SMART FARMING

THE UNPREDICTABLES – TEAM-32

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MOTIVATION OF THE PROJECT

- In this project we intend to propose an IOT system to sense VOCs to actually predict onset of pathogen attack on the plants.
- For this we would like to measure the following:
  - Soil humidity
  - Temperature and Humidity
  - Light intensity
  - VOC's and CO2

IMPLEMENTATION OF THE PROJECT

- We use the following sensors to measure the above environmental variables.
  - Capacitive soil moisture sensor – soil humidity
  - DHT22 – temperature and humidity of surroundings
  - CCS811 – VOC's and CO2
  - BH1750 – Light intensity

IMPLEMENTATION OF THE PROJECT

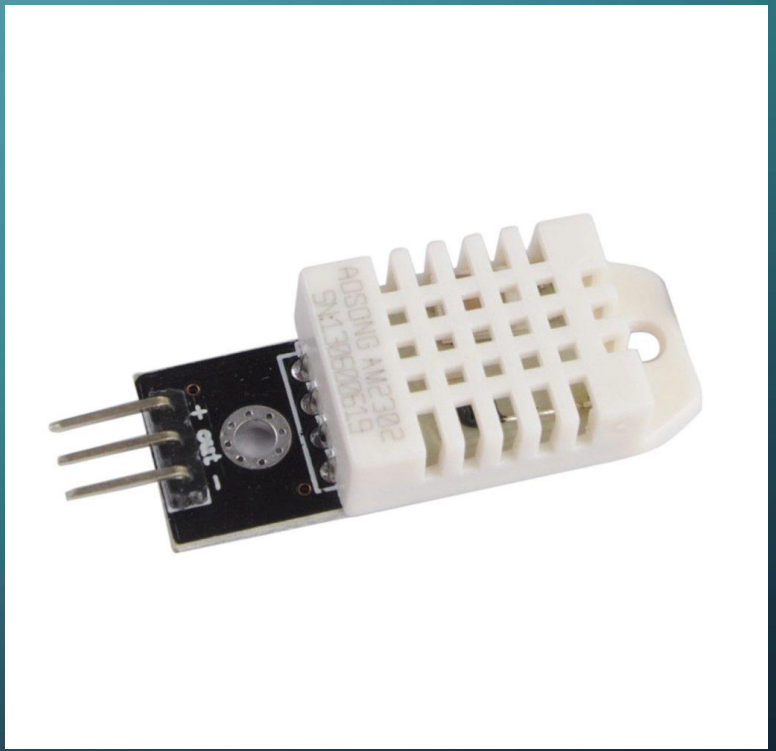
- We intend to do data collection and analysis using thingspeak, OM2M.
- We will also make a dashboard into which user logins and accesses the data collected by sensors.

CAPACITIVE SOIL MOISTURE SENSOR

- This sensor measures the amount of moisture present in the soil.
- To do this the sensor uses capacitive sensing.

