SENDING DATA FROM RASPBERRY-PI TO IBM WATSON

Team ID	PNT2022TMID53743
Project Name	Smart Waste Management Using 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

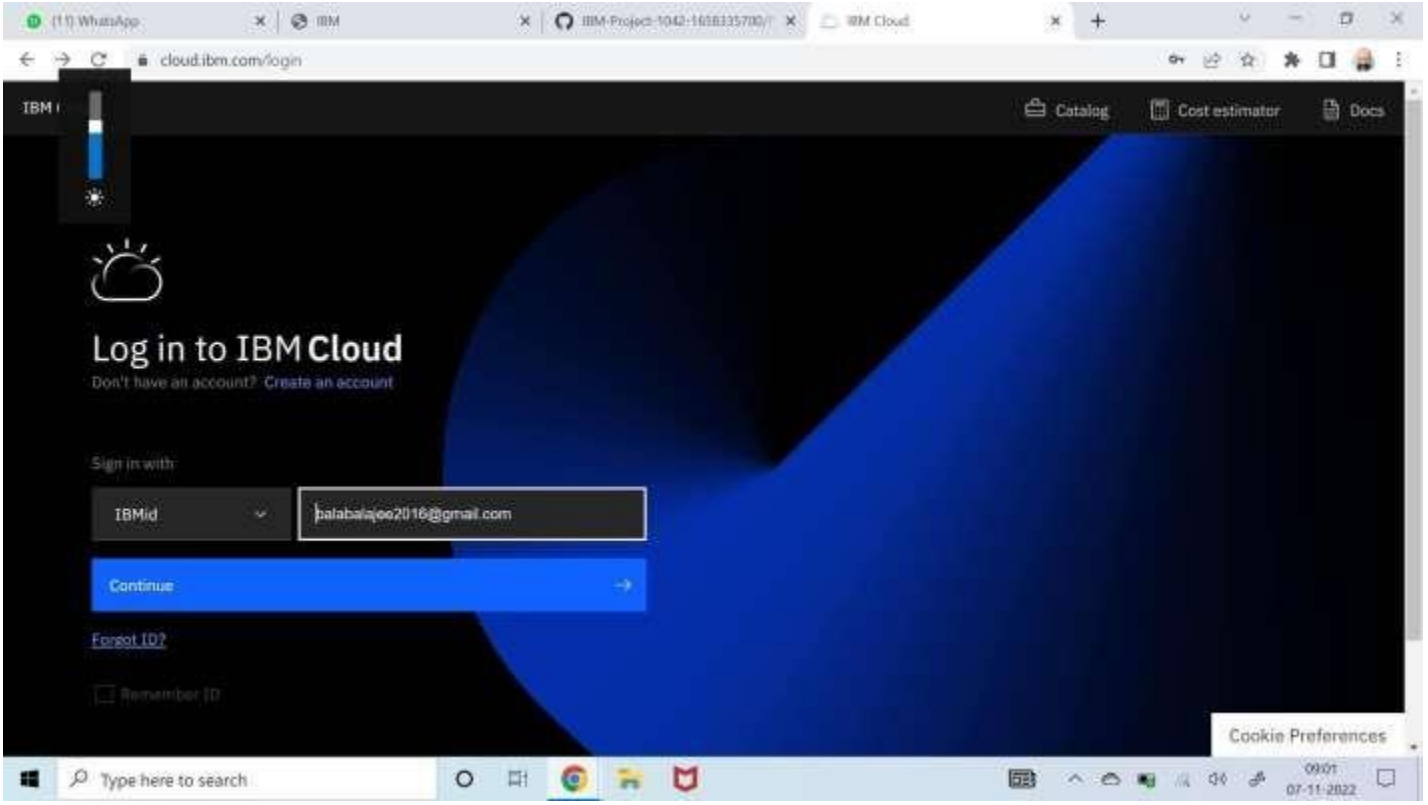
SOFTWARE:

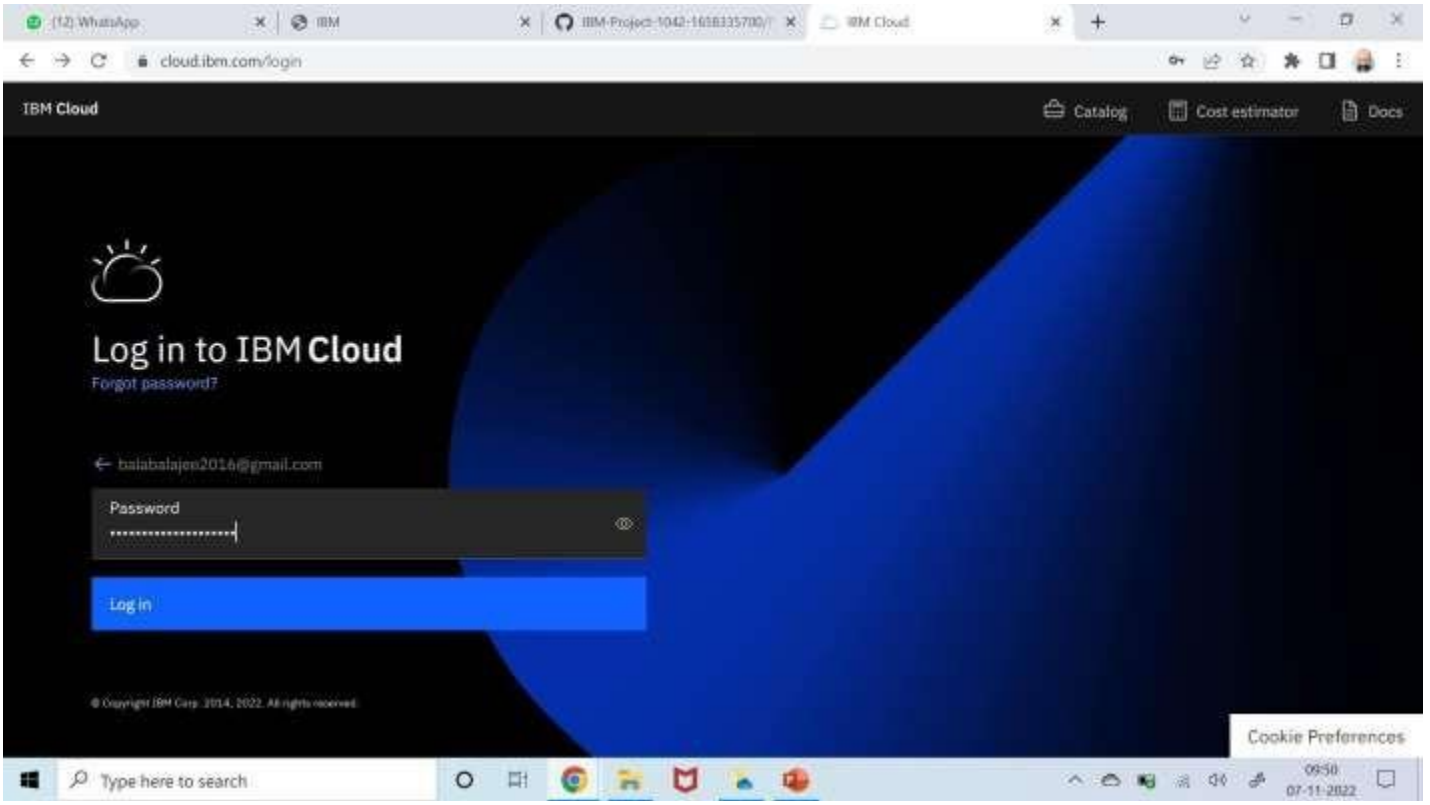
- IBM BLUEMIX ACCOUNT

STEPS TO BE FOLLOWED

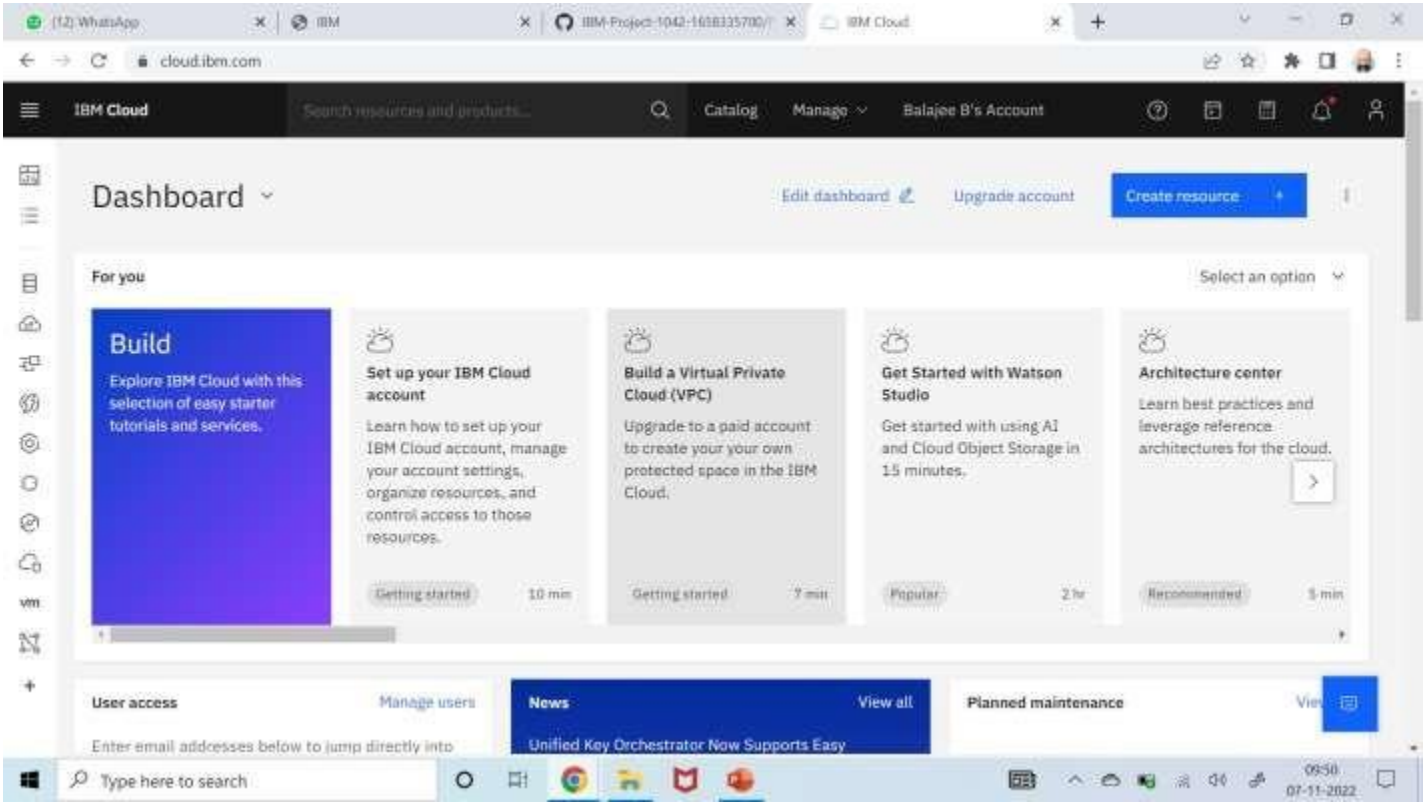
Step-1: Create a device in IBM Watson:

