**SENDING DATA FROM RASPBERRY-PI TO IBM WATSON**

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| **Date** | 3 NOVEMBER 2022 |
| **Team ID** | PNT2022TMID17620 |
| **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

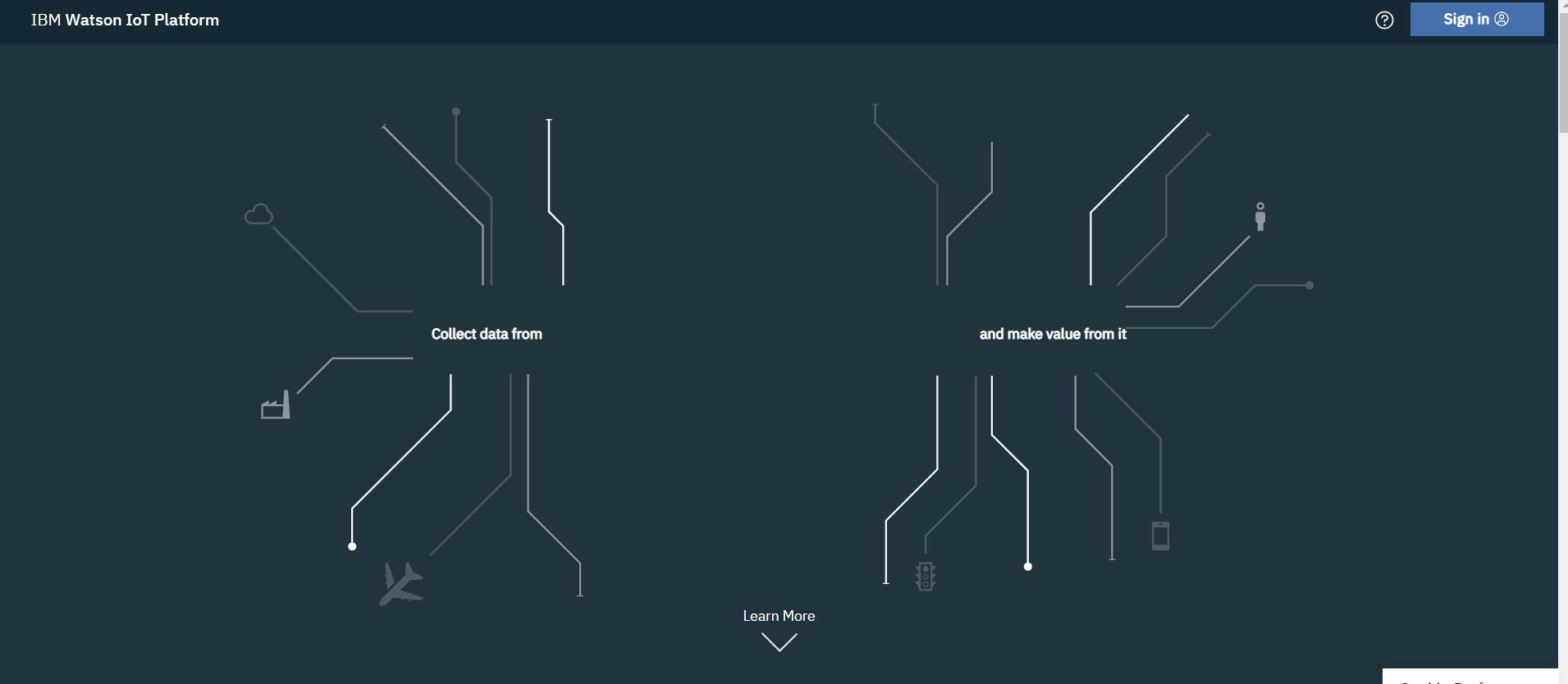
**SOFTWARE:**

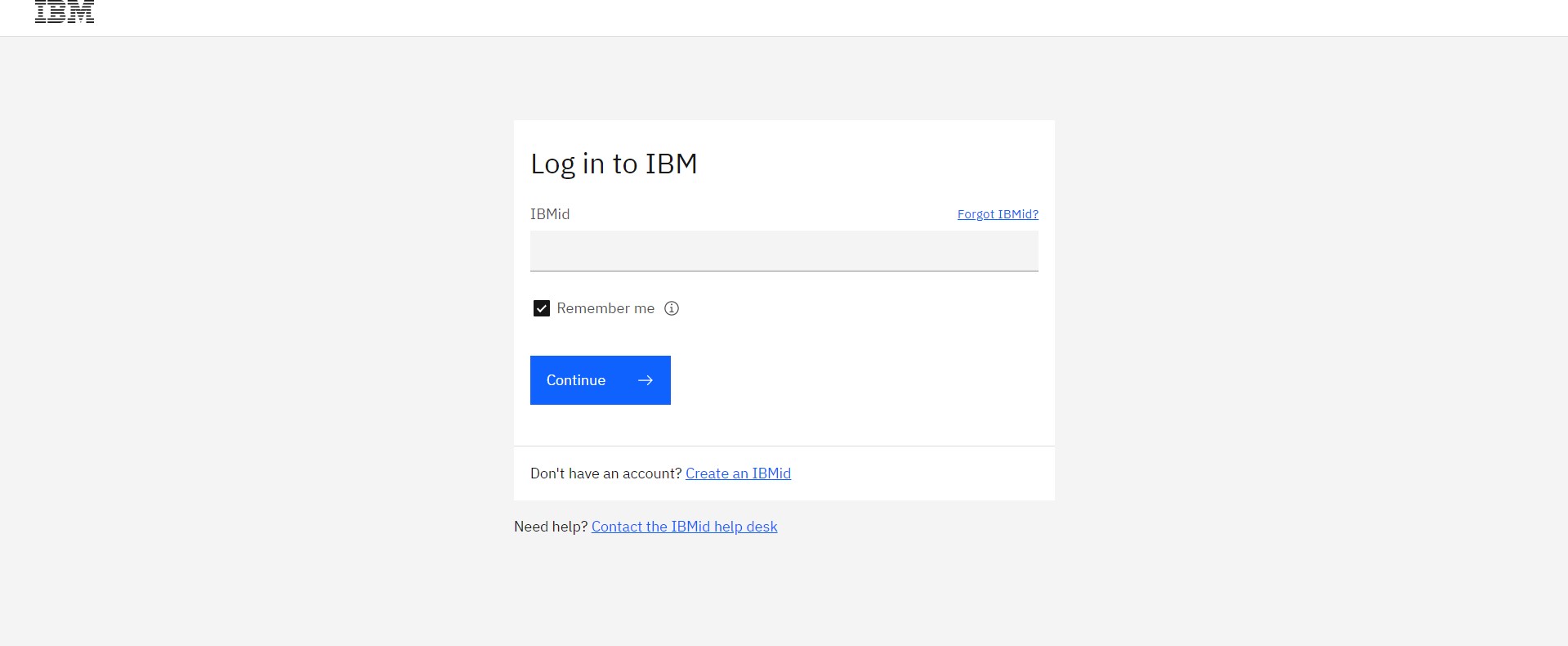
