PROJECT REPORT

Title: Smart Agriculture System

in

INTERNET OF THINGS

by

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PROJECT EXPLANATION:

1. IBM CLOUD:

The IBM cloud platform combines platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience.

In IBM cloud, with the help of Internet of things platform, I created a device by giving its device credentials and connect the device with IOT sensor simulator.

IOT sensor simulator is used to get the temperature , humidity, object temperature values after connecting to the device. Object temperature value is similar to soil moisture .

Device credentials are device type, device ID etc. we want to create a lite plan in watson IOT platform.

2. NODE-RED:

First of all, in this, we have to install ibm iot nodes, then connect the temperature, humidity, soil moisture as function to ibm iot input and deploy it . output can be seen via msg payload .

The output confirms that the IOT device connected to get the simulator data. The values of temperature, humidity etc were displayed in the debug place. The output can be seen through node red dashboard.

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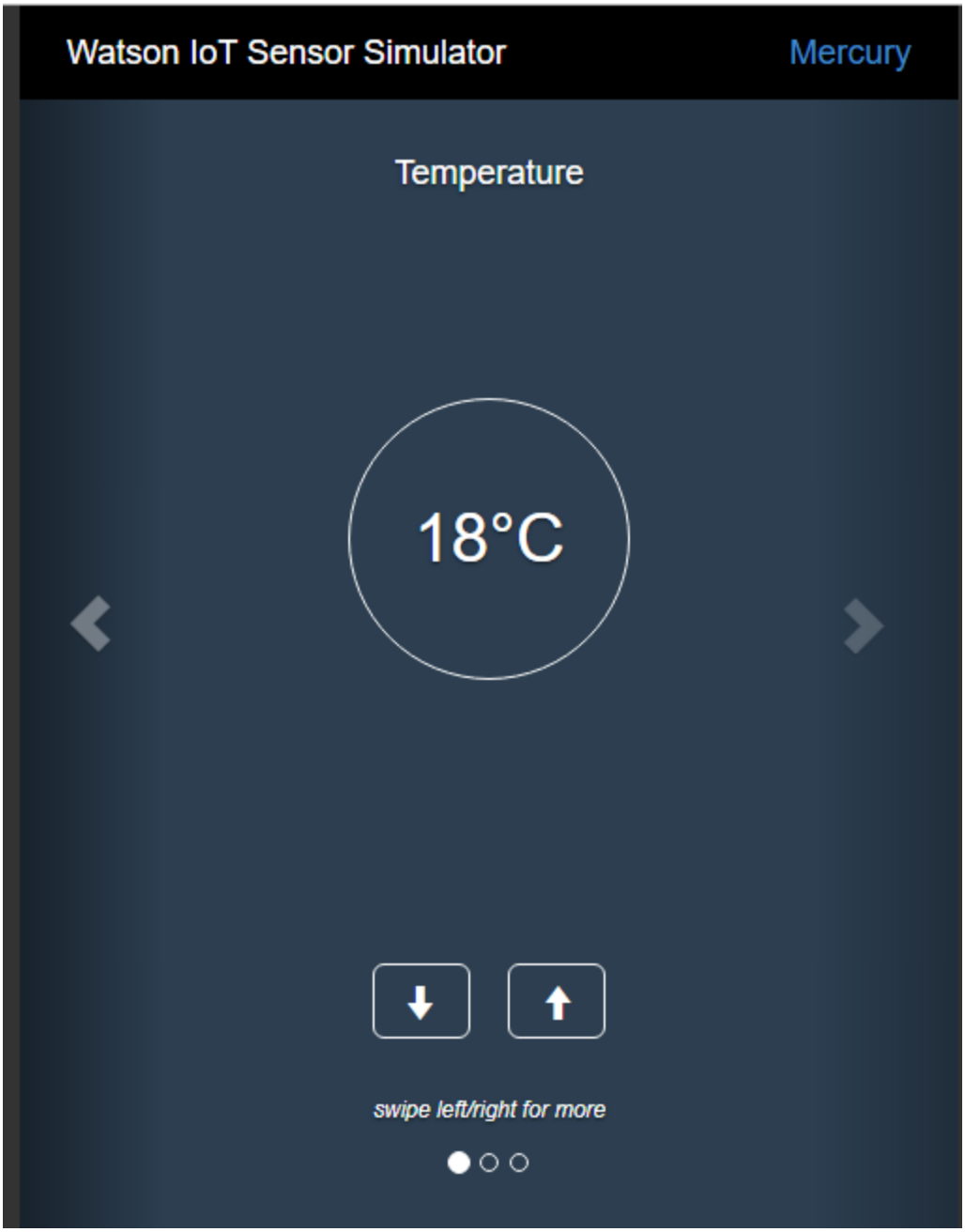

This figure shows that the IOT sensor connected to IOT platform.

