International Women's Hackathon 2018

Title: Smart Farming e-Monitoring System

Theme: Innovation

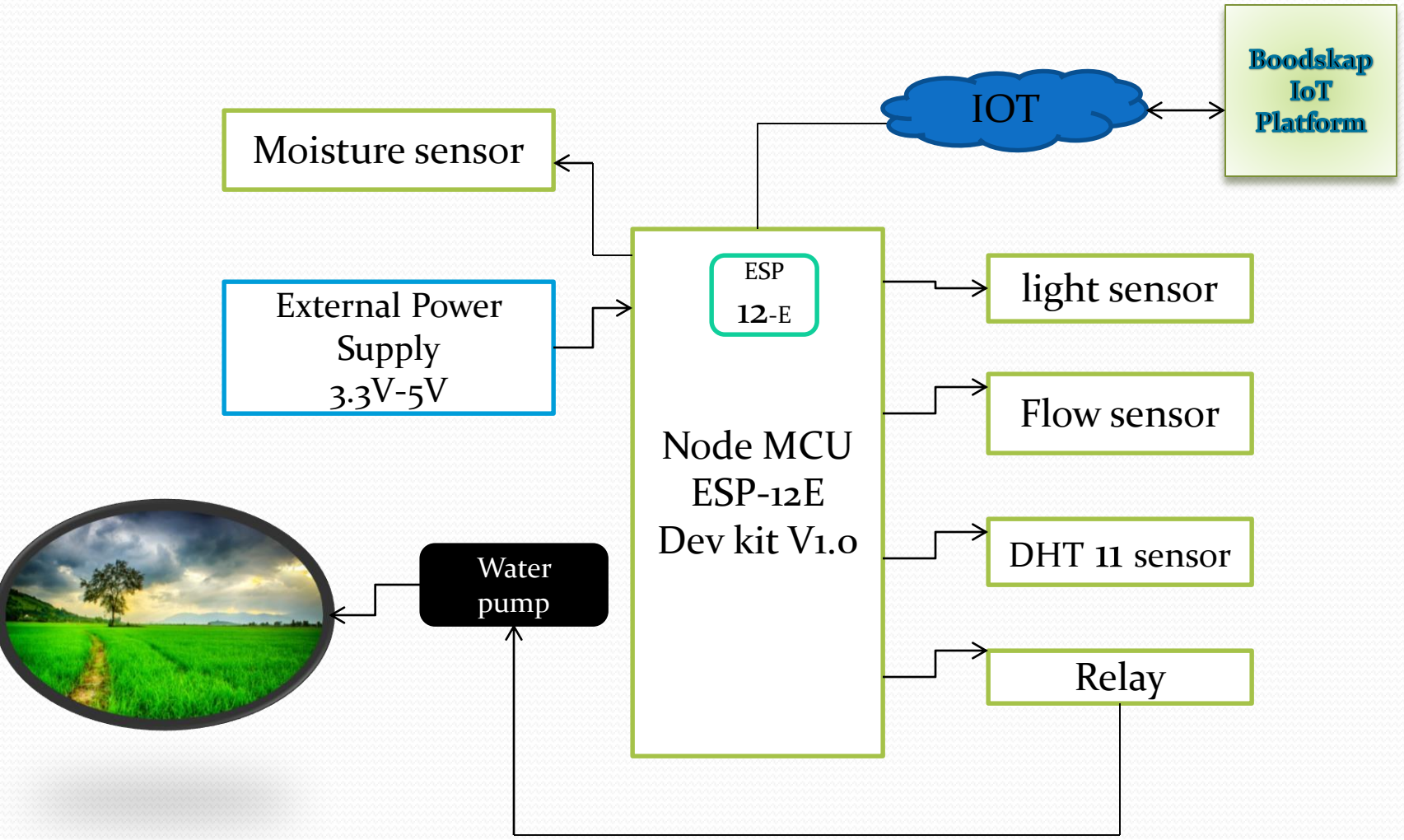
PROJECT OBJECTIVE:

- The main aim of this project is to monitor the real time farming processes with critical historical data, such as weather events, climate changes. The watering of the land is to be made through IoT and Web Application.

PROJECT OUTCOME:

- The outcome of this project is to save wastage of water and to send the water to the field by using the water pump through the boodskap server.