* IBM BLUEMIX ACCOUNT

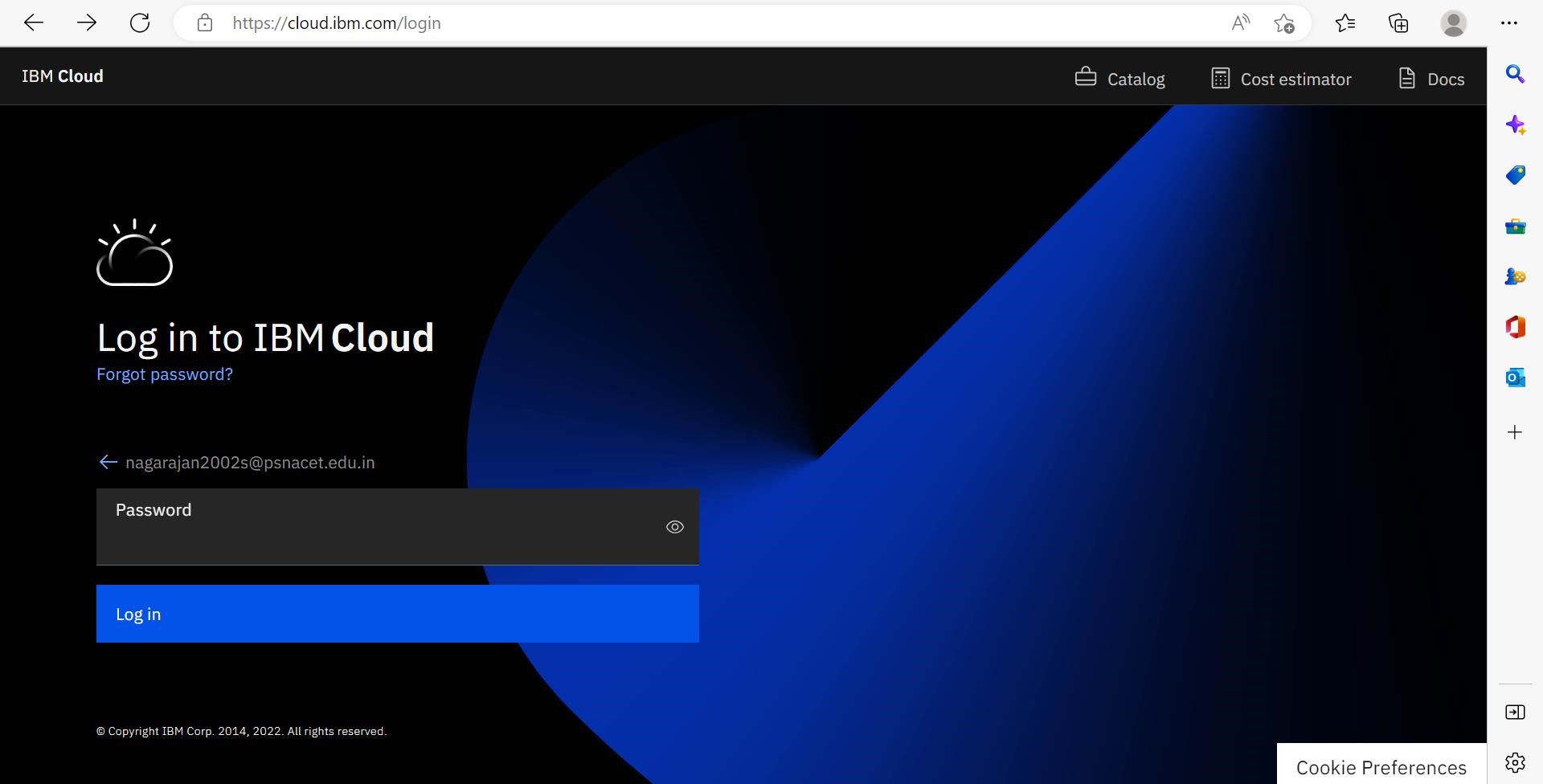
**STEPS TO BE FOLLOWED**

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

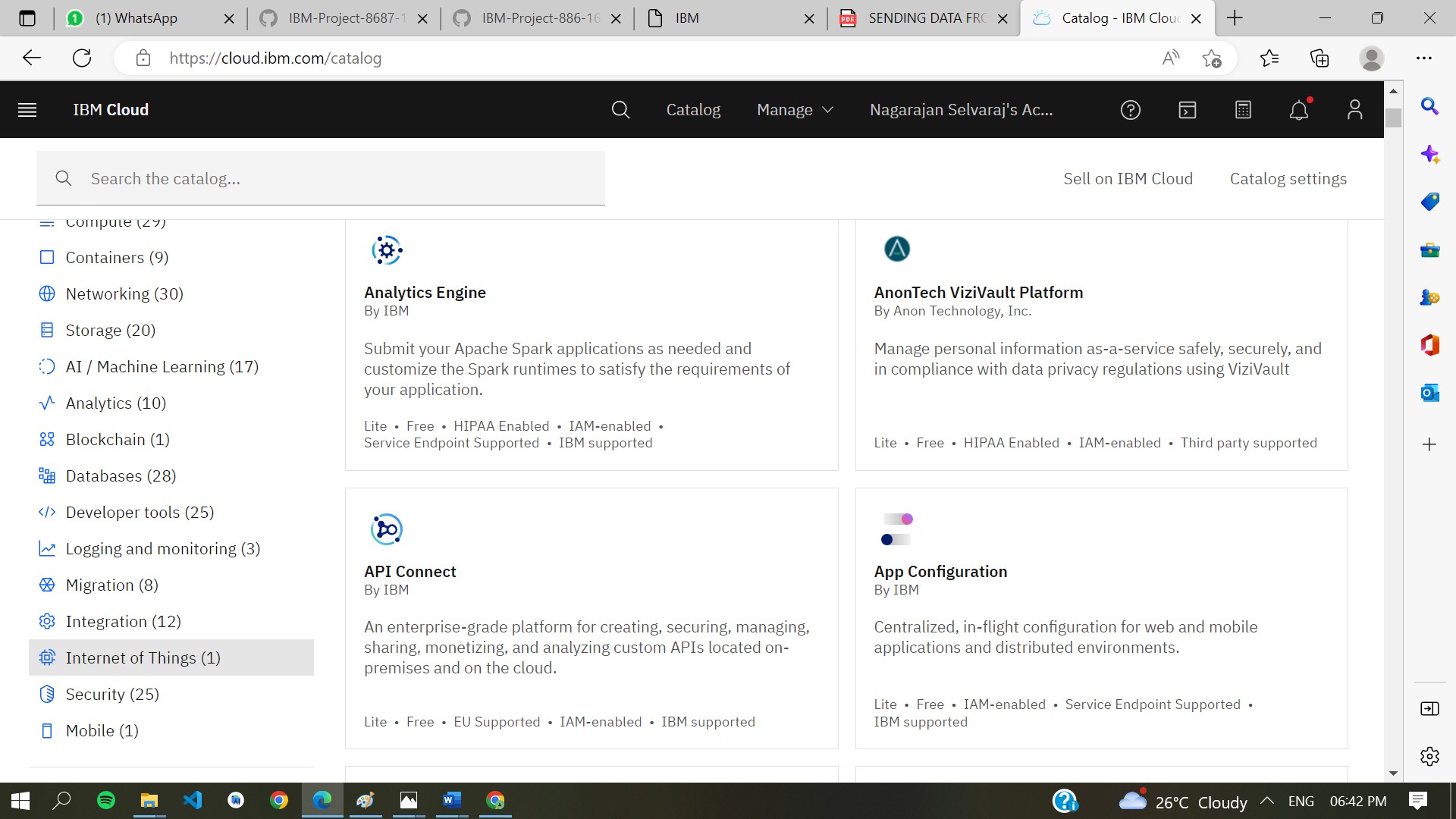
* Firstly, login into your IBM-Bluemix account with your e-mail ID and Password.



