

# PHASE 2 - MILESTONE 3

Shivashankar S	4MH15CS085
N Nithin Srivatsav	4MH16CS056
Ponnanna MB	4MH16CS071
Swathi N Shayana	4MH16CS106
Guide: Prof. Kavya Priya M L	

# OBJECTIVES AND OVERVIEW

1. Recommend Crop to be planted.
2. Recommend Fertilizer to be used.
3. Voice assistant based irrigation system.
4. Give real time data of soil to farmer.

## PROBLEMS?



# DESIGN DETAILS

## ML MODULE

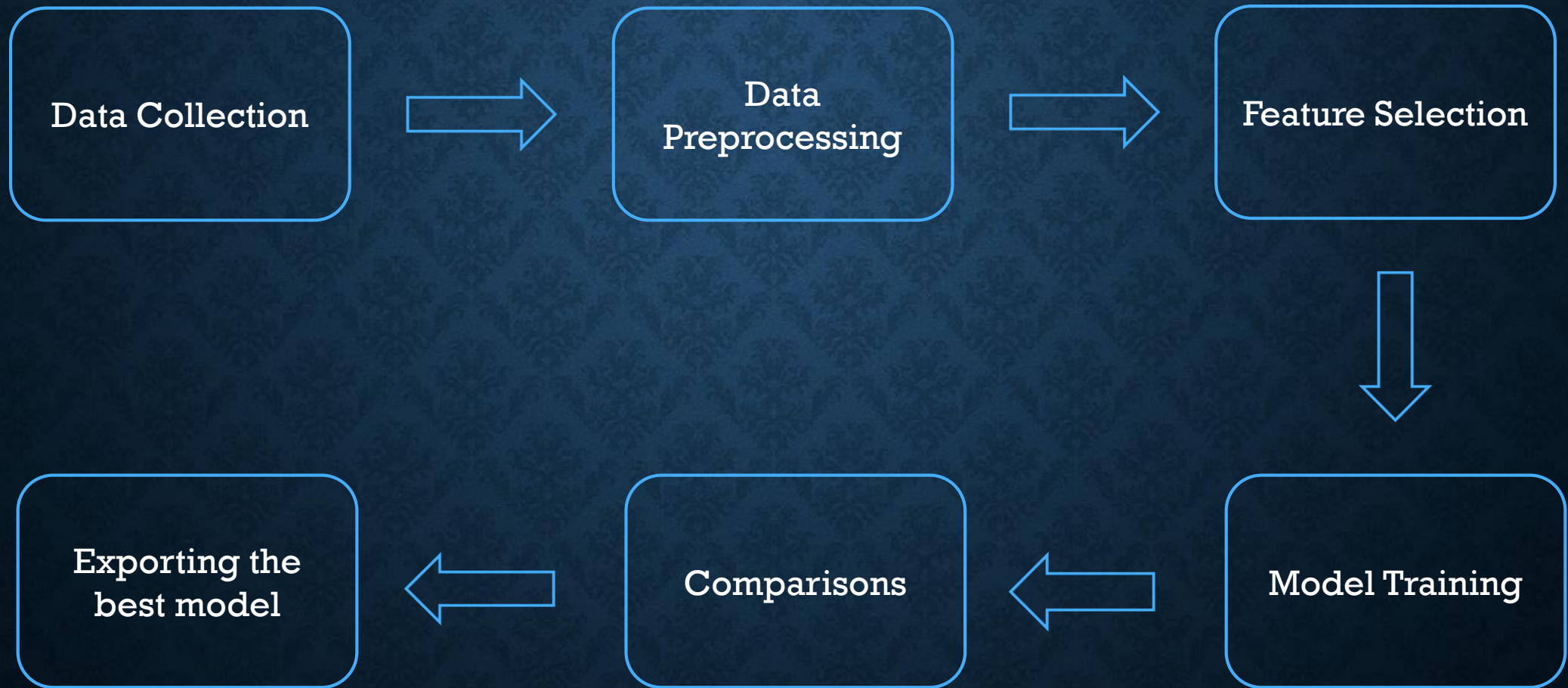


# IOT SENSORS MODULE

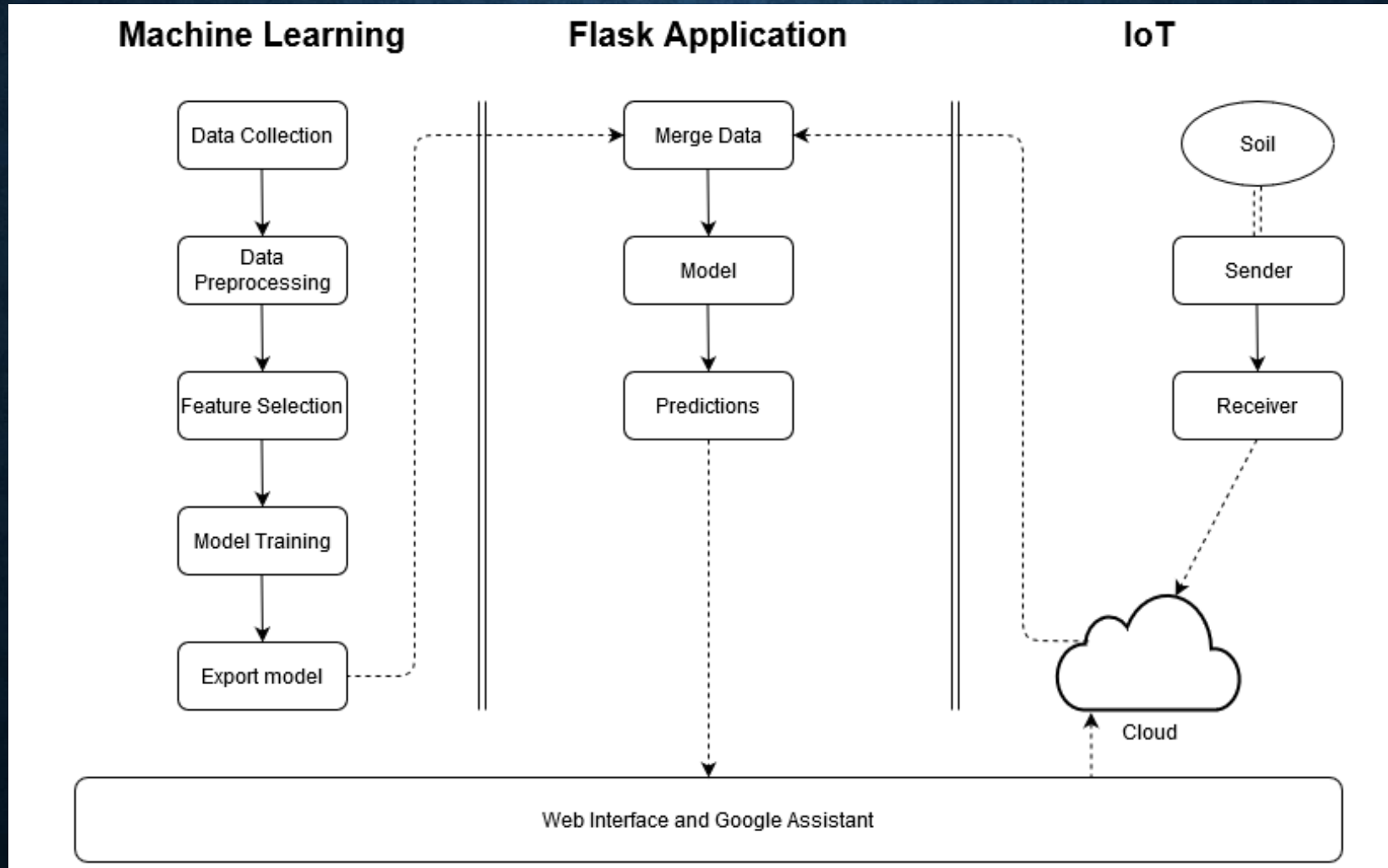




# IMPLEMENTATION DETAILS



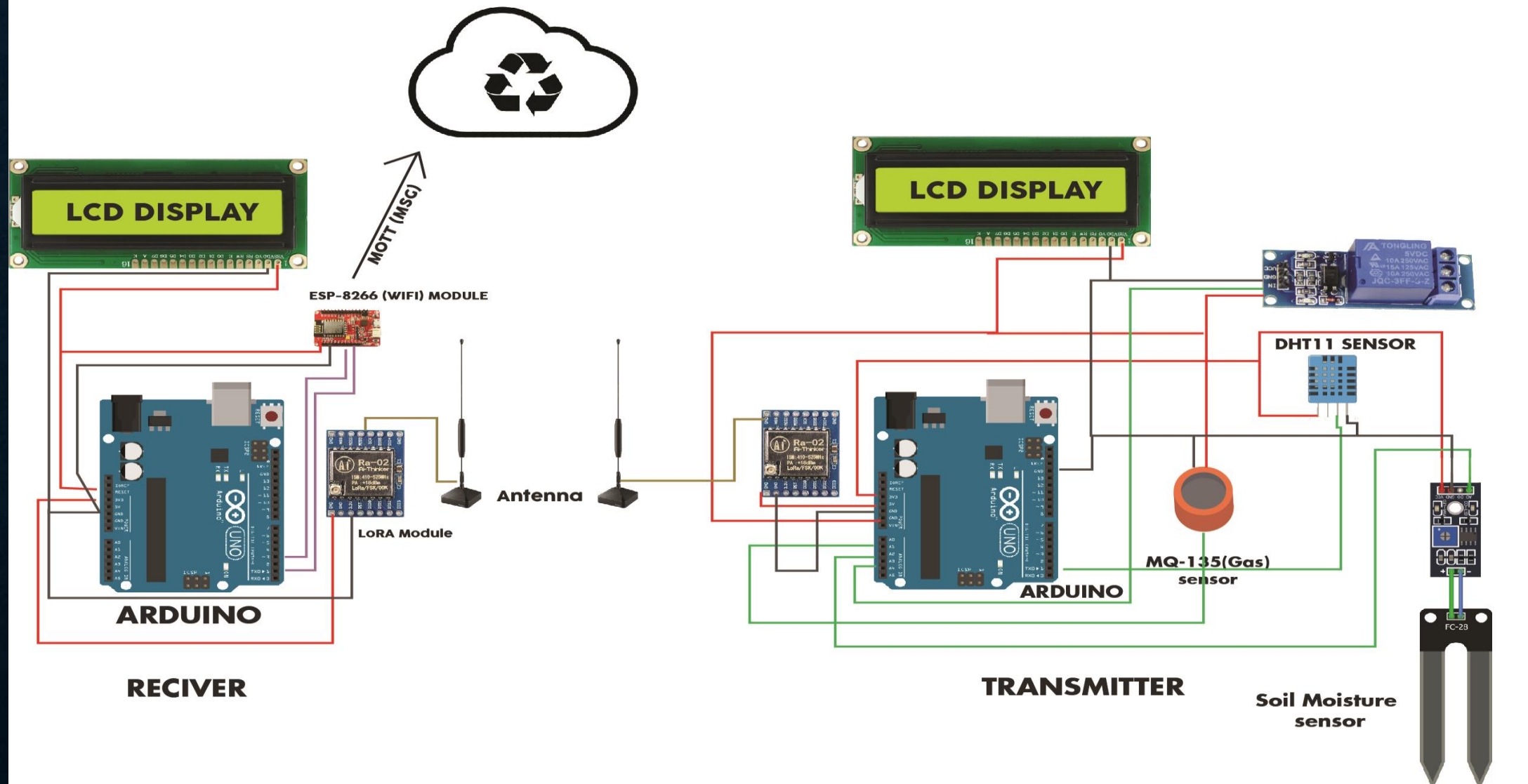
# SYSTEM ARCHITECTURE



# HOW THE DATA WAS CURATED?









# NAÏVE BAYES ALGORITHM

- Works on conditional probability.
- “Naïve” way of choosing.
- Good for multi class classification.
- Light weighted.
- Fast, because it is just mathematics in the background.

# COMPARISON OF CHOSEN SOLUTION

## ❑IoT

- LORA module vs ZigBee
- Automatic Irrigation System
- Battery Backup | Renewable Source of Energy

## ❑Machine Learning

- Many features
- High Accuracy

## ❑General

- Integration of different modules
- Complete package system for farmer



# TEST STRATEGY

- JMeter testing on the API [ load testing ]
  - Try and catch blocks as and when required in the code
  - Appropriate logging of errors or failures.
  - Sentry Integrations to get mail alerts if anything goes wrong.
- 
- Outputs of test cases can be found in the report enclosed in the mail.



# RESULT DISCUSSION

- Outcomes of the project:
  1. Crop Recommendation.
  2. Fertilizer Recommendation.
  3. User Friendly interface [currently supporting 2 languages].
  4. Real time data of soil right at the palm of hands.
  5. Integrations with google assistant for smoother usage.

