SENDING DATA FROM RASPBERRY-PI

TO IBM WATSON

Date	3 NOVEMBER 2022
Team ID	PNT2022TMID09849
Project Name	GAS LEAKAGE MONITORING AND ALERTING SYSTEM FOR INDUSTRIES

AIM:

To send sensor data (or any dummy data) from Raspberry –Pi to IBM Watson .In our case it is DHT sensors Data.

REQUIREMENTS:

HARDWARE:

- RASPBERRY-PI (3B)(WITH ETHERNET CABLE OR WIFI CONNECTED)
- USB MOUSE
- USB KEYBOARD
- VGA TO HDMI CABLE
- A MONITOR
- RASPBERRY'S POWER SUPPLY
- DHT-11 Sensor
- Connecting Wires

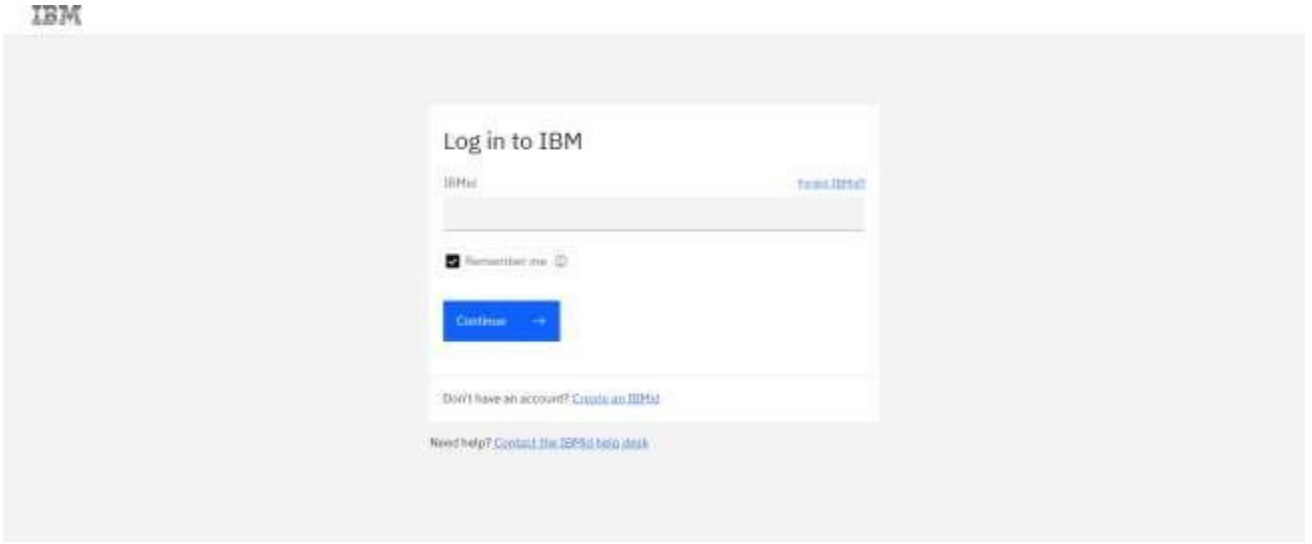
SOFTWARE:

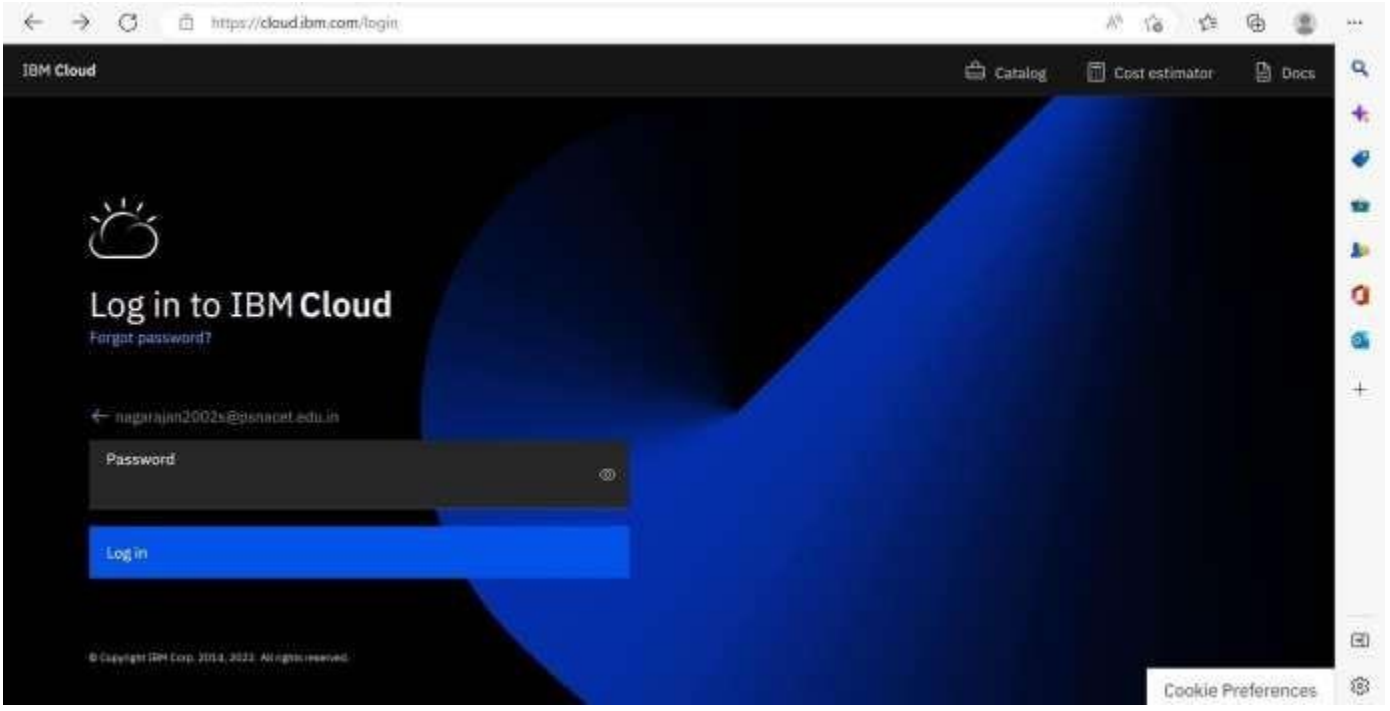
- IBM BLUEMIX ACCOUNT

STEPS TO BE FOLLOWED:

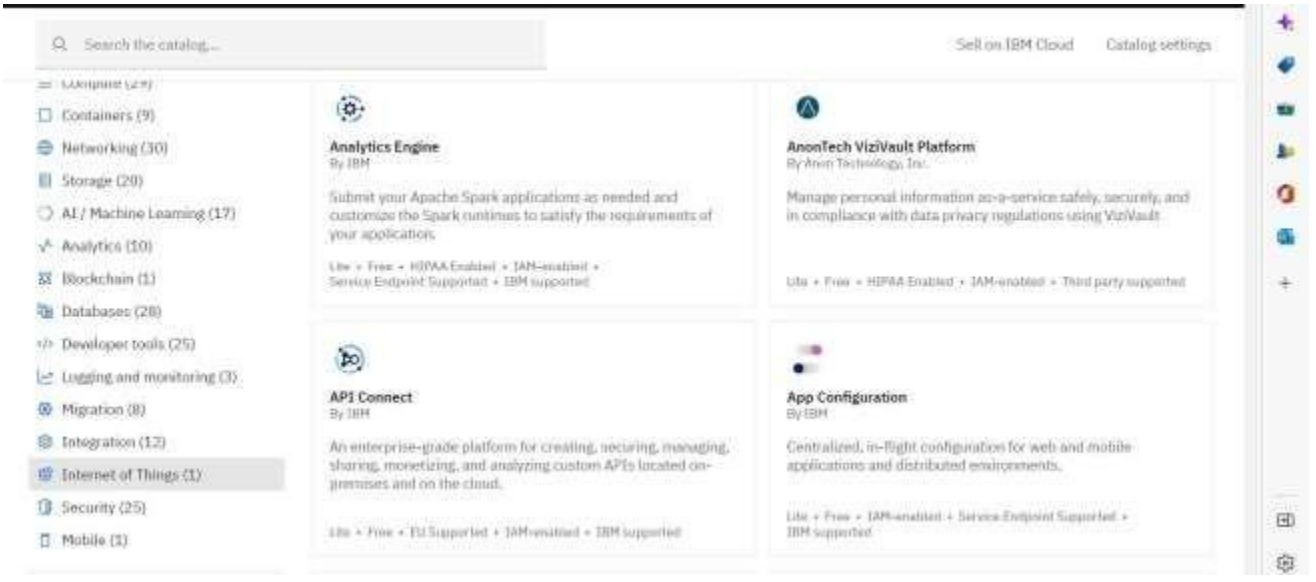
Step-1: Create a device in IBM Watson:

- Firstly, login into your IBM-Bluemix account with your e-mail ID and Password.