Functional Flow Chart:



REQUIREMENTS FOR THE EXECUTION OF THE PROJECT :

SOFTWARE	HARDWARE	SYSTEM
Arduino IDE	**1.** Node MCU **2.** Relay **3.** DHT11 Sensor **4.** Moisture Sensor **5.** Light Sensor **6.** Flow Sensor **7.** 6V DC motor **8.** 9V Battery **9.** Bread Board **10.** Jumper Wires **11.** USB Cable **12.** 1 inch Water Pipe	Laptop

Introduction to the boodskap Server:

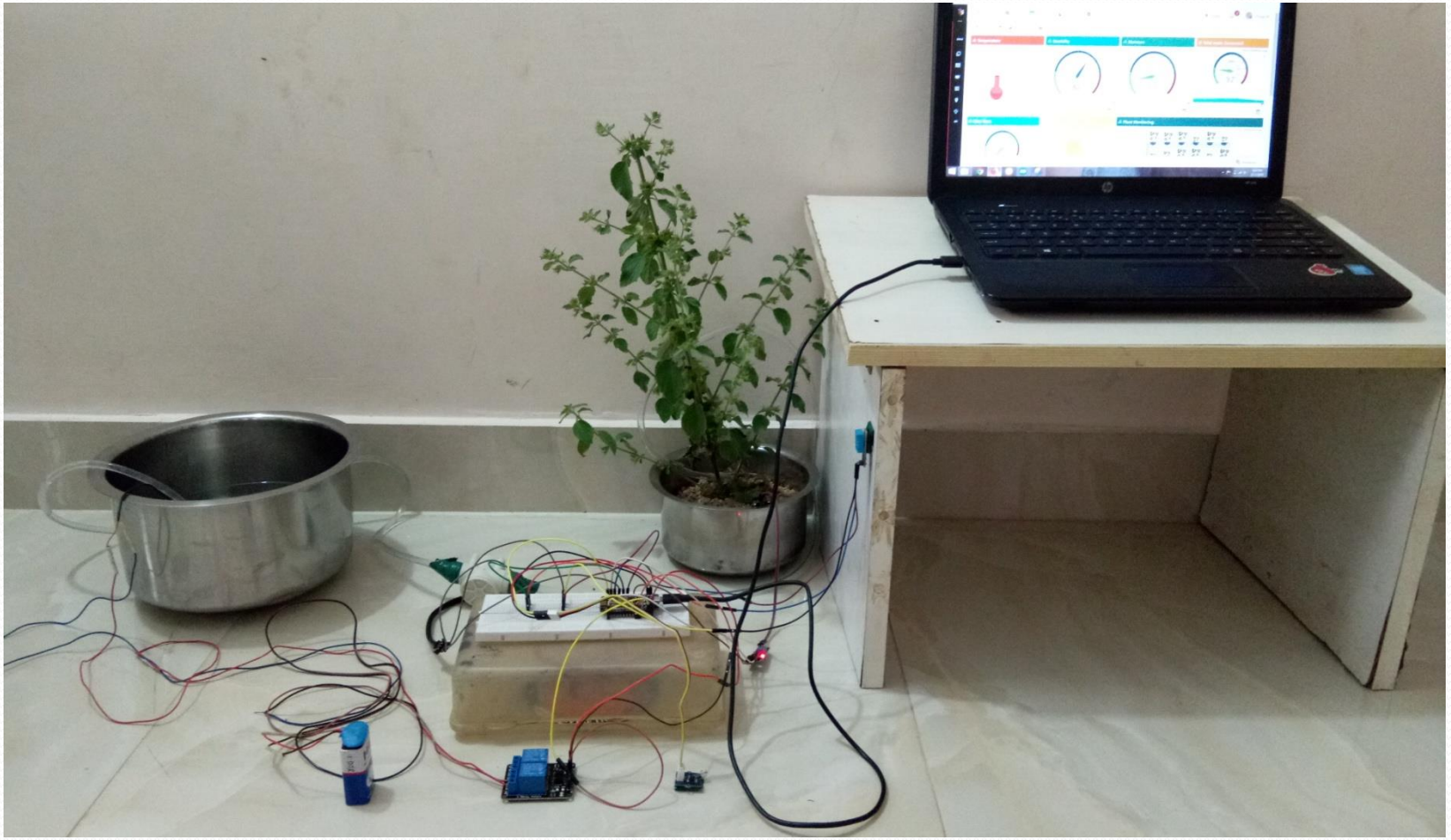
- It is a powerful and Flexible platform.
- It has its own boodskap server.
- It's a digital dashboard where we can build a graphic interface for our project by simply dragging and dropping widgets.
- Its works on the Web Application.