## **SAMPLE RESPONSE OF THE CROP API**

```
{  
  "crop": "Jute",  
  "soil_moisture": "20"  
}
```



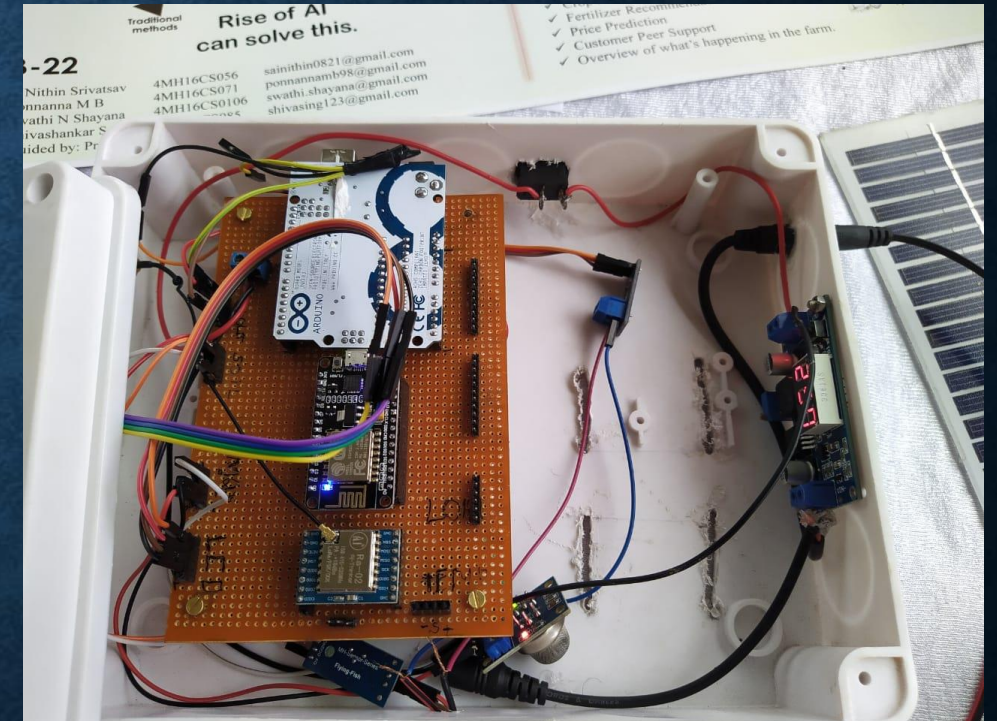
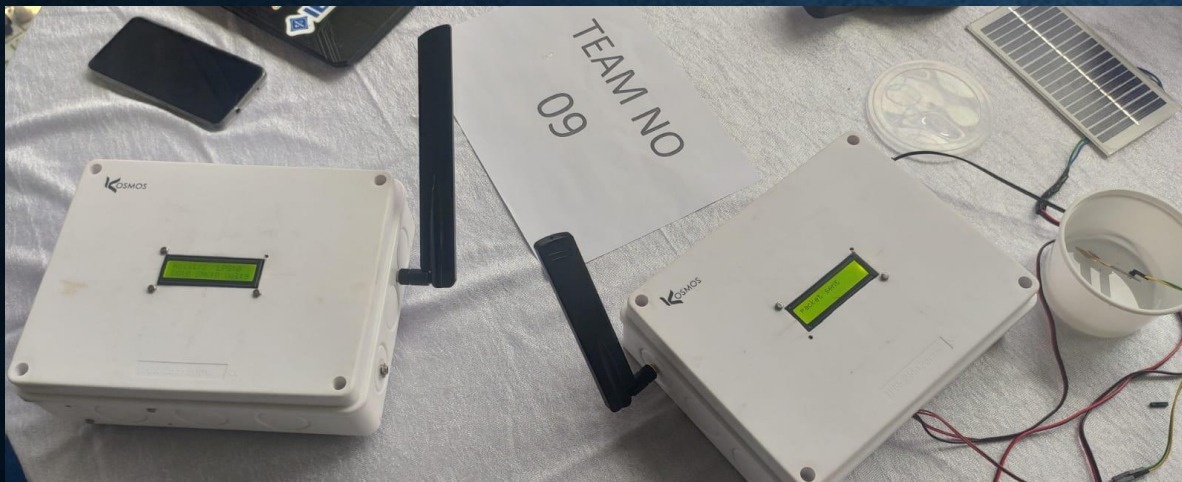
# STATUS AND FURTHER WORKS

- ✓ Crop Recommendation
- ✓ Real Time Soil Data
- ✓ Web Page
- ✓ Google Assistant
- ✓ Automatic Irrigation System
- ✓ Deployed everything onto cloud
- ✓ Fertilizer Recommendation
- ✓ Integration of all APIs



# DEMONSTRATION INFORMATION

- Sender in the quadrangle.
- Receiver at the presentation spot.
- Website deployed.



**THANK YOU**