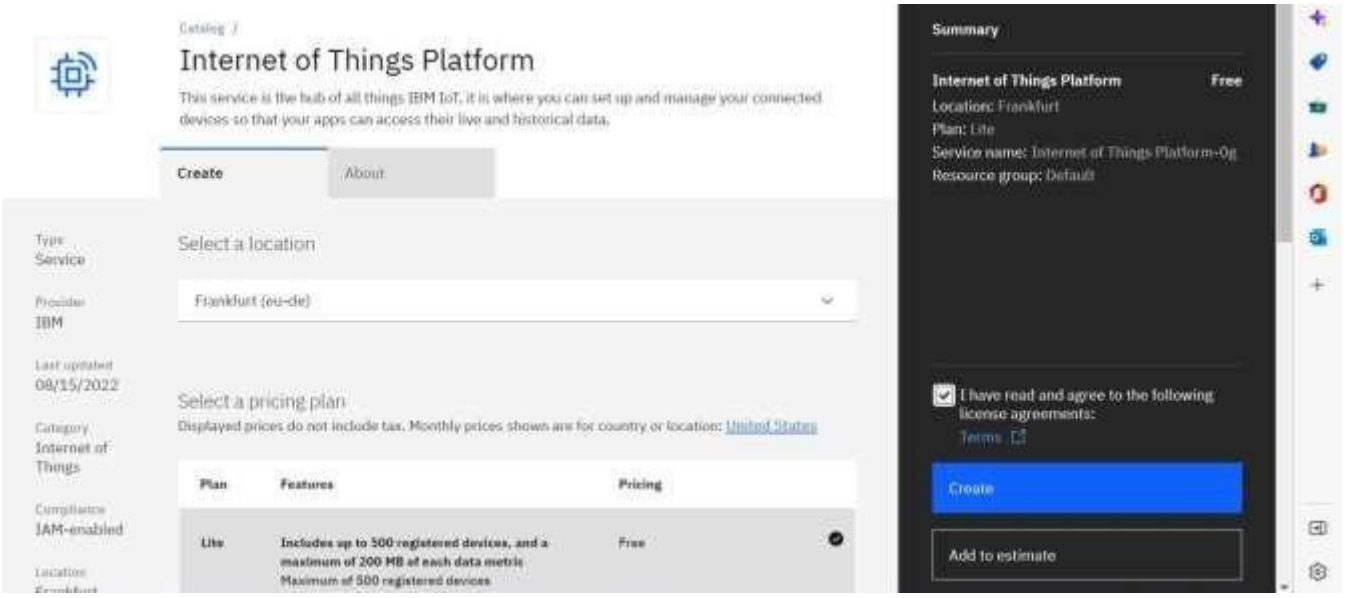


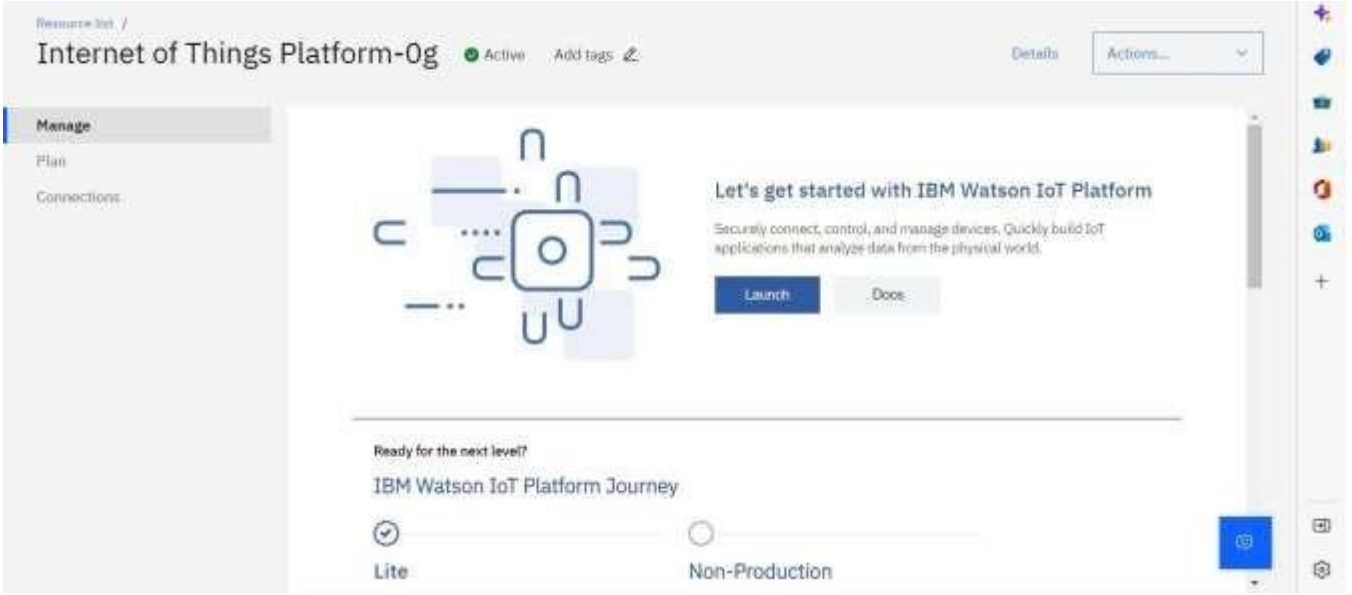
- Click on catalog on your dashboard screen, then under platform go IoT.



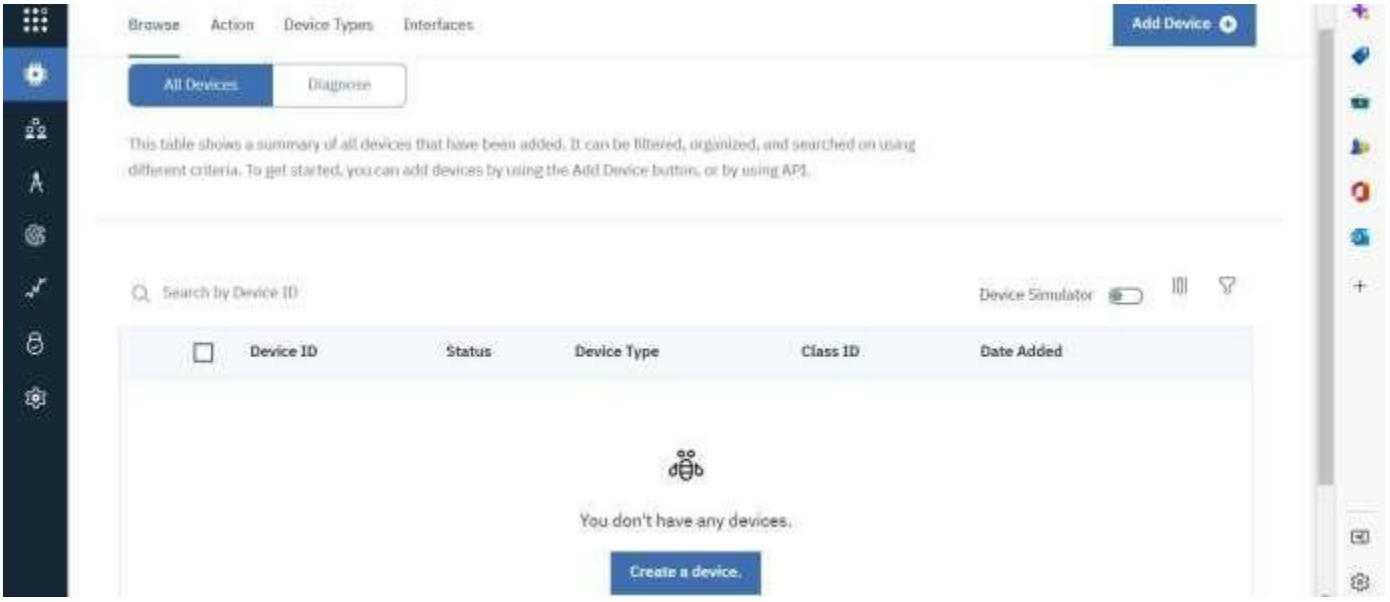
- Check all details and click on create.