Software:

ARDUINO-IDE:

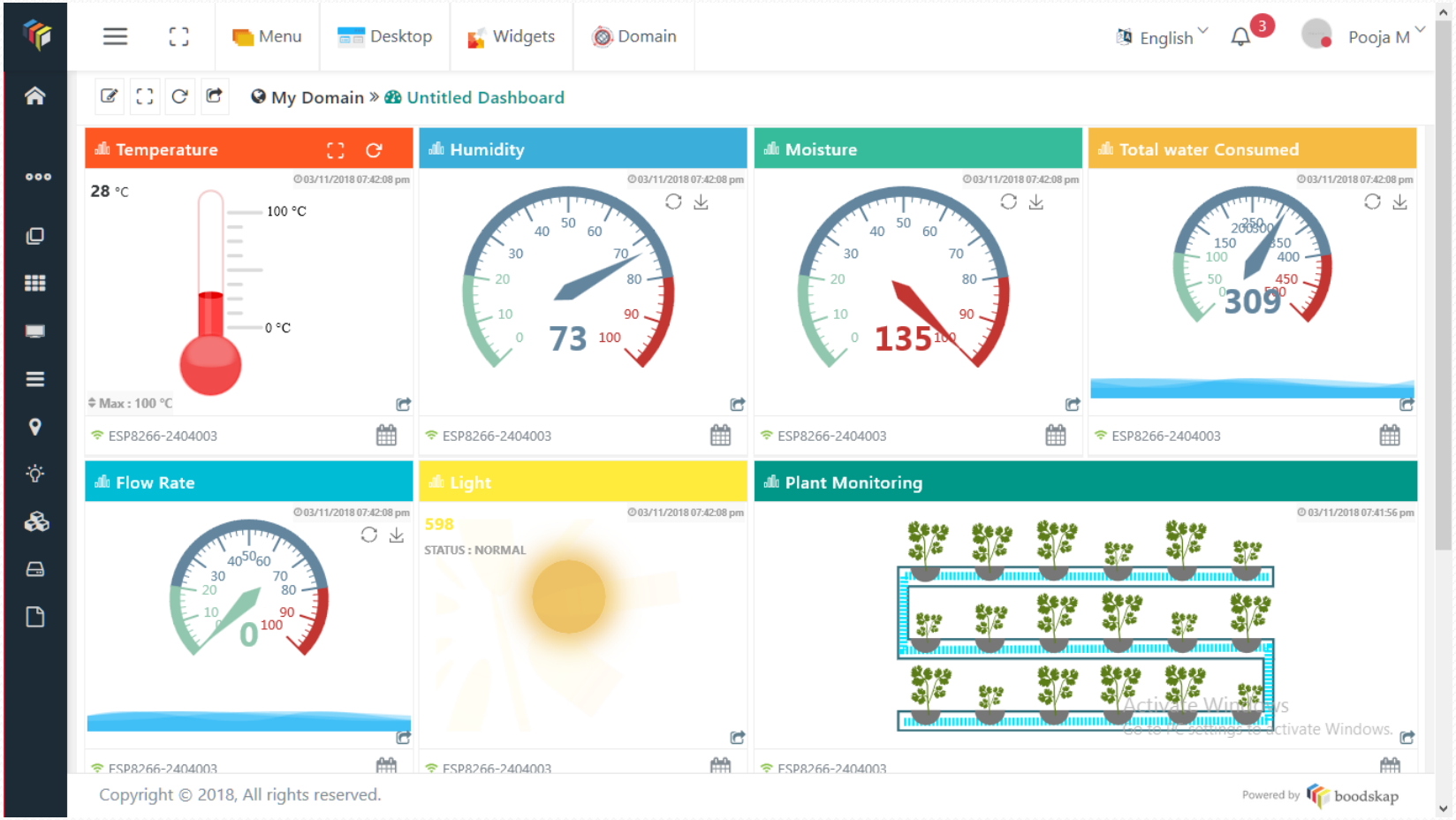
- The Node Micro Controller Unit (MCU) is programmed using the Arduino Software (IDE).
- It is an open source software.
- It contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions and a series of menus.

