## PUBLISH DATA TO THE IBM CLOUD

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|---|---|
| Team ID | PNT2022TMID05259 |
| Project Name | Smart Waste Management System For Metropolitan cities |

**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

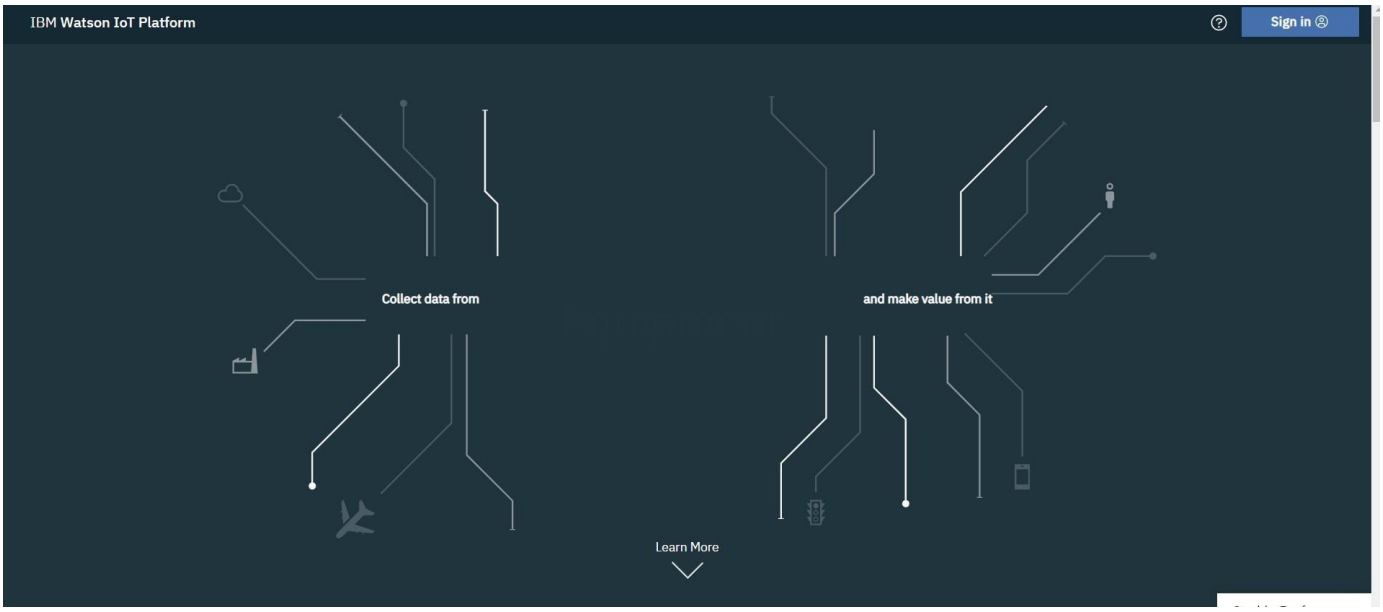
**SOFTWARE:**

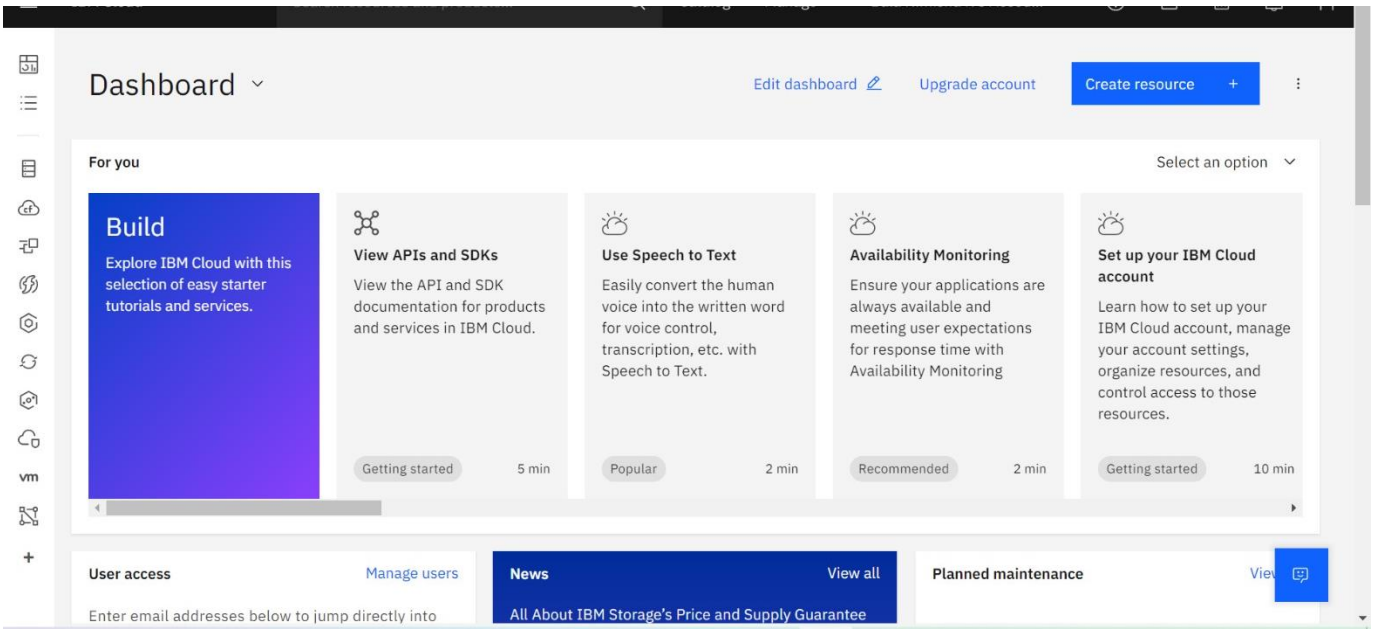
- IBM BLUEMIX ACCOUNT

**STEPS TO BE FOLLOWED**

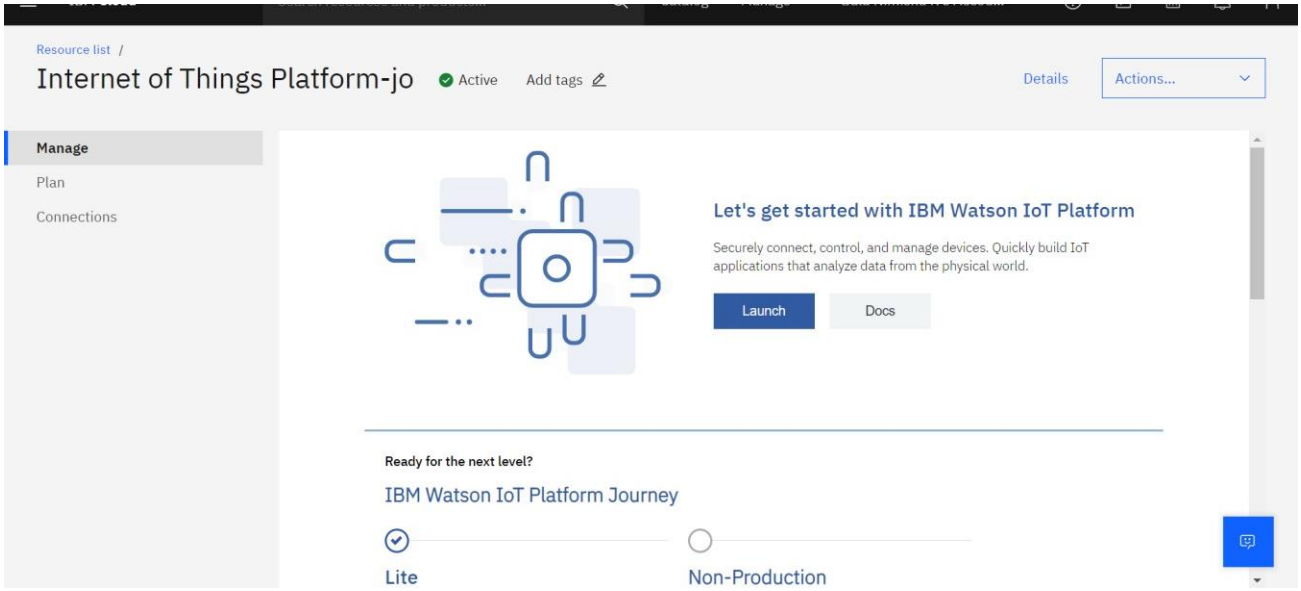
**Step-1: Create a device in IBM Watson:**

