

## 1)INTRODUCTION:-

### 1.1) OVERVIEW:-

In this "SMART AGRICULTURE" project, we have created a UI based on iot using nodered, IBM cloud services and ibm iot sensor.we have connected the iot sensor virtually to IBM cloud and UI.

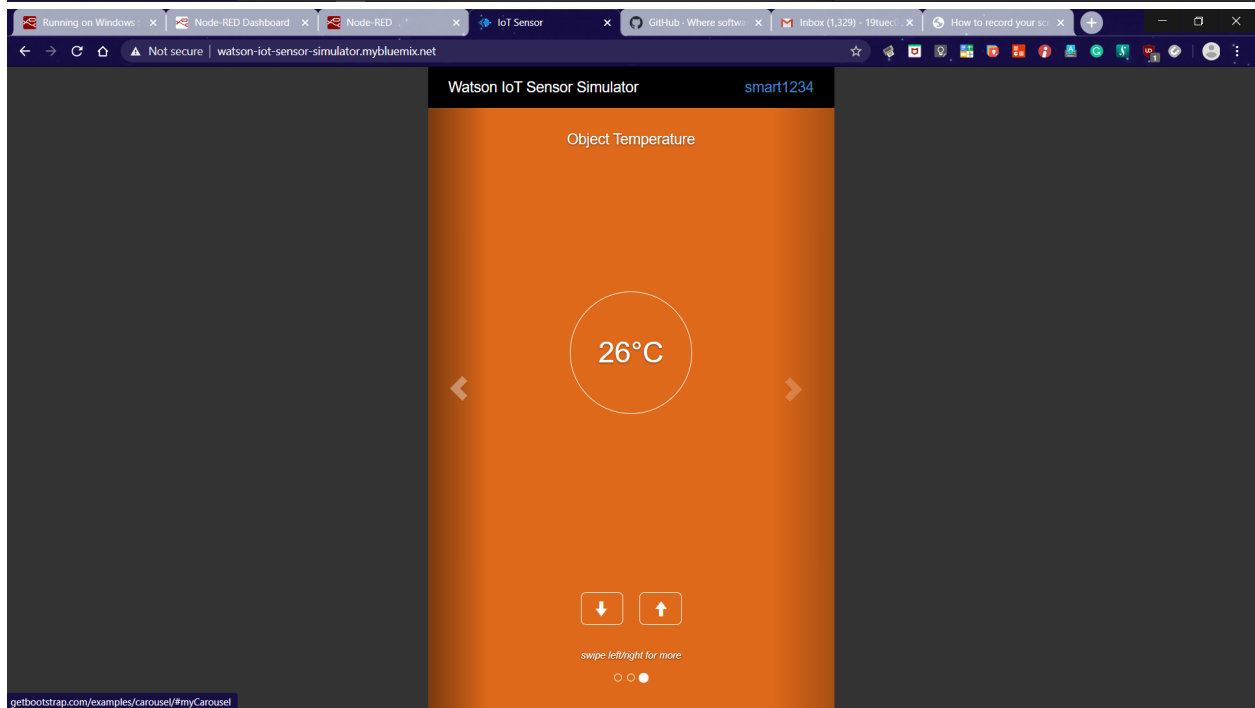
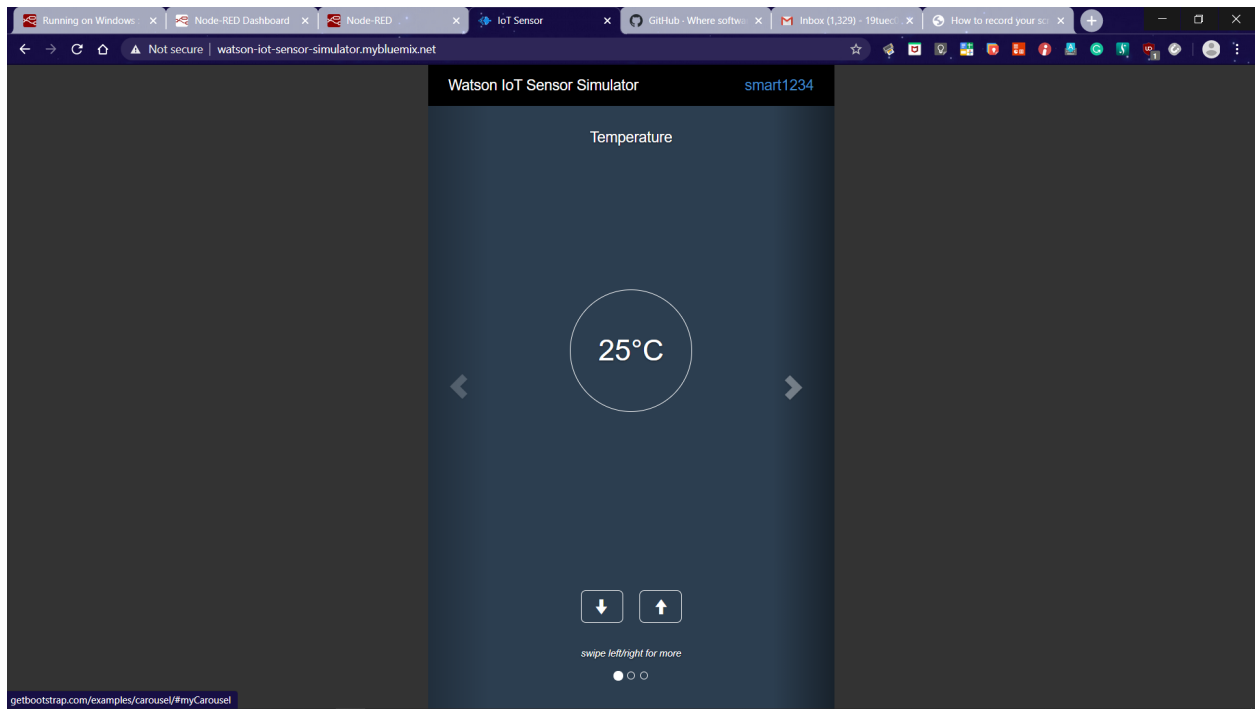
1.2) Purpose:- -This project focuses on agriculture, and this enables the farmers to monitor the field parameters and control the motors for irrigation from anywhere. - This technology would ultimately improve the yield and limit the water usage to a greater extent, as farmers can consider the field parameters such as moisture, temp and humidity and climate parameters from open weather api before irrigation.

