




SPRINT-2

Date	04 November 2022
TEAM ID	PNT2022TMID41544
Project Name	IoT Based smart crop Protection system for agriculture
Maximum mark	20 marks

STEP1: Download and Install NODE JS.



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Downloads


Latest LTS Version: 18.12.1 (includes npm 8.19.2)


Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS
Recommended For Most Users

Current
Latest Features


Windows Installer
node-v18.12.1-x64.msi


macOS Installer
node-v18.12.1.pkg


Source Code
node-v18.12.1.tar.gz

Windows Installer (.msi)
Windows Binary (.zip)
macOS Installer (.pkg)
macOS Binary (.tar.gz)
Linux Binaries (x64)
Linux Binaries (ARM)
Source Code

32-bit	64-bit
32-bit	64-bit
64-bit / ARM64	
64-bit	ARM64
64-bit	
ARMv7	ARMv8
node-v18.12.1.tar.gz	

EN English (United States)



STEP2: Setup node.js and configure command prompt for error check.open node-red from the generated link.

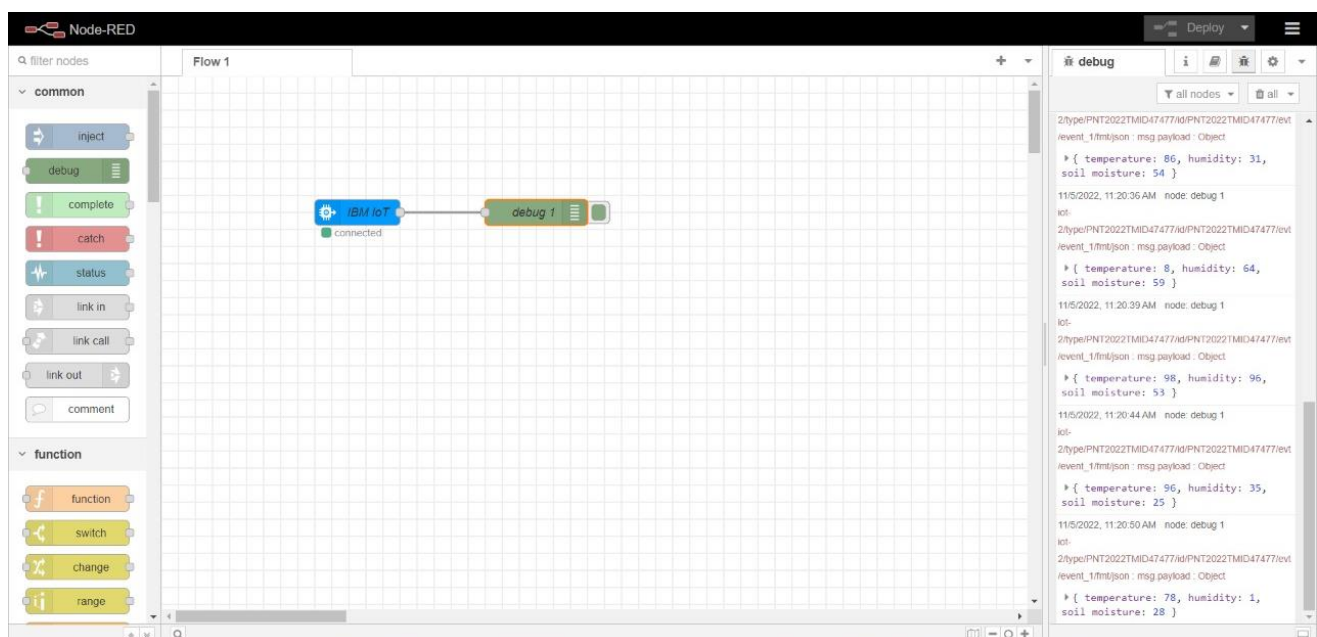
```
node-red
4 Nov 18:48:05 - [info] Node-RED version: v3.0.2
4 Nov 18:48:05 - [info] Node.js version: v18.12.0
4 Nov 18:48:05 - [info] Windows_NT 10.0.19044 x64 LE
4 Nov 18:48:26 - [info] Loading palette nodes
4 Nov 18:48:44 - [info] Settings file : C:\Users\ELCOT\.node-red\settings.js
4 Nov 18:48:45 - [info] Context store : 'default' [module=memory]
4 Nov 18:48:45 - [info] User directory : \Users\ELCOT\.node-red
4 Nov 18:48:45 - [warn] Projects disabled : editorTheme.projects.enabled=false
4 Nov 18:48:45 - [info] Flows file : \Users\ELCOT\.node-red\flows.json
4 Nov 18:48:45 - [info] Creating new flow file
4 Nov 18:48:45 - [warn]

-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----
4 Nov 18:48:45 - [warn] Encrypted credentials not found
4 Nov 18:48:45 - [info] Starting flows
4 Nov 18:48:46 - [info] Started flows
4 Nov 18:48:46 - [info] Server now running at http://127.0.0.1:1880/
```