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

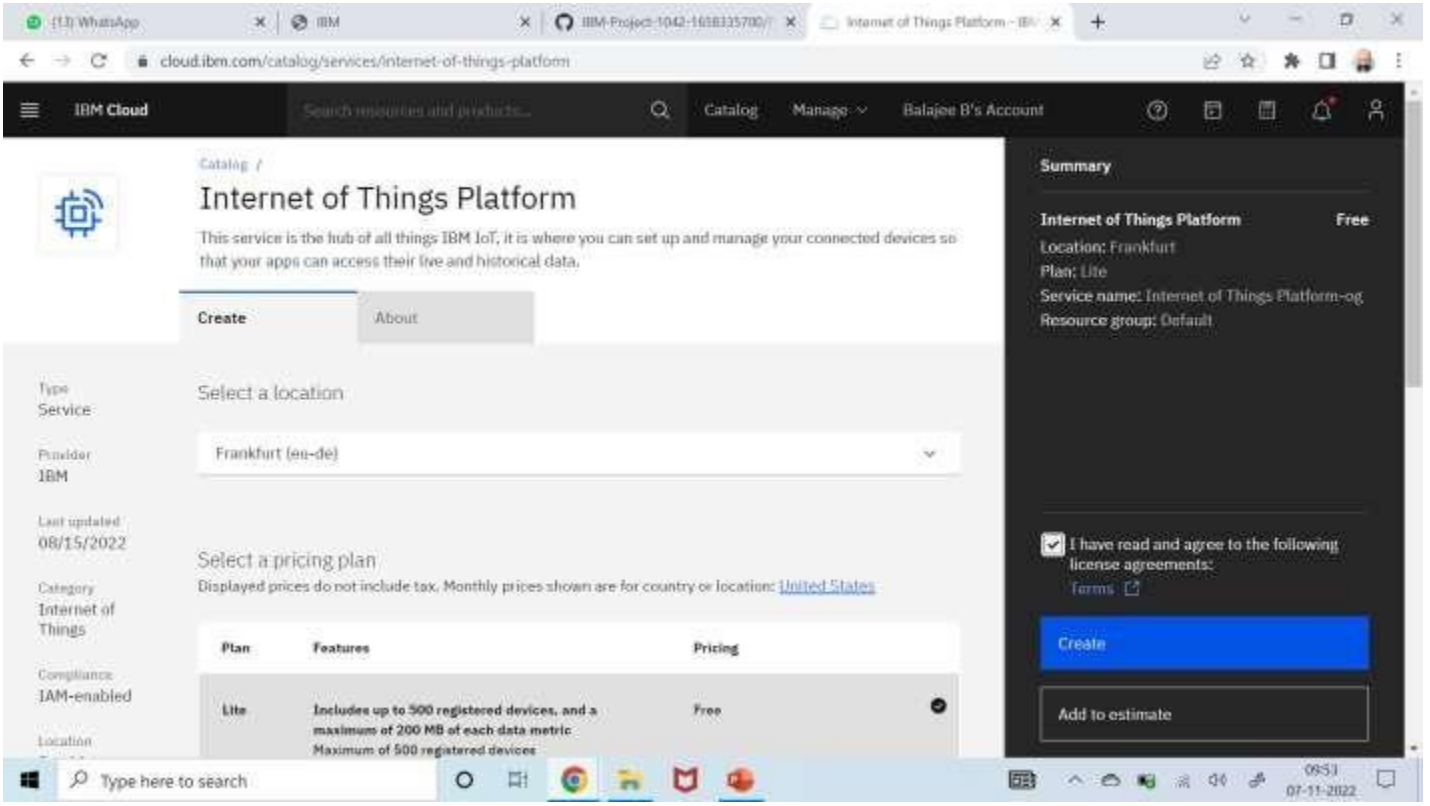


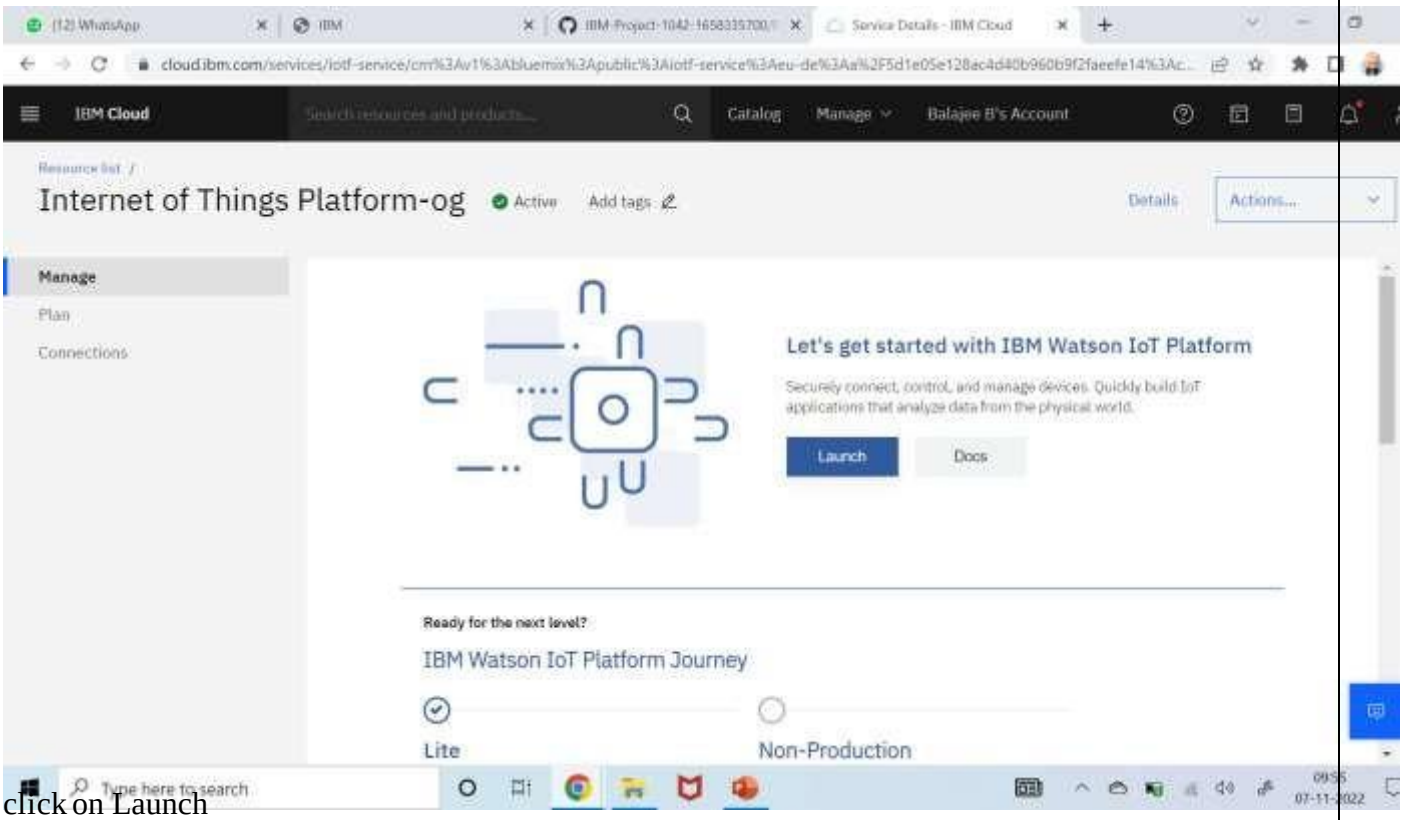


- Click on catalog on your dashboard screen, then under platform go IoT.



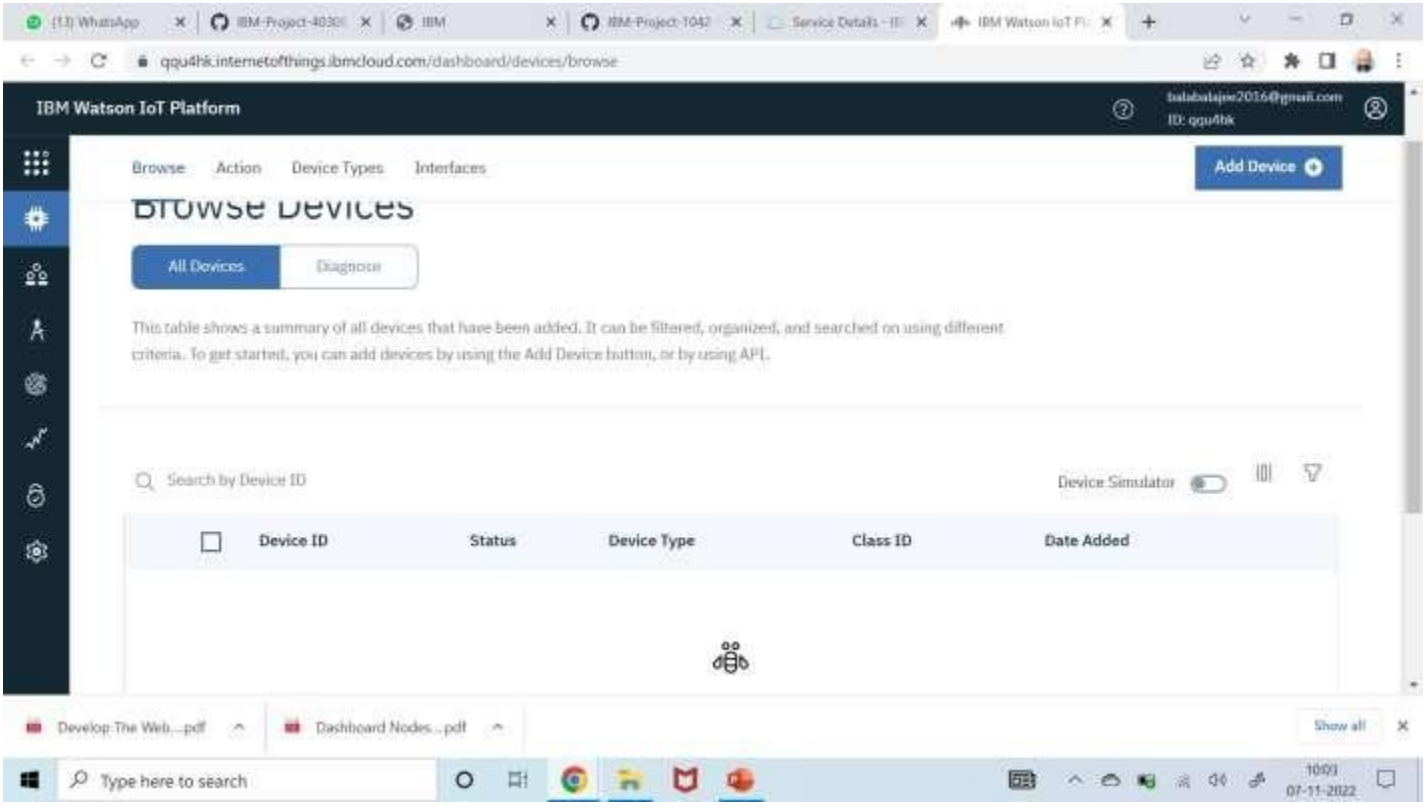
- Check all details and click on create.



