

Sprint-3

Node-Red Service

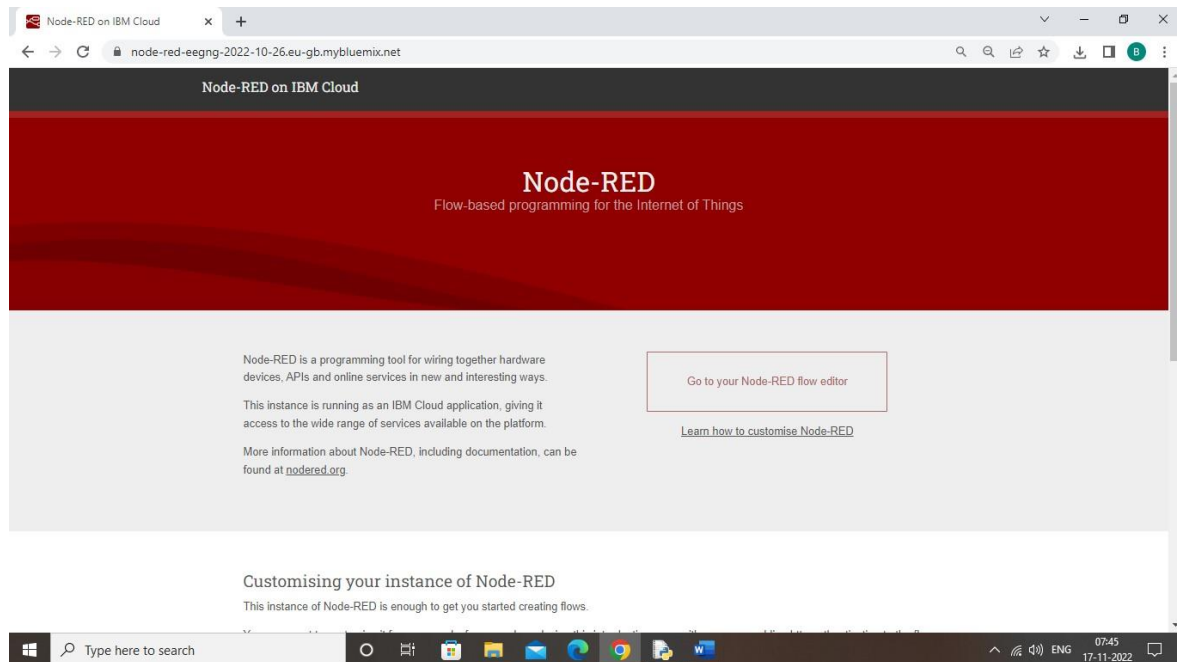
Team ID	PNT2022TMID37069
Project Name	IOT BASED CROP PROTECTION SYSTEM FOR AGRICULTURE

Description:

The sensor data's (generated by python scripts) which are send to IBM IOT platform which is received through the node red service to create an user interface to visualize the sensor data and alerts given and also to control the motors or sprinklers in the cropland (python code). The user can view this dashboard from any browser at anywhere. Through this node red service creating an http URL to access sensor data's and control motors or sprinklers through external mobile application.

1.Created an node red application to start node red service :

Node red service has been created through IBM cloud service.



2. Adding IBM IOT node to get device event datas from ibm iot platform:

IBM IOT node is added then API key and Authentication node is given.

Api key : a-zf801i-t0p8y2rkov , Authentication token : yF-U_jKEuiB@xLuh1e

The screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow named 'Flow 1' with a central 'connected' node. This node is connected to multiple sensor nodes (Temp, PH, Animal, Flame, Moisture, Water) and alert nodes (Alert1 through Alert6). Each sensor node is connected to a corresponding chart or gauge node. The right sidebar shows the 'Edit IBM IoT node' configuration panel. The 'Properties' section includes fields for Name (Bharathi), API Key (a-zf801i-t0p8y2rkov), API Token (yF-U_jKEuiB@xLuh1e), and Server Name (orgid.messaging.internetofthings.ibmcloud.com). The 'Scalable' checkbox is checked, and the 'Keep Alive' interval is set to 60 seconds. The 'Use Clean Session' checkbox is also checked. The bottom status bar shows the system time as 06:13 on 17-11-2022.

3. Nodes are added to show the sensor data's in the node red UI or dashboard.

Link for flow editor:

<https://node-red-eegng-2022-10-26.eu-gb.mybluemix.net/red/#flow/76c39a5e39214608>

The screenshot shows the Node-RED web interface with the same flow as the previous image. The flow is designed to receive data from the IBM IoT platform and display it in the Node-RED UI. The 'connected' node is connected to a 'http' node, which then feeds into a series of nodes for each sensor (Temp, PH, Animal, Flame, Moisture, Water) and alert (Alert1 through Alert6). Each sensor node is connected to a corresponding chart or gauge node. The right sidebar shows the 'Edit IBM IoT node' configuration panel, which is identical to the one in the previous image. The bottom status bar shows the system time as 06:08 on 17-11-2022.