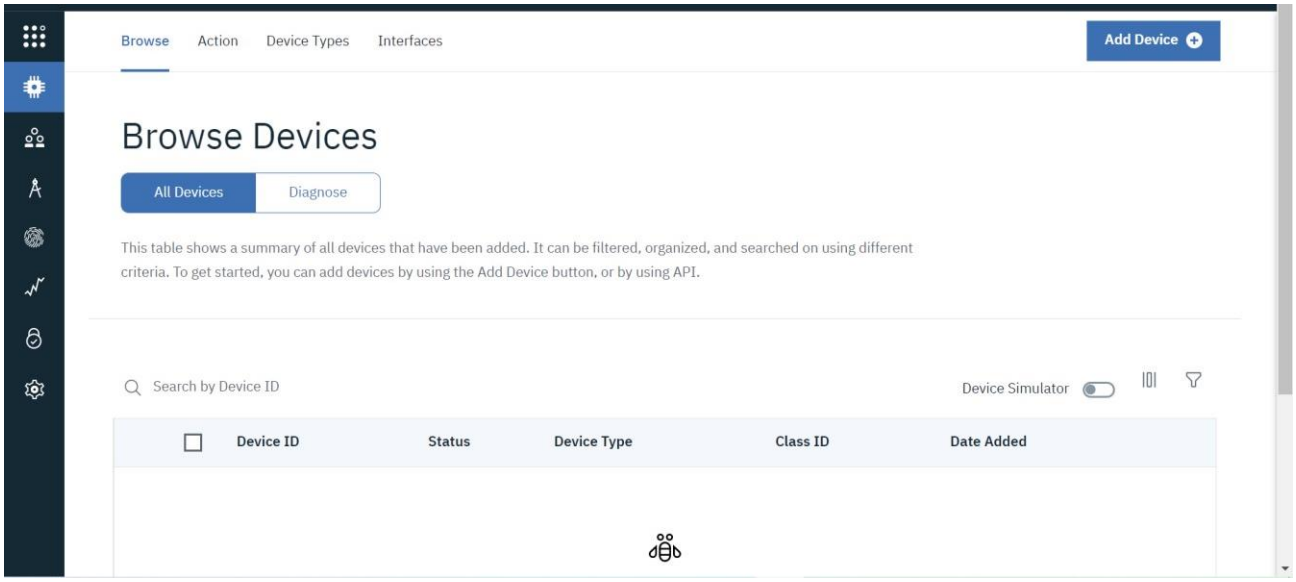
- Firstly, login into your IBM-Bluemix account with your e-mail ID and Password.