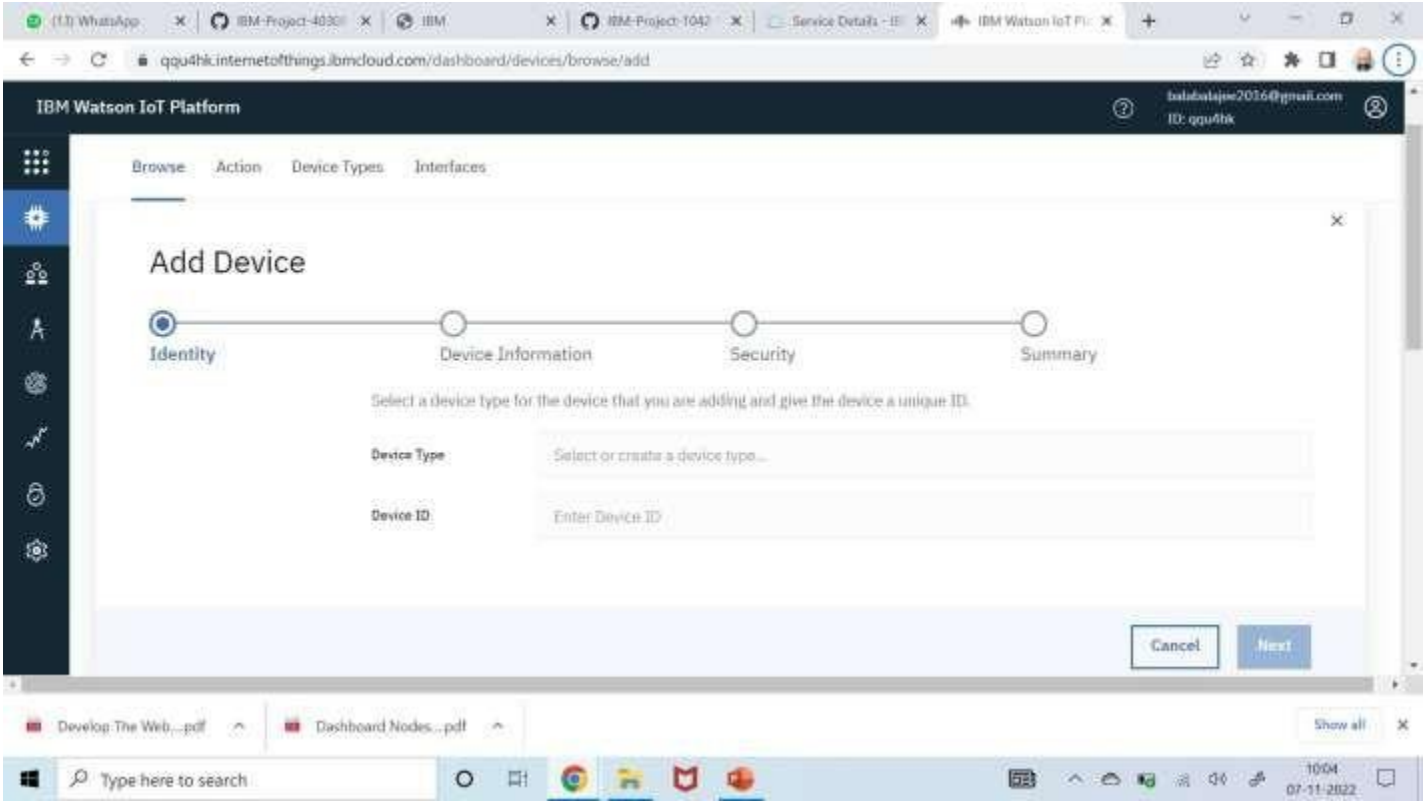


- click on Launch

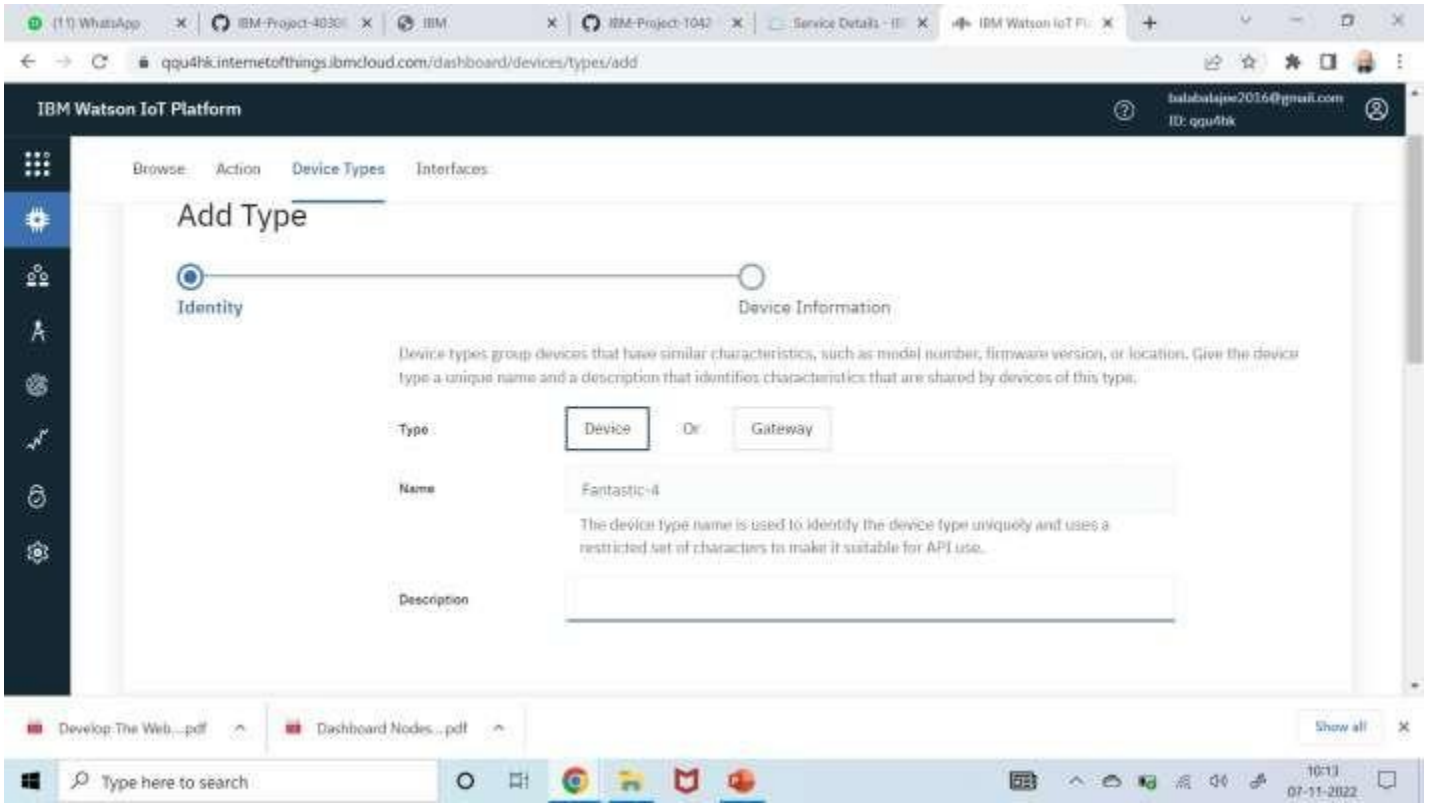
- Dashboard of IBM Watson IoT platform,
- Click on Add device



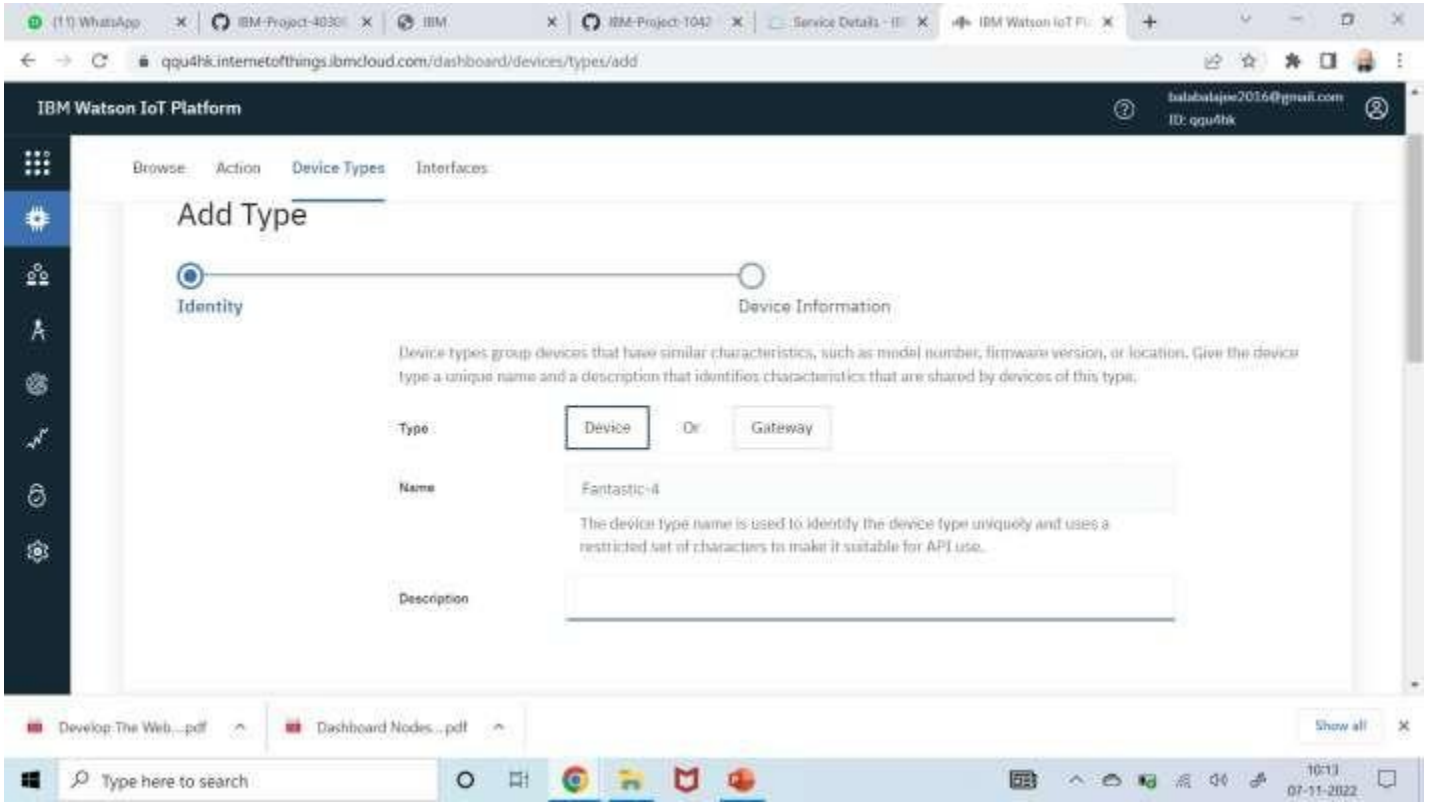
- After click on Add device this page will open



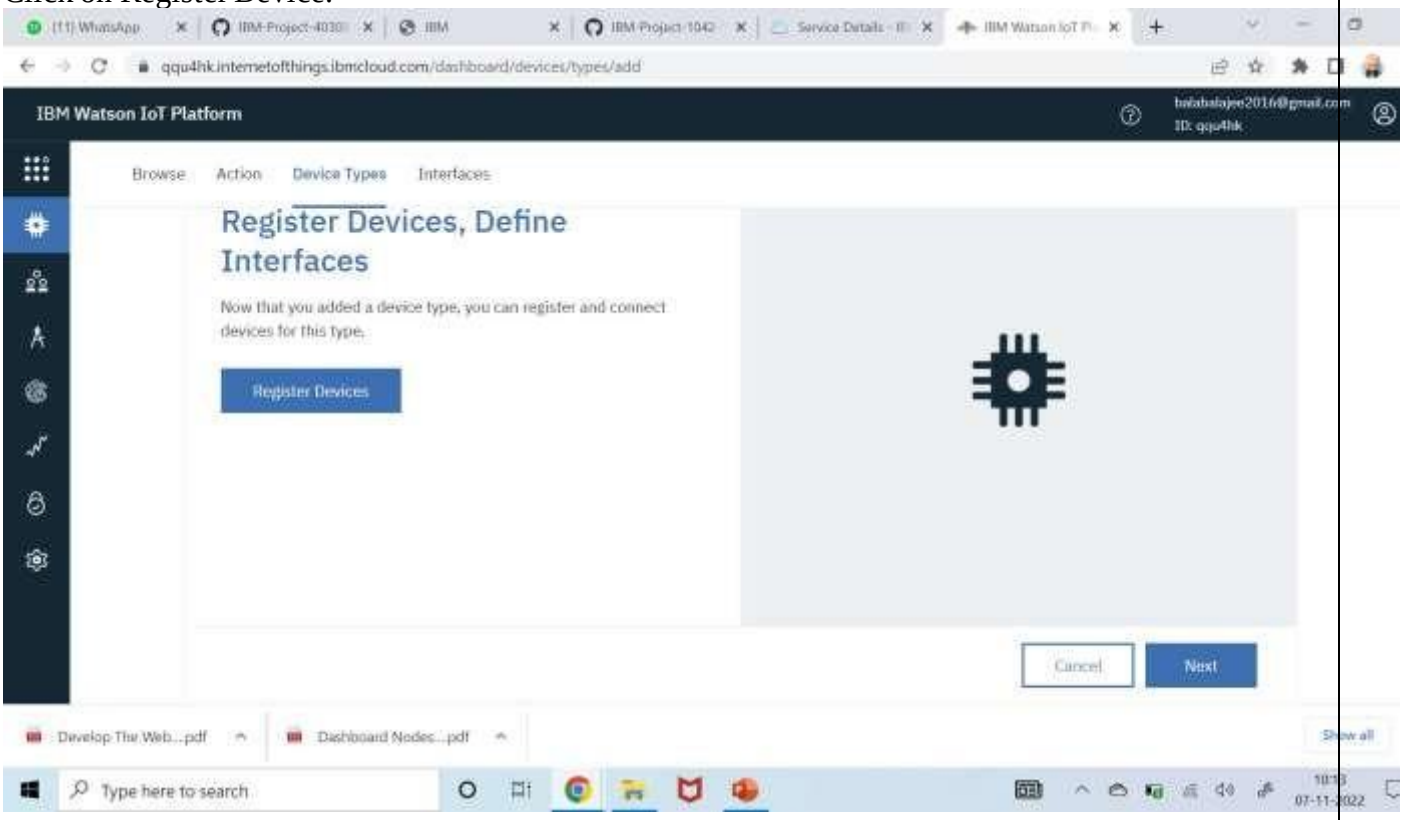
- Go to device type and fill the details.