4. charts and guage node are used to visualize the data:

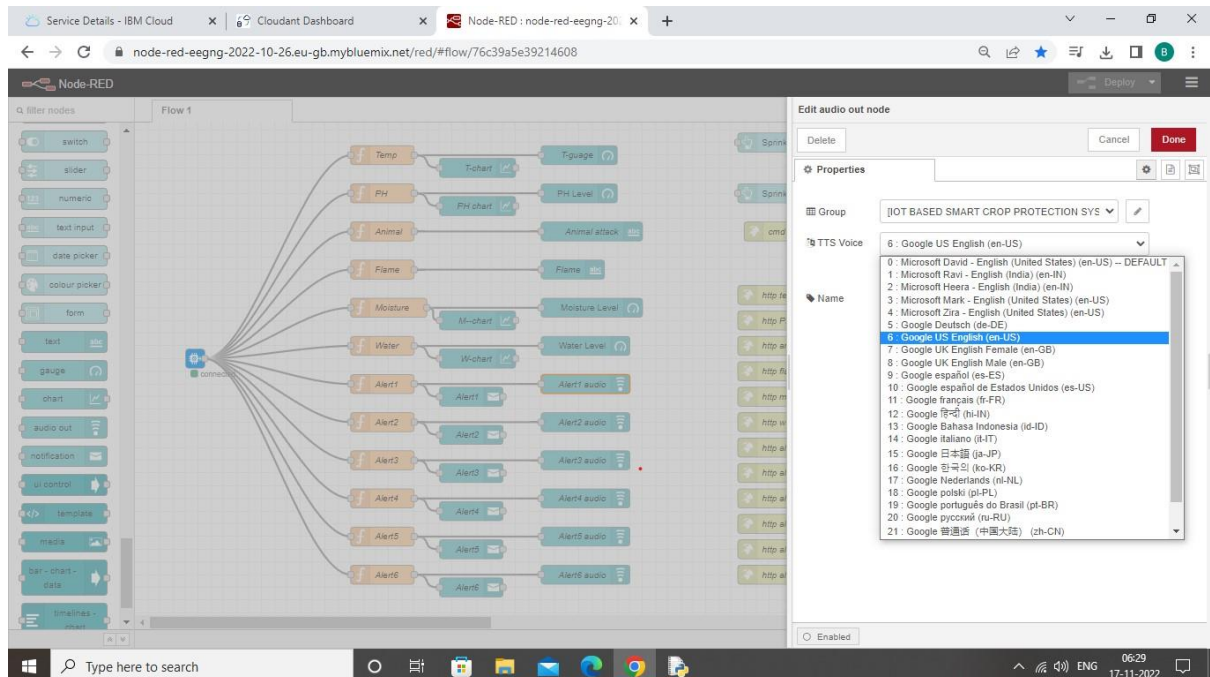
The screenshot shows the Node-RED web interface. On the left, the 'common' and 'function' node palettes are visible. The main workspace contains a flow starting from a 'connected' node, which branches into several sensor nodes: Temp, PH, Animal, Flame, Moisture, Water, and Alert1 through Alert6. Each sensor node is connected to a corresponding visualization node: T-gauge, PH Level, Animal attack, Flame, Moisture Level, Water Level, and Alert1 audio through Alert6 audio. On the right, the 'Edit chart node' panel is open for the 'T-chart' node. The properties include: Group (IOT BASED SMART CROP PROTEC), Size (6 x 3), Label (Temperature chart), Type (Line chart), X-axis (last 10 minute OR 1000 points), X-axis Label (HH:mm:ss), Y-axis (min 0 max 80), Legend (None), Series Colours (a grid of colored squares), and Name (T-chart). The 'Enabled' checkbox is checked.

5. Notification node are added to show the alert notification:

This screenshot shows the same Node-RED flow as the previous one, but with an additional 'notification' node added at the end of the flow, after the 'Alert6 audio' node. The 'Edit notification node' panel is open on the right. The properties include: Layout (OK / Cancel Dialog), Send to all browser sessions (checked), Default action label (OK), Secondary action label (optional label for Cancel button), Topic (Alert1), and Name (Alert1). A note at the bottom states: 'Note: checking Accept raw HTML/JavaScript can allow injection of code. Ensure the input comes from trusted sources.' The 'Enabled' checkbox is checked.