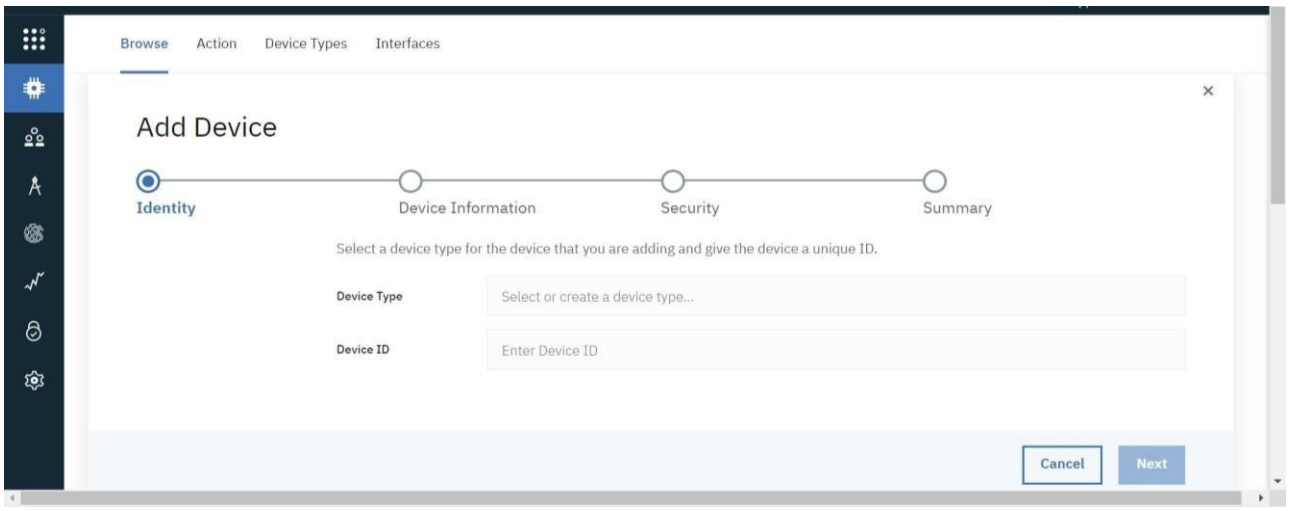



Check all details and click create

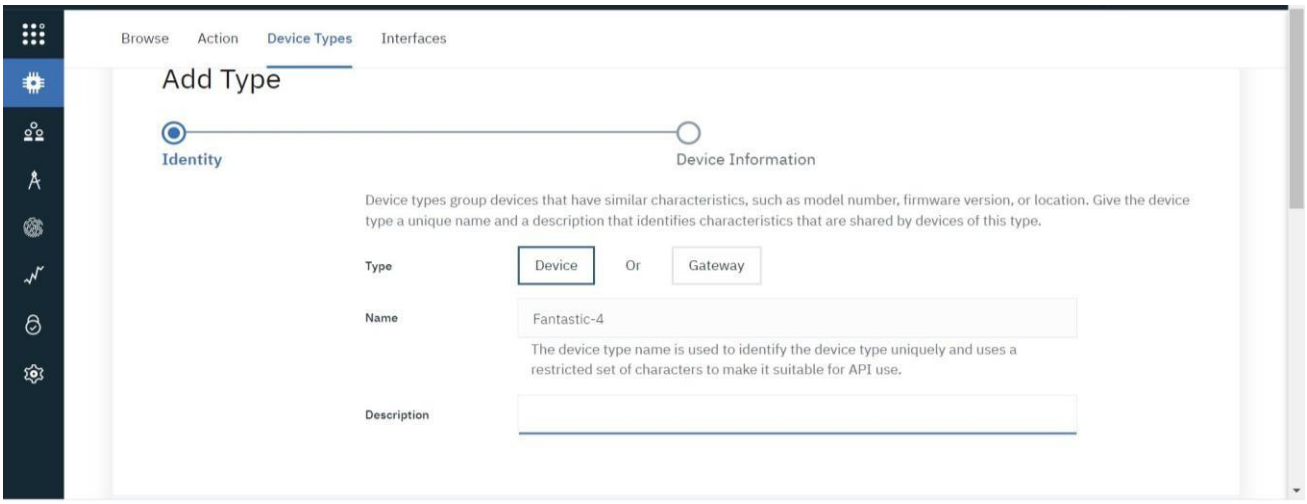


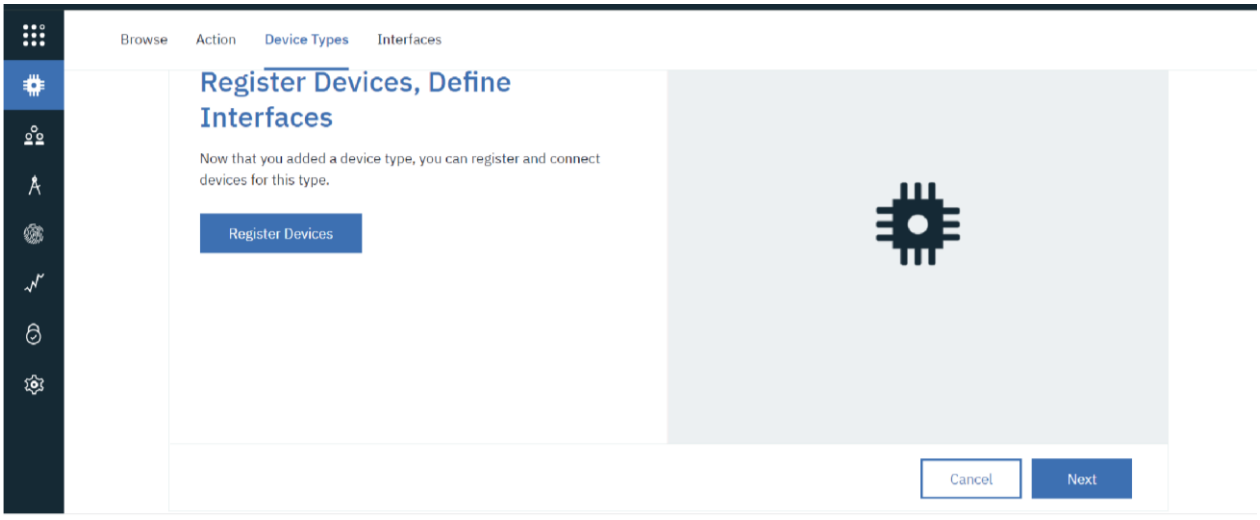

- After click on Add device this page will open



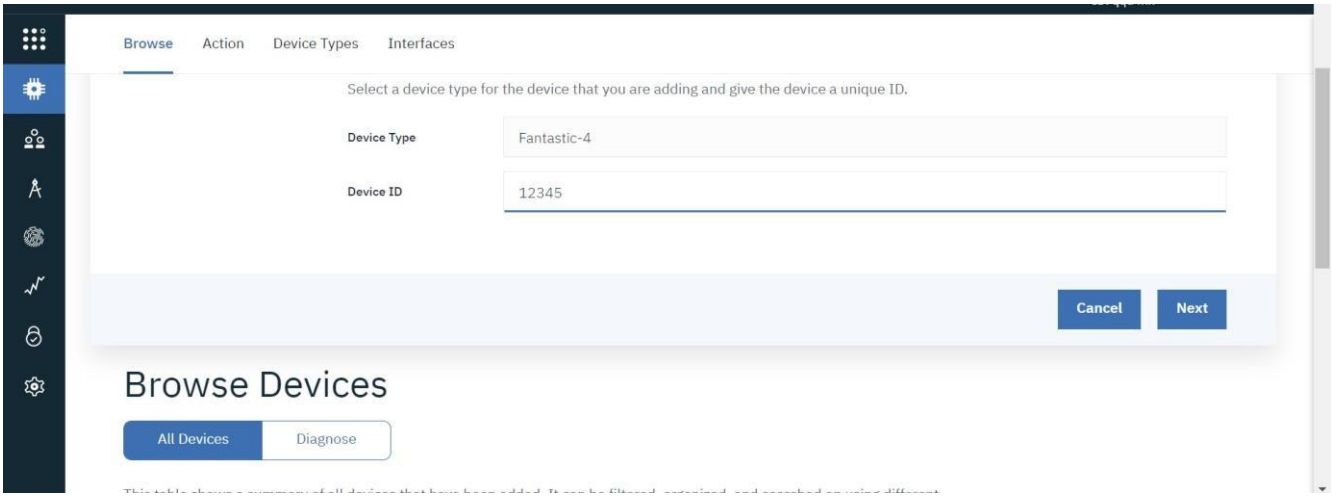

- Go to device type and fill the details.