- click on Launch

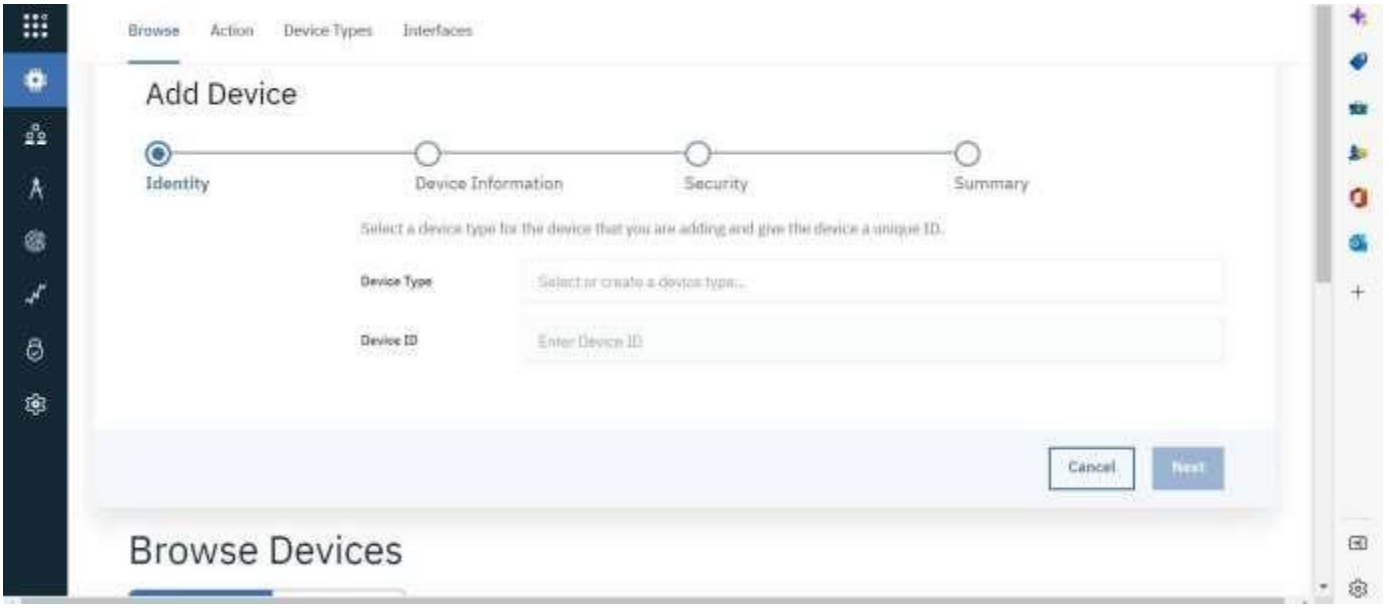




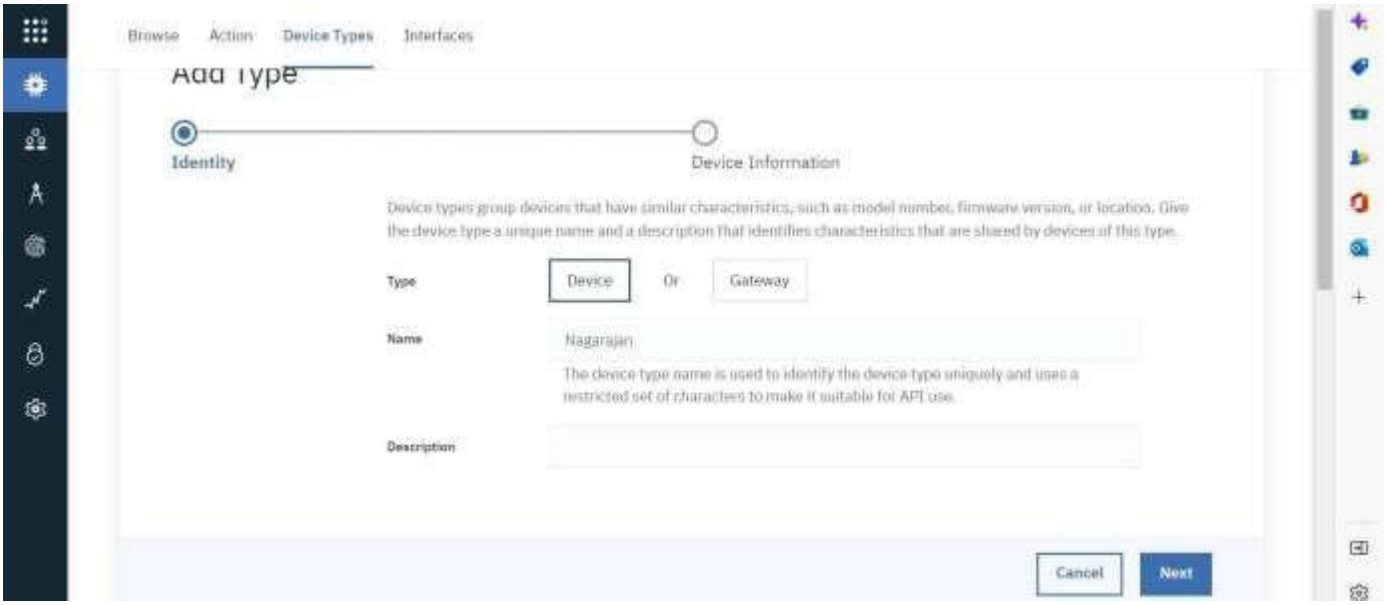
- Dashboard of IBM Watson IoT platform,
- Click on Add device



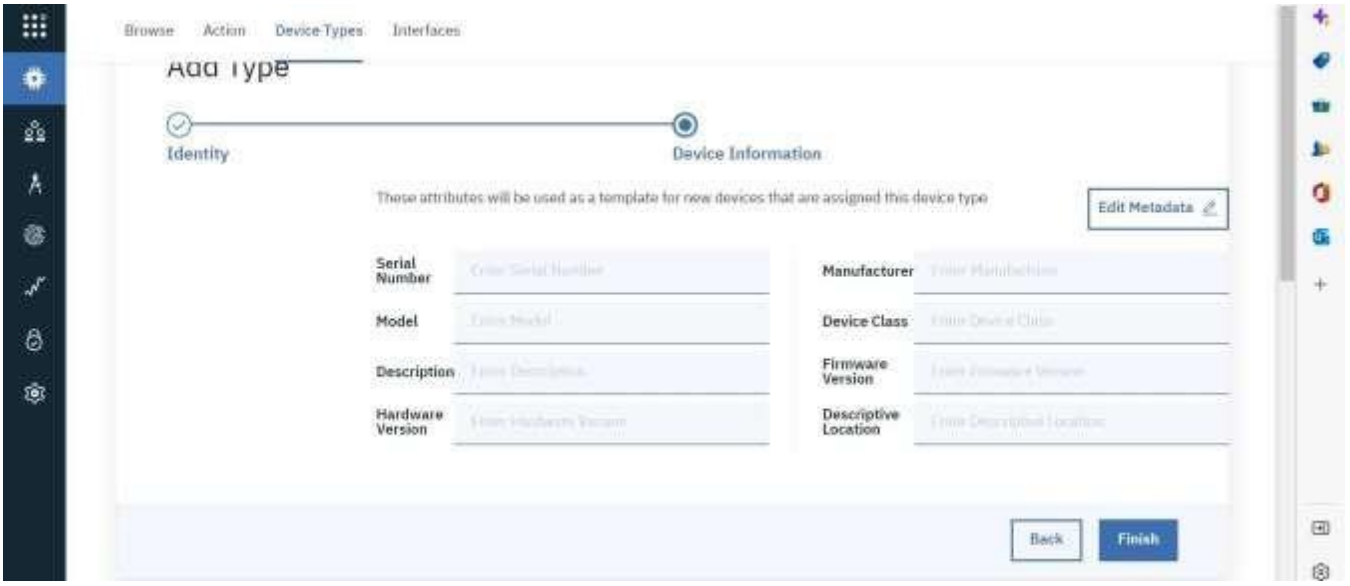
- After click on Add device this page will open



- Go to device type and fill the details.

