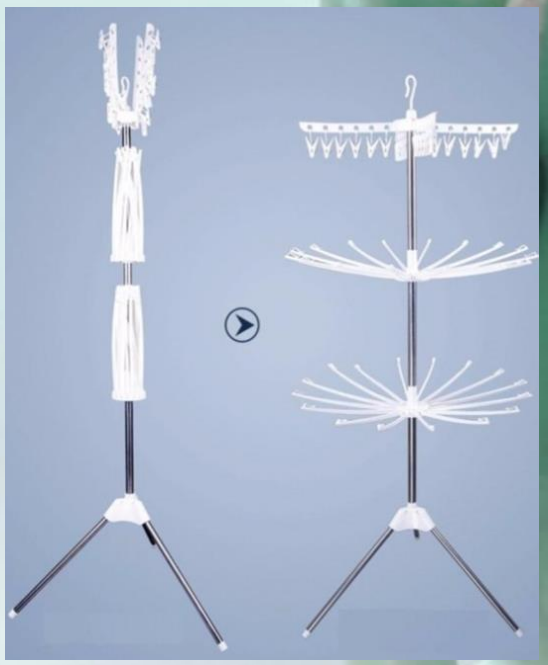
Circuit Diagram



Experimental Results/Findings

<u>Rain sensor</u> - at the top for efficient positioning

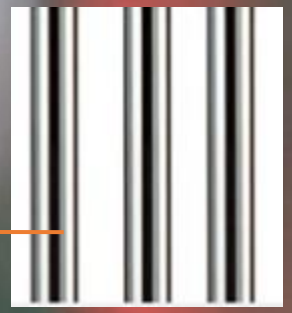




Retractable for keeping and space saving

<u>Ideal model</u>

<u>Nylon</u>
- Waterproof
- Flexible
- Lightweight

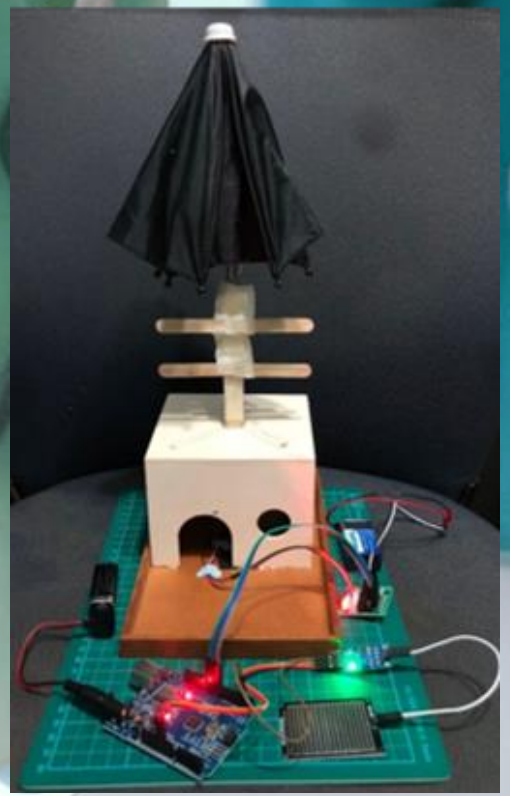


<u>Stainless steel</u>
- Strong
- Durable

<u>Plastic</u>
- Strong
- Waterproof
- Rustproof

Experimental Results/Findings

- Prototype is designed and developed to show the project's system function.
- Automatically covers and uncovers the laundry rack in response to weather conditions.
- Prototype pictures below gives a visualisation of how the rain cover acts according to the scenario of rain and no rain.