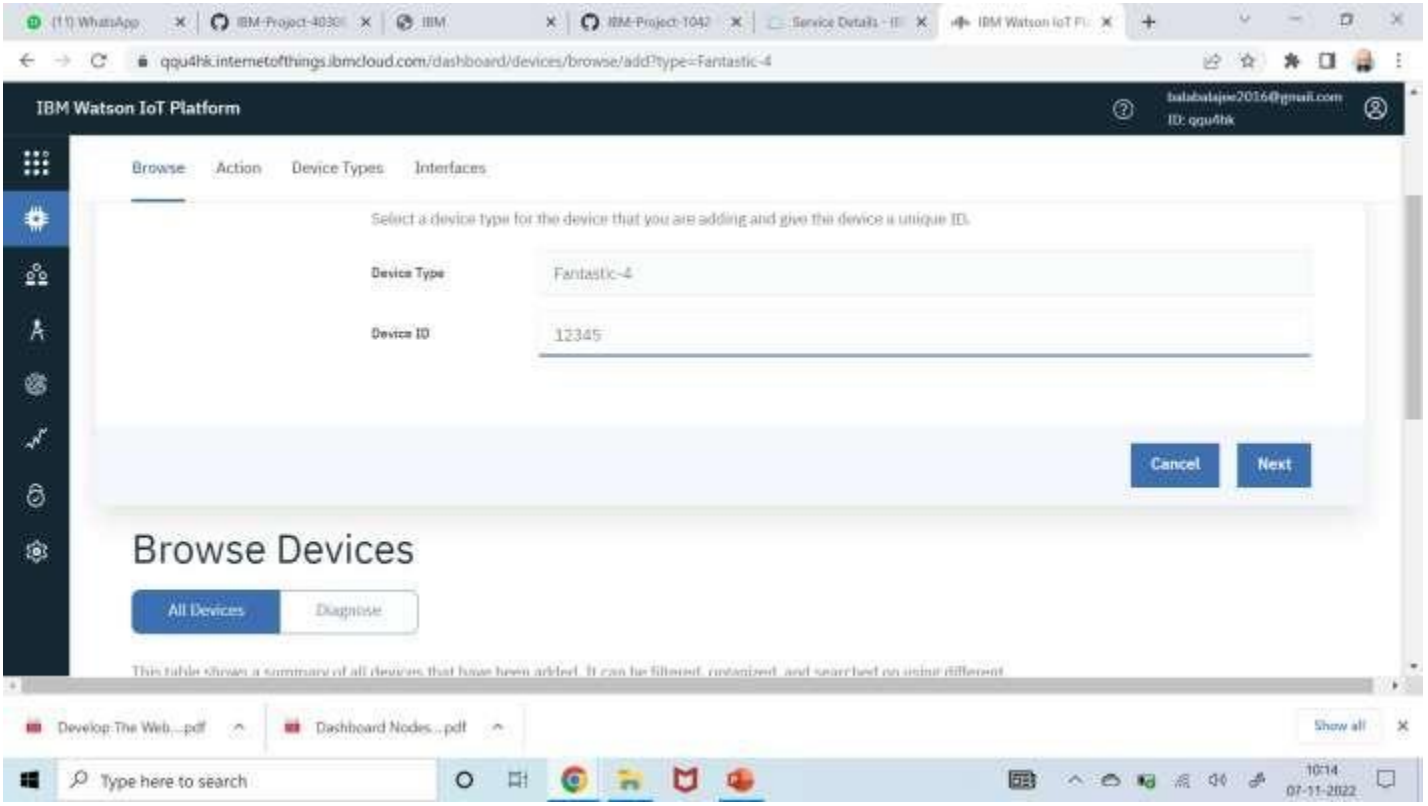
- Click on Finish



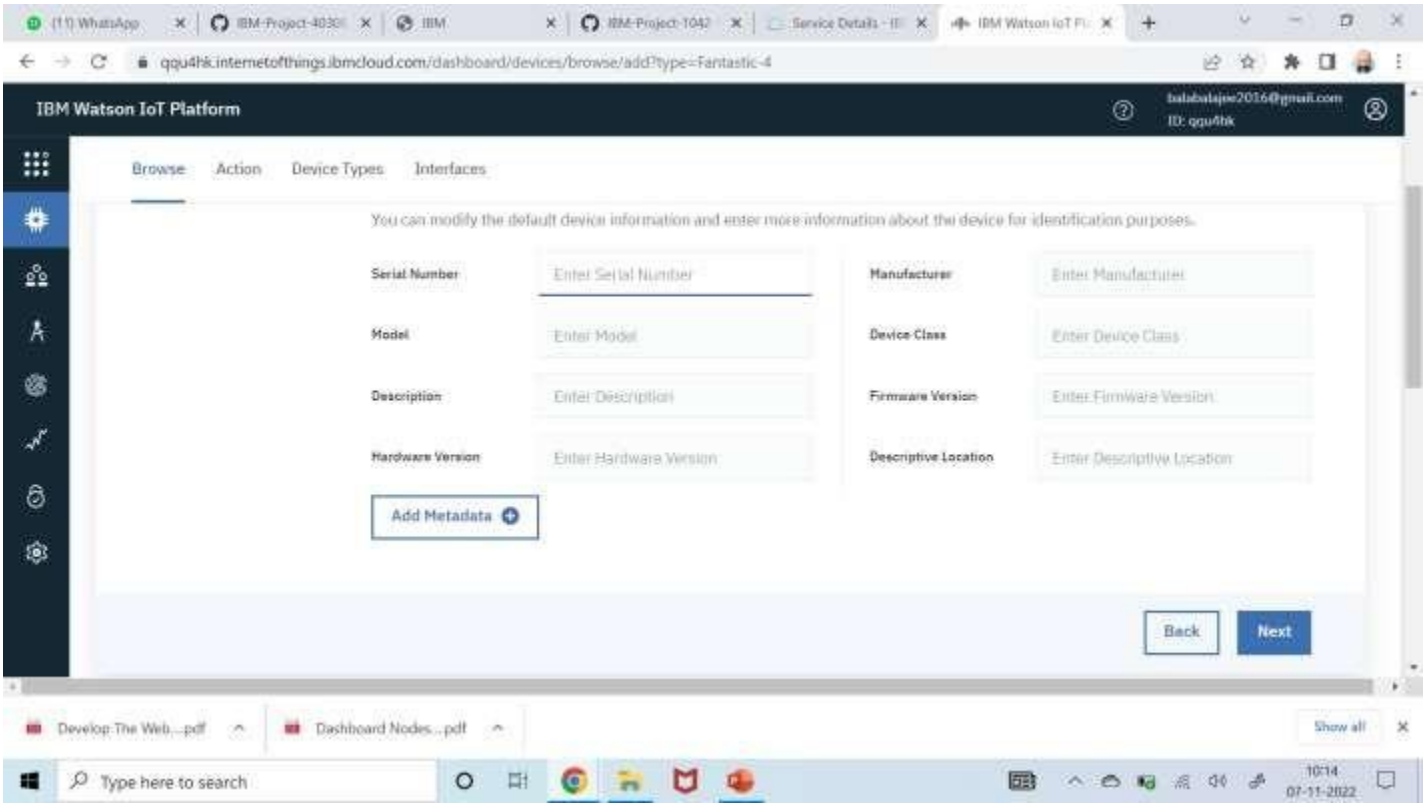
- Click on Register Device.



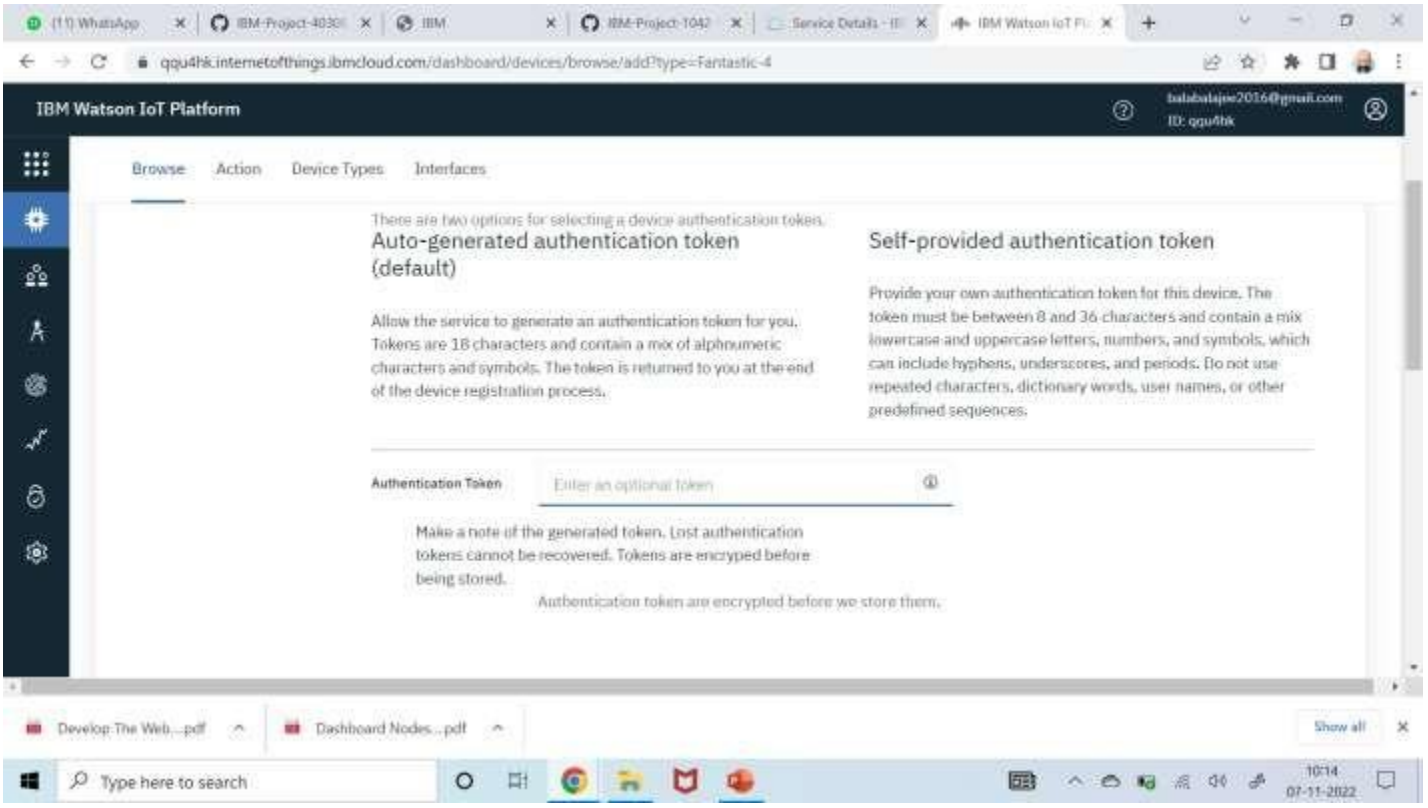
- Choose the device and give device ID and then click on next.