6. Audio output node is added to give voice alert.

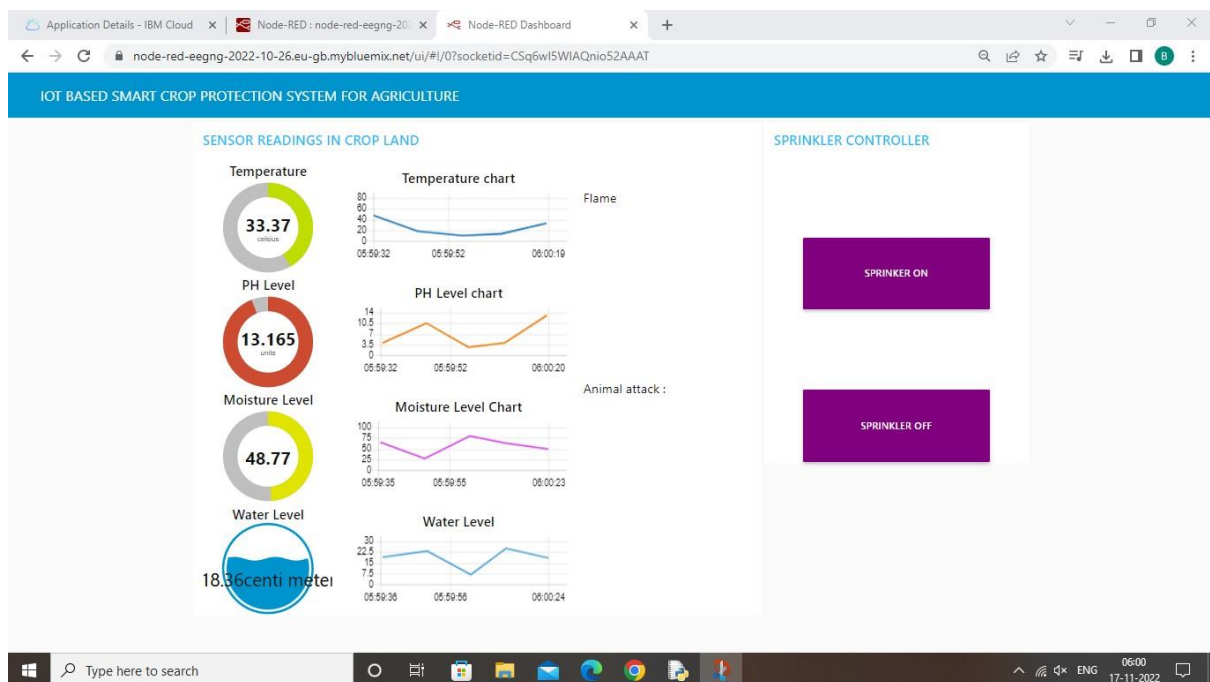
Google US english voice is used to give alert.

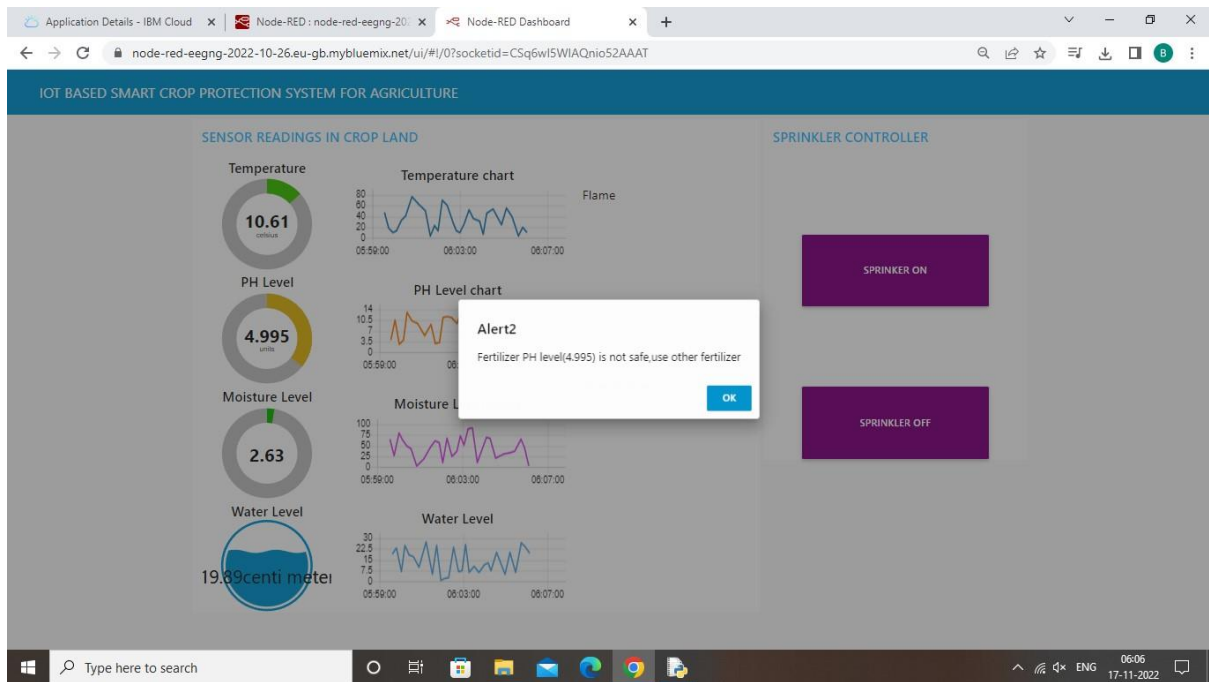


7. Node red dashboard or User Interface:

Dashboard Link:

<https://node-red-eegng-2022-10-26.eu-gb.mybluemix.net/ui/#!/0?socketid=Me5yY1WWIBVyvegiAAAA>





8. Data of all flows are stored in cloudant :

