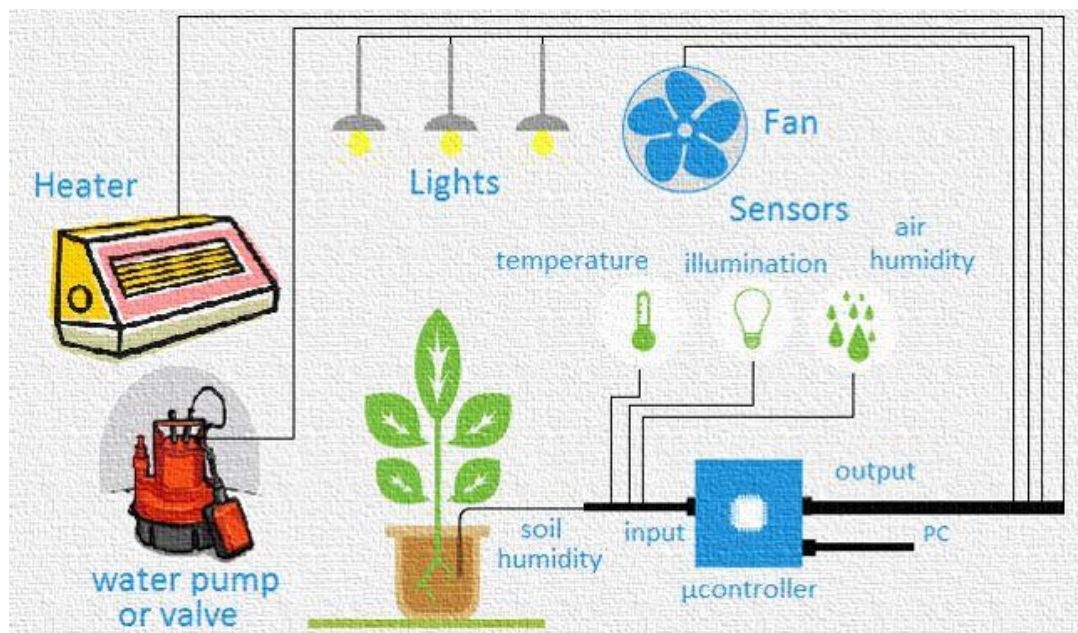


Smart Green-House Monitoring and Control System

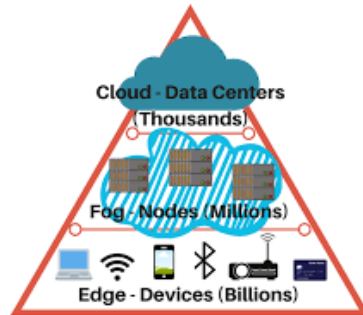
Using Fog Computing

Being a nature enthusiast, the first idea that came into my mind was of making something that could actually monitor pollution and effects due to increasing global warming. But for my first project, this was a big idea with big implementation, so why not scale it down and start from home.



This project is an IOT based solution for your greenhouse, nursery or garden, wherever you want to implement. We will be using some basic sensors and technology to make a project which is feasible and easy to handle. The idea is to monitor temperature, Humidity, moisture content in the soil for your Greenhouse and set it up with Water motor that will be triggered as soon as the moisture content is low or the temperature is high. We can set the conditions according to our needs and also connect more sensor like for air-conditioning according to the amount of automation we need.

The new thing in this will be Fog Computation, which moves computation and networking closer to the edge, reduces the need to communicate via the cloud and thus decrease latency.



Components Required:

Hardware:

- NodeMCU
- DHT11 (Humidity and Temperature)
- LDR
- Soil moisture sensor
- LEDs
- Resistors
- Capacitors
- Water pump

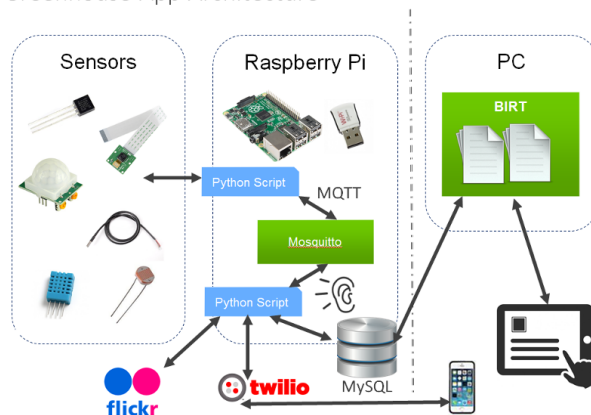
Software:

- Arduino IDE
- Blynk

Other Requirements:

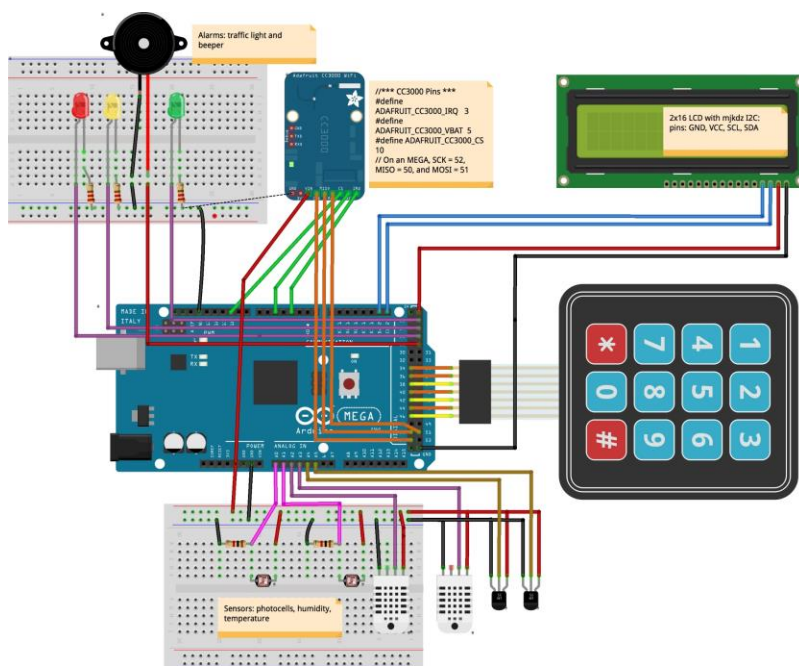
- Android phone
- Tubing adaptable to your water-pump.

Greenhouse App Architecture



Circuit Diagram and Explanation:

1. Installing the Arduino IDE and setting up Blynk app.
2. Wiring up the sensors with Arduino and water-pump accordingly and connecting it to the computer with Arduino IDE in it.
3. Coding the NodeMCU according to the requirements and using either Blynk or RaspberryPi using MQTT.
4. Creating a local network for Fog Computing and sending the messages that require urgent attention through it to the local server and rest information to the cloud.



fritzing