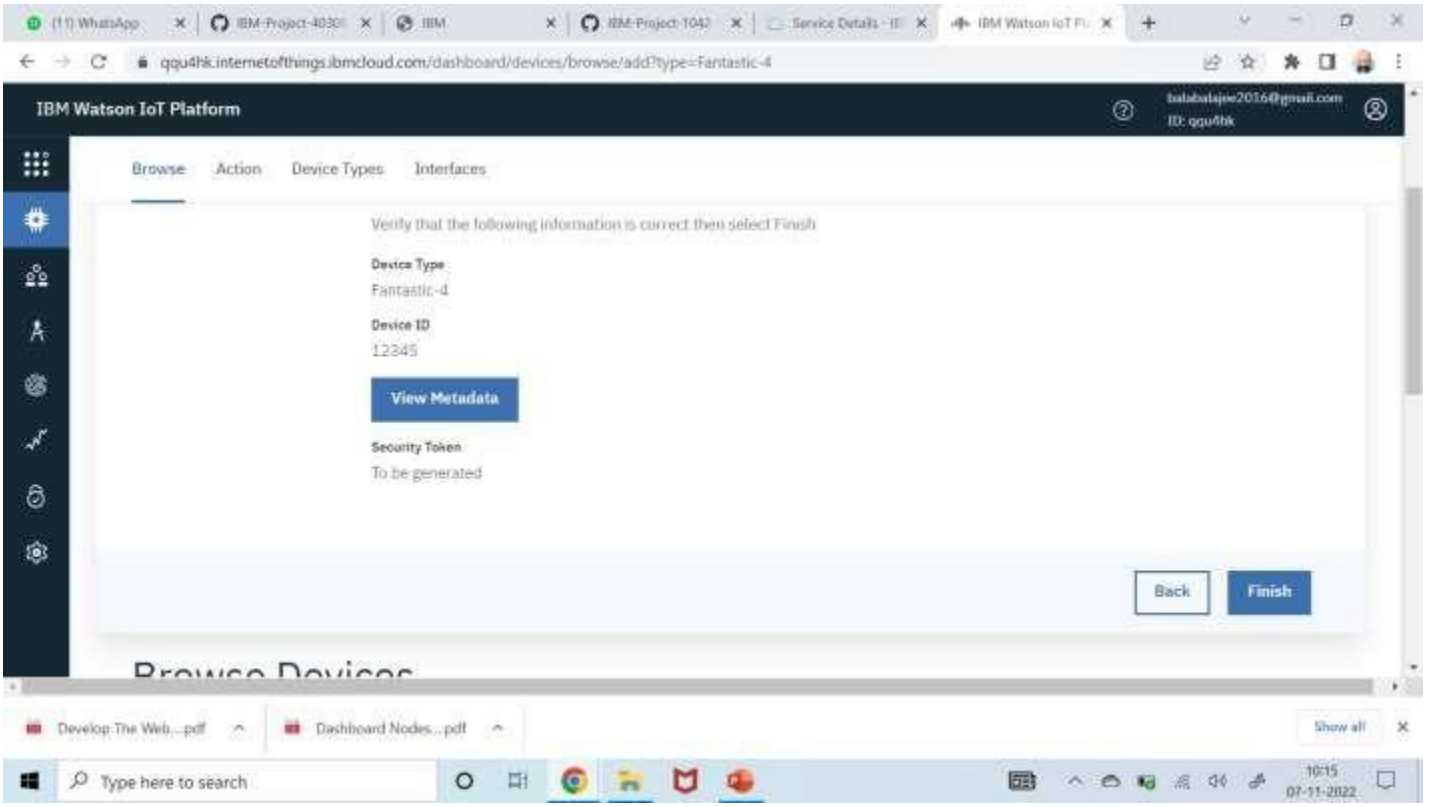
- Click on Next



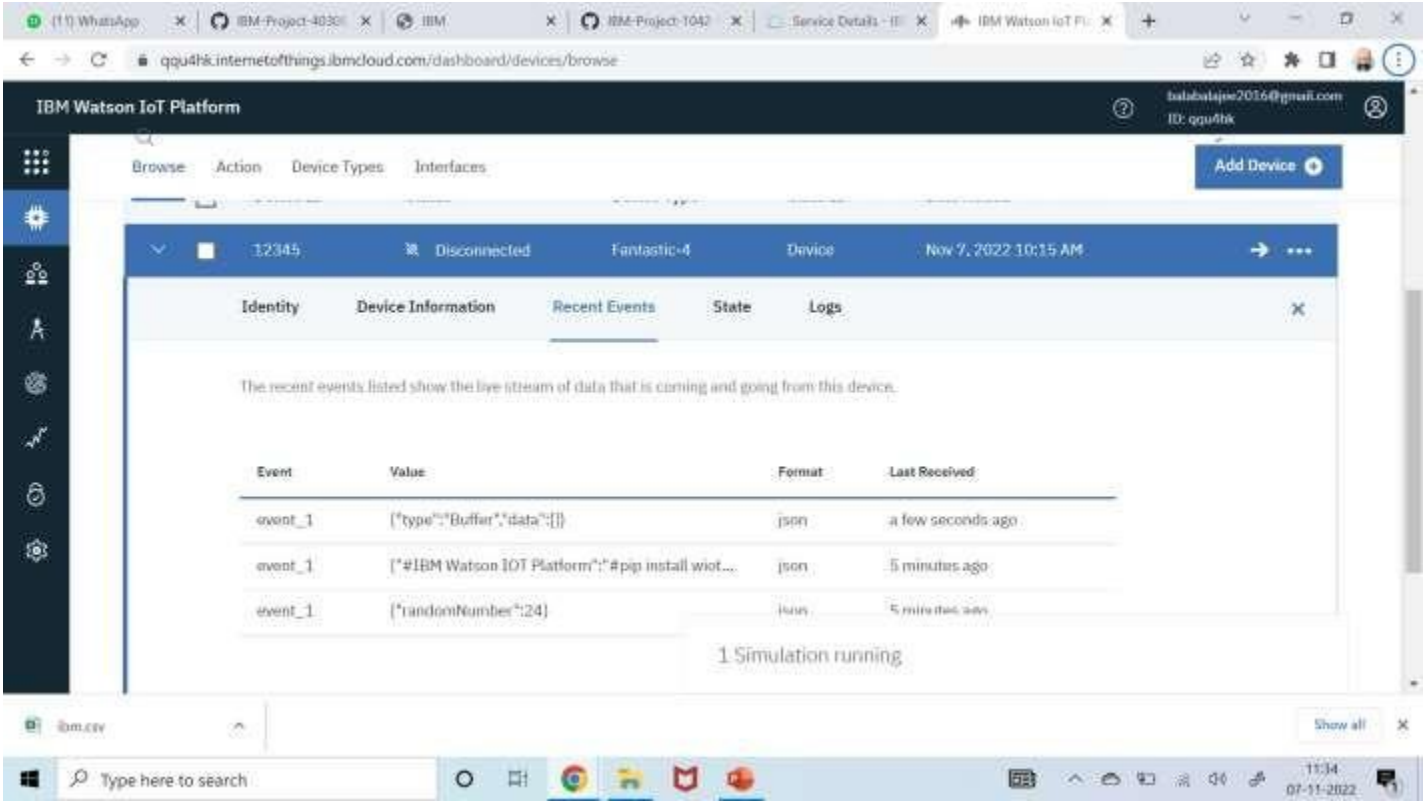
- Click on Next



- Click on Finish



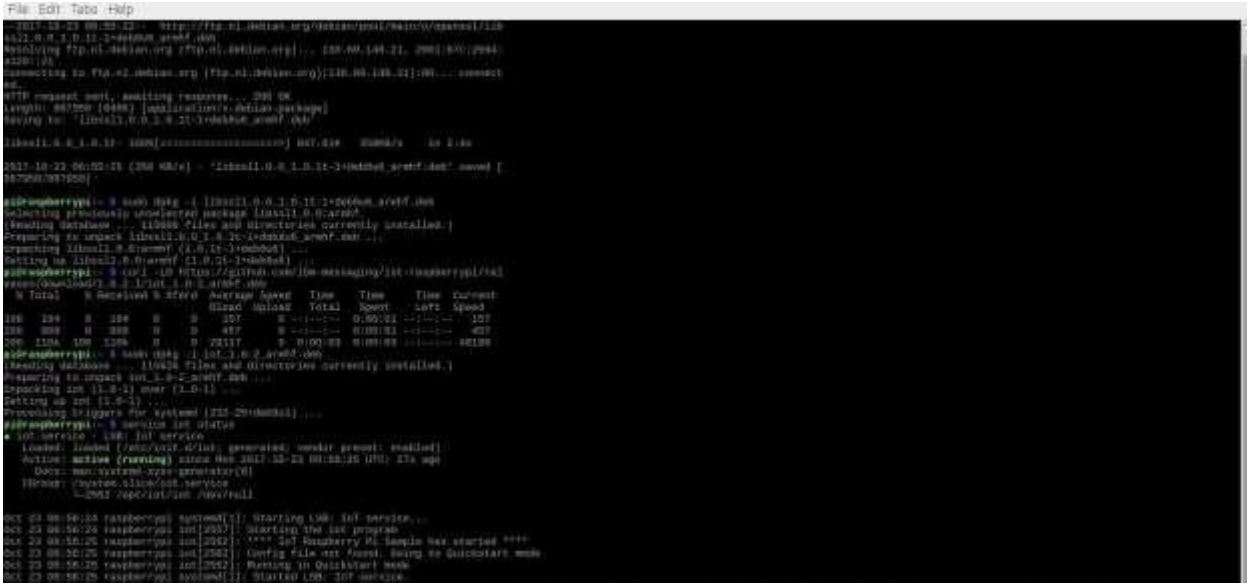
- Device is created



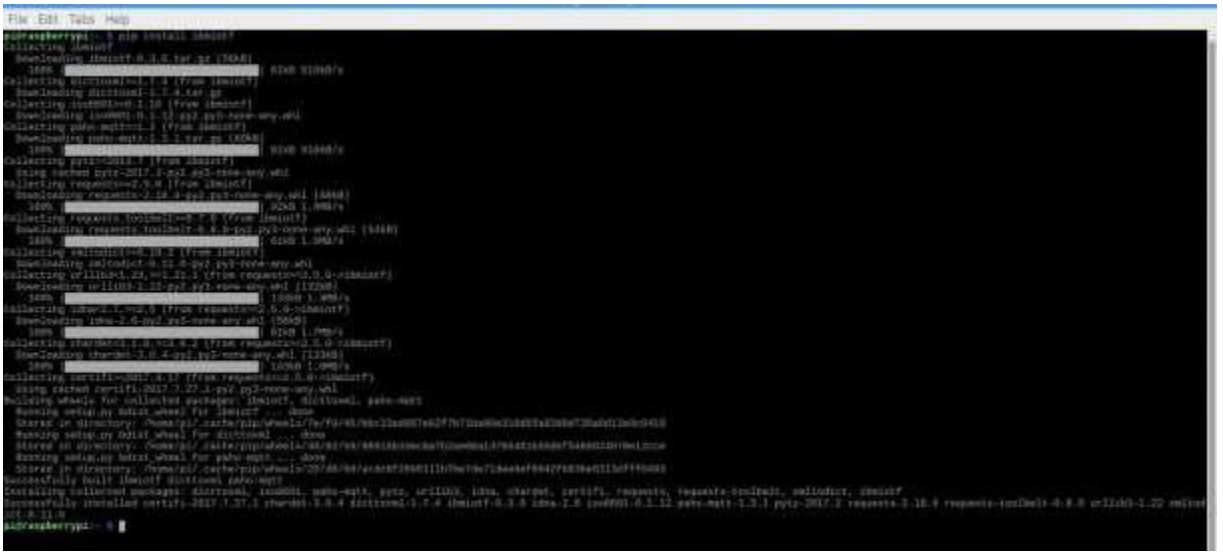
STEP-2: INSTALLING NECESSARY PACKAGES ON YOUR PI:

- 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

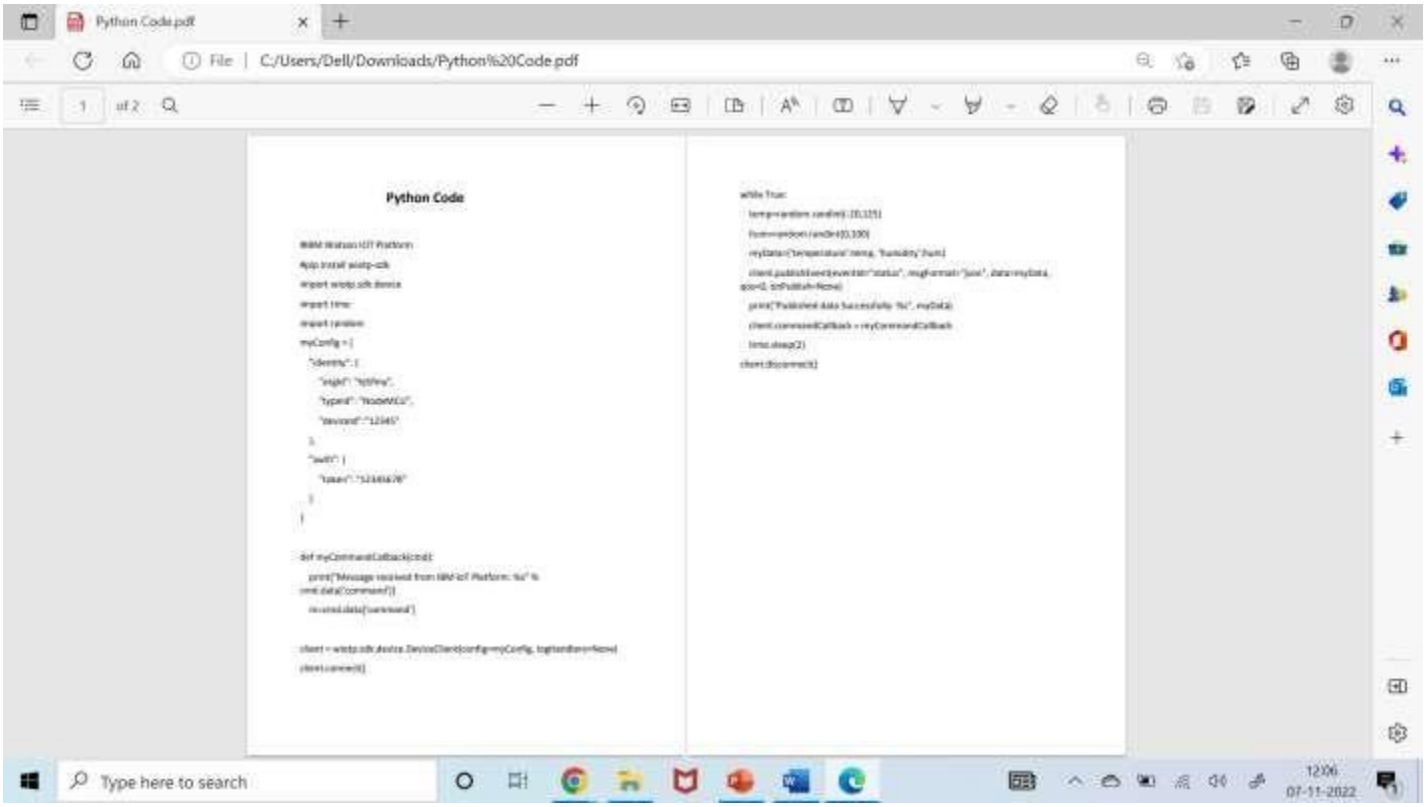
Following are the images as to what appears on your pi's terminal when u type these commands



- Then open your terminal and type pip install ibmiotf

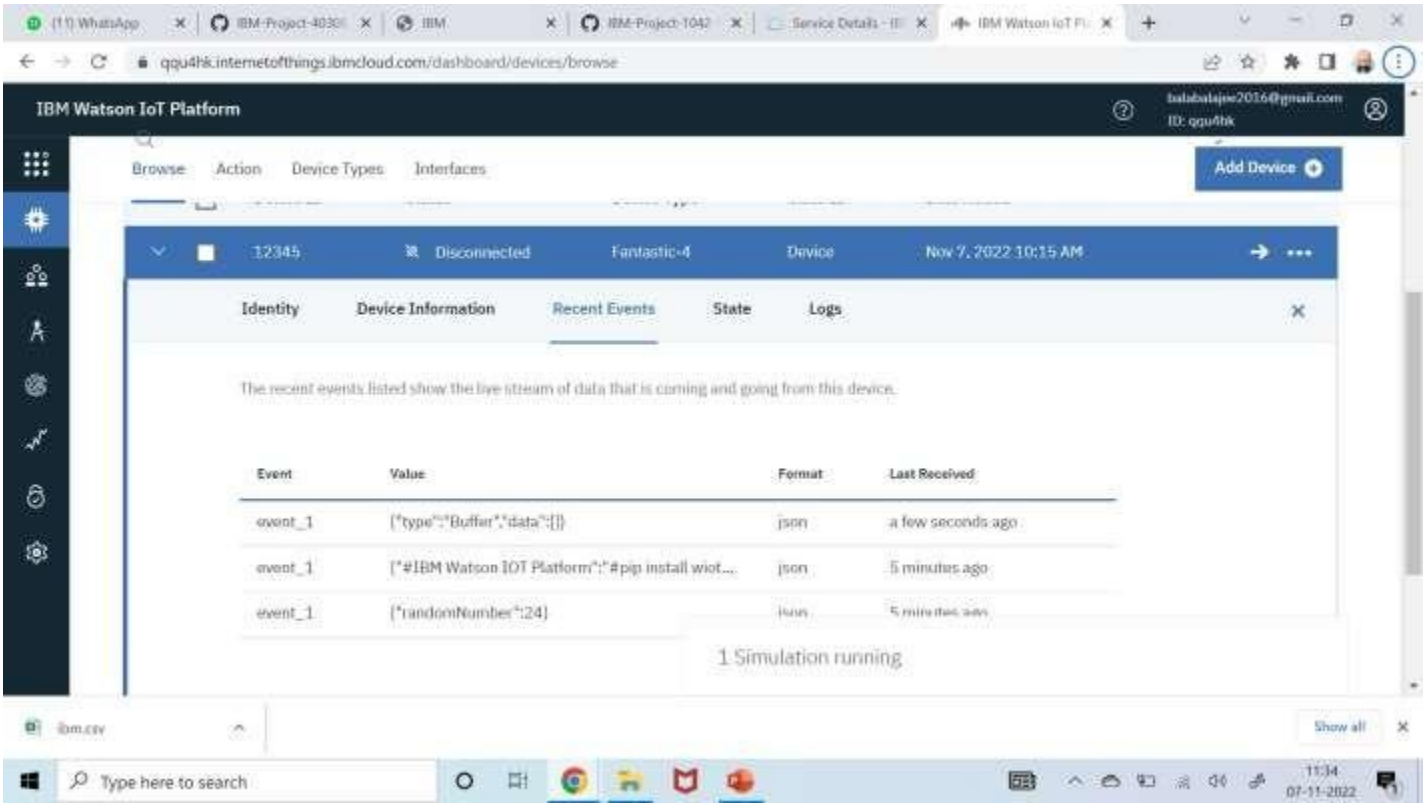


- I have sent DHT-11 Sensors data to ibm bluemix .To get the code u need to login into IOT GYAN.
- Then I get the image as follows in my pi's shell:



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

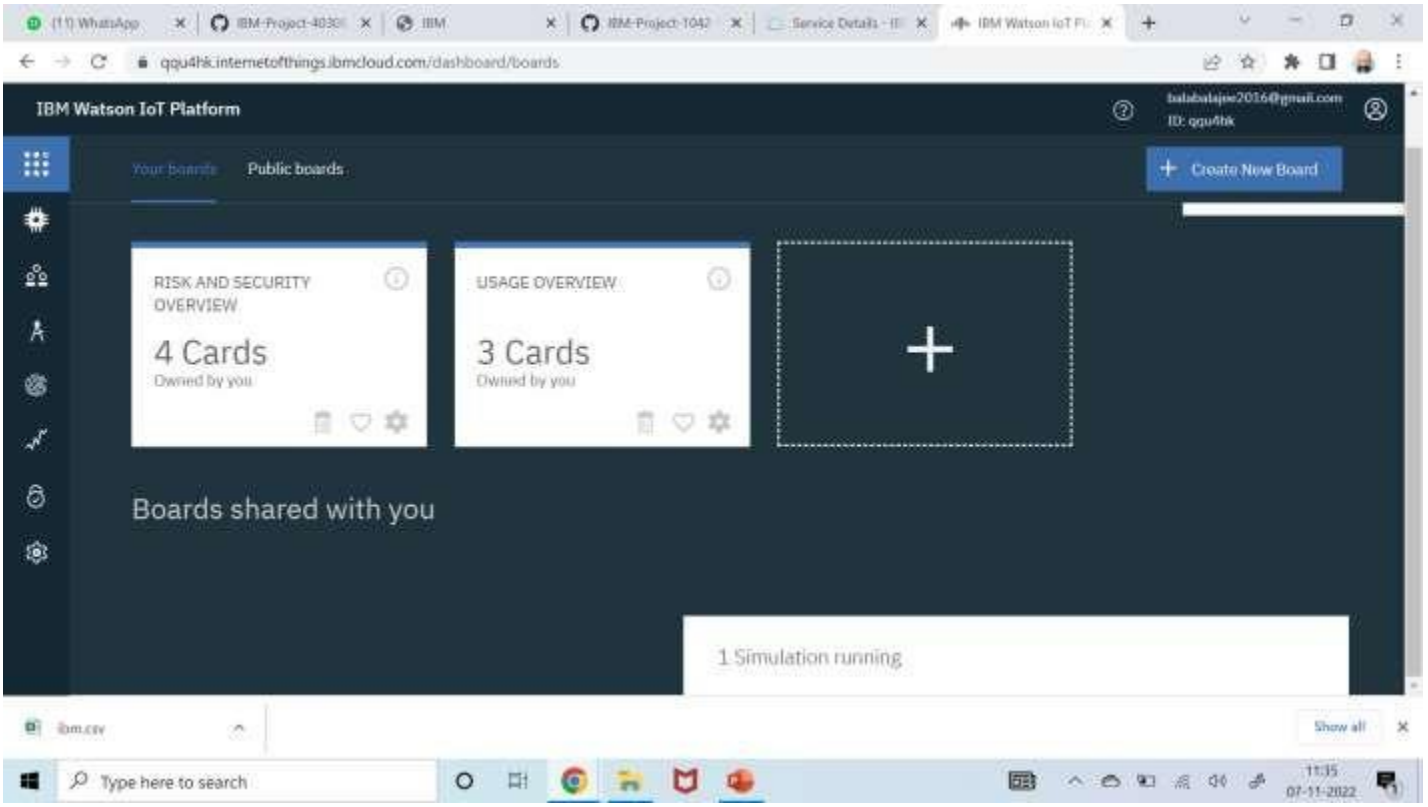
- After you have sent your sensors data you can check whether it is received at your iot platform Just look at the image below and if u see the same wifi kind of symbol on your created device then your dta is being received.