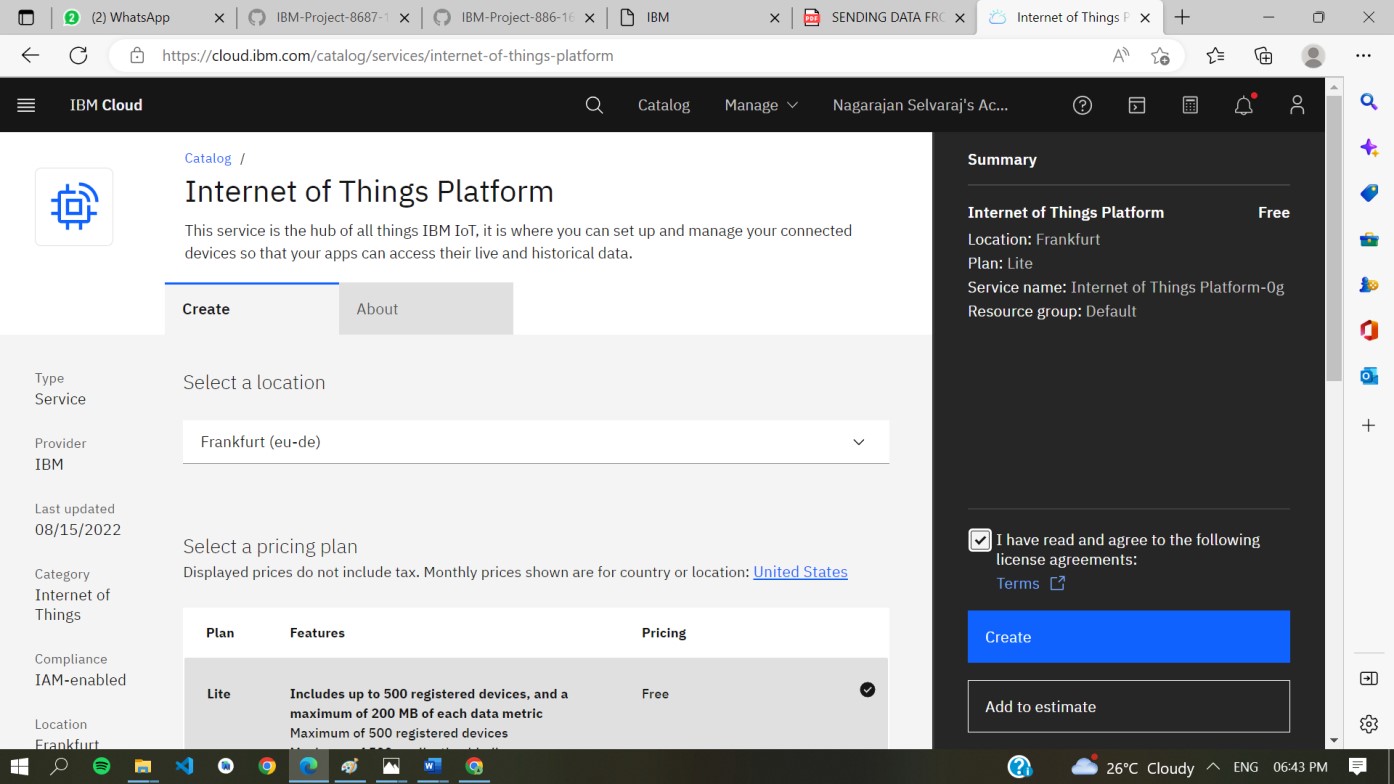




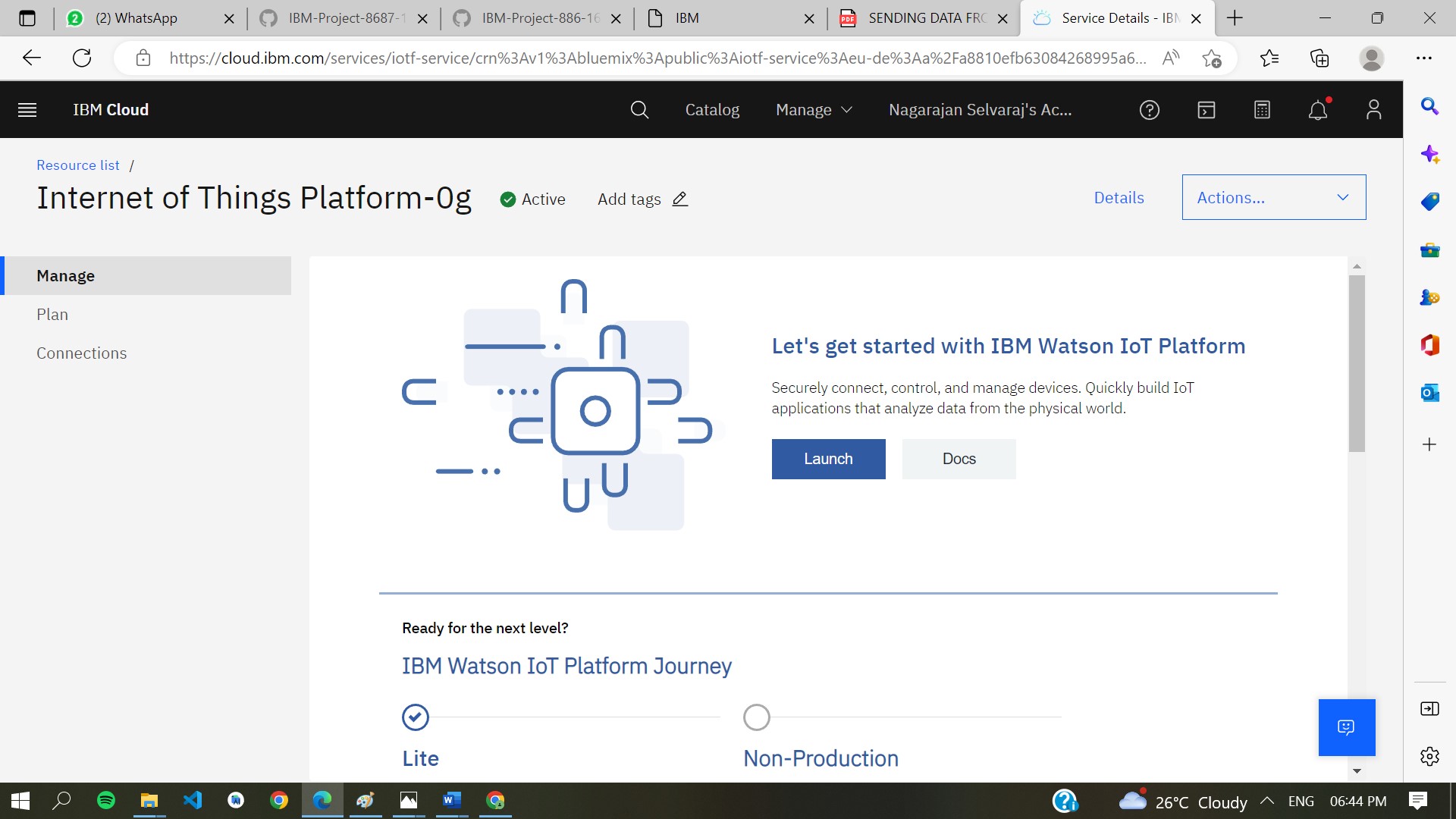
* Click on catalog on your dashboard screen, then under platform go IoT.



Check all details and click on create.