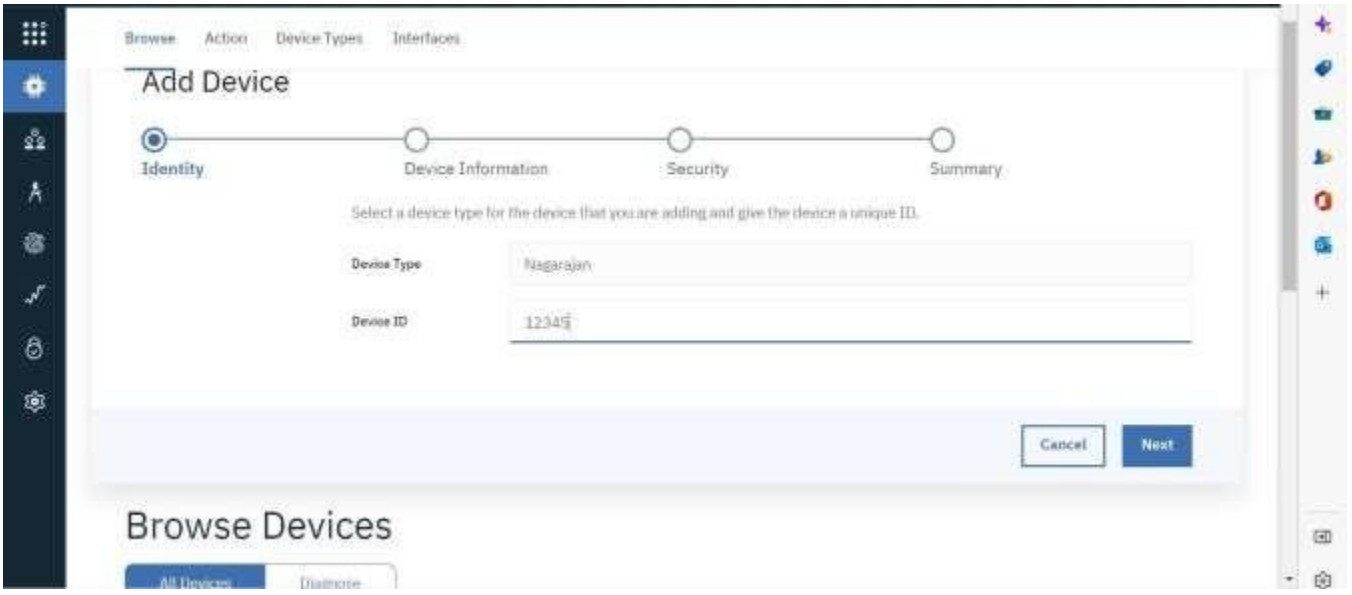


- Click on Finish

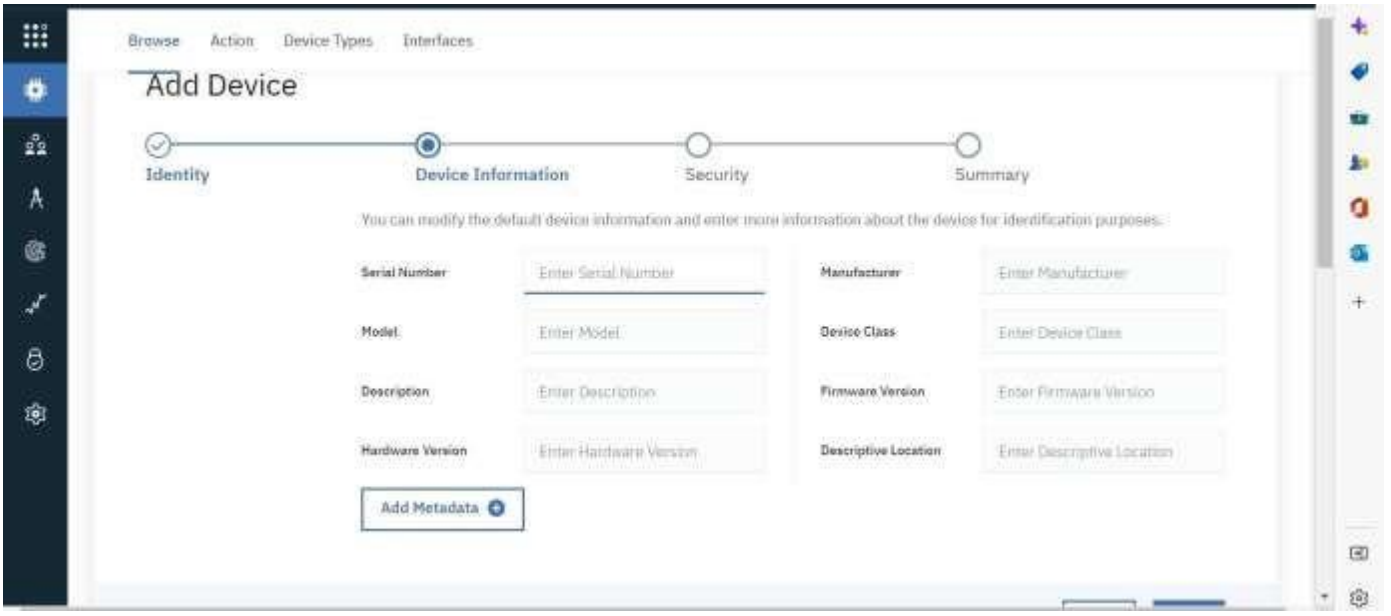


- Click on Register Device.

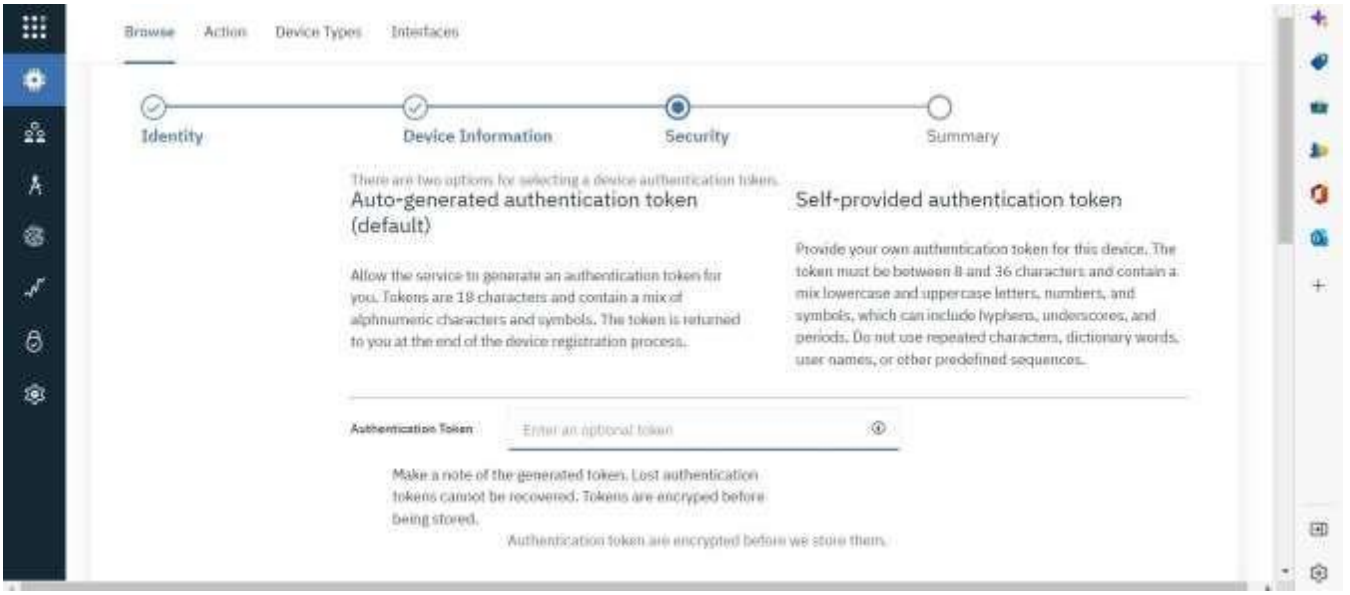
- Choose the device and give device ID and then click on next.



