



# **MALINENI LAKSHMAIAH** **WOMEN'S ENGINEERING COLLEGE** **(AUTONOMOUS)**

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Pulladigunta(V), Vatticherukuru(M), Guntur(Dt), A.P.



**TEAM NAME : WIRELESS WARRIORS**

**PROJECT NAME : WEATHER RESPONSIVE CROP PROTECTION**

**SUBMITTED BY**

**K.MEGHANA**

**K.RAJESWARI**

**Y.GAYATHRI**

**T.MOUNIKA**

**N.NAVYA**



## Introduction :

After cropping, farmers spread red chilli or tobacco or paddy on open ground to dry them. However, sudden rain or hail can damage the crop, leading to wastage.

This challenges faced by Farmers.

## Objective :

To develop an automated system that can detect rain and wheather changes, protects the crop and redirects the rain water efficiently.





## PROBLEM STATEMENT :

- 1 . The key challenges faced by farmers emphasizing the need for an innovative solution.
- 2 . Weather uncertainty can cause crop damage and loss.
- 3 . Labour – intensive manual covering.
- 4 . Reduce yield and quality.
- 5 . Weather related stress affects crop quality.
- 6 . Increased farmers stress and migration.
- 7 . Decreased competitiveness in global markets.



## Existing solution :

**Manual covering :** Farmers can use tarps , sheets or other materials to cover crop plants during rain or extreme weather.

**Green houses :** Expensive and often unaffordable for small – scale farmers.

**Shade nets :** Provide partial protection but not effective against heavy rain or hail.



## Proposed solution :

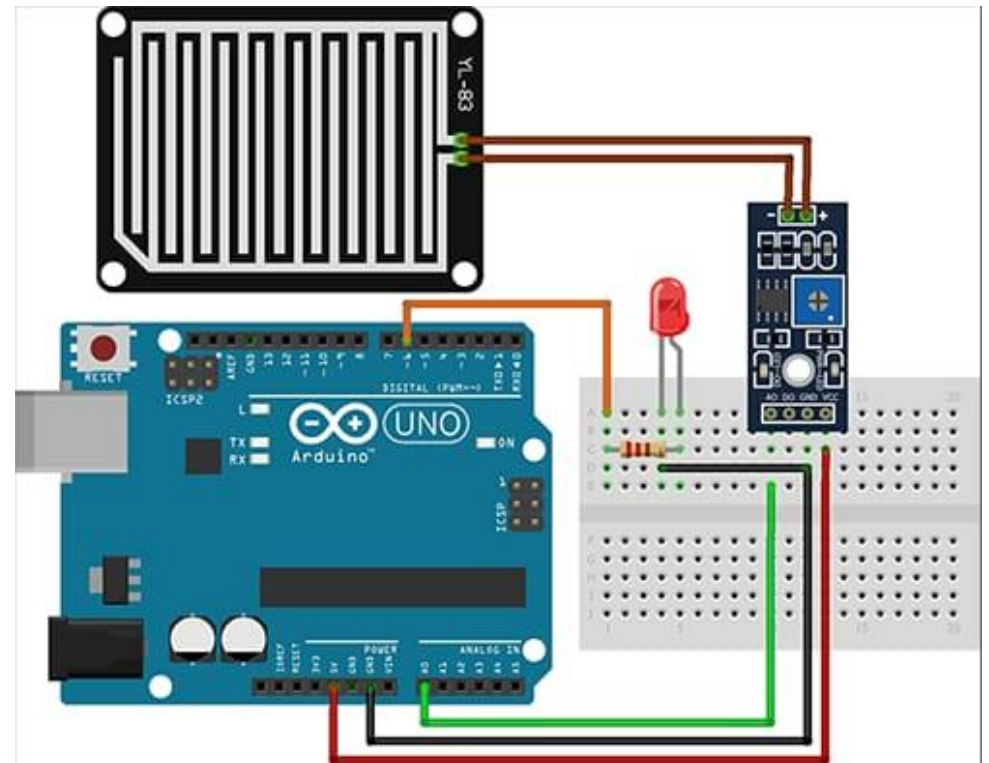
- 1 . Automated covering and uncovering.
- 2 . Real-time rain detection.
- 3 . Adjustable sensitivity for varying rain intensities.
- 4 . Water-resistant and UV-resistant covering material.
- 5 . Energy efficient power supply.