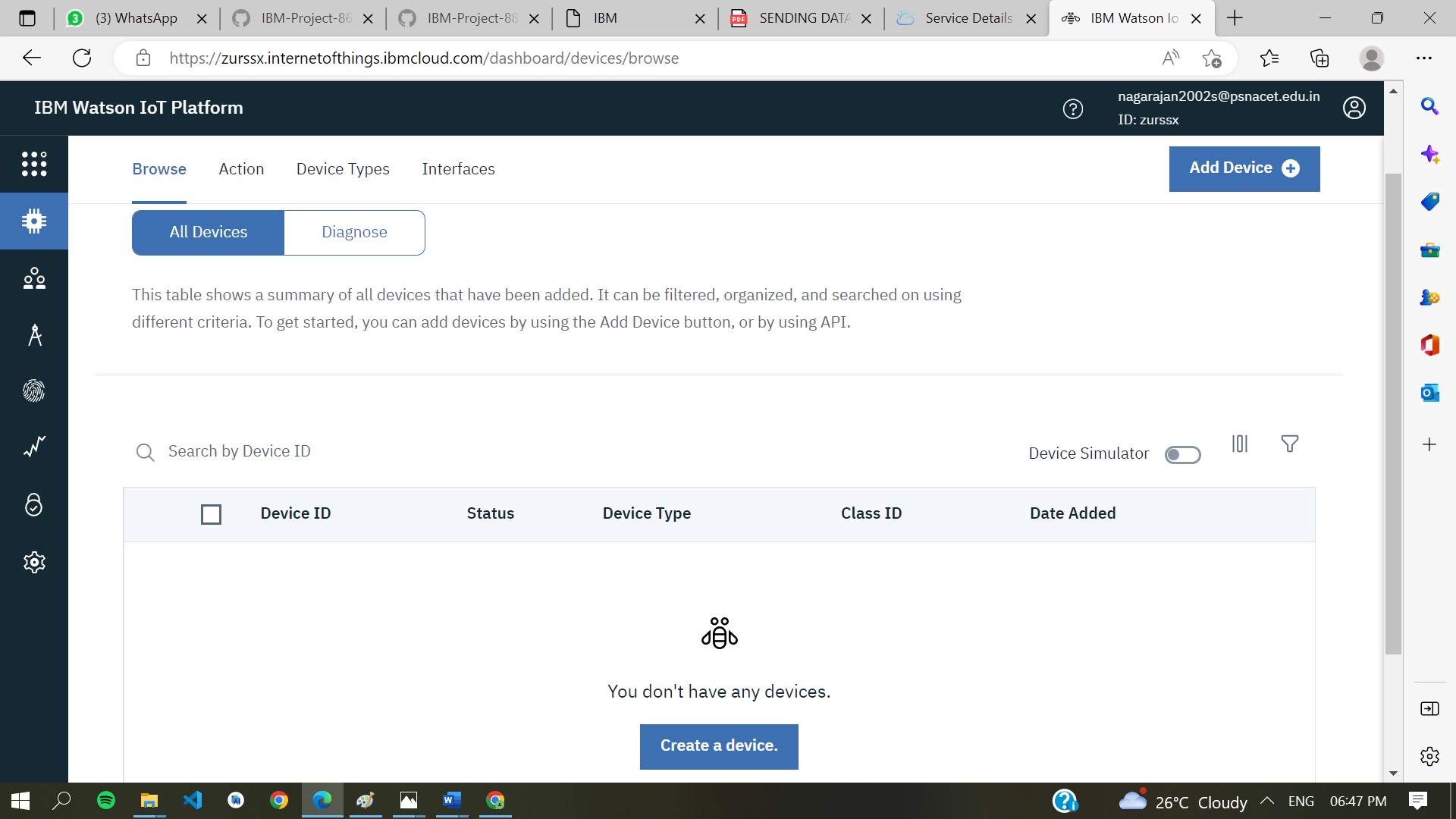


* click on Launch

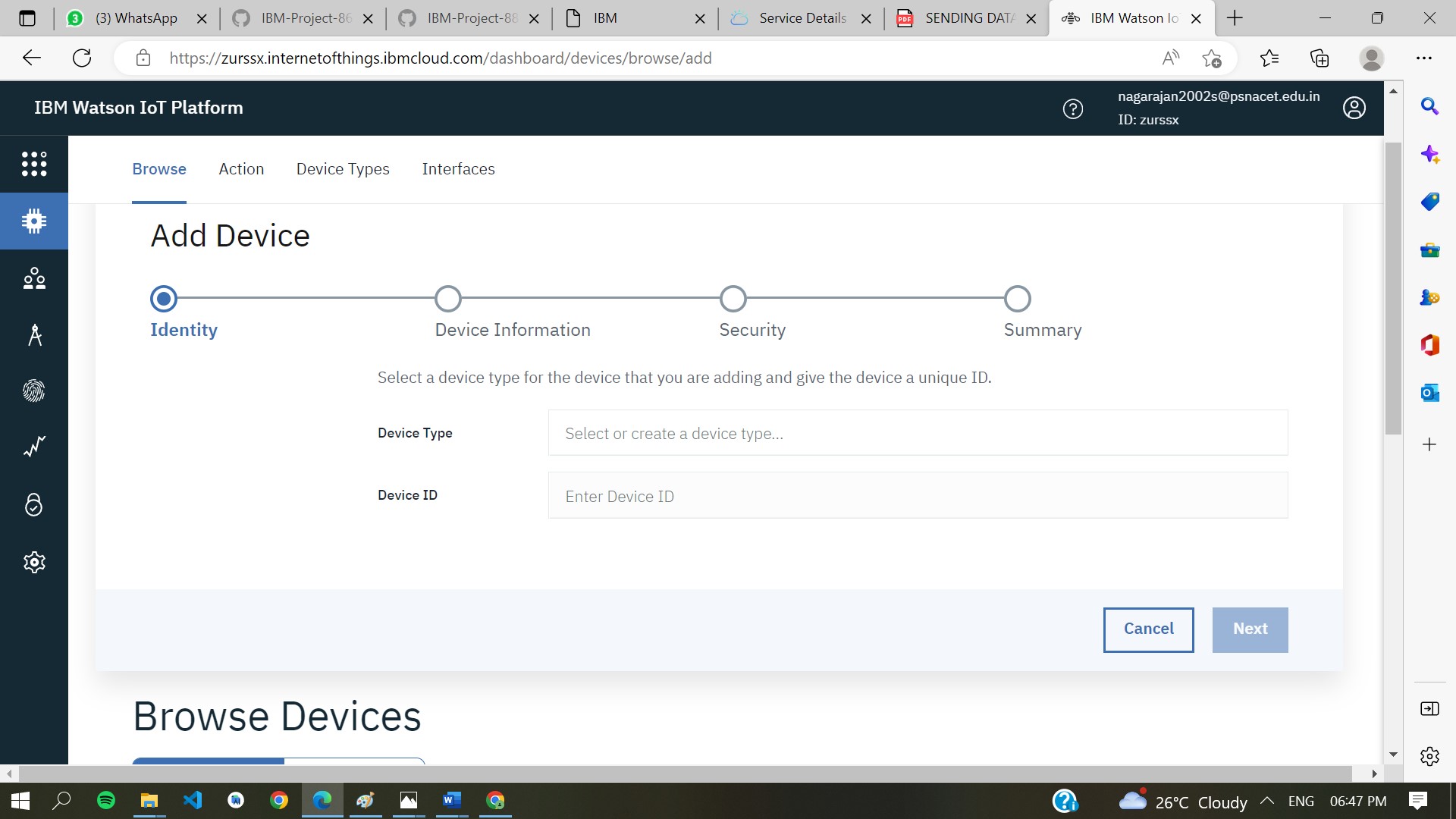