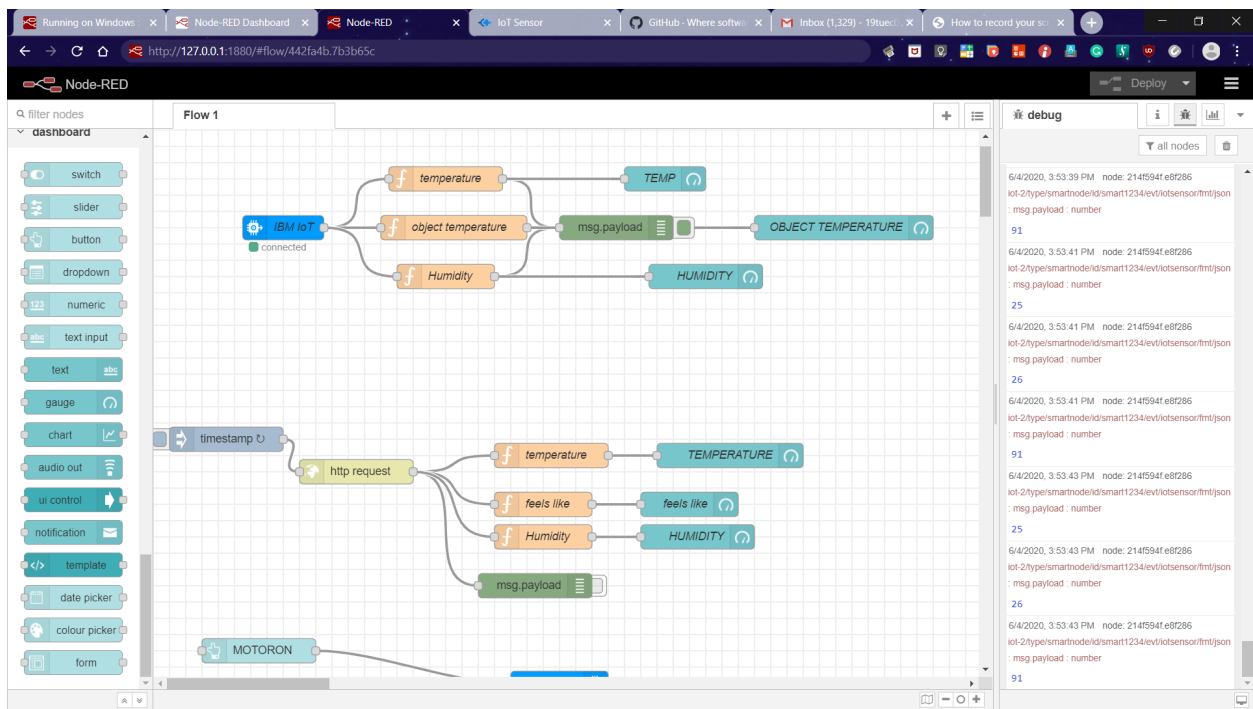
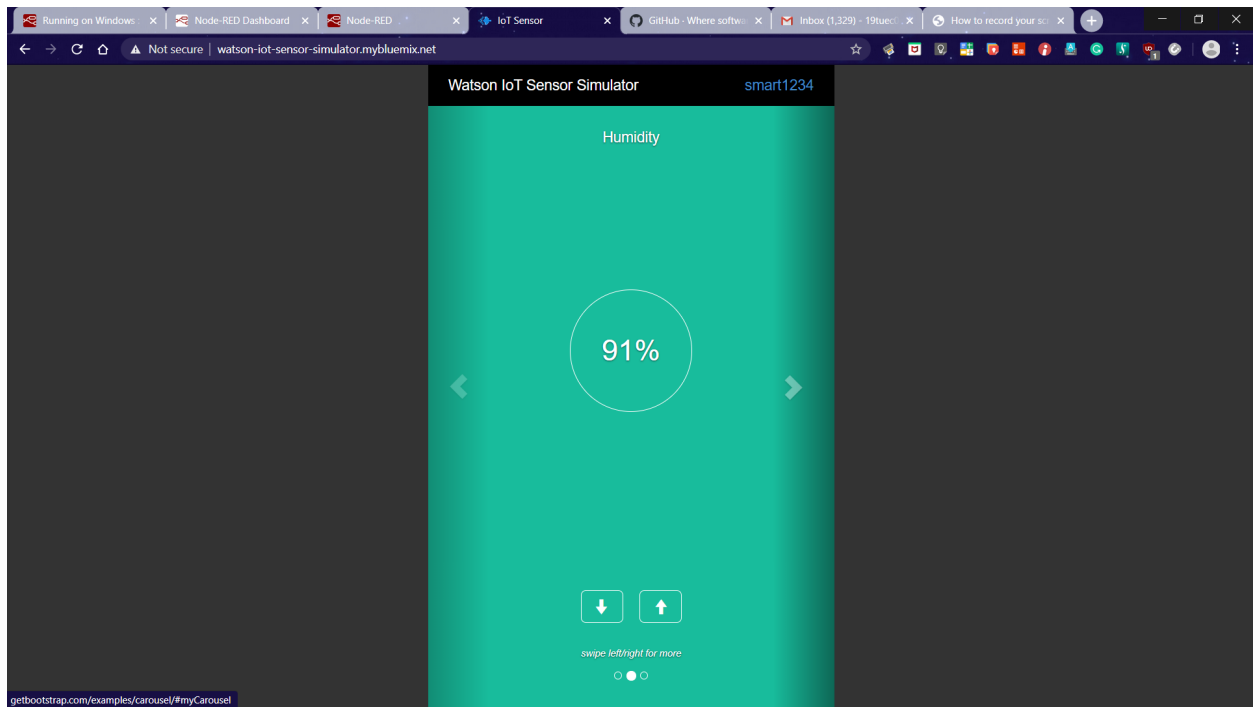
## 2.LITERATURE SURVEY:-