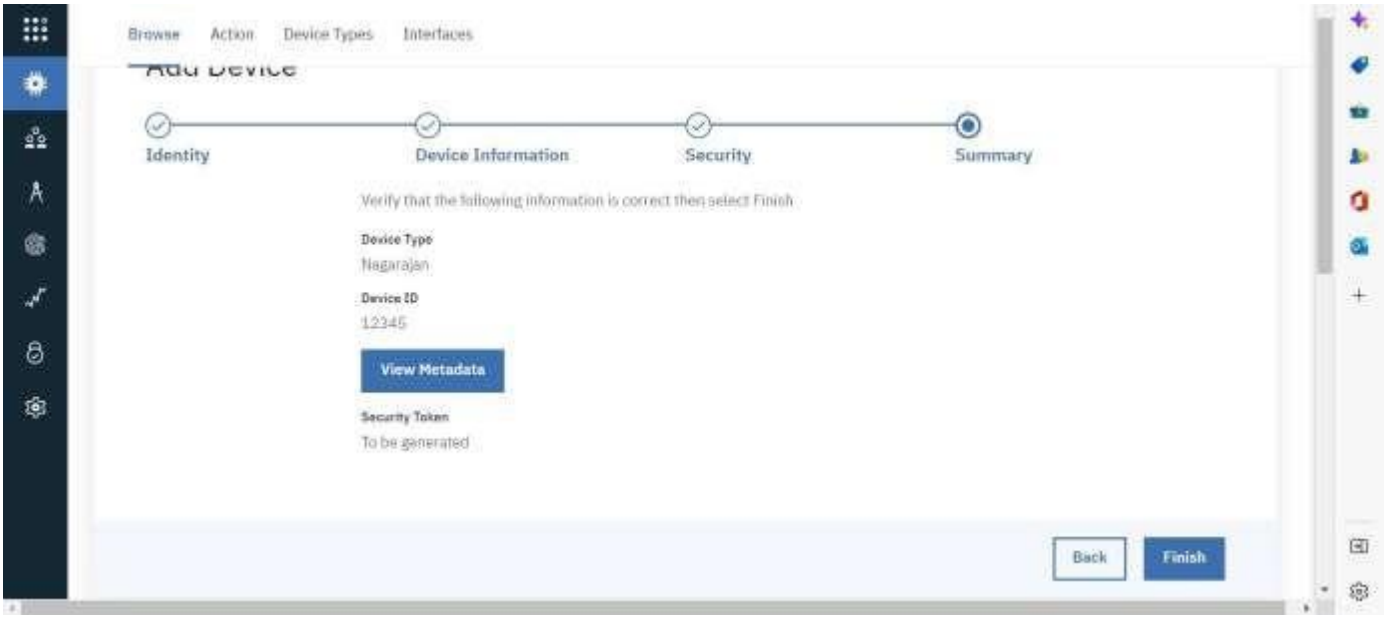
- Click on Next



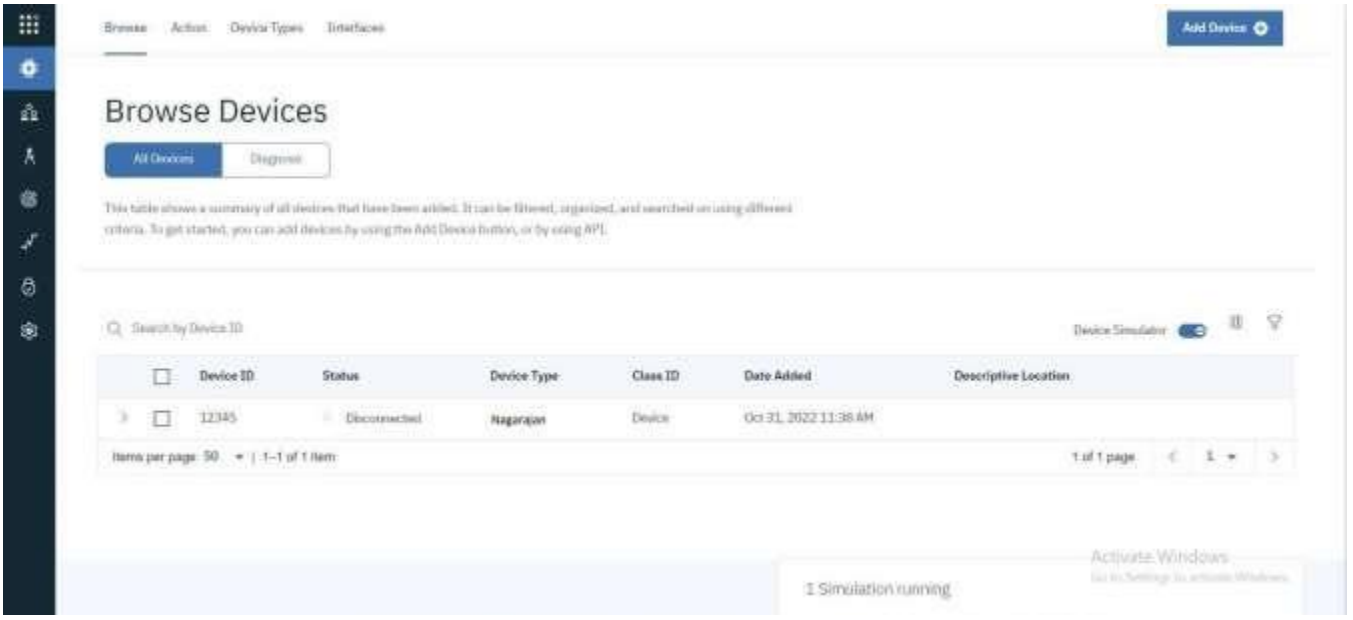
- Click on Next



- Click on Finish



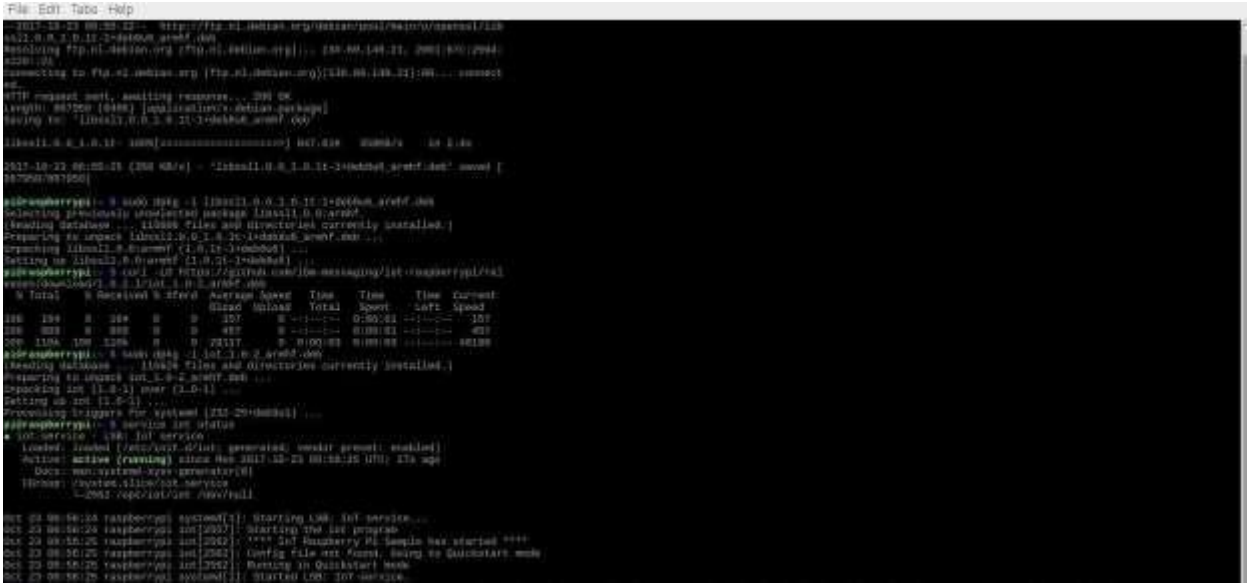
- Device is created



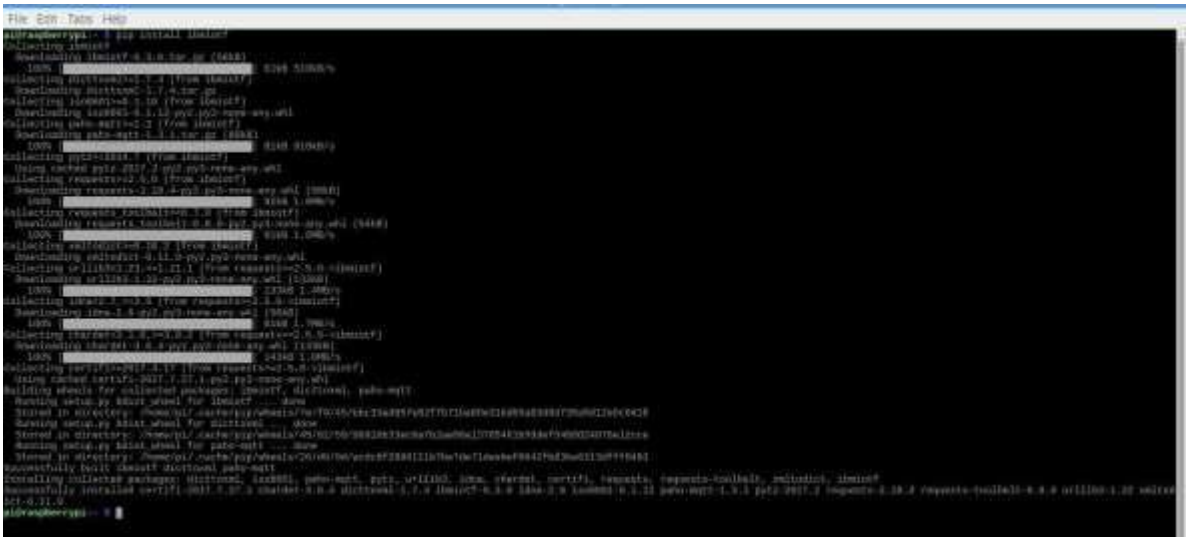
STEP-2: INSTALLING NECESSARY PACKAGES ON YOUR PI:

- Now we are going to install necessary packages on your pi.
- Open your terminal in your pi and type the following commands
- curl -LO
  https://github.com/ibm-messaging/iot-raspberrypi/releases/download/1.0.2.1/io t_1.0-2_armhf.deb
- sudo dpkg -i iot_1.0-2_armhf.deb
- service iot status

Following are the images as to what appears on your pi's terminal when u type these commands



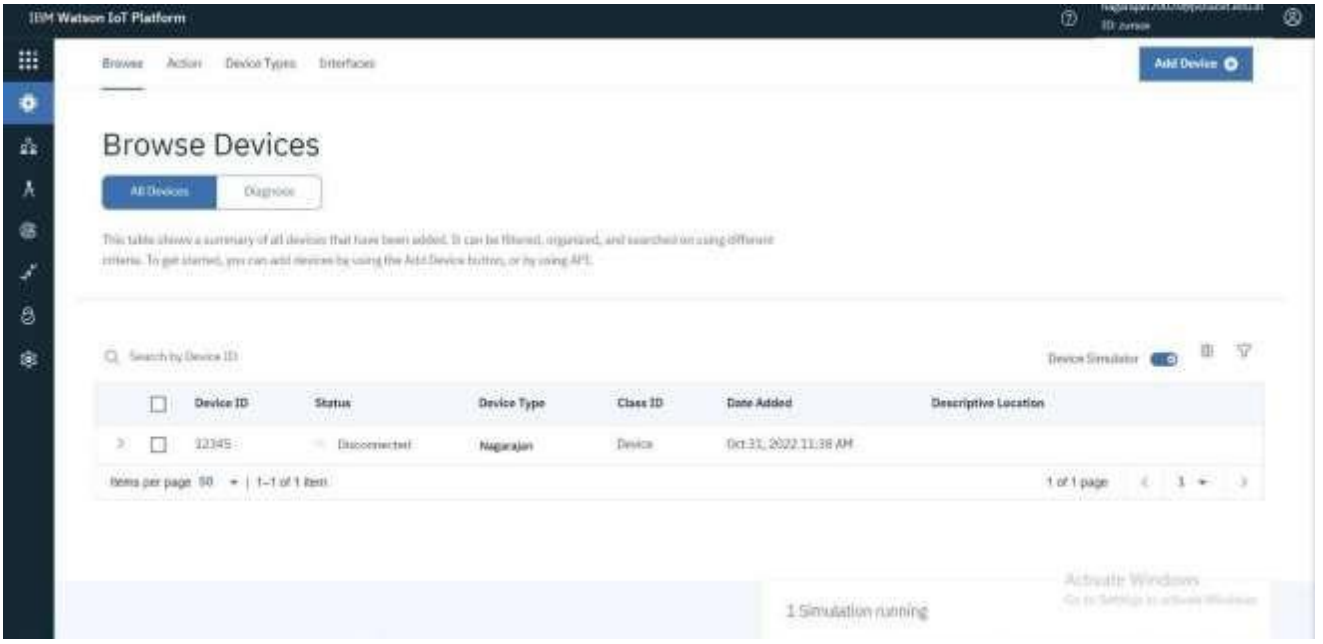
- Then open your terminal and type pip install ibmiotf