Dashboard of IBM Watson IoT platform,

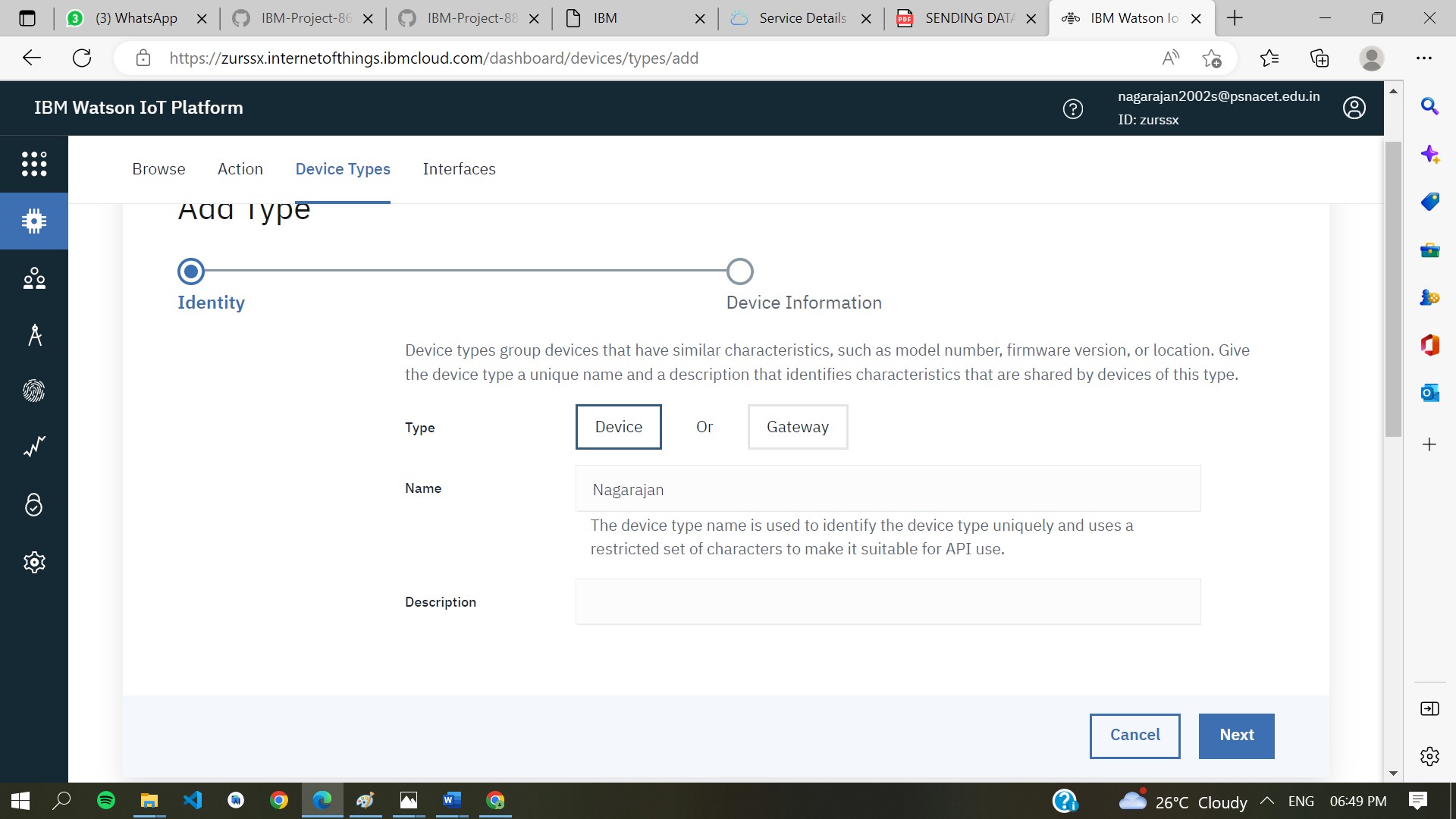
* Click on Add device