IBM Watson IoT Platform
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
Type here to search

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

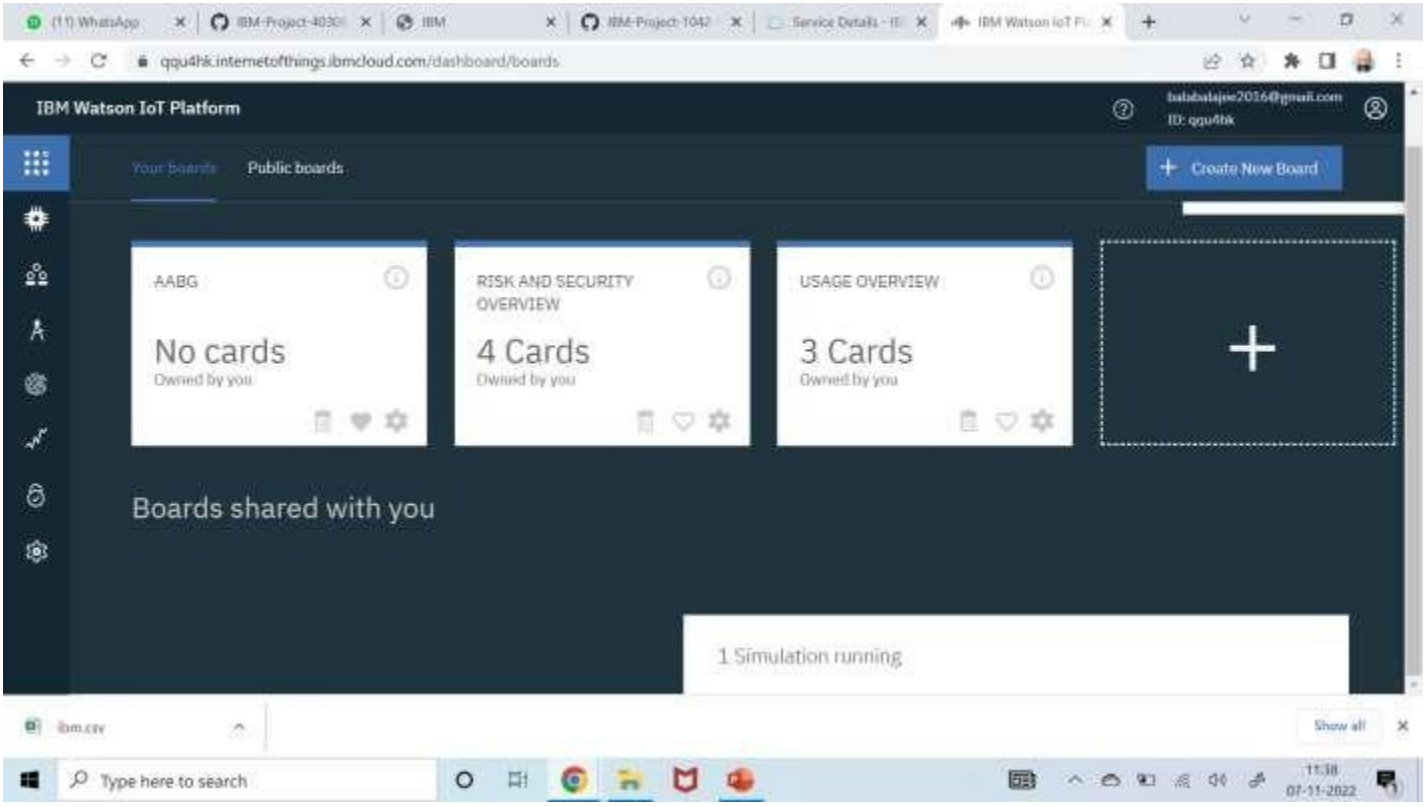
Step-4: Creating boards and cards for visualization of data:

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

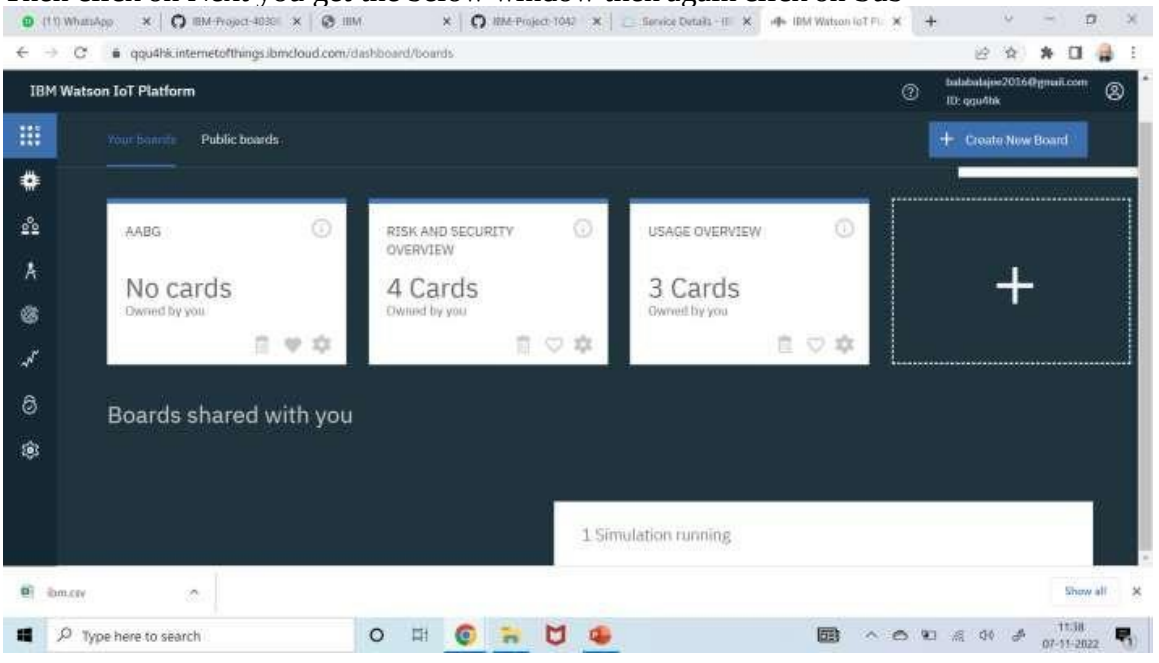


- Click on Create a new board to create a board .