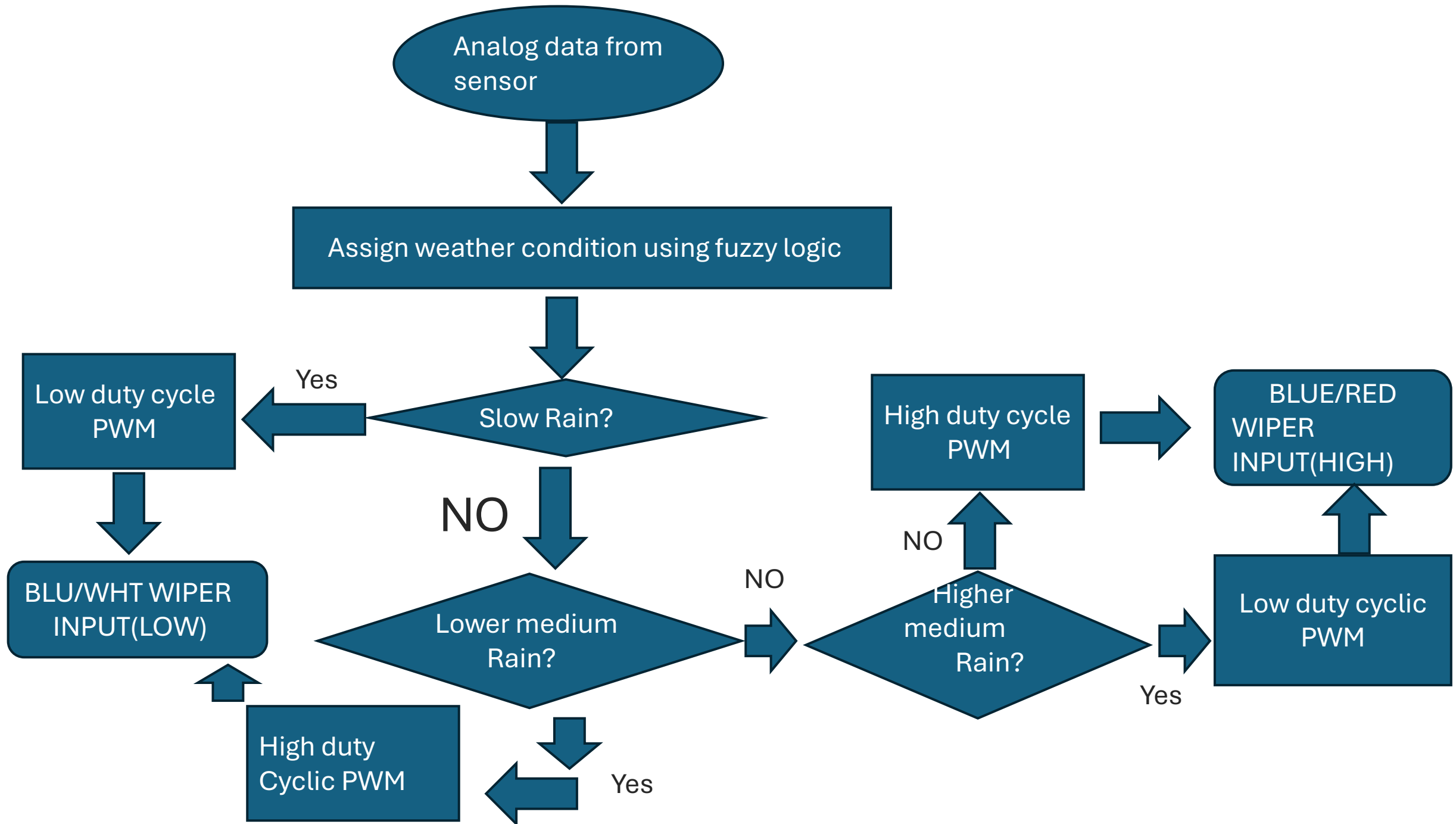


# Value propositions :

“Protect crops from Unpredictable Weather with our automated covering system.”

- 1 . Increased yield and quality.
- 2 . Reduced crop damage and loss.
- 3 . Labour savings.
- 4 . Improved weather resilience.
- 5 . Enhanced crop protection.