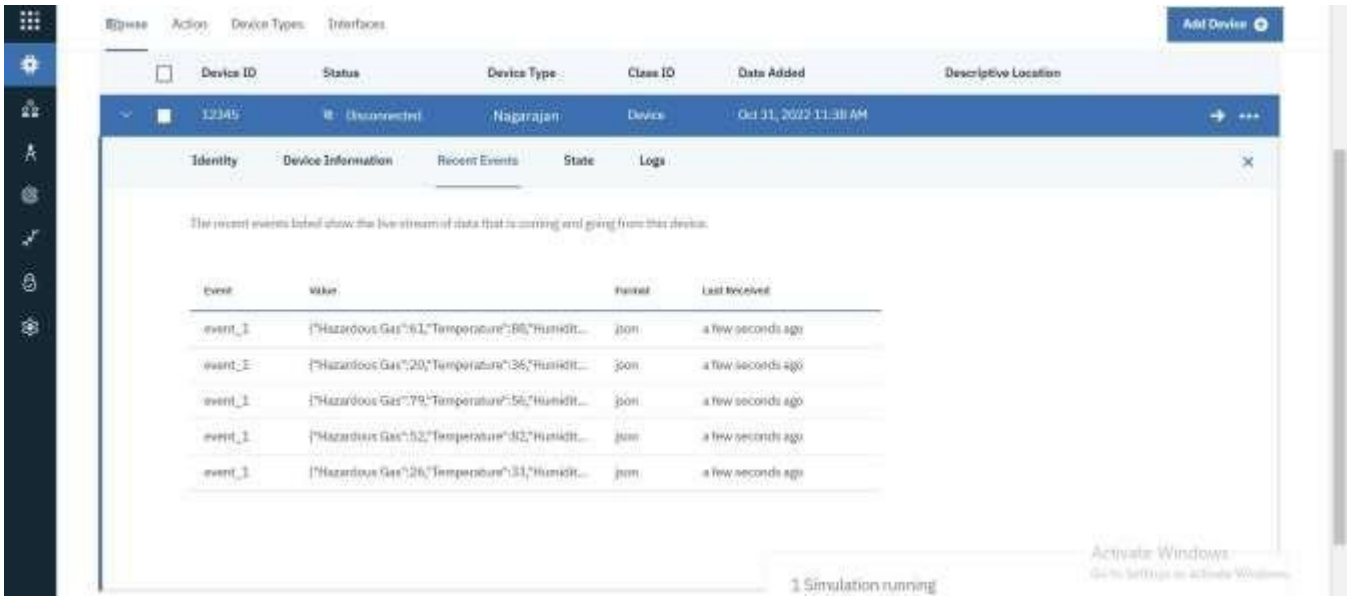
- I have sent DHT-11 Sensors data to ibm bluemix .To get the code u need to login into IOT GYAN.
- Then I get the image as follows in my pi's shell:

Step-3: checking your data sent on IBM Bluemix:

- After you have sent your sensors data you can check whether it is received at your iot platform Just look at the image below and if u see the same wifi kind of symbol on your created device then your data is being received.



- After double clicking on your created device you can see the received data as shown in image

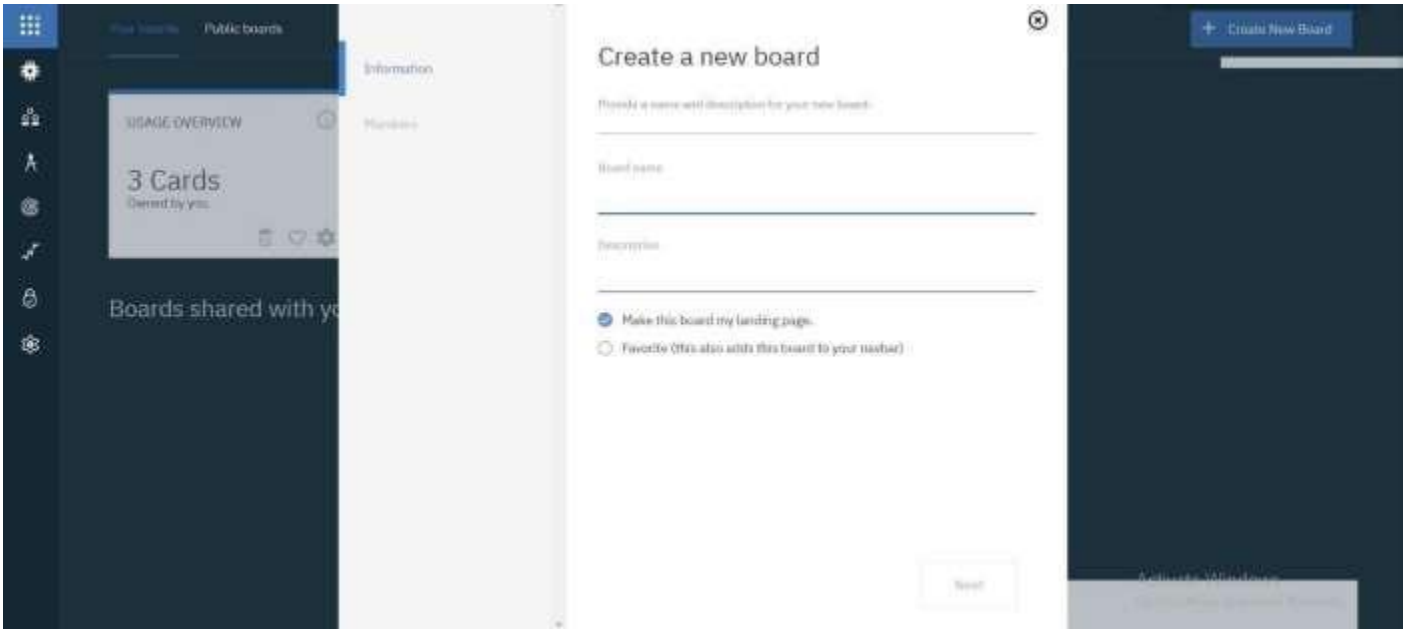


Step-4: Creating boards and cards for visualization of data:

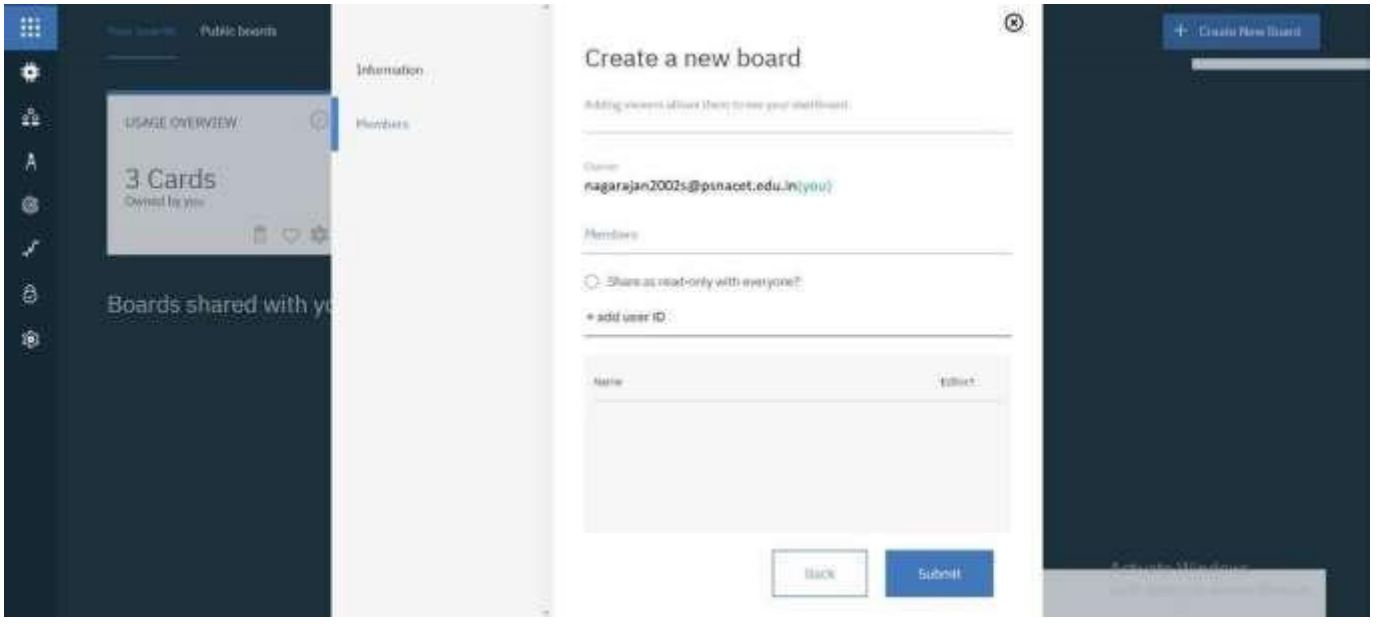
- In your Watson platform you have an option called board .Click on it and you get the following window on your screen

- Click on Create a new board to create a board .