STEP3: Connect ibmiot in and Debug 1 and Deploy.



STEP4: Edit gauge node (Here the gauge nodes are named as Temperature, Humidity and Soil moisture).

The screenshot shows the Node-RED interface with a flow named 'Flow 1'. A gauge node is connected to an 'IBM IoT' node. The 'Edit gauge node' dialog is open, showing the following properties:

- Group: [CROP PRODUCTION] MONITORIN
- Size: auto
- Type: Gauge
- Label: gauge
- Value format: {{value}}
- Units: units
- Range: min 0, max 10
- Colour gradient: Green, Yellow, Red
- Sectors: 0, optional, optional, 10
- Class: Optional CSS class name(s) for widget
- Enabled: ☐

The right sidebar shows the 'info' tab with details about the gauge node, including its ID '2fa1b50866f72a6e' and type 'ui_gauge'.

The screenshot shows the Node-RED interface with a flow named 'Flow 1'. A gauge node is connected to an 'IBM IoT' node. The 'Edit gauge node' dialog is open, showing the following properties:

- Group: [CROP] MONITORING
- Size: auto
- Type: Gauge
- Label: TEMPERATURE
- Value format: {{value}}
- Units: C
- Range: min 0, max 100
- Colour gradient: Green, Yellow, Red
- Sectors: 0, optional, optional, 100
- Class: Optional CSS class name(s) for widget
- Name:
- Enabled: ☐

The right sidebar shows the 'debug' tab with a log of messages. The messages are JSON objects containing temperature, humidity, and soil moisture data.

```
2/type/PNT2022TMD47477/Id/PNT2022TMD47477/evt
/event_1/fmt/json : msg.payload : Object
  { temperature: 28, humidity: 26,
    soil moisture: 75 }
11/5/2022, 11:24:38 AM node: debug 1
iot:
2/type/PNT2022TMD47477/Id/PNT2022TMD47477/evt
/event_1/fmt/json : msg.payload : Object
  { temperature: 2, humidity: 82,
    soil moisture: 53 }
11/5/2022, 11:24:44 AM node: debug 1
iot:
2/type/PNT2022TMD47477/Id/PNT2022TMD47477/evt
/event_1/fmt/json : msg.payload : Object
  { temperature: 45, humidity: 95,
    soil moisture: 82 }
11/5/2022, 11:24:50 AM node: debug 1
iot:
2/type/PNT2022TMD47477/Id/PNT2022TMD47477/evt
/event_1/fmt/json : msg.payload : Object
  { temperature: 33, humidity: 40,
    soil moisture: 90 }
11/5/2022, 11:24:56 AM node: debug 1
iot:
2/type/PNT2022TMD47477/Id/PNT2022TMD47477/evt
/event_1/fmt/json : msg.payload : Object
  { temperature: 83, humidity: 2,
    soil moisture: 86 }
```

STEP5: Simulated program to get the random values.

The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons. The main area displays 'Device Drilldown - PNT2022TMID47477'. Under 'Recent Events', there is a 'State' section with a table of data points:

Property	Value	Type
temperature	72	Number
humidity	49	Number
soil moisture	99	Number

Below the table, there is a 'Device Information' section. On the right, a modal window for 'Device Type: PNT2022TMID47477' is open, showing 'Events' configuration. The 'Event type name' is 'event_1'. The 'Schedule' is set to '20' and 'Every Minute'. The 'Payload' is a JSON object:

```
{
  "temperature": random(0, 100),
  "humidity": random(0, 100),
  "soil moisture": random(0, 100)
}
```

The modal also includes buttons for 'Send', 'Upload a CSV file', 'Cancel', and 'Save'.