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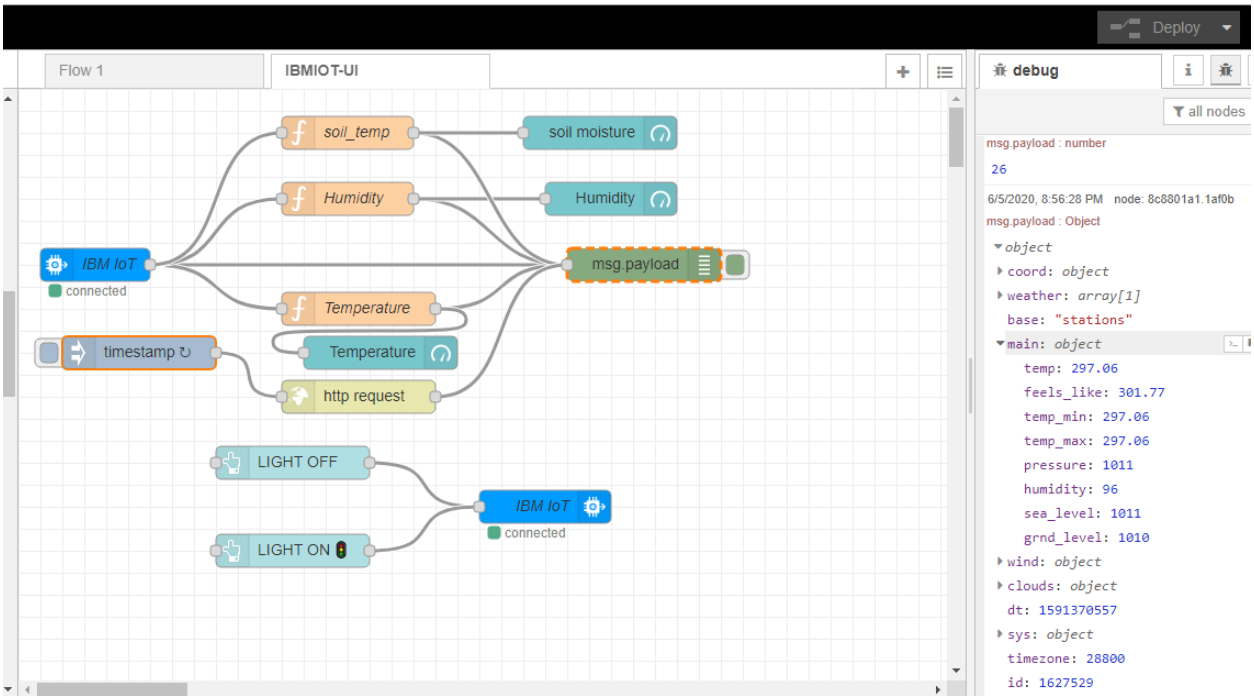
3. Open weather API:

Open weather API is online services that provide current weather data, forecasts etc.

It also provide a particular city weather data. From the weather, the farmer can supply the sufficient water to the crop depending upon the current weather.

In node-red, using http request the particular city's current weather can be easily known i.e., temperature, humidity, soil moisture.