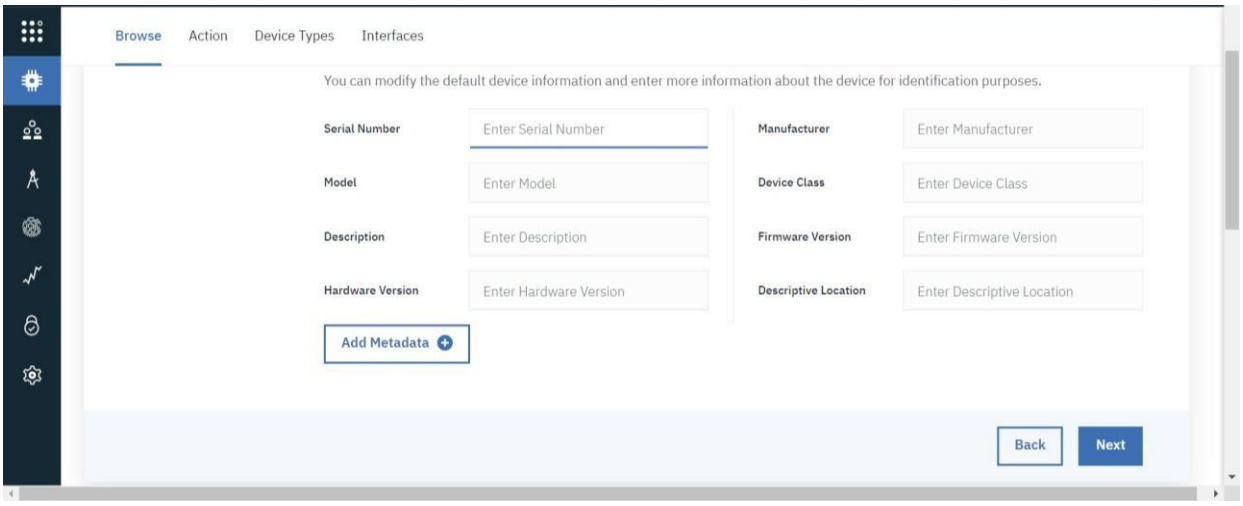

- Click on Finish

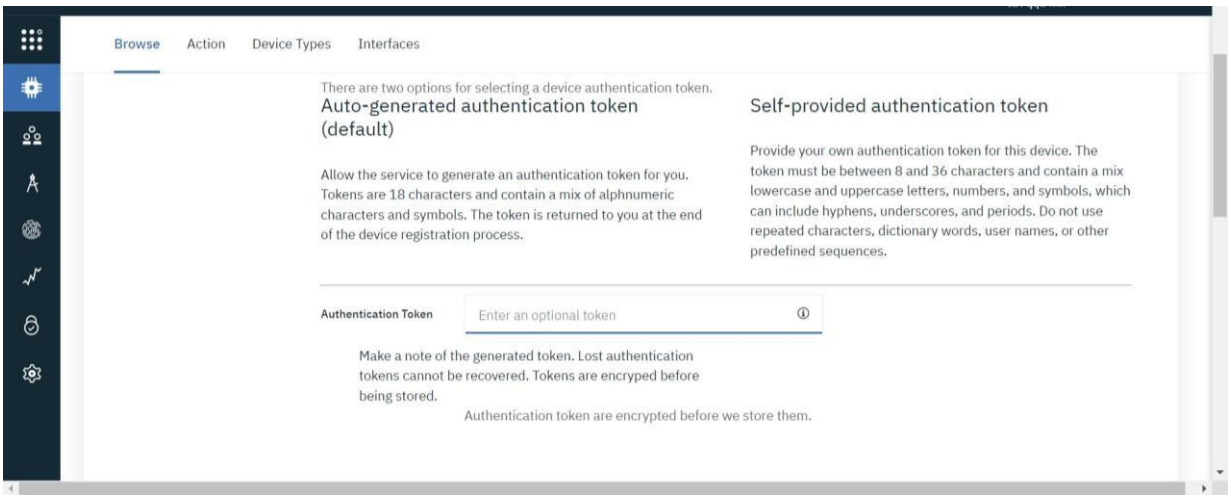


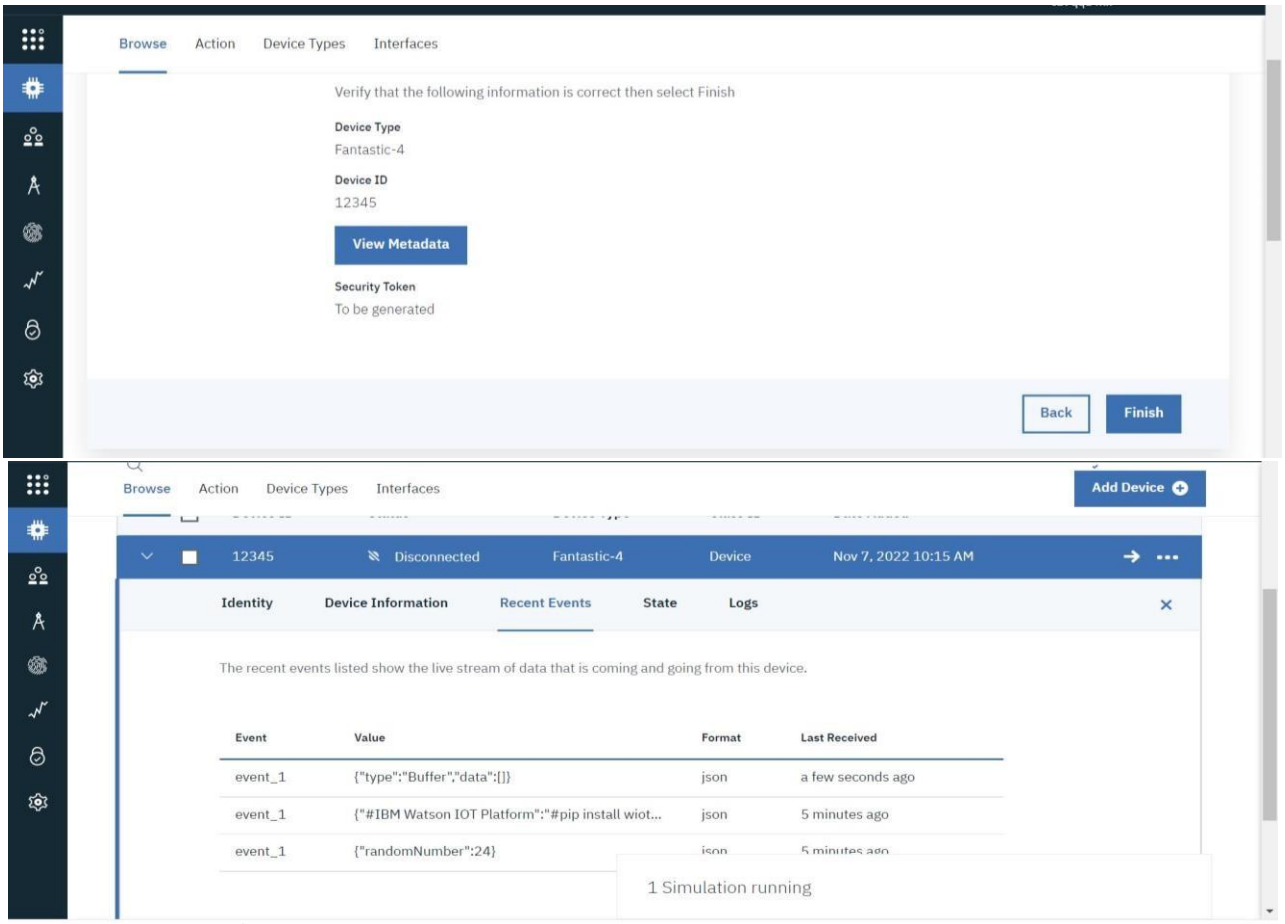
- Choose the device and give device ID and then click on next.




- Click on Next



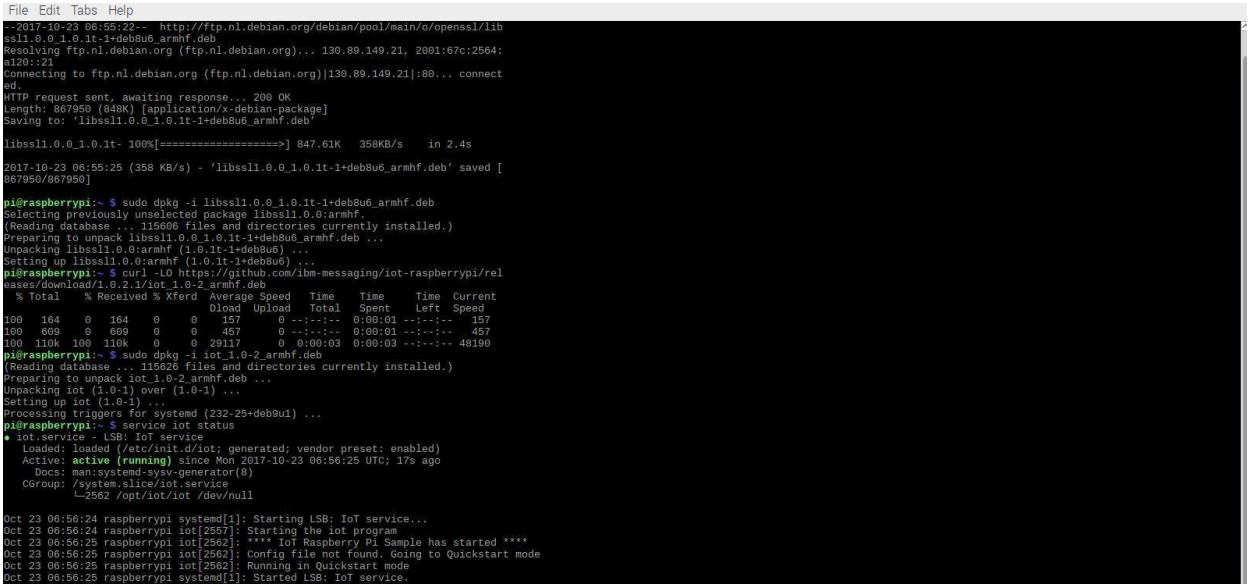




Browse
Action
Device Types
Interfaces
Verify that the following information is correct then select Finish
Device Type
Fantastic-4
Device ID
12345
View Metadata
Security Token
To be generated
Back
Finish
Browse
Action
Device Types
Interfaces
Add Device
12345
Disconnected
Fantastic-4
Device
Nov 7, 2022 10:15 AM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"type":"Buffer","data":[]}
json
a few seconds ago
event_1
{"#IBM Watson IOT Platform":"#pip install wiot...
json
5 minutes ago
event_1
{"randomNumber":24}
json
5 minutes ago
1 Simulation running

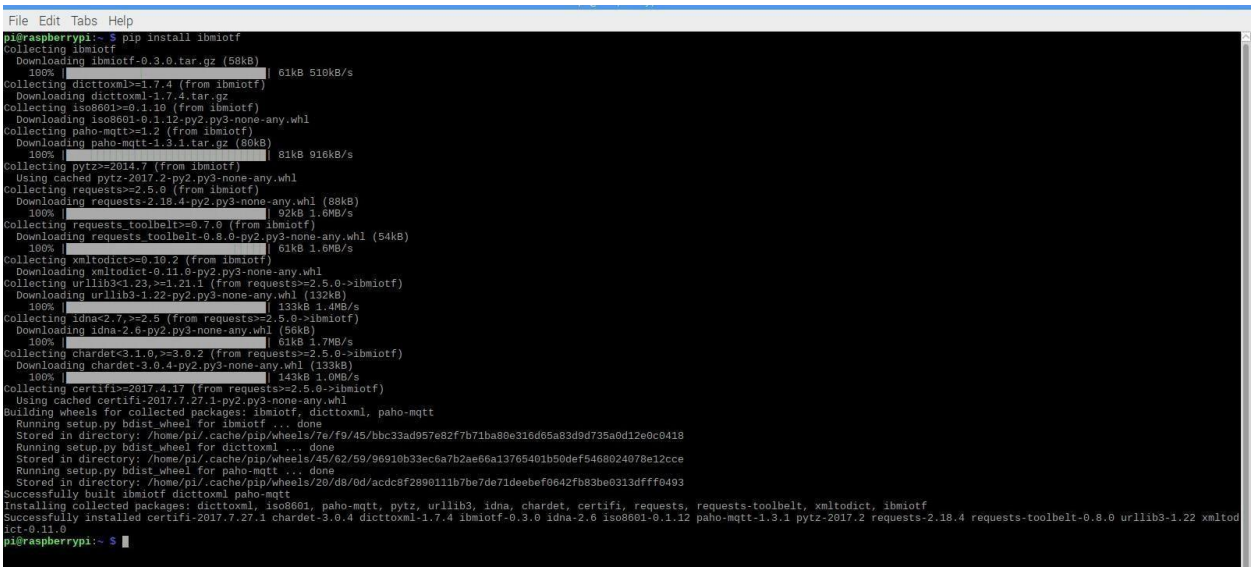
## STEP-2: INSTALLING NECESSARY PACKAGES ON YOUR PI:

- 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

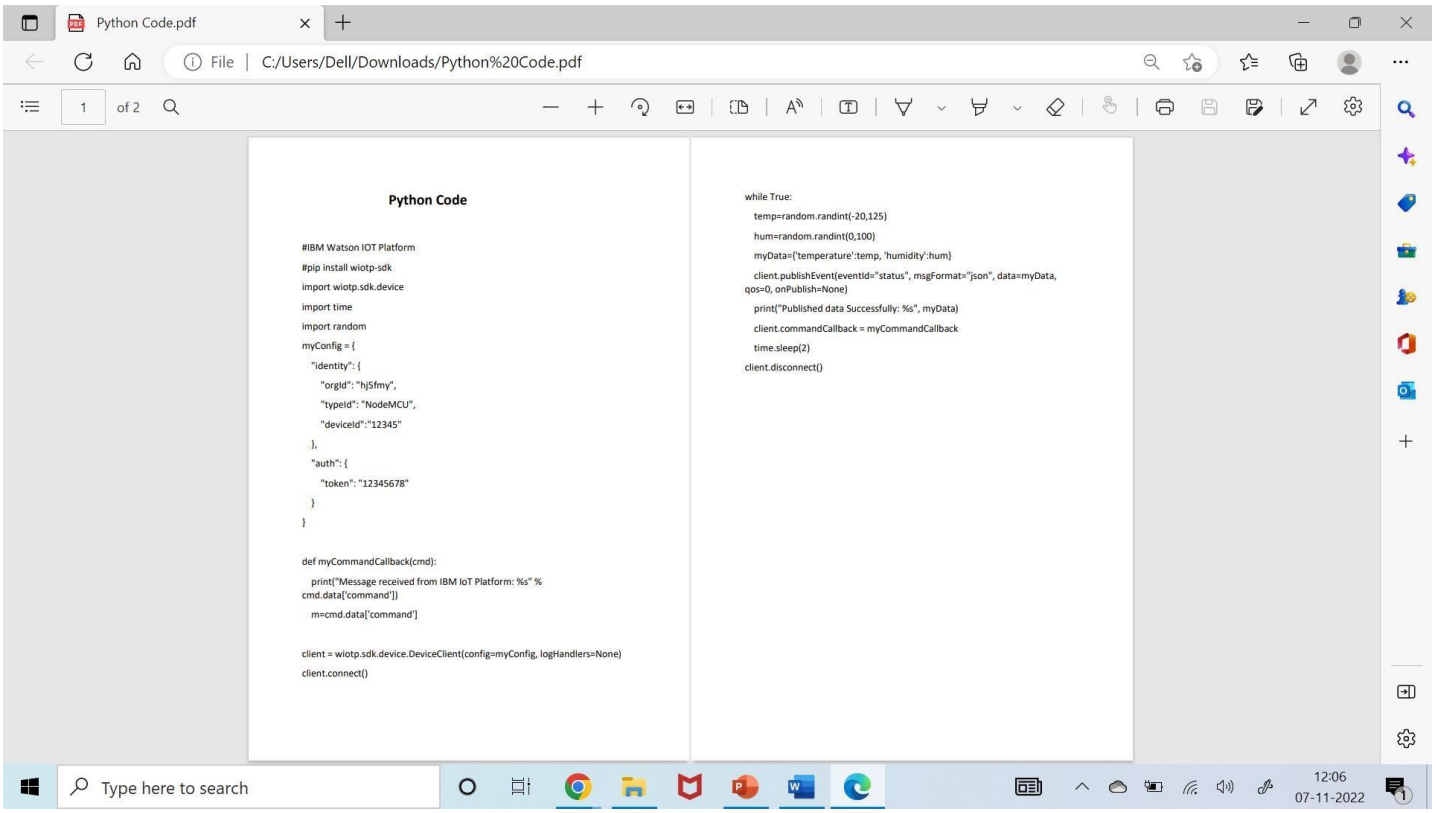



- Then open your terminal and type pip install ibm-iotf



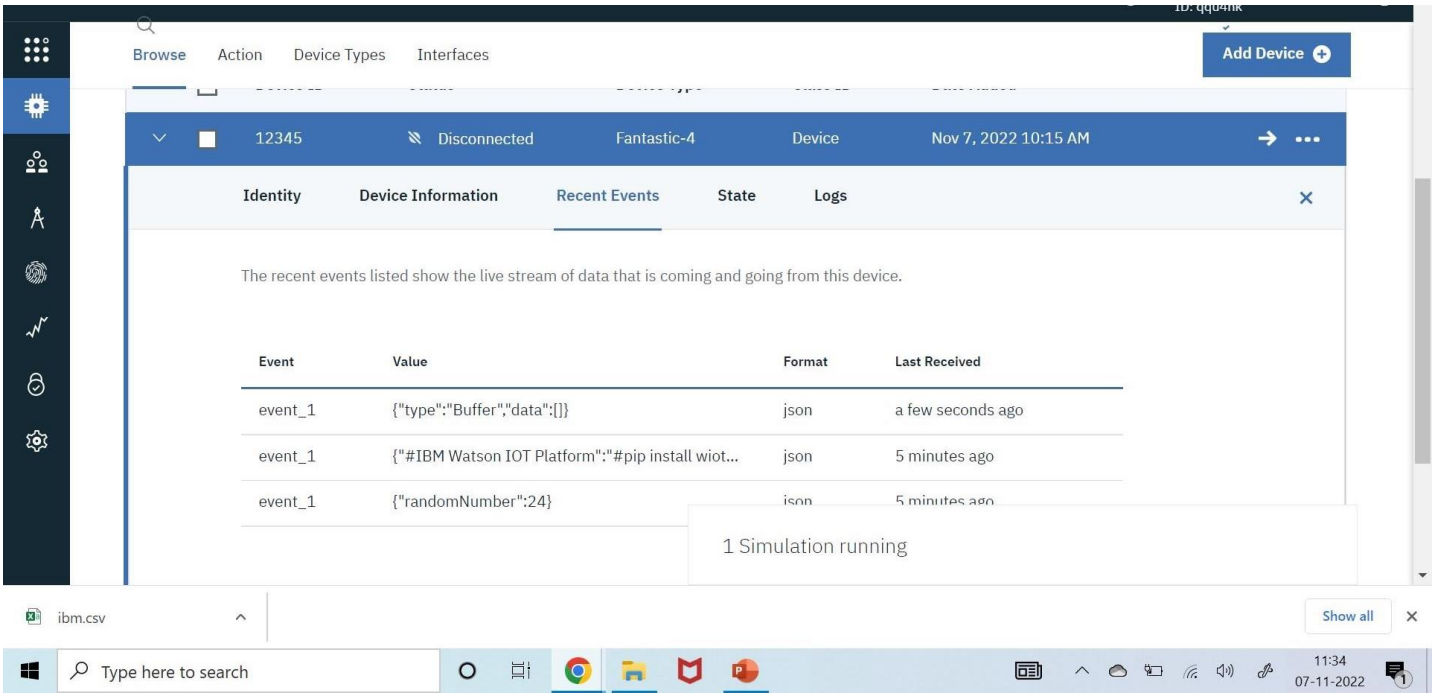
I have sent DHT-11 Sensors data to ibm bluemix .To get the code u need to login into IOT GYAN.

- 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 dta is being received.