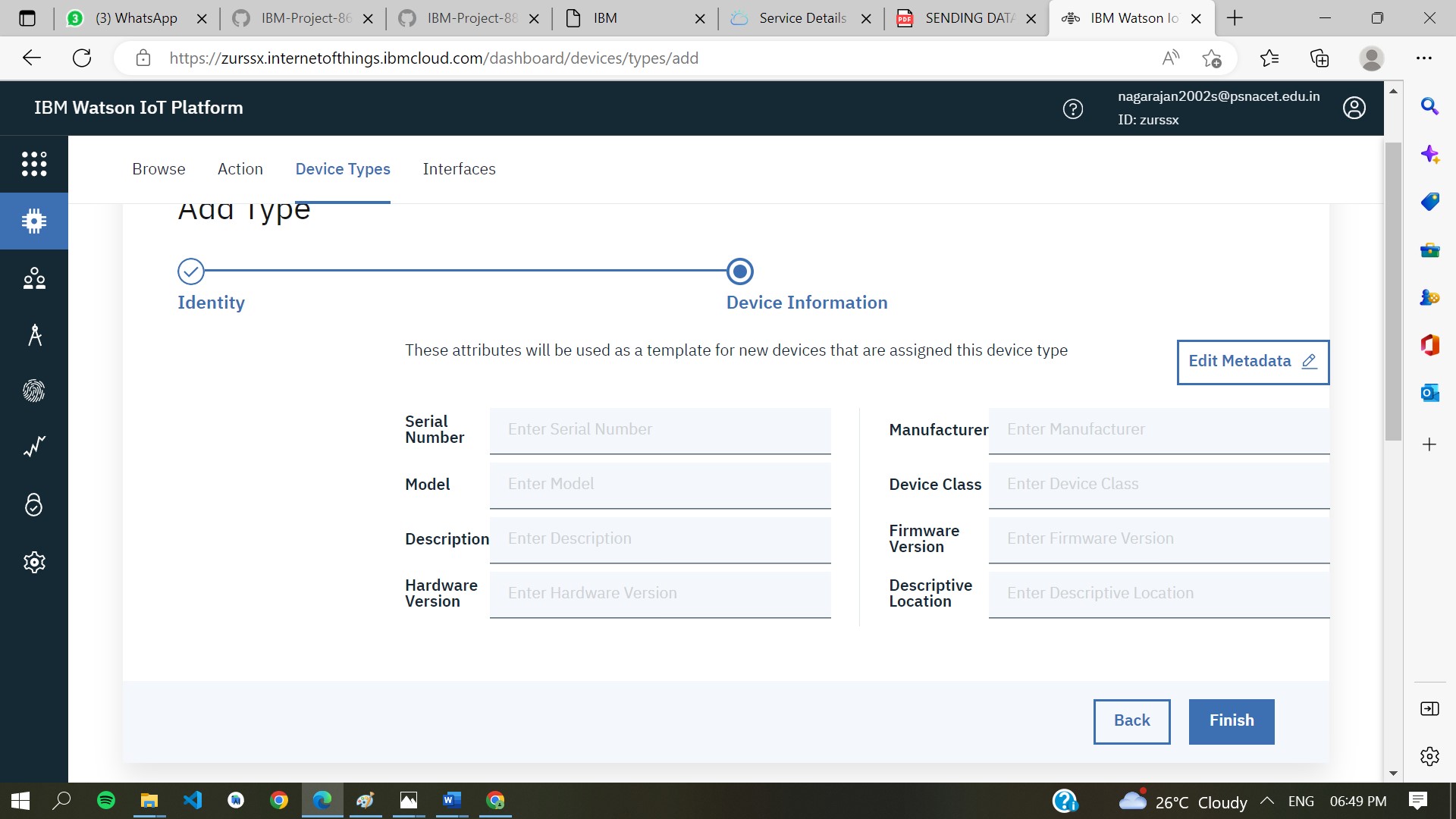
* After click on Add device this page will open



