Parshvanath Charitable Trust's

A. P. SHAH INSTITUTE OF TECHNOLOGY

(Approved by AICTE New Delhi & Govt. of Maharashtra, Affiliated to University of Mumbai)
(Religious Jain Minority)

Department of Information Technology

Academic Year: 2018-19
Semester: VIII
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Project Title: Iot Based Smart Irrigation System

Group No:08

Group Members:

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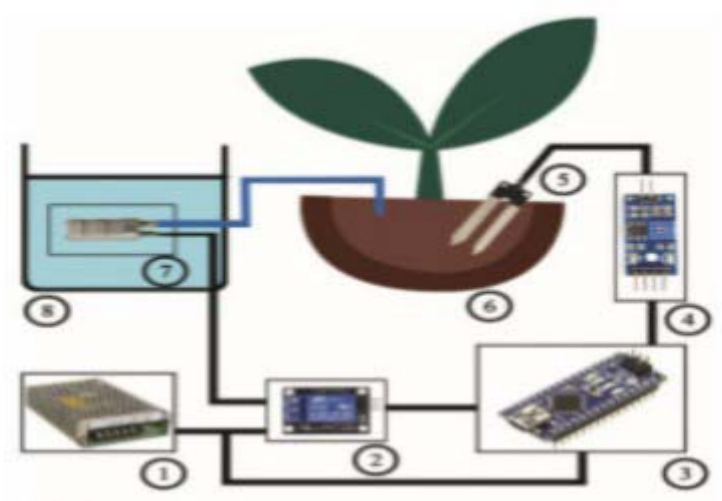
Guide: Prof. Rahul Ambekar
Co Guide: Prof. Vishal Badgujar



1.Power Supply: To supply power voltage to arduino and pump.

2.Relay Module: Controlled by interfacing with microcontroller.

3.Microcontroller(Arduino Uno): Sensor interfaced 14 pinI/O Microcontroller.Code is dumped on arduino board.

4. Amplifier Cuircuit Soil Moisture Sensor

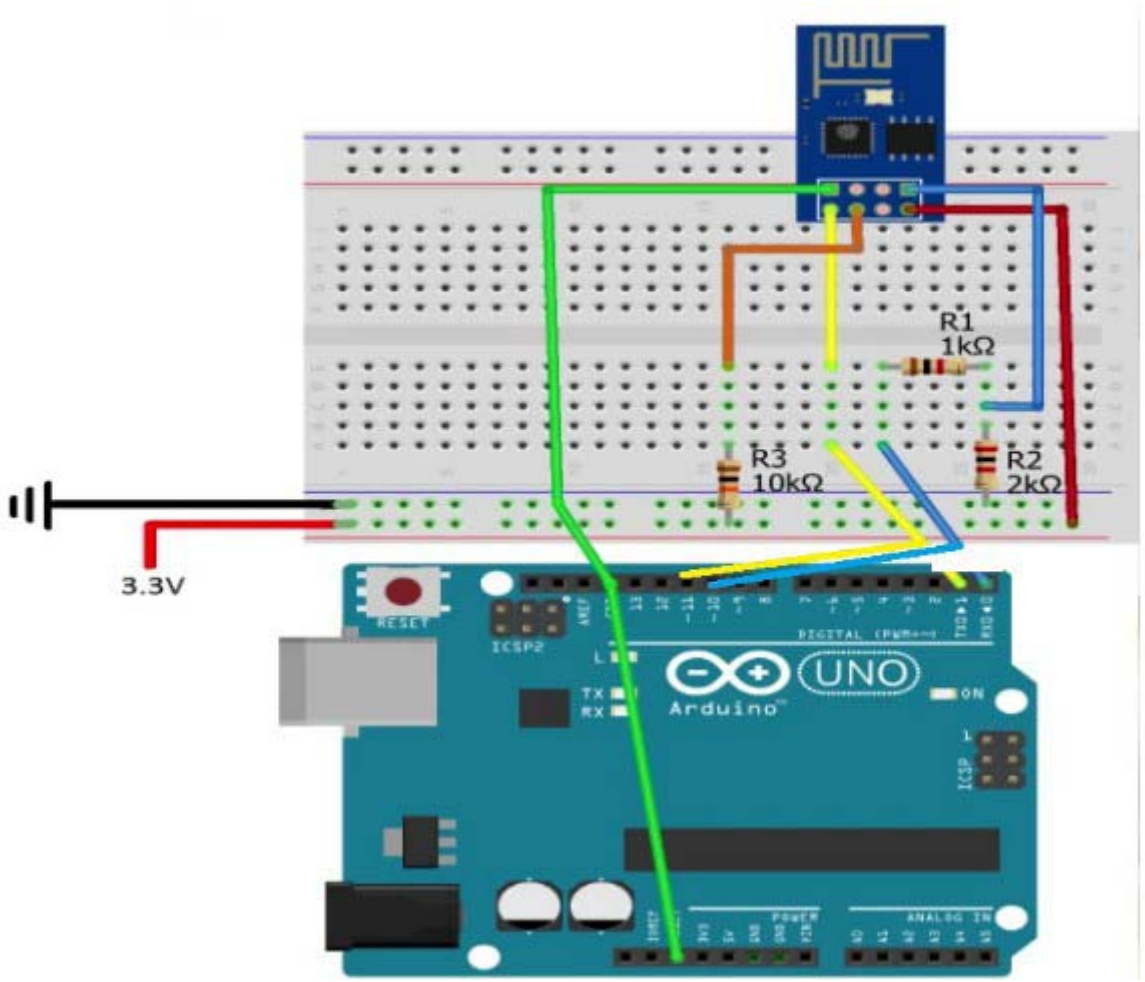
5. Soil Moisture Probes: Senses soil moisture level