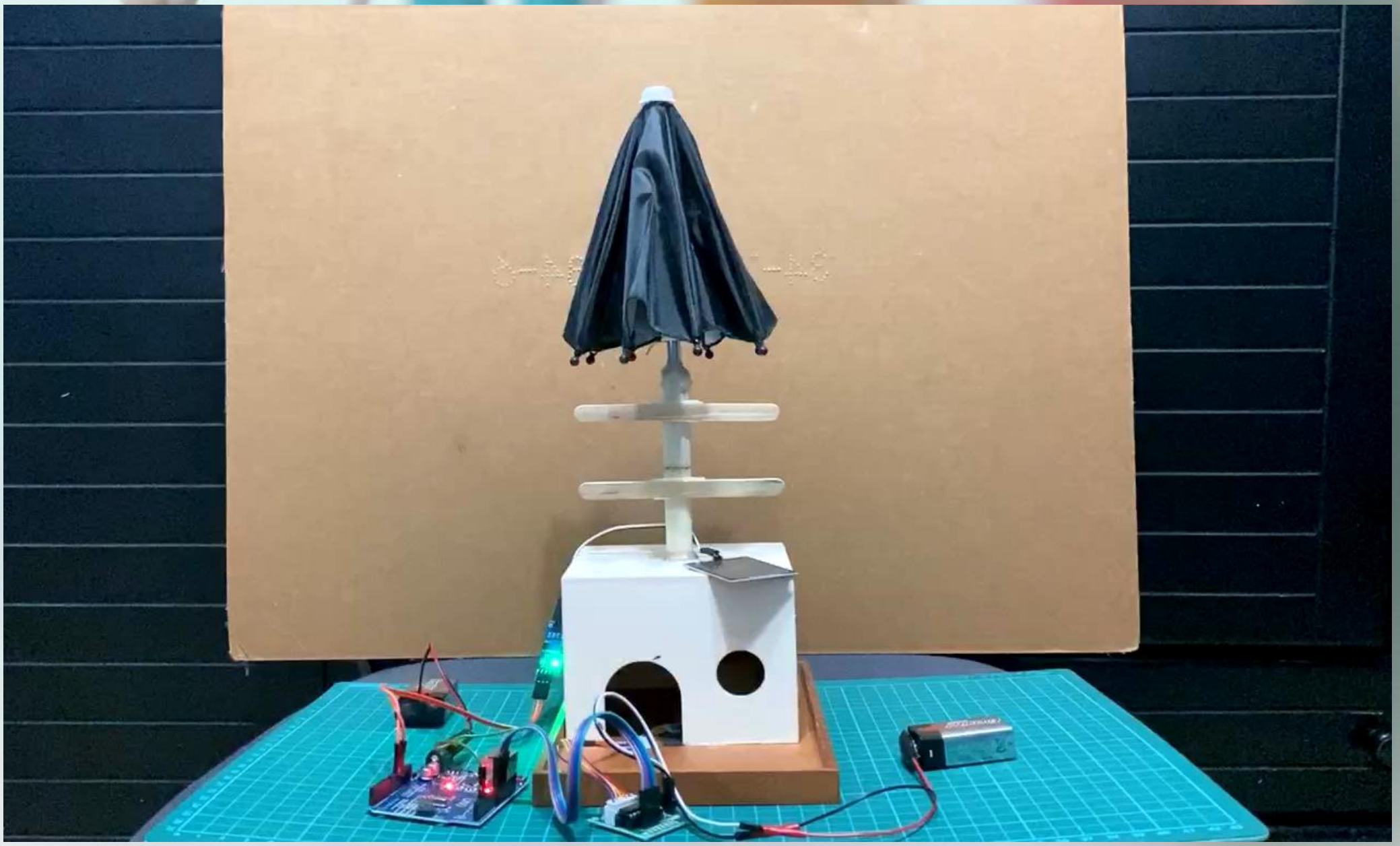
Rain

No rain

<u>No Rain</u>
No rain detected
= rain
cover closes

<u>Rain</u>
Rain detected
= rain cover
opens

Experimental Results/Findings



Summary

Conclusion

The project has been successfully developed and implemented.

- ✓ Achieved its primary objective of providing a hassle-free and efficient laundry drying process.
- ✓ System's functionality validated through thorough testing
- ✓ Results demonstrated its ability to detect rain accurately and respond accordingly.

Future Works

- Energy Efficiency - Enhance energy efficiency with power-saving features and sleep modes.
- Weather Forecast Integration - Utilize weather forecast data for proactive actions.
- Machine Learning Integration - Optimize operation based on user patterns and weather trends.