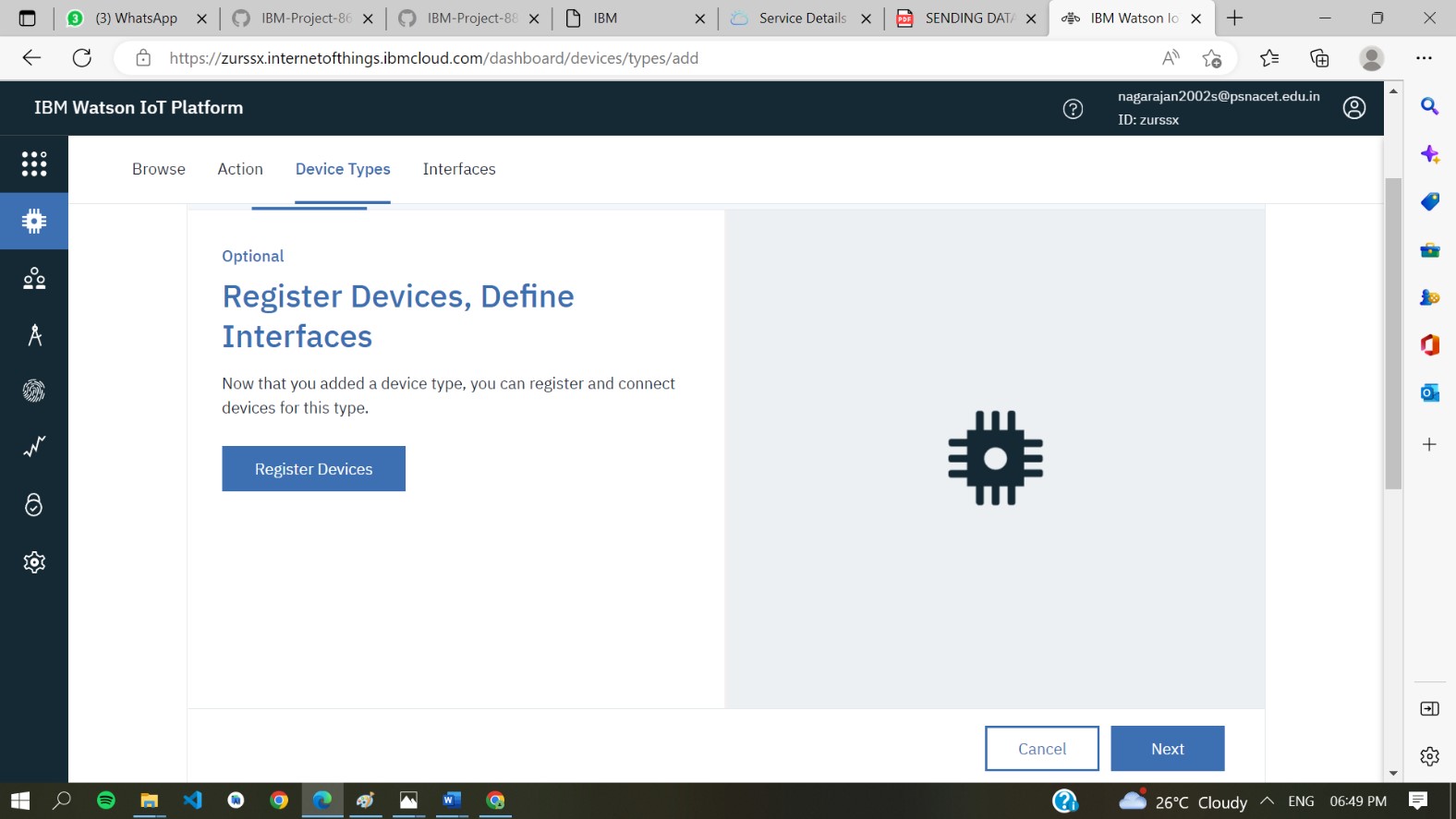
Go to device type and fill the details.