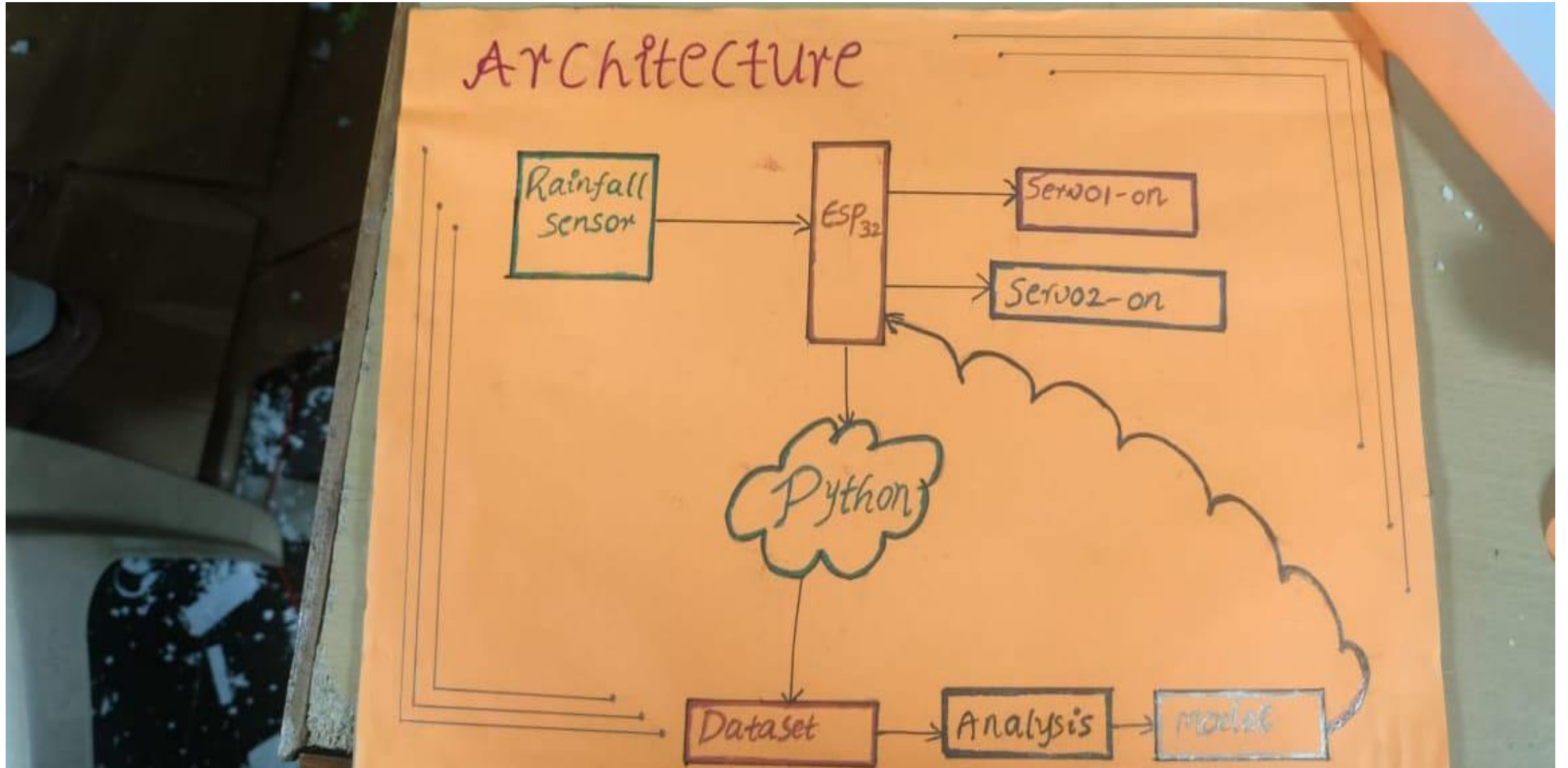


## Conclusion :

- I . The sensor machine provides an automated, cost-effective, and practical solution to a common problem faced by farmers.
- II . It also ensures sustainable water management by directing rainwater to the ground.
- III . Automated covering and uncovering ,minimizing crop damage and loss.
- IV . Scales to suit various farm sizes and and infrastructures.NO



## ARCHITECTURE :





# POSTER PRESENTATION :

## Weather Responsive Crop Protection

### Introduction:-

Nowadays the farmers suicide rate is increasing due to the production of yield decreases & this leads to the loss in farmers income. so to the farmer decreases the production of the yield.

### Problem statement:-

One of the problem is after harvesting farmers spread seed and chili or tobacco on partly on their open ground to dry under the sun.

In due to the unpredictable change in weather condition like rain or storm can change the crop leading to wasting.