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

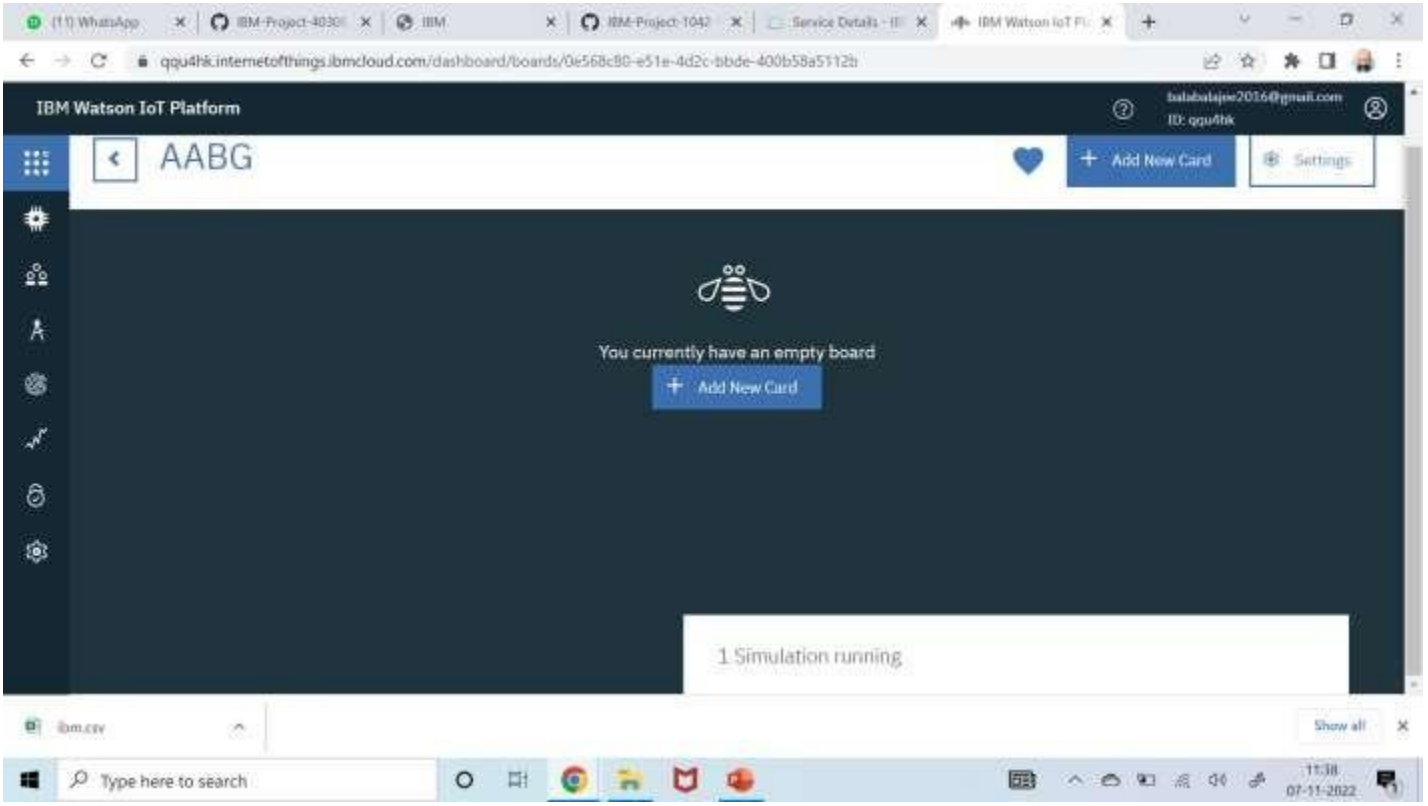


- Then click on Next you get the below window then again click on Sub

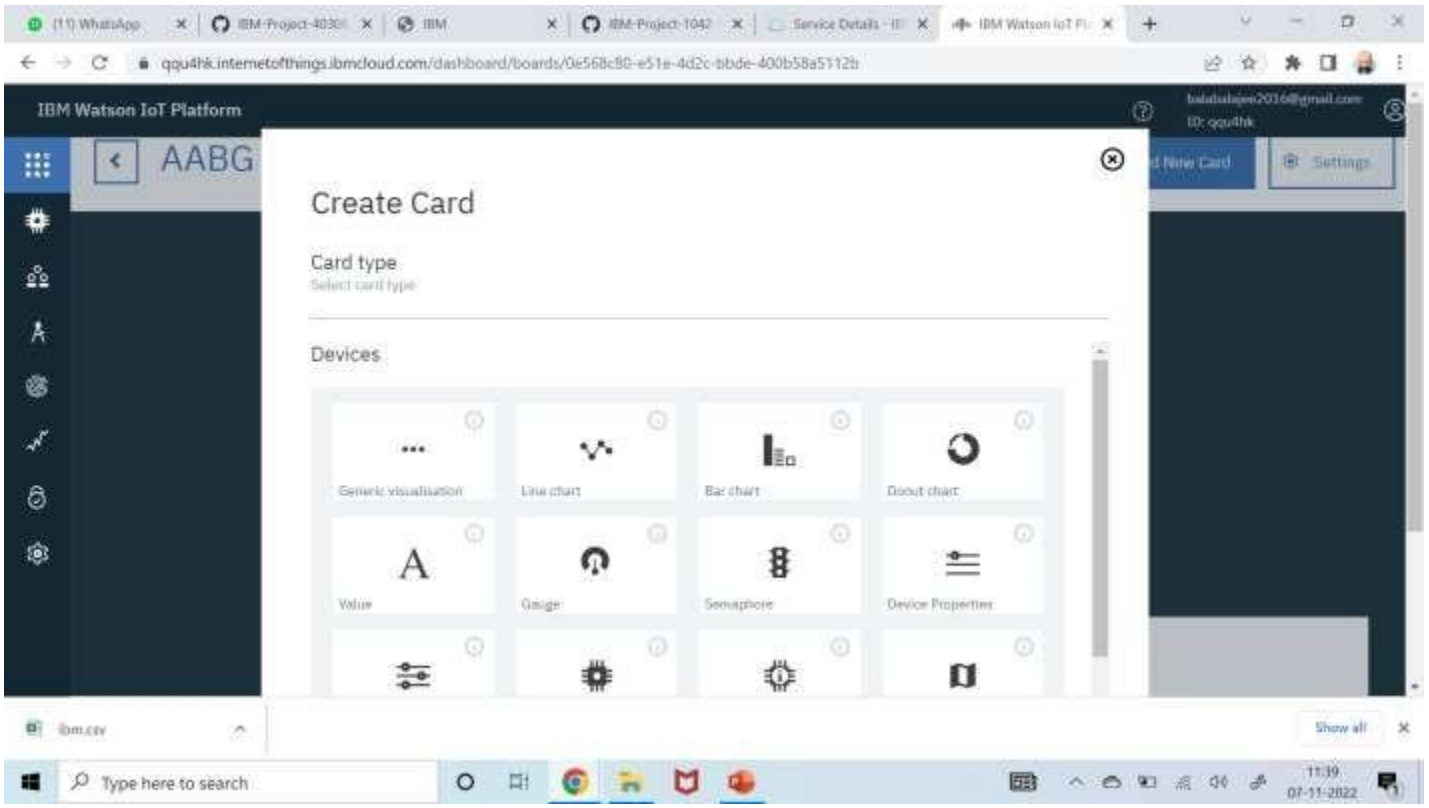


Then double click on your boards name which you have created.

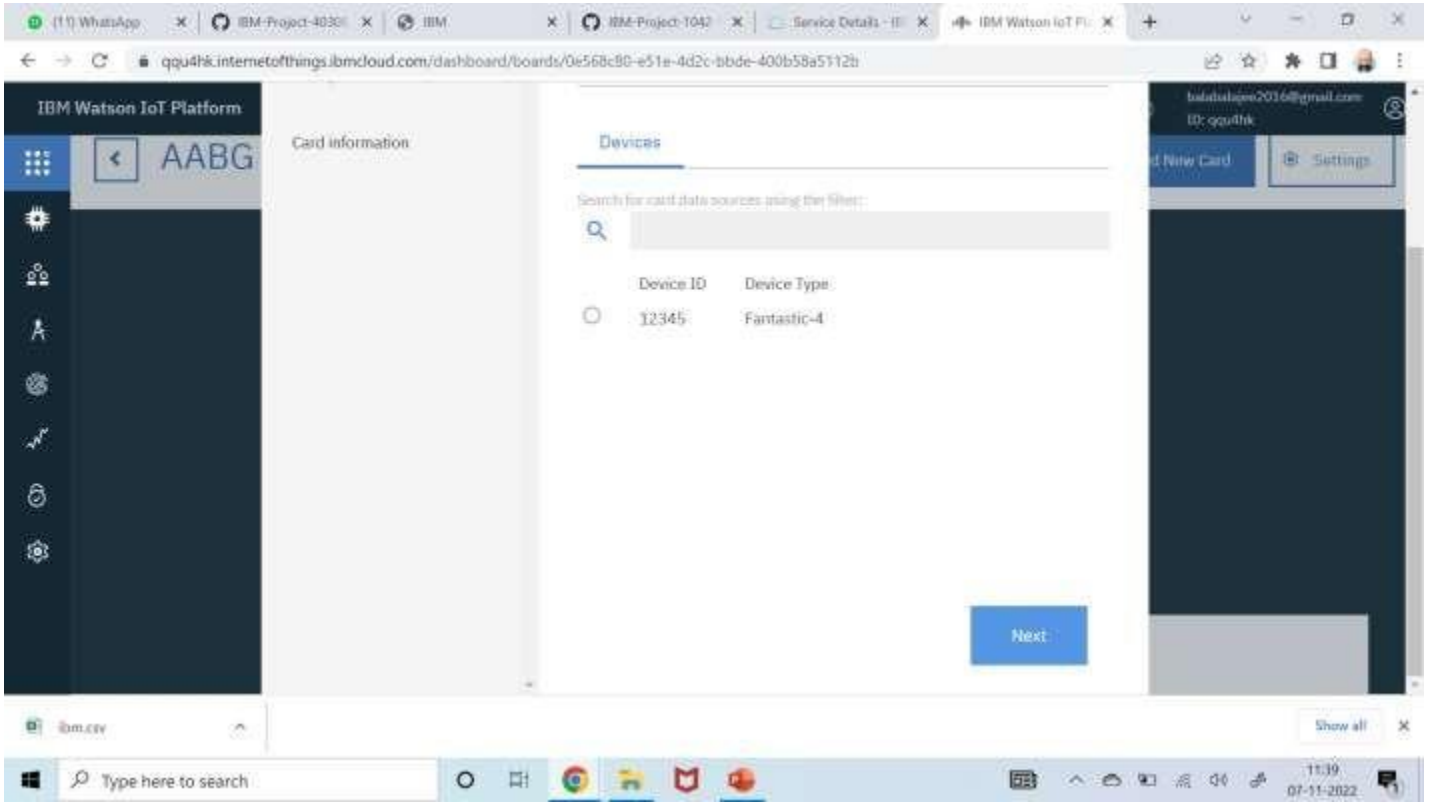
- Click on Add New Card



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

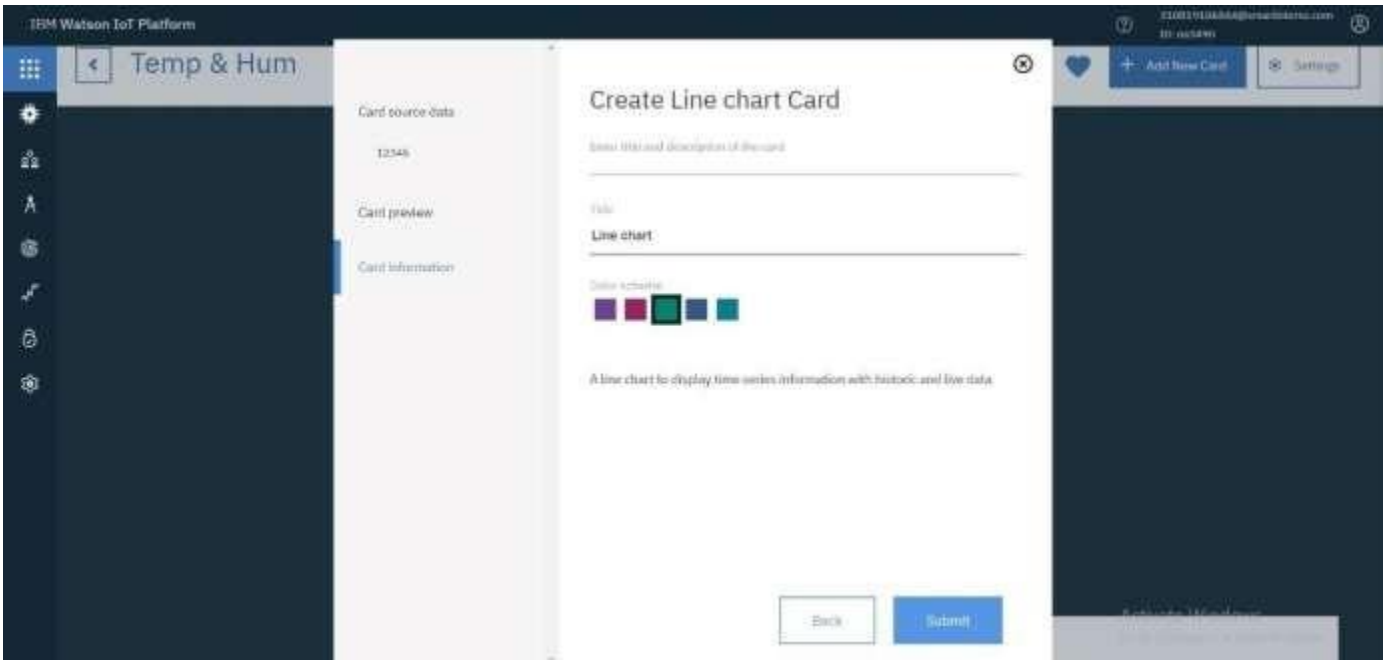


- You get the below window, choose the Device and click on Next.

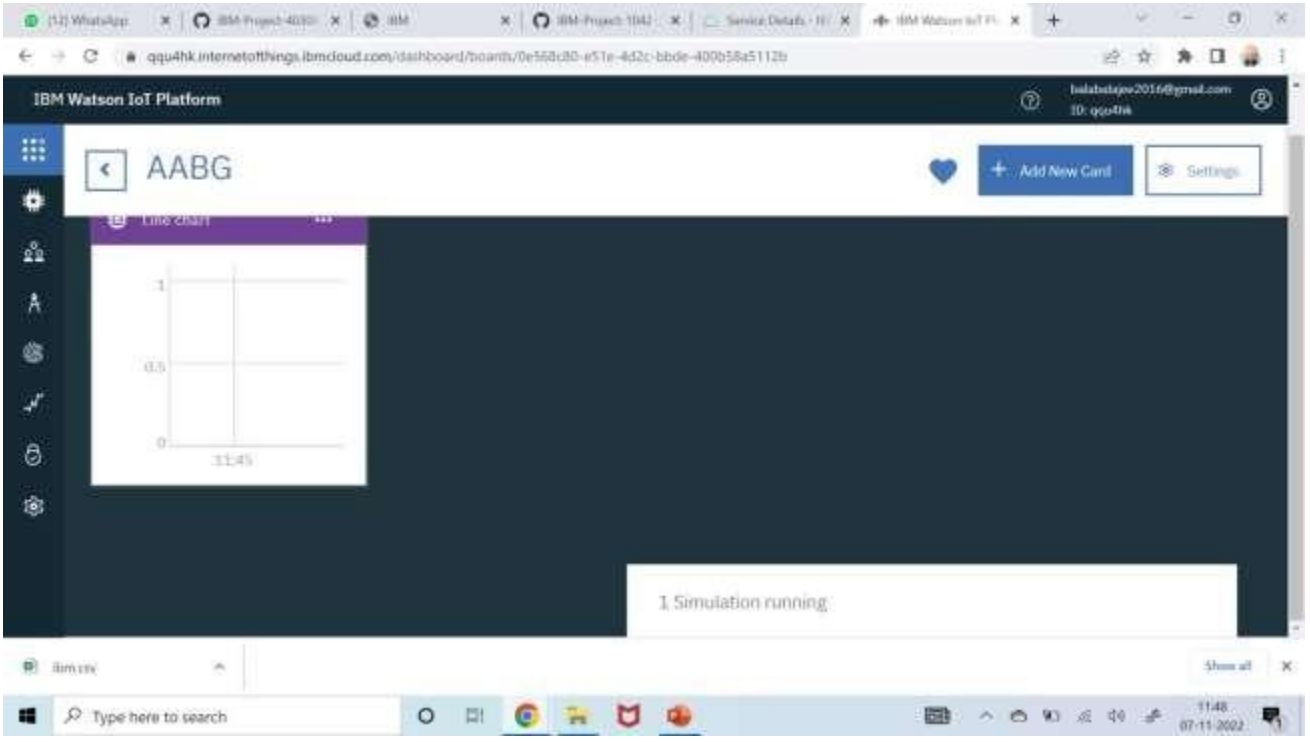


- Select the event, properly to be visualized on your graph and click next. In my case it is humidity

- 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.