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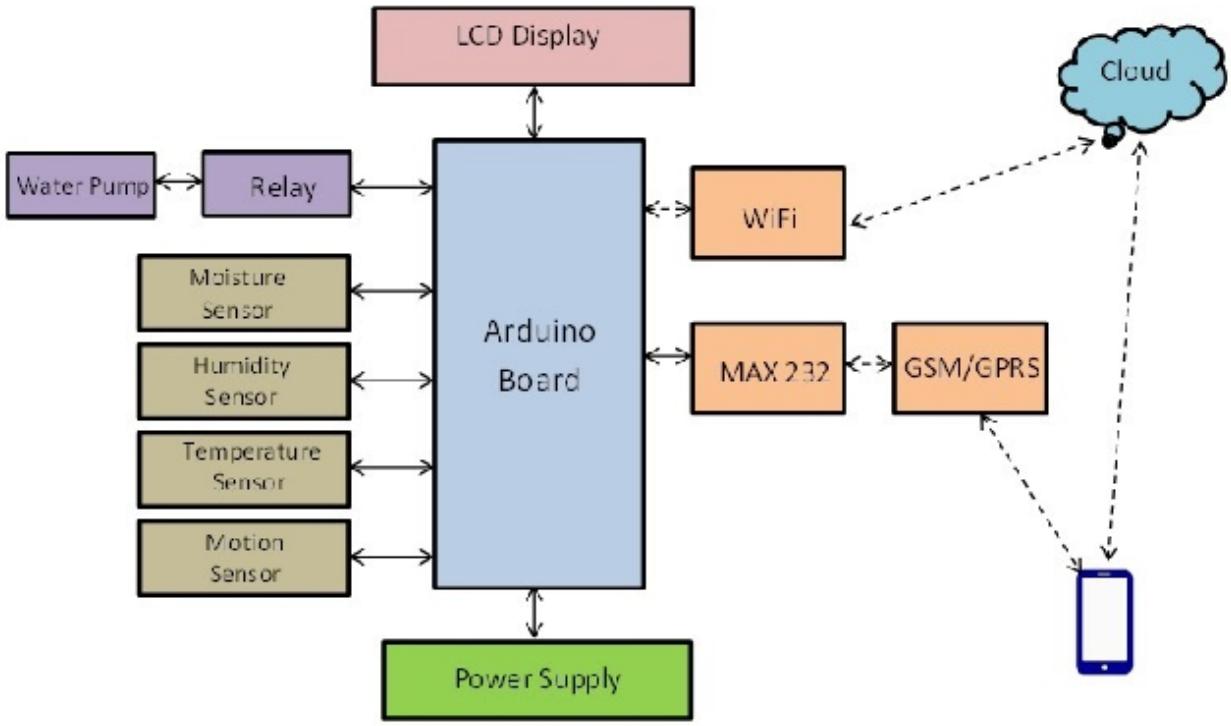
The above figure shows the entire details of the process.

4. IDLE python:

By writing a python code, the motors can be easily controlled.

Motor on and off buttons can also be created in node red platform.

This python code helps to subscribe to IBM IOT platform and get the commands from node red dashboard.



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The above figure is model idea of this smart agriculture system project. with the help of IBM cloud, node red, Python code the commands of motor i.e., motor on and off is received. This should be received via python code output.

By creating a web app, this all functions should be performed. Having a mobile phone is enough for farmers to monitor the crop.

ADVANTAGES:

- Farmers can monitor their crops from anywhere.
- This should be helpful in global climatic change condition.
- This should provide a good and increased production of crops.
- Solar powered and mobile operated pumps save cost of electricity.

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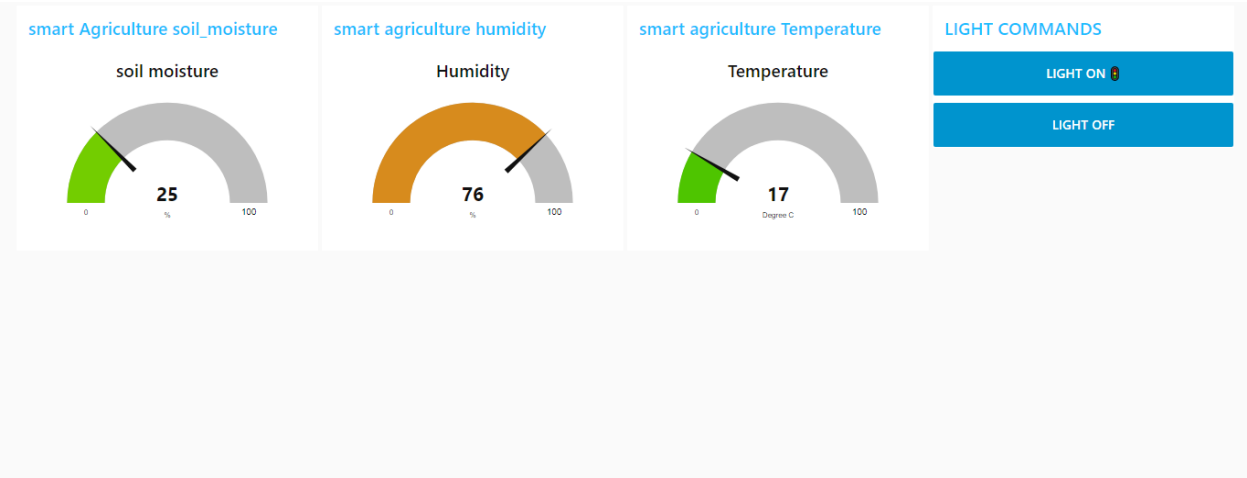

This figure shows the node red UI. By giving commands to the motor, the signal will be displayed in python code output.

THANK YOU