### 2.1)Existing problem:-

Farmers of today are not aware about changing climatic conditions due to global warming. This makes them irrigate crops without considering the weather forecast. They even don't consider their own field parameters before irrigation. This causes crop failure and water wastage. - This issue causes both water waste and crop failure to farmers and pushes them in high interest loans.

2.2)Proposed solution. : -Our solution is to provide a UI to farmers, through which they can monitor the field parameters (humidity, temperature, moisture), weather data from open weather api. This UI also provides two control buttons, using which they can control motors for irrigation. - This would reduce water wastage and increase productivity.





EXPERIMENTAL INVESTIGATION: -

The screenshot shows the Spyder Python IDE interface. The main editor displays a Python script named `temp.py` located at `C:\Users\Arto Pravin\spyder-py3\temp.py`. The script imports `time`, `sys`, and `ibmiotf.application` and `ibmiotf.device`. It defines variables for `organization`, `deviceType`, `deviceId`, `authMethod`, and `authToken`. A function `myCommandCallback(cmd)` is defined to handle incoming commands like 'motoron', 'motorooff', and 'setInterval'. The script then attempts to create an `ibmiotf.device.Client` object and connect to the device. A `try` block handles the connection, and an `except` block catches any exceptions, printing an error message and exiting the program.

The console window at the bottom shows the execution logs. It displays a series of messages indicating the device's connection status, including 'Unexpected disconnect from the IBM Watson IoT Platform' and 'Connected successfully'. The logs also show the device's IP address and the time of each event.

The UI was created using NODERED, all the nodes where configured and the UI was run.

- This UI was able to display the different gauges to show the fieldparamters.
- This UI was also able to display the data from open weather api by gauges.
- This UI provided two control buttons fro controlling the motor,and when one of any these two buttons are clicked, this returned "motor-on command received" in the idle where the python code was ran. This act show that the UI and the code are connected.

5)RESULT: -Thus the required UI with complete required specifications in created and Tested

6)disadvantage This UI can't make its own wiser decision, which would be very useful for illiterate farmers.

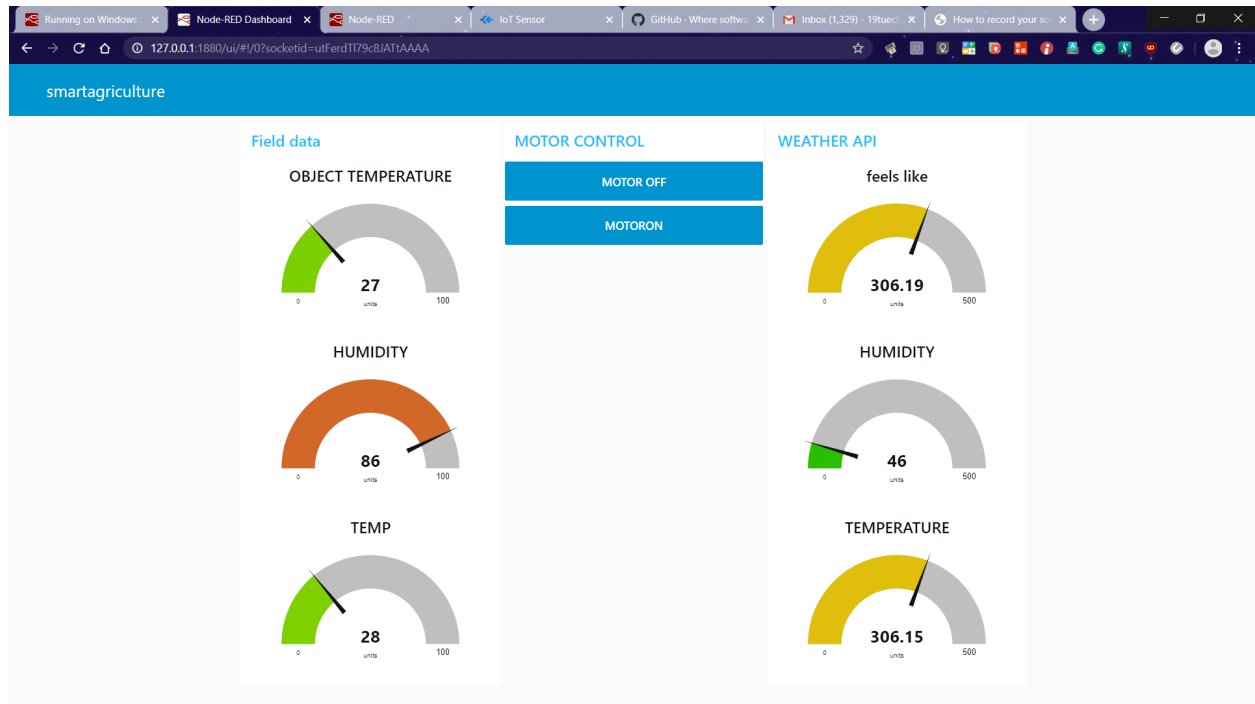
ADVANTAGES: -This UI saves time for farmers as they controll and monito their farm without visiting the farm .this makes them concentrate in other activities to gain money.

7)APPLICATIONS: -In Agricultural and Horticultural fields.

8)CONCLUSION: I strongly beleive that, this project would boost up the yield to feed growing population, and save water

. 9)FUTURE SCOPE: -This UI would further devoloped to provide wise decision for

illiterate farmers.



10)BIBLIOGRAPHY: -Webinars by" The Smart Bridge" mentor