STEP6: Generate debug message from IBM Watson IoT Platform and connect the nodes.

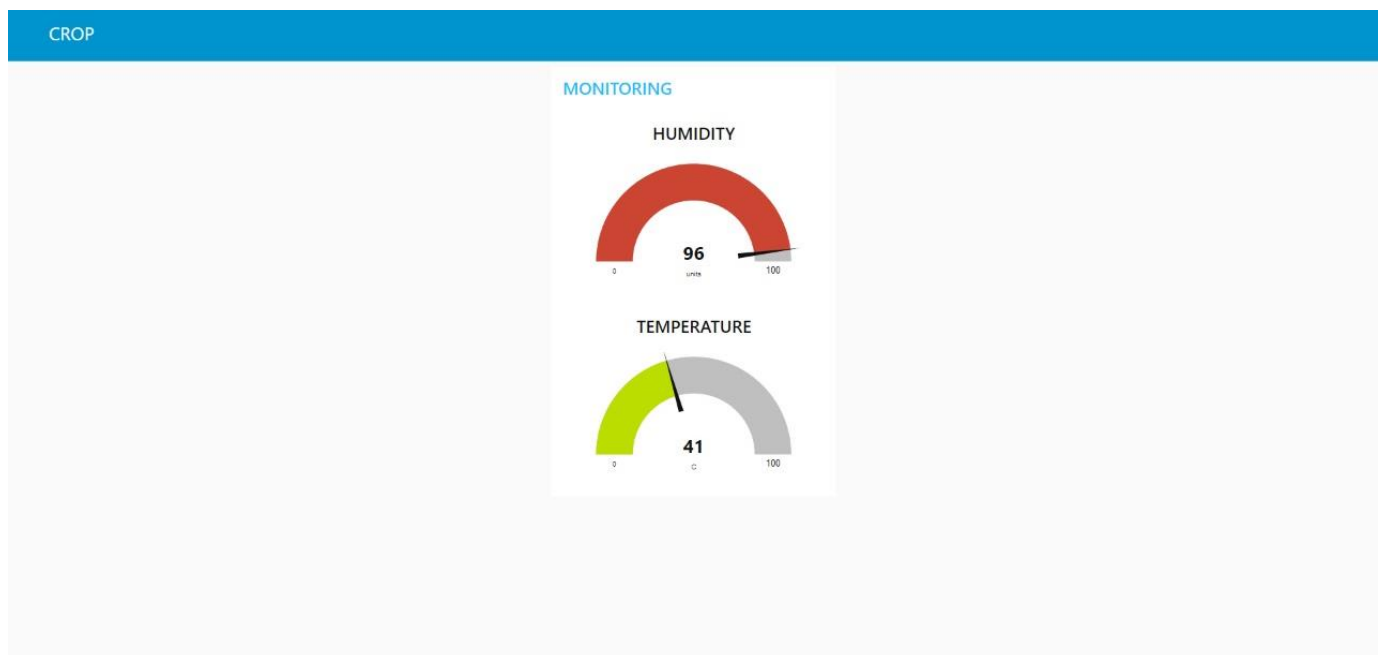
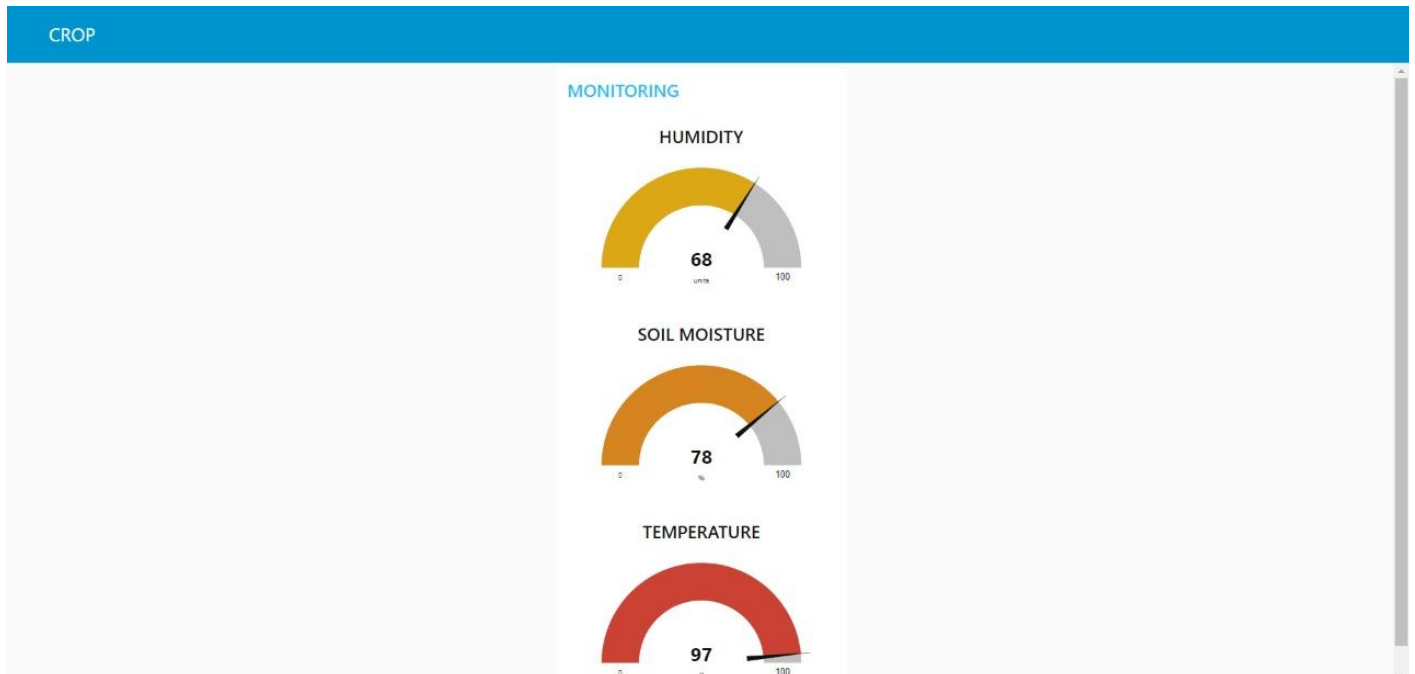
The screenshot shows the Node-RED interface. The main workspace displays a flow diagram with the following nodes:

- IBM IoT** (connected)
- msg.payload**
- TEMPERATURE NODE** (function node)
- TEMPERATURE** (output node)
- HUMIDITY NODE** (function node)
- HUMIDITY** (output node)
- SOIL MOISTURE NODE** (function node)
- SOIL MOISTURE** (output node)

The debug console on the right shows the following messages:

```
(body:line 1)"
11/5/2022, 3:42:06 PM node: SOIL MOISTURE NODE
function: (error)
"SyntaxError: Unexpected identifier
(body:line 1)"
11/5/2022, 3:43:20 PM node: SOIL MOISTURE NODE
function: (error)
"SyntaxError: Unexpected identifier
(body:line 1)"
11/5/2022, 3:47:22 PM node: SOIL MOISTURE NODE
function: (error)
"SyntaxError: Unexpected identifier
(body:line 1)"
11/5/2022, 3:53:15 PM node: msg.payload
iot-
2/type/PNT2022TMID47477/Id/PNT2022TMID47477/ev
/event_1/mqttjson : msg.payload : Object
{ temperature: 46, humidity: 27,
soil moisture: 45 }
11/5/2022, 3:53:17 PM node: msg.payload
iot-
2/type/PNT2022TMID47477/Id/PNT2022TMID47477/ev
/event_1/mqttjson : msg.payload : Object
{ temperature: 31, humidity: 2,
soil moisture: 19 }
11/5/2022, 3:53:20 PM node: msg.payload
iot-
```

STEP7: Generate the some output from recent events.



STEP8: MIT APP inventor to design the APP.

