**IMPLEMENTATION OF AGRI-IOT PLATFORM**

**Sensor analysis:**

Various sensors of temperature, humidity and ambient light are analysed and taking price, accuracy and availability into consideration two sensors are selected. DHT22/AM2302 is to calculate temperature and humidity, and MAX44009 is for calculating ambient light.

**DHT22/AM2302 (Temperature and Humidity sensor):**

* Output type: Digital
* Applications: HVAC, consumer goods, automotive, automatic control, data loggers, weather stations, home appliances, humidity regulator, medical and other humidity measurement.
* Supply voltage: 3.3V – 6V
* Number of Pins: 4
* Humidity Accuracy: +-5%RH
* Temperature Accuracy: ±0.5 ℃
* Transmission Distance: 20m
* Microcontroller: Arduino, Raspberry pi
* Price: Rs.255
* Interface: SPI

**MAX44009 (Ambient Light Sensor):**

* Output type: Digital
* Applications: Digital Lighting Management, Portable Devices, Security Systems.
* Supply voltage: 1.7V – 3.6V
* Microcontroller: Arduino, Raspberry pi
* Price: Rs.150
* Interface: I2C

**Sensor Interfacing:**

**Hardware:**

Arduino board

DHT22 (Temperature and Humidity sensor)

MAX44009 (Ambient Light sensor)

Jumper wires

Breadboard

**Software:**

Arduino IDE

plxdaq V2.10

web2py

**Connections:**

1. VCC and GND of DHT22 and MAX44009 are connected to VCC and GND of Arduino.
2. Data pin of DHT22 is connected to digital pin2 of arduino board.
3. SCL pin of MAX44009 is connected to analog pin5 (A5) of arduino board.
4. SDA pin of MAX44009 is connected to analog pin4 (A4) of arduino board.

Using Arduino cable arduino board is connected to PC. Add following libraries to your arduino software before running the code.

* Adafruit unified sensor
* DHT sensor library
* MAX44009-master

Run Agrosensors.ino on the Arduino IDE. We can see the values of temperature, humidity and ambient light on the serial monitor.

Later plxdaq is opened, port number and baud rate are set and connect button is pressed press to establish connection. Then we can see the sensor data in excel sheets. The excel sheet is saved in csv format and auto save option is set.

Web2py.app.AGRO.w2p should be uploaded in your local web2py server. In default.py the location of the csv file should be changed in two places. It is saved and the website can be opened.

You can view the collected data on your website.

**INSTALLATION GUIDE:**

* <http://forum.arduino.cc/index.php?topic=437398.0> for plxdaq
* <https://www.arduino.cc/en/Main/Software> for Arduino
* <http://www.web2py.com/init/default/download> for web2py