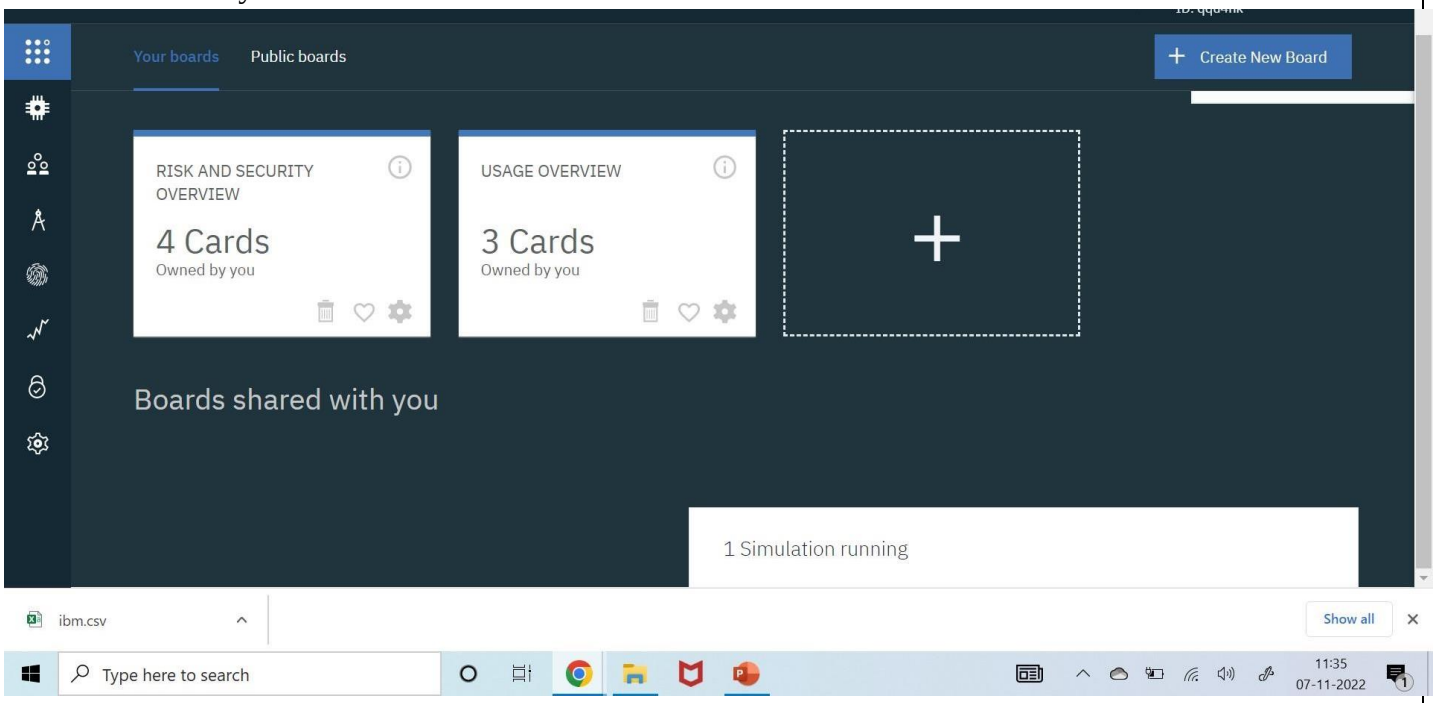

Browse
Action
Device Types
Interfaces
Add Device
12345
Disconnected
Fantastic-4
Device
Nov 7, 2022 10:15 AM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event_1
{"type":"Buffer","data":[]}
json
a few seconds ago
event_1
{"#IBM Watson IOT Platform":"#pip install wiot...
json
5 minutes ago
event_1
{"randomNumber":24}
1 Simulation running


ibm.csv
Show all
Type here to search
11:34
07-11-2022

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

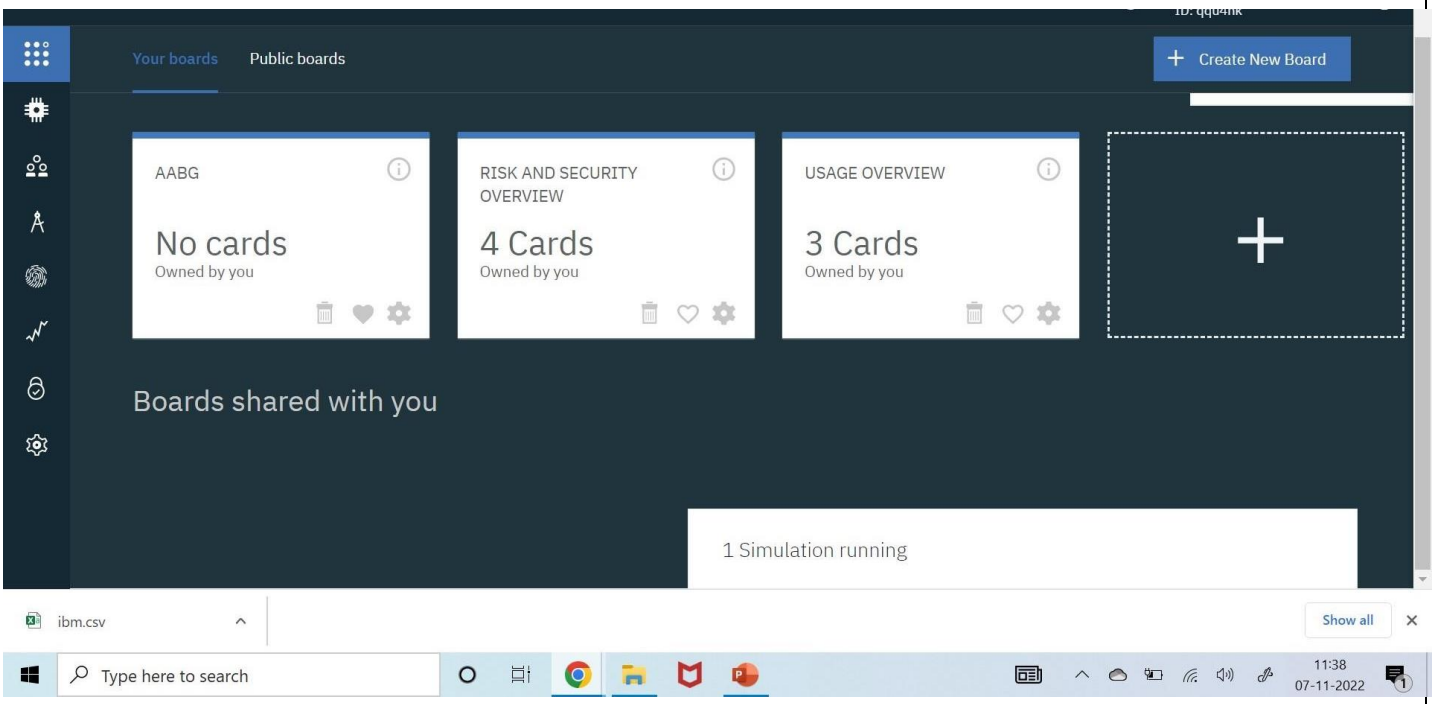
**Step-4: Creating boards and cards for visualization of data:**

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

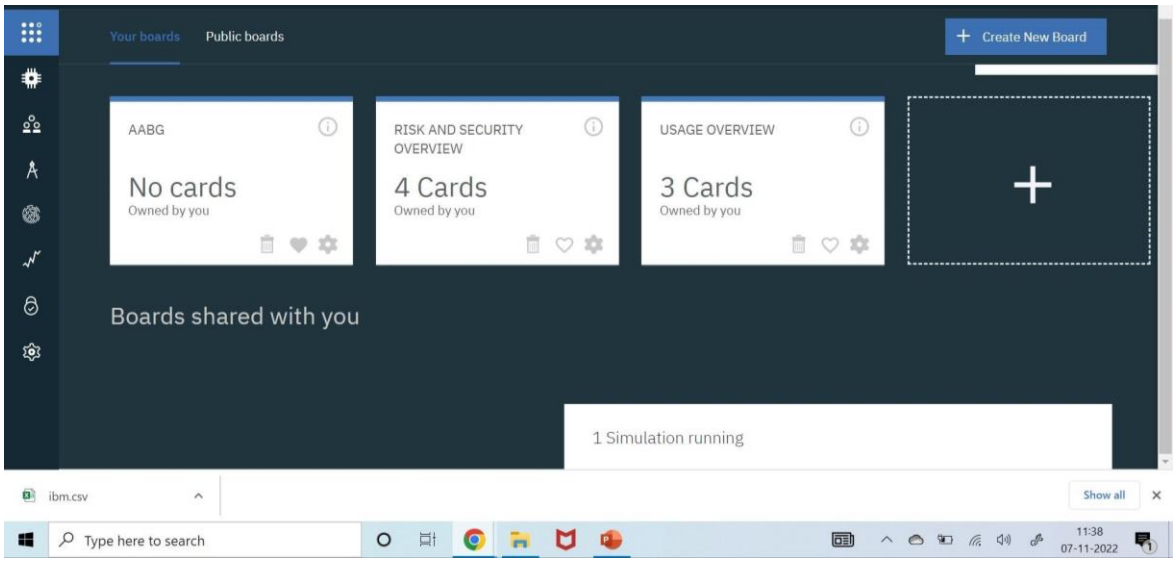



- Click on Create a new board to create a board .

