

IOT ENABLED SMART FARMING APPLICATION

Sprint delivery-2

TEAMID: **PNT2022TMID03145**

8.IoT Simulator:

In our project for simulation we have used Watson iot platform for simulation. Watson IoT Platform features Analytics and Watson APIs Completely manage your IoT landscape and make better business decisions. Using a secure, smart and scalable platform as the hub of your IoT, get real-time analysis of user, machine and system-generated data, including speech, text video and social sentiment.

. The link for simulator- <https://www.ibm.com/cloud/watson-iot-platform/details>

9.Open weather API:

Open Weather platform is a set of elegant and widely recognizable APIs. Powered by convolutional machine learning solutions, it is capable of delivering all the weather information necessary for decision-making for any location on the globe.

Website link: <https://openweathermap.org/appid>

10.Building project:

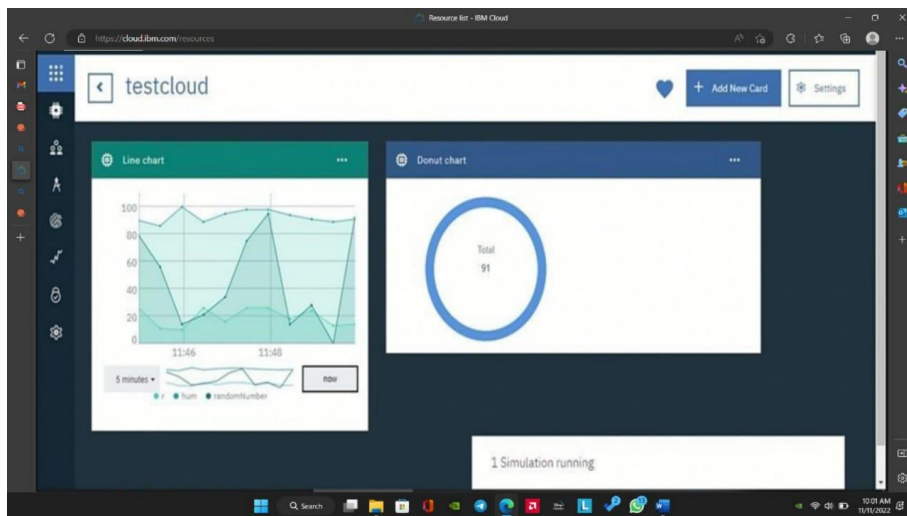
Give the credentials of your device in IBM Watson IoT Platform

My credentials given to simulator are: OrgID: 957tf2 api: a-957tf2f5rg4qowe2 Device type: wxyz token:

3agoaaQHNWFEgUYT4?

Device ID : 7687132

Device Token : 87412864



You can see the received data in graphs by creating cards in Boards tab You will receive the simulator data in cloud You can see the received data in Recent Events under your device .

```
{  
  "d": {  
    "name": "wxyz",  
    "temperature": 25,  
    "humidity": 82,  
    "Moisture ": 15  
  }  
}
```

IBM Watson IoT Platform

https://fbaafw.internetofthings.ibmcloud.com/dashboard/devices/browse

prateekram00@gmail.com
ID: fbaafw

Browse Action Device Types Interfaces

Add Device

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Disconnected	abcd	Device	Nov 15, 2022 8:47 PM	
8838547703	Disconnected	project	Device	Nov 16, 2022 6:28 PM	