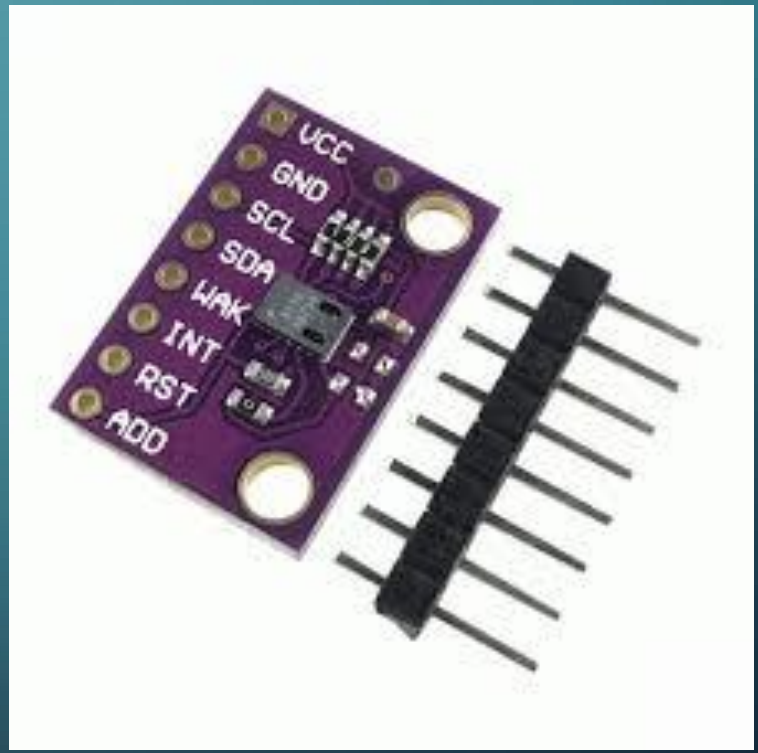
DHT22 SENSOR

- Measures Temperature and humidity of the surroundings.
- This sensor uses a thermistor to measure temperature and a capacitive humidity sensor to measure humidity.



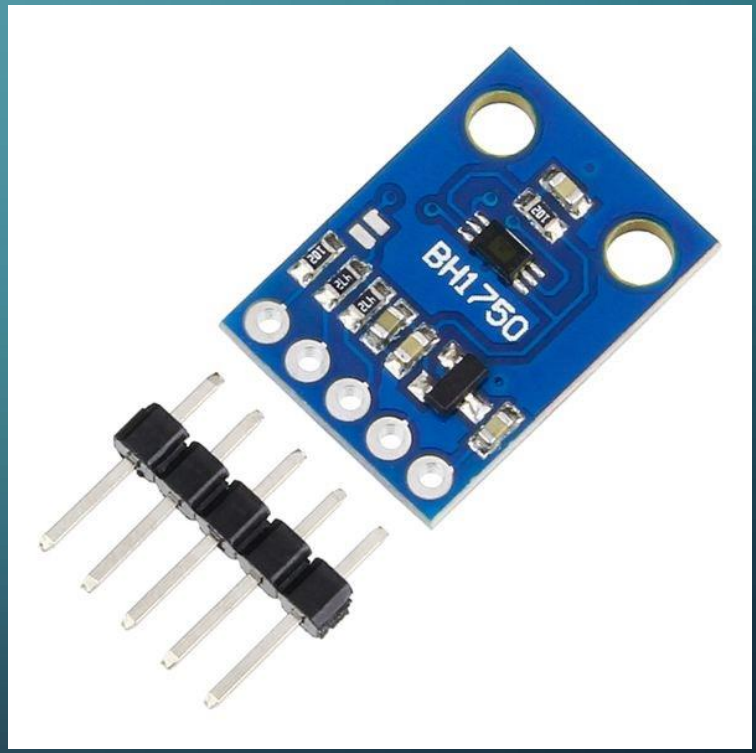
CCS811 SENSOR

- Measures the amount of Total volatile organic compounds and equivalent carbon dioxide.
- To do this, it measures the resistance of a sensitive layer exposed to ambient air which is heated up using a resistance.



BH1750 SENSOR

- Measures light intensity
- What materials will you use for your prototype?
- Will your prototype be actual size or a model? Why?



DATA ANALYSIS

- The data such as temperature, humidity etc collected can be used to analyze the following factors:
  - The water necessity of the plant.
  - To determine suitable crops in that environment.
  - To determine when a crop plantation should be done.
  - To determine crop growth.
- The data collected is deployed into thingspeak and OM2M for monitoring.

DATA ANALYSIS

- Data monitoring is also done by using a dashboard developed.
- User who wants to access the data logins into the dashboard and can request data from a particular time in the past.

SUMMARY

- Timeline:
  - Week 1 : Deployment of the hardware
  - Week 2 : Developing code for various components
  - Week 3 : Dashboard
  - Week 4 : Detailed Report

Block Diagram