### Objective

### Benefits:-

- Increases yield & quality
- Enhanced crop protection
- Reduced crop damages and loss
- Improved weather resilience



ESP32



Servo Motor

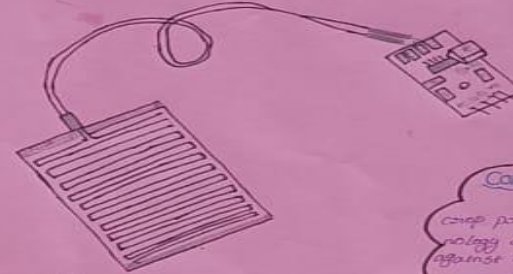


Fig : Rain Sensor

### How it works:-

1. Raindrops fall on the sensor module.
2. Sensor module detects raindrops and sends signal to microcontroller.
3. Microcontroller process and signal and determine rain intensity.
4. Output interface sends signal to control unit (eg. smart shield).
5. Control unit activates/deactivates automated shield based on rain intensity.

### Conclusion:-

In conclusion, a weather responsive crop protection system offers a smart technology driven approach to safeguarding crop against unpredictable & extreme weather conditions. By integrating real time weather conditions data with IoT, the automation system can proactively & accurately protect crops, reduce losses & optimises resource usage.

The rainfall occurs suddenly the sensor detects them rainfall.

Automatically the crop/shield covers the crop & protect the crop.

this automated loop is the proof which means it also protect the crop when any unexpected fire accident occurs.

When the rainfall detects the sensor, the connection which is to connected the sensor will alert the system.

When the rainfall stops automatically it uncovers the crops, the crop is exposed to the sunlight.

In this way we help the farmers to increase their yield & get a little more bit profit.

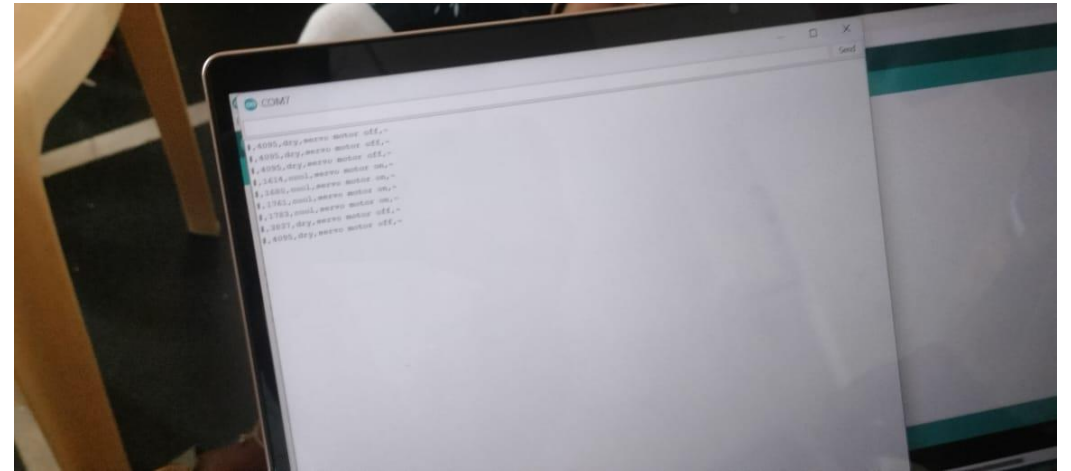
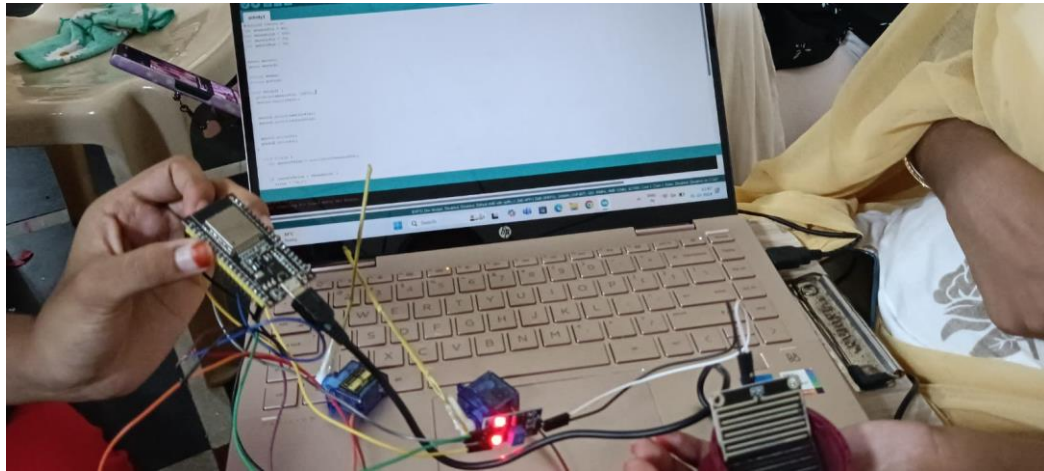




TEAM :



## Hardware components :





**Thank You**