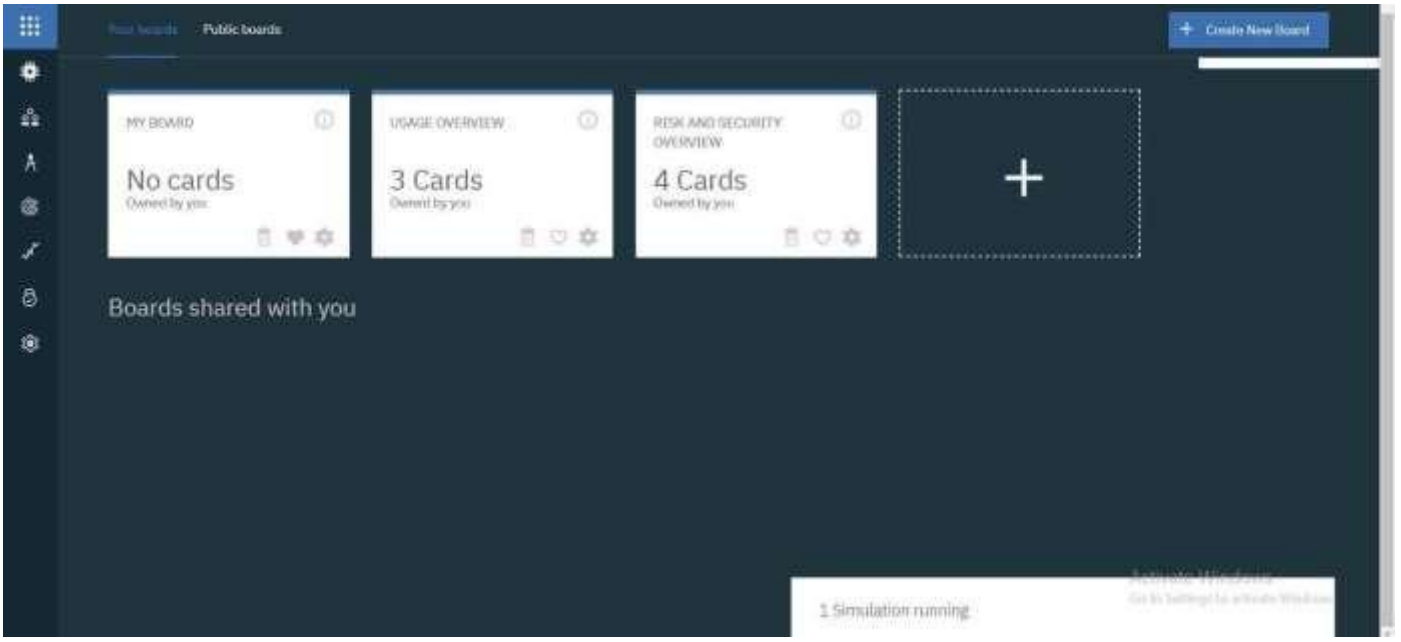
  The given below window appears give a name and description to your board as shown in the window below.



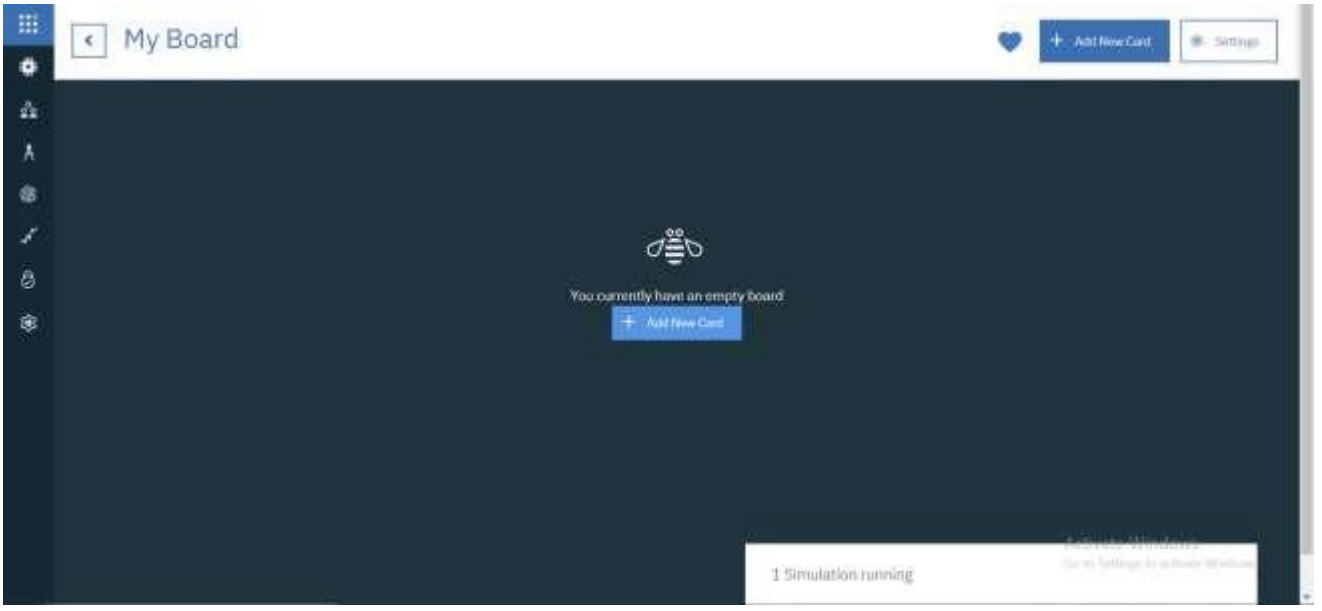
- Then click on Next you get the below window then again click on Submit



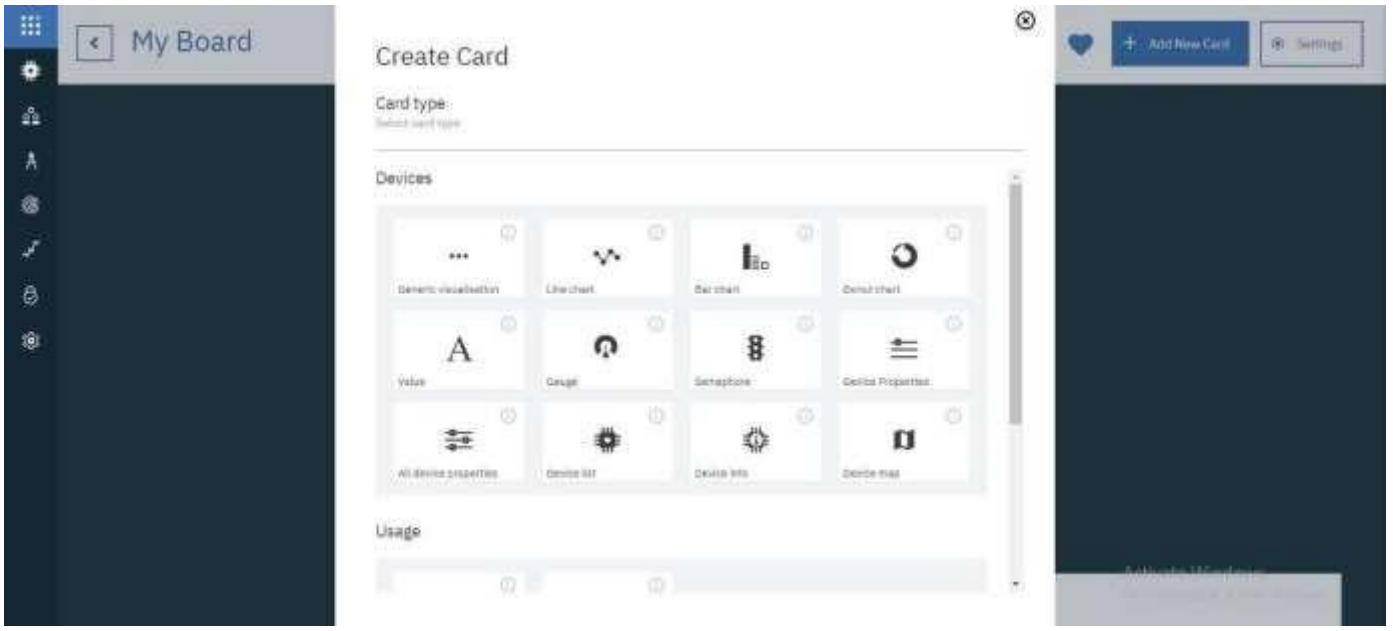
- Then double click on your boards name which you have created.