Experimental Setup:

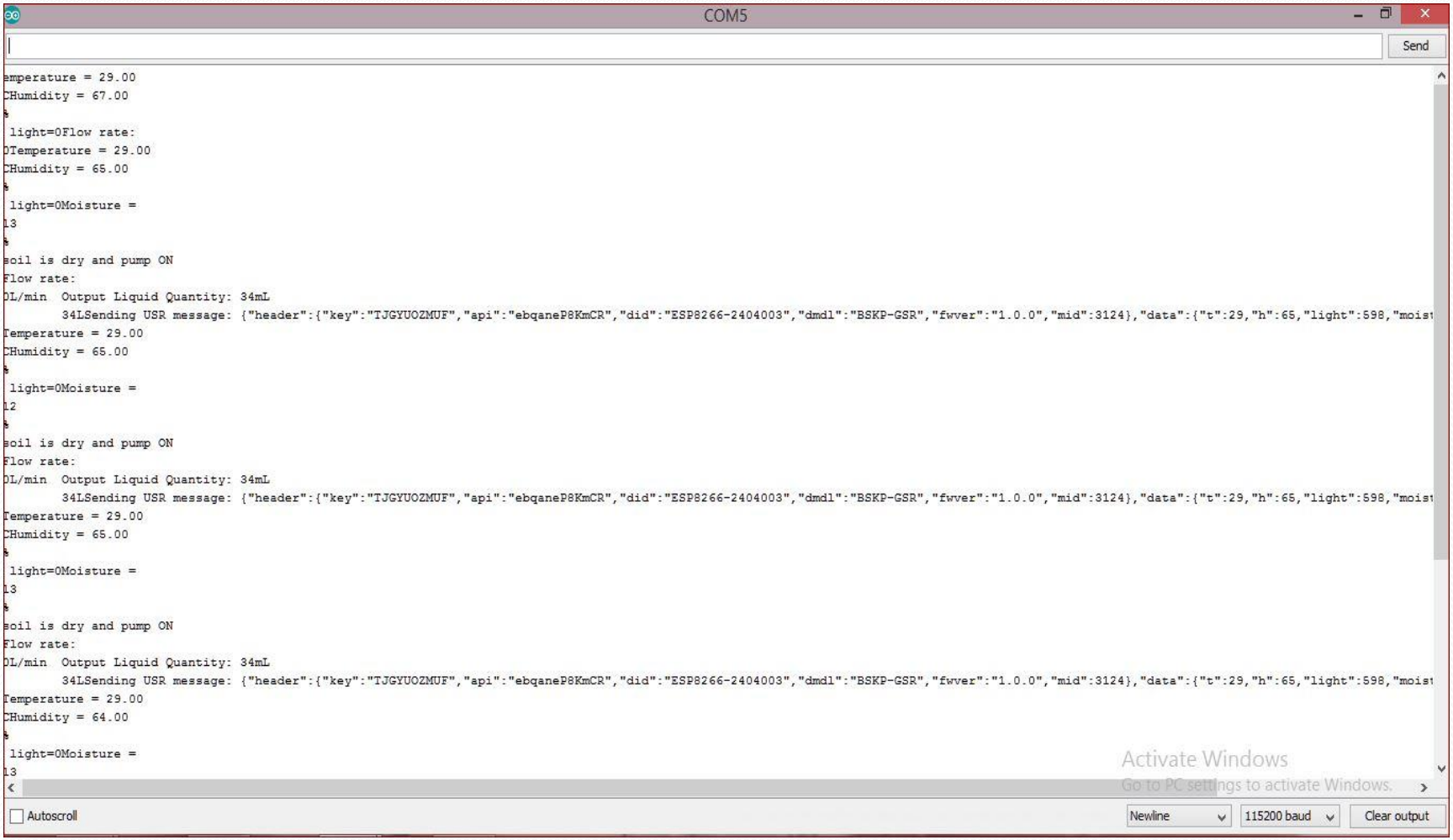


Boodskap Dashboard:

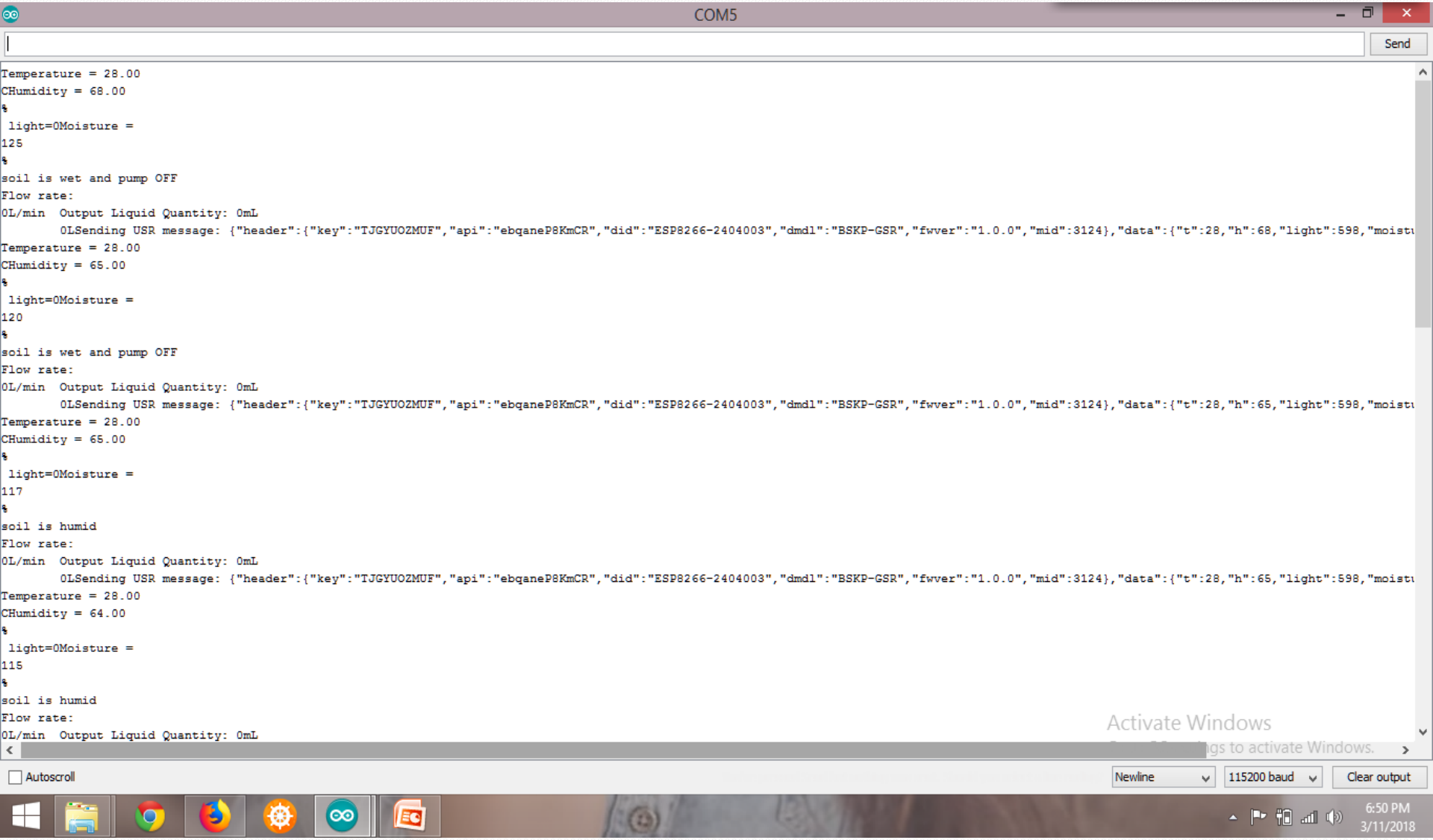
Boodskap DashBoard:



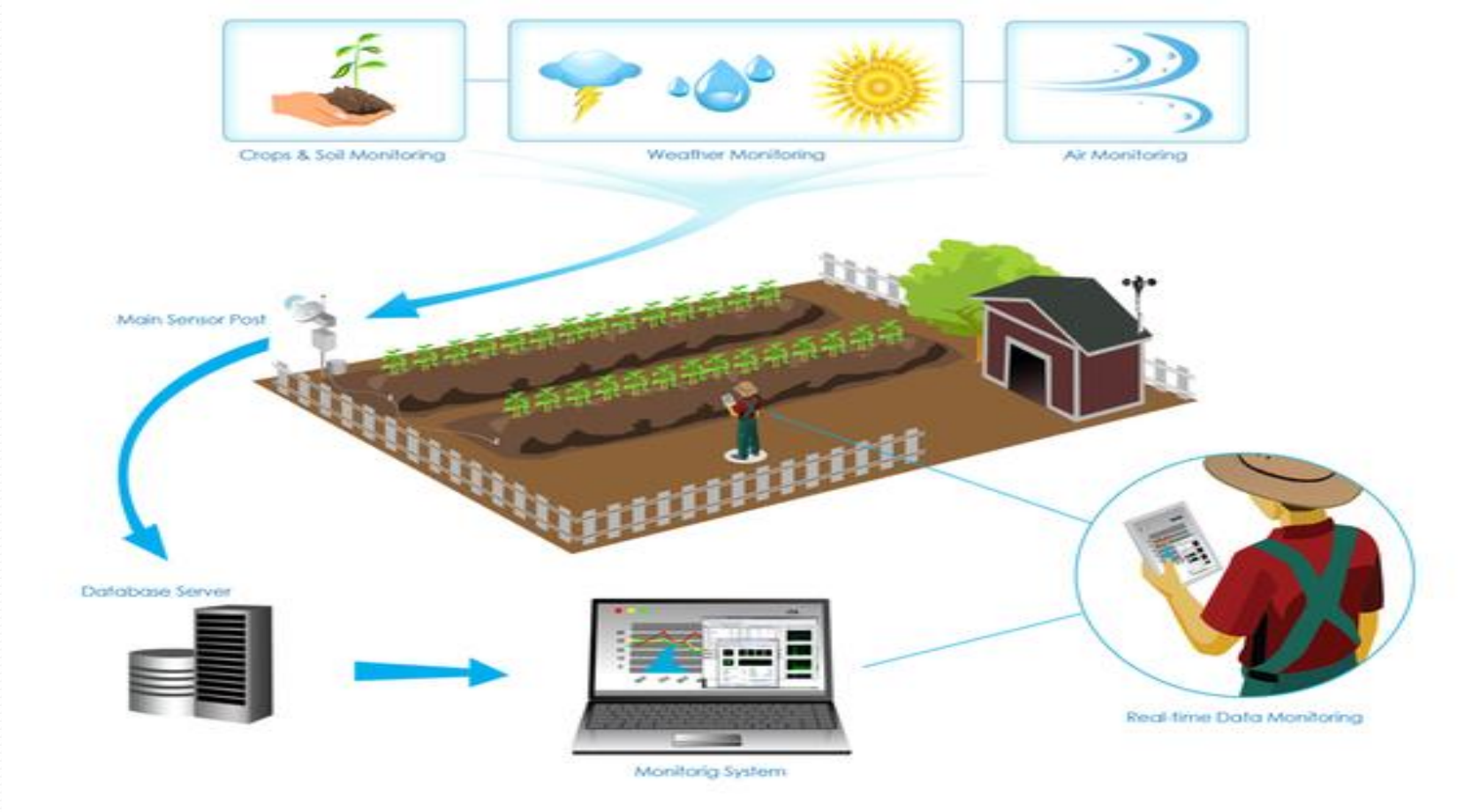
Serial monitor Output when soil is dry:



Serial Monitor Output when soil is wet:



Technology Used:



Key Differentiator:

- Proper usage of Water for irrigation facilities thus reduces wastage of water.
- Less Power consumption.
- Weather conditions can be monitored.
- Man power will be reduced.
- Maximize the food production and minimize the crop damage.

Future Plans:

- The future of the technology is that implementation of machine learning using sensors data can lead to optimized fertilizer suggestions.
- The sensors can also be scaled up to be used in Drones and Tractors for cultivation.
- Using Drones for spraying Fertilizers to the affected crops.
- The data gathered can be used to find efficiency of a certain yield.

THANK YOU