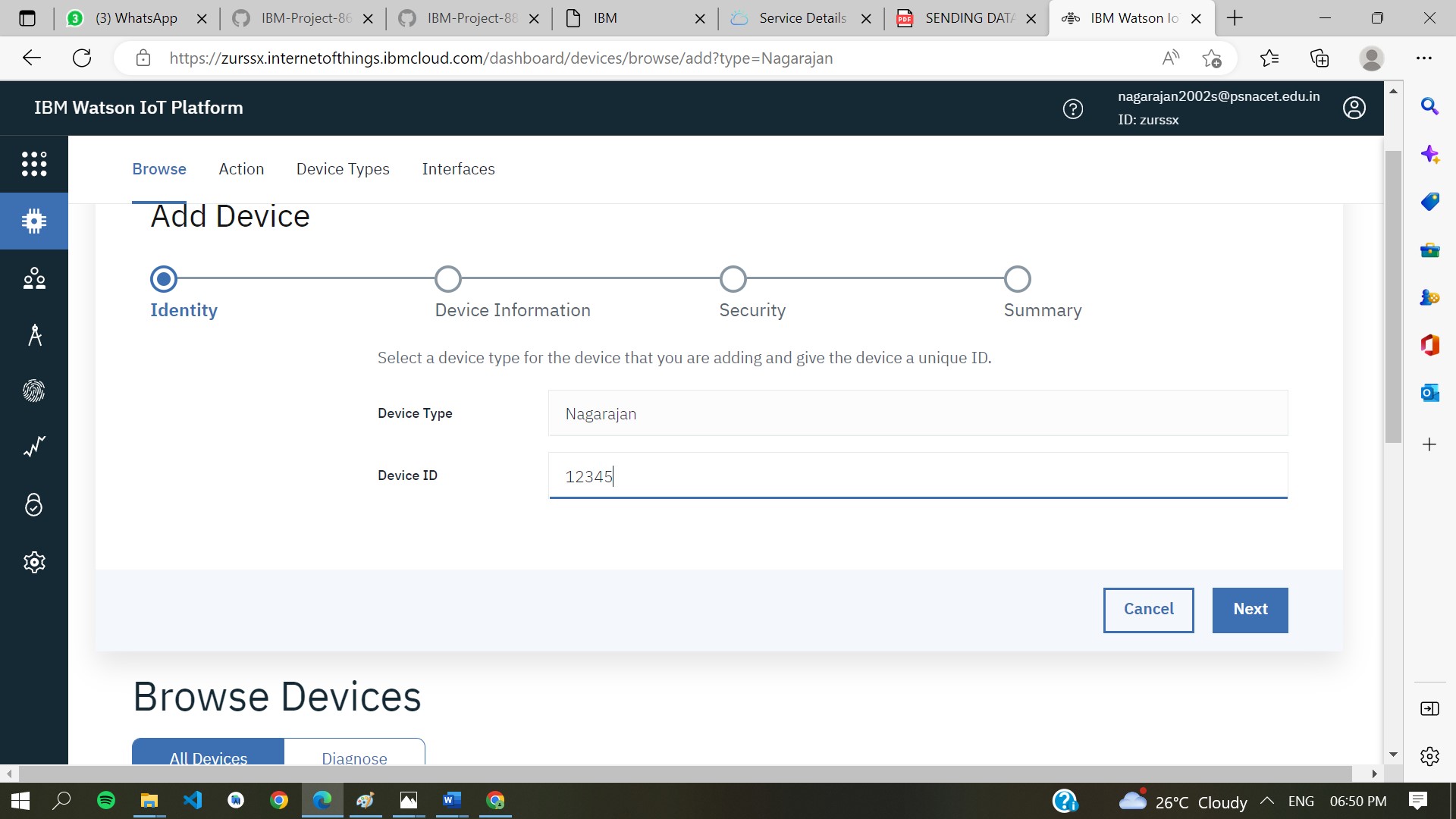
* Click on Finish



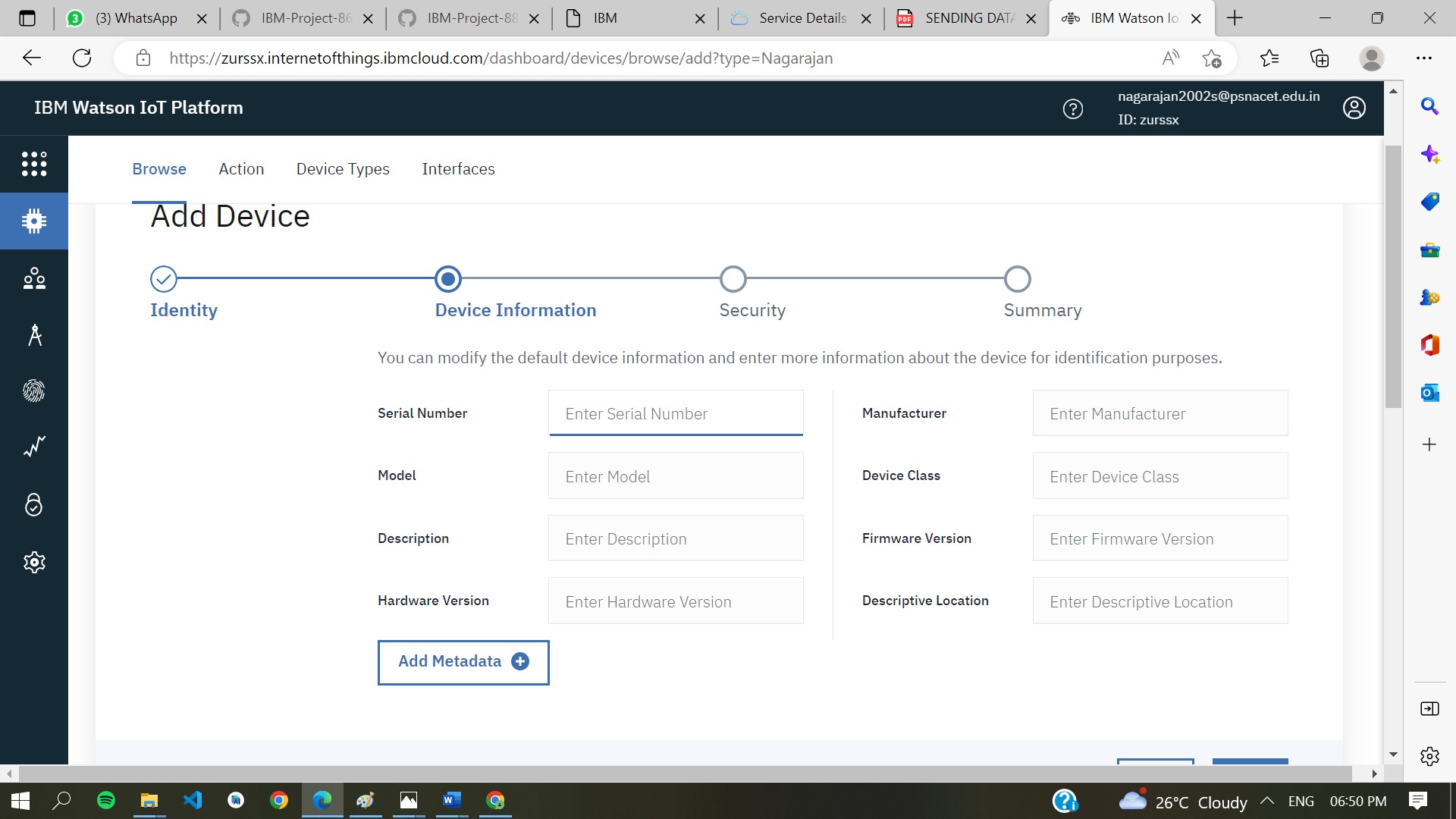
Register Device.