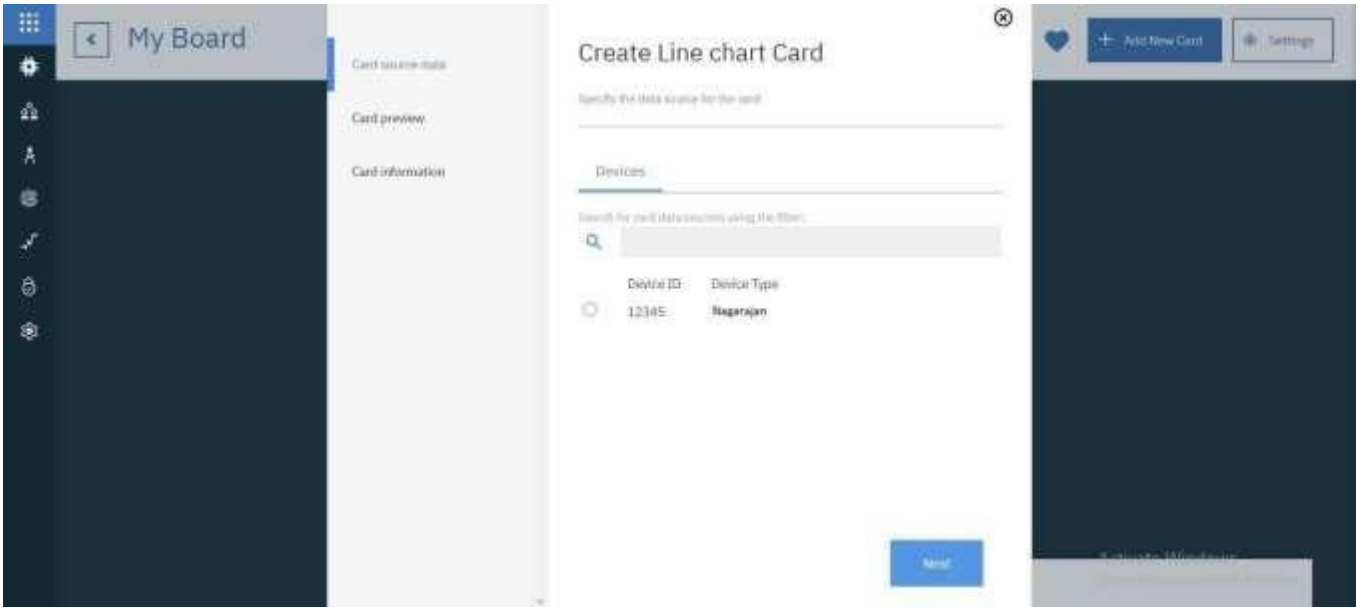
- Click on Add New Card



- Select the type of Graph u want accordingly and click next

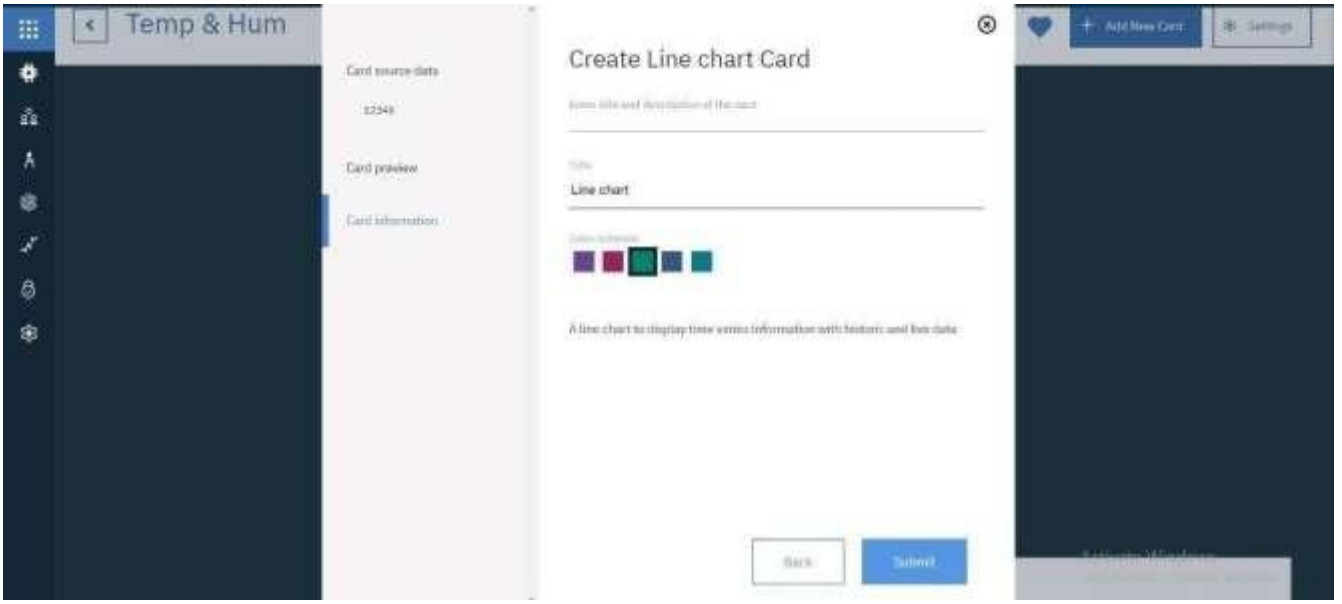


- You get the below window, choose the Device and click on Next.



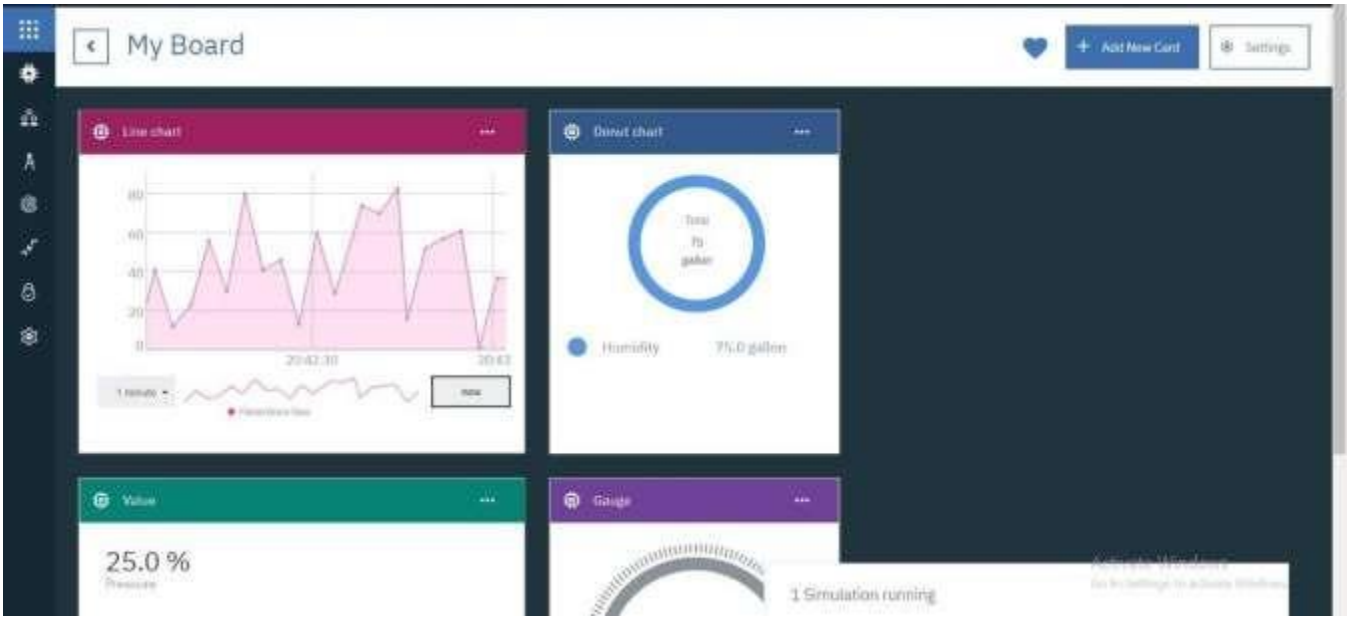
- Select the event, properly to be visualized on your graph and click next. In my case it is humidity

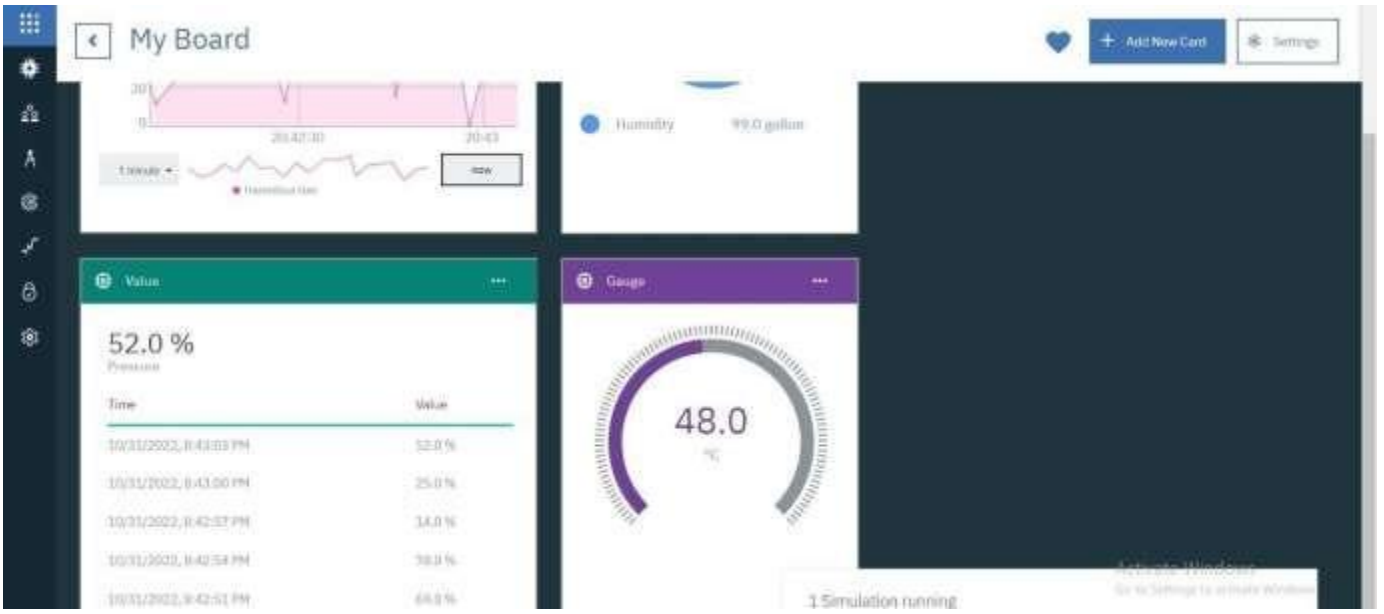
- Then select the size of the graph and color of the graph board you want and click next



- Here is the graph

- Repeat the process to get different graphs.





RESULT:

Hence, we were able to send data from our pi to IBM Watson and visualize it on a graph.