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

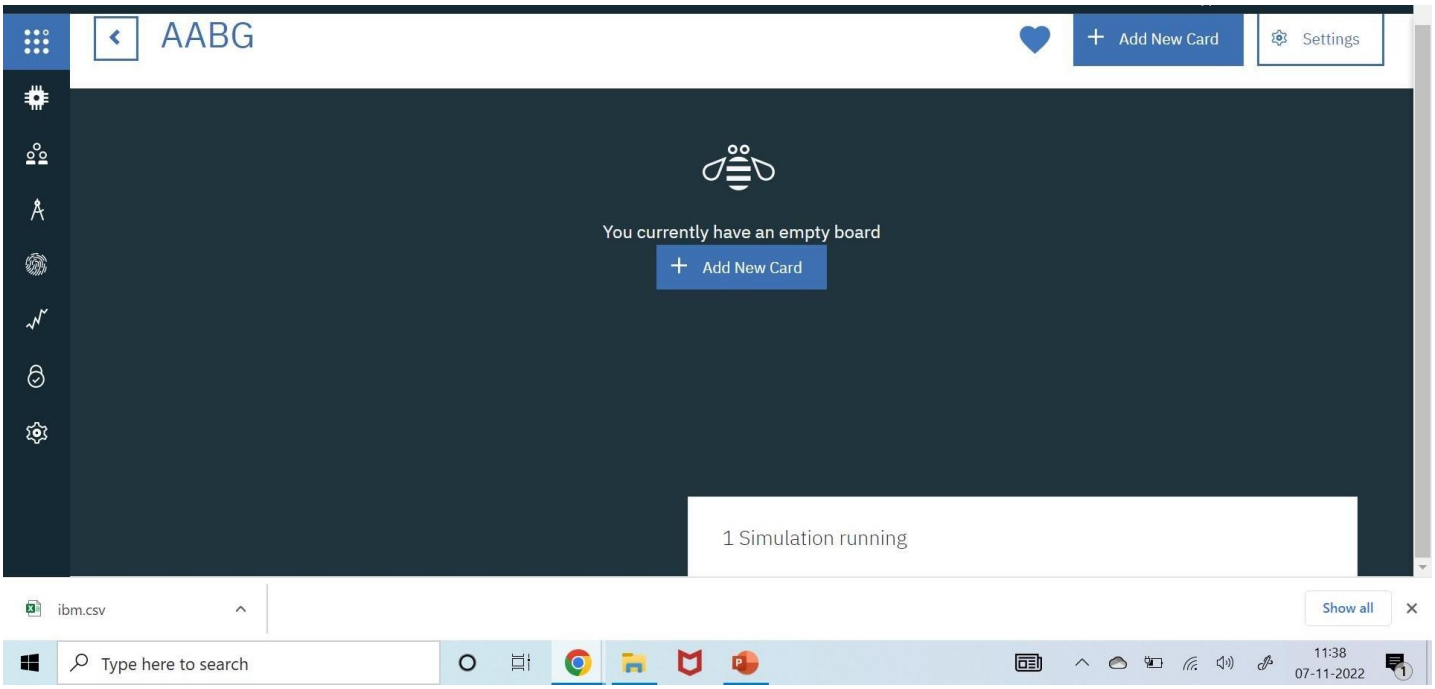



- Then click on Next you get the below window then again click on Sub

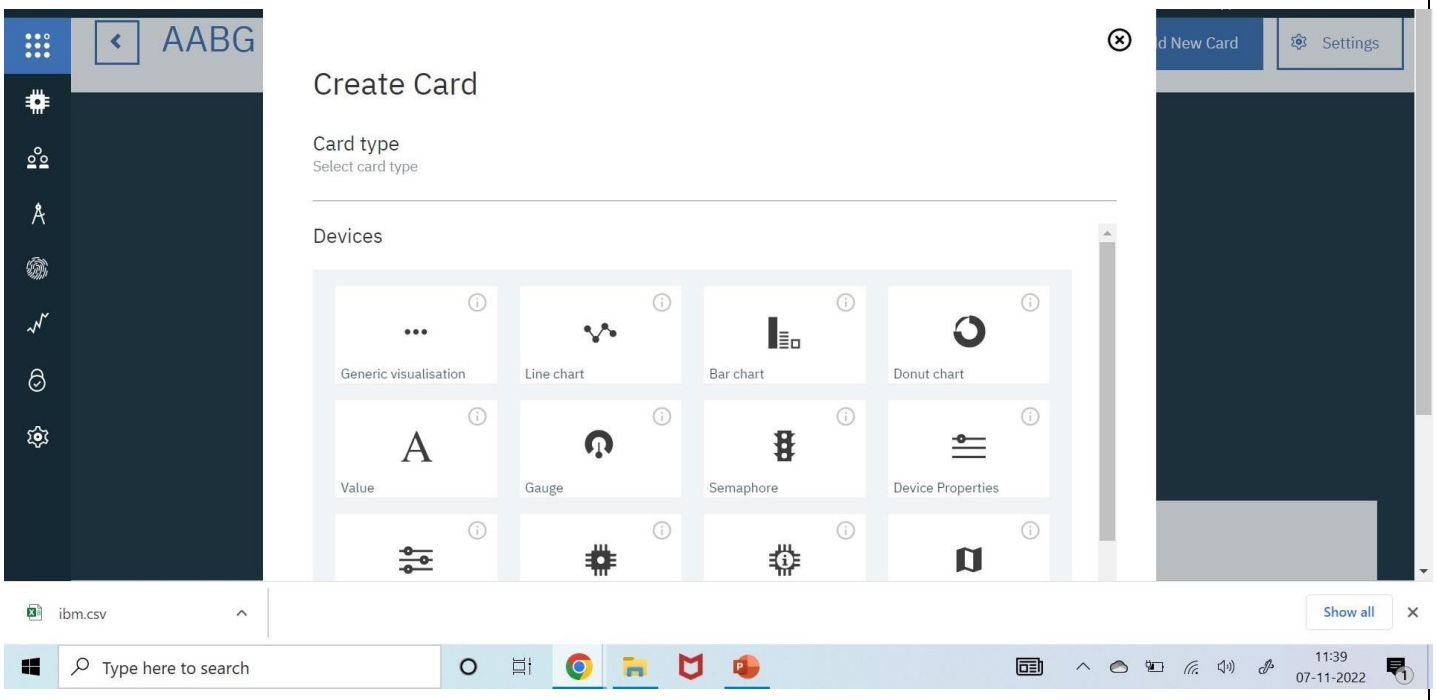



Then double click on your boards name which you have created.