Items per page 50 | 1-2 of 2 items

1 of 1 page

0 Simulations running

11. Collecting IBM cloud data by NODE-Red:

Below steps are used to collect the data from IBM cloud to NODE-Red platform

Node-RED

Flow 1

IBM IoT

connected

Motor Switch On

Motor Switch Off

mit app control

mit app Event

mit app

Edit ibmiot in node

Delete Cancel Done

Properties

Authentication API Key

API Key IBMIOT-APIKEY

Input Type Device Event

Device Type All or abcd

Device Id All or 7654321

Event All or +

Format All or json

QoS 0

Name IBM IoT

Enabled

debug

all nodes all

```
{ temp: 94, Humid: 87 }
```

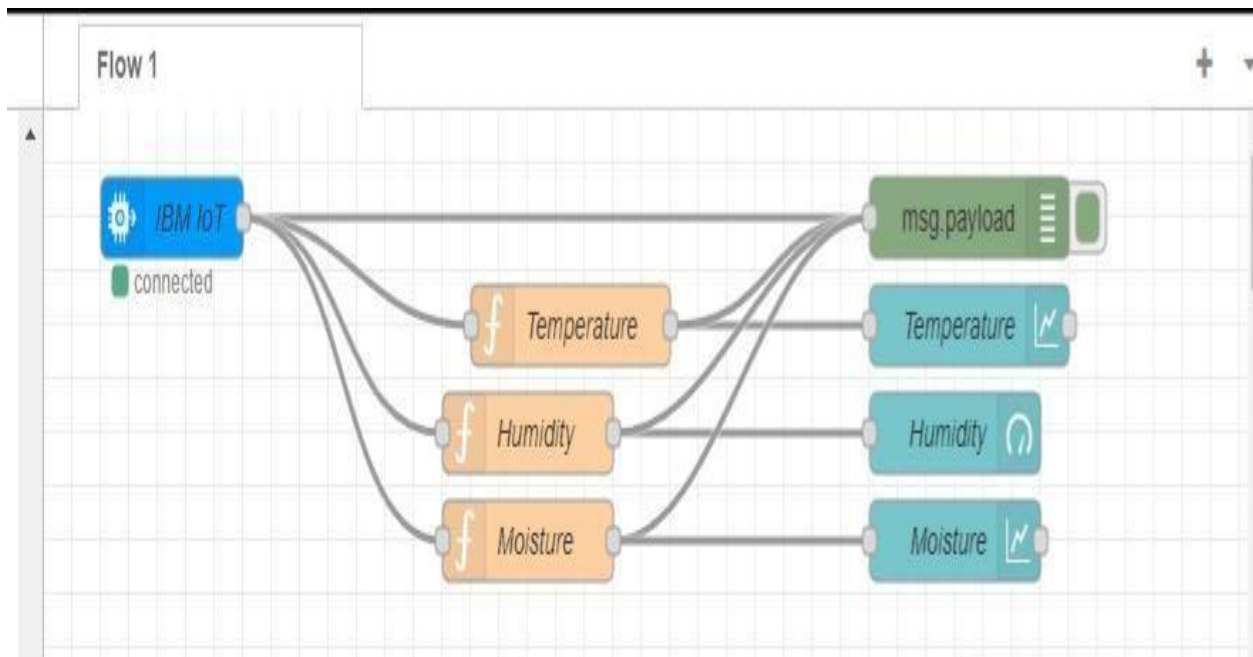
6/11/2022, 12:24:46 pm node: e82c8ed2538304c4
iot-2/hype/abcd/7654321/ev/IoTSensor/fmt/json :
msg.payload : number
94

6/11/2022, 12:24:46 pm node: e82c8ed2538304c4
iot-2/hype/abcd/7654321/ev/IoTSensor/fmt/json :
msg.payload : number
87

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2/hype/abcd/7654321/ev/IoTSensor/fmt/json :
msg.payload : Object
{ temp: 106, Humid: 76 }

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2/hype/abcd/7654321/ev/IoTSensor/fmt/json :
msg.payload : number
106

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2/hype/abcd/7654321/ev/IoTSensor/fmt/json :
msg.payload : number
76



Collecting Data From OpenWeather API:

The node-red collects data from OpenWeather API

```
format:{"coord":{"lon":79.85,"lat":14.13},"weather":[{"id":803,"main":"Clouds","description":"brokenclouds","icon":"04n"}],"base":"stations","main":{"temp":307.59,"feels_like":305.5,"temp_min":307.59,"temp_max":307.59,"pressure":1002,"humidity":35,"sea_level":1002,"grnd_level":1000},"wind":{"speed":6.23,"deg":170},"clouds":{"all":68},"dt":1589991979,"sys":{"country":"IN","sunrise":1589933553,"sunset":1589979720},"timezone":19800,"id":1270791,"name":"Gūdūr","cod":200}
```

```
var temperature = msg.payload.main.temp;
```

```
temperature = temperature-273.15;
```

```
return {payload : temperature.toFixed(2)};
```

in this code, the temperature parameter is initially in kelvin and converted to Celsius

Node-RED

https://nodered.org

Node-RED

Flow 1

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function

IBM IoT

connected

Motor Switch On

Motor Switch Off

mit app control

MIT app Event

MIT app

Edit ibmiot in node

Delete Cancel Done

Properties

Authentication API Key

API Key IBMIOT APIKEY

Input Type Device Event

Device Type All or abcd

Device Id All or 7654321

Event All or +

Format All or json

QoS 0

Name IBM IoT

Enabled

debug

all nodes all

{ temp: 94, Humid: 87 }

6/11/2022, 12:24:46 pm node: e82c8ed2538304c4
iot-2type/abcd/7654321/ev4/iotSensor/fmt/json :
msg.payload : number
94

6/11/2022, 12:24:46 pm node: e82c8ed2538304c4
iot-2type/abcd/7654321/ev4/iotSensor/fmt/json :
msg.payload : number
87

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2type/abcd/7654321/ev4/iotSensor/fmt/json :
msg.payload : Object
{ temp: 106, Humid: 76 }

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2type/abcd/7654321/ev4/iotSensor/fmt/json :
msg.payload : number
106

6/11/2022, 12:24:56 pm node: e82c8ed2538304c4
iot-2type/abcd/7654321/ev4/iotSensor/fmt/json :
msg.payload : number
76

10:49 AM
11/11/2022