6.Plant

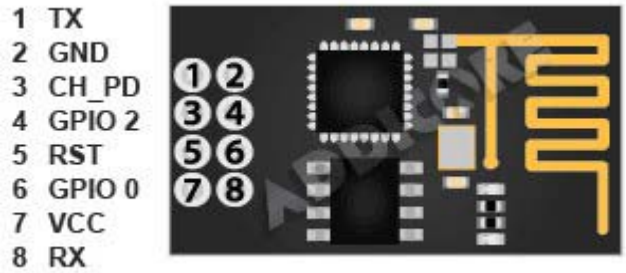
7.Water pump

8.Water Container

Circuit connections of main components of our project arduino uno and Wifi module

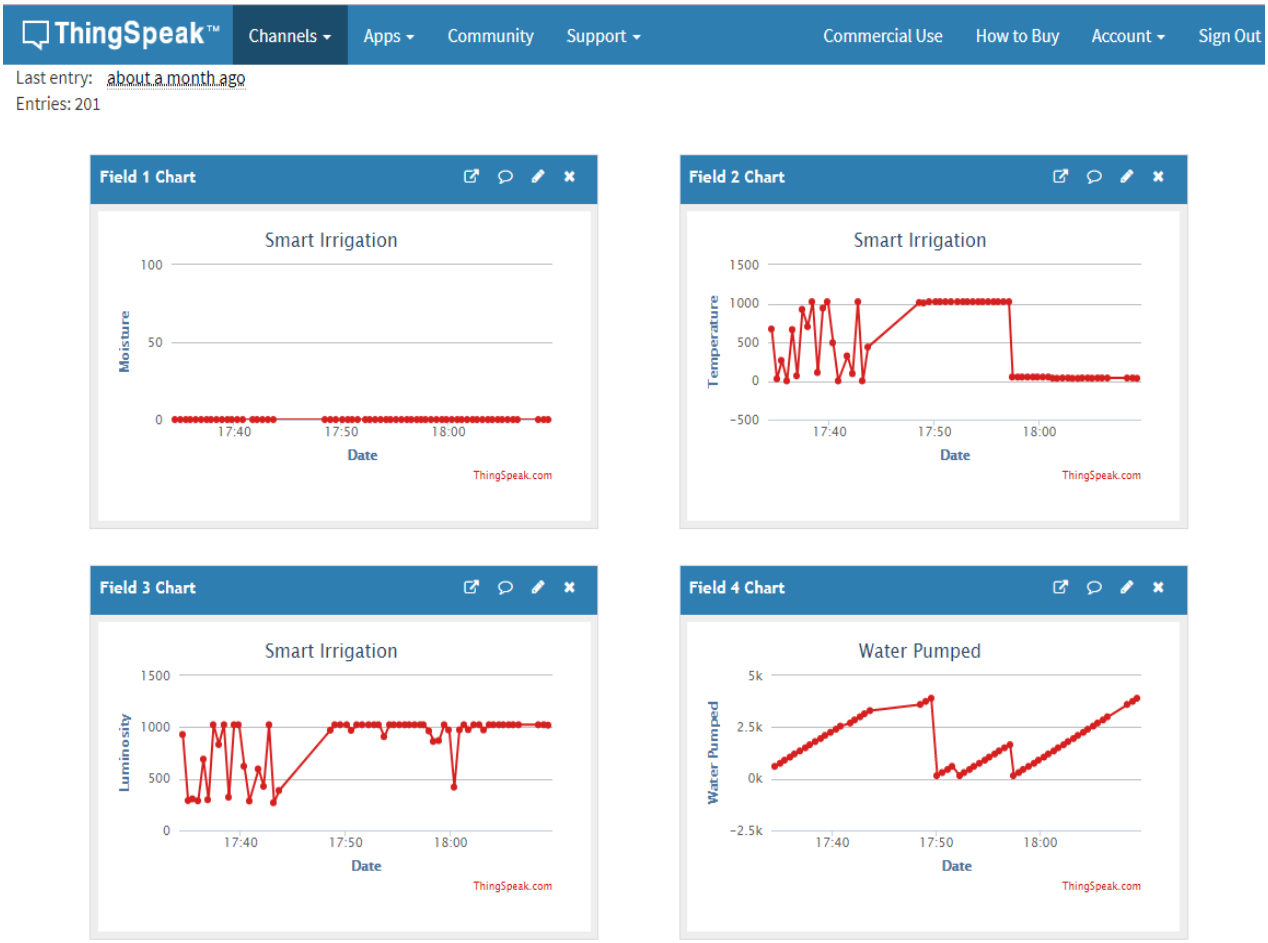


Wifi module pin structure:



Setup of our connection and plant watering system:

Sending Data on Cloud (ThingSpeak).



The following field shows graphical data, as follows:

Field 1 Chart - Moisture
Field 2 Chart - Temperature
Field 3 Chart - Luminosity
Field 4 Chart - Water Pumped

Webpage of Smart Irrigation System:

The website shows the incoming data in graphical manner and amount of water provided to plant or farm.

Conclusion:

The irrigation system on automation uses optimal resources to improve the efficiency of the irrigation. This system can be implemented in places that face water shortage to improve agricultural sustainability. In this project a prototype includes sensing element node and data storage on cloud. The sensing element node is deployed on the field for sensing the soil parameters such as temperature, moisture, luminosity and humidity. According to the soil parameters the automation is achieved by turning the motor on/off based on the set threshold value embedded in the code. All the data is stored on cloud, which represent the data in graphical chart, from that it can be checked how much water was consumed by plant and how many times the pump was turned on. Additionally, same data can be seen on the website.