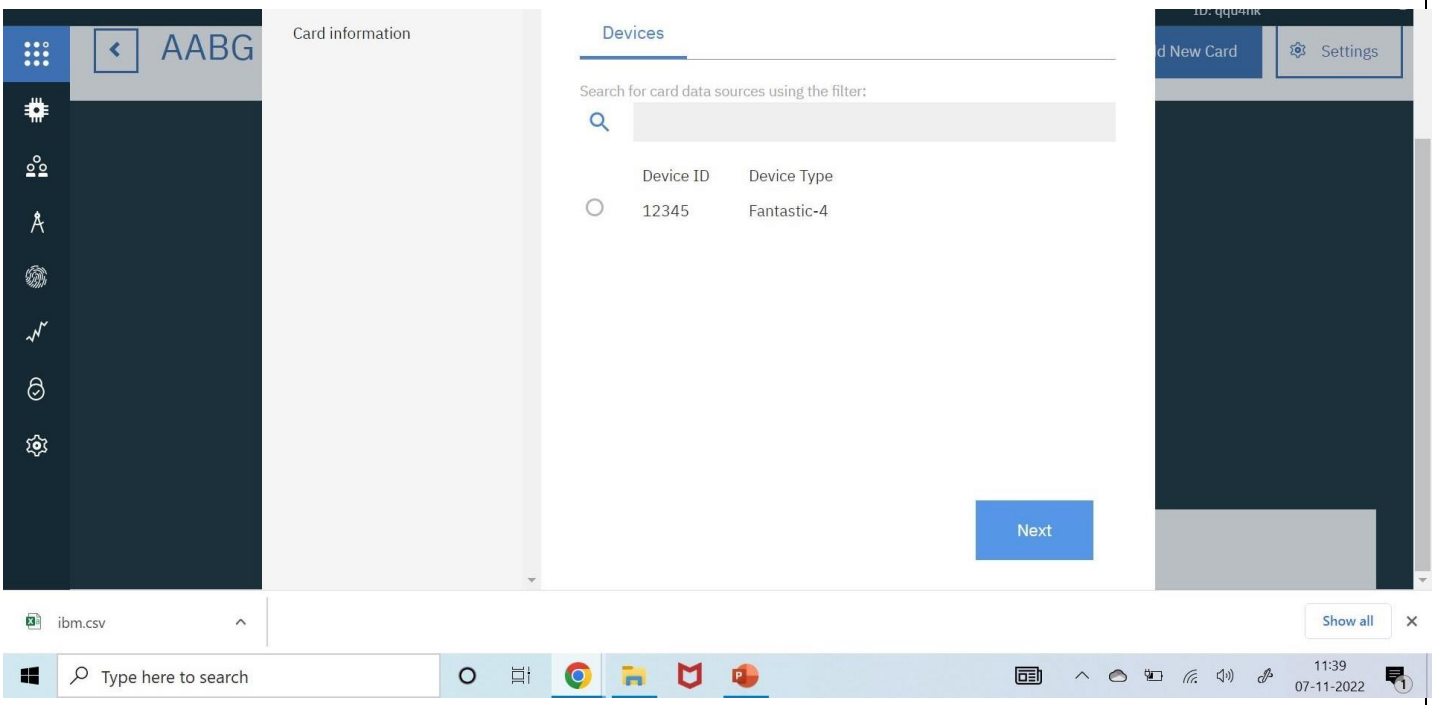
- Click on Add New Card




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

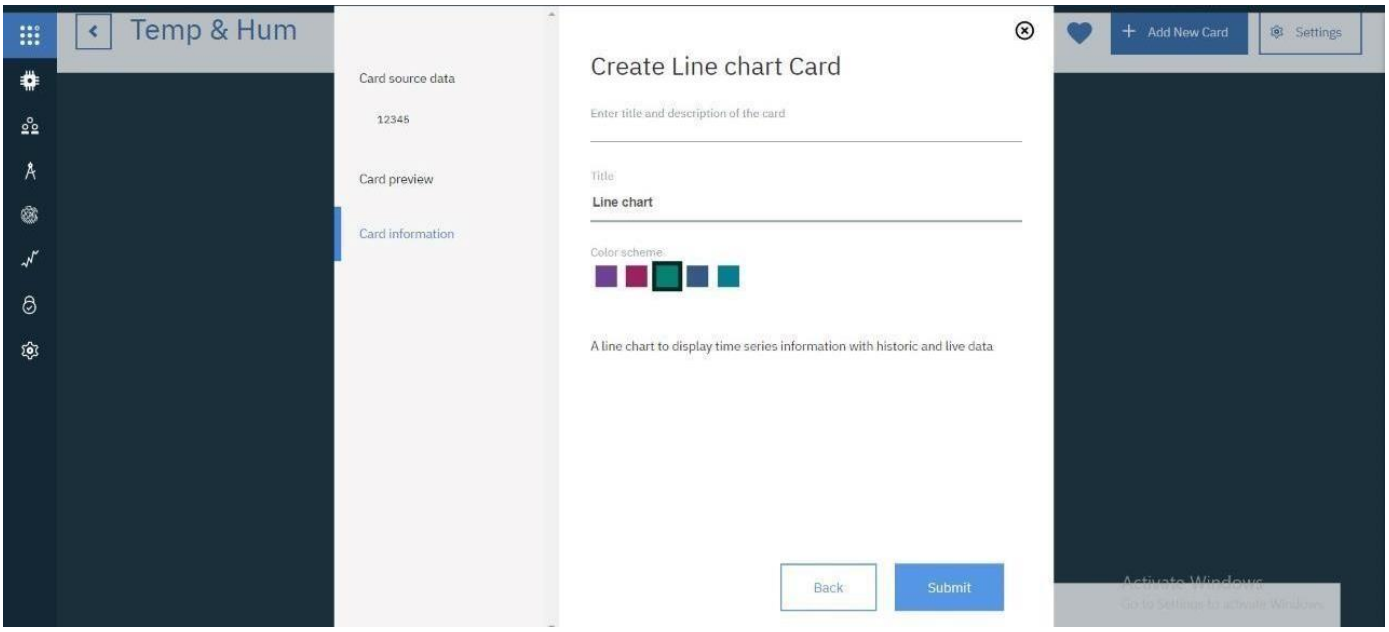


- You get the below window, choose the Device and click on Next.

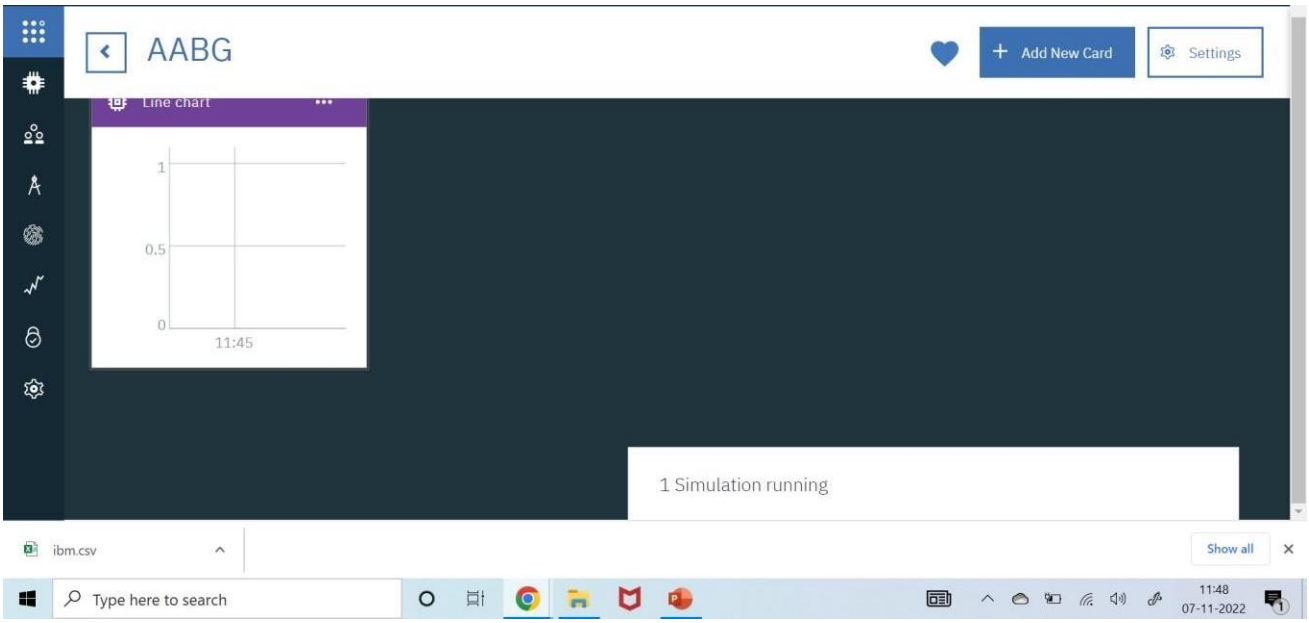



- Select the event, properly to be visualized on your graph and click next. In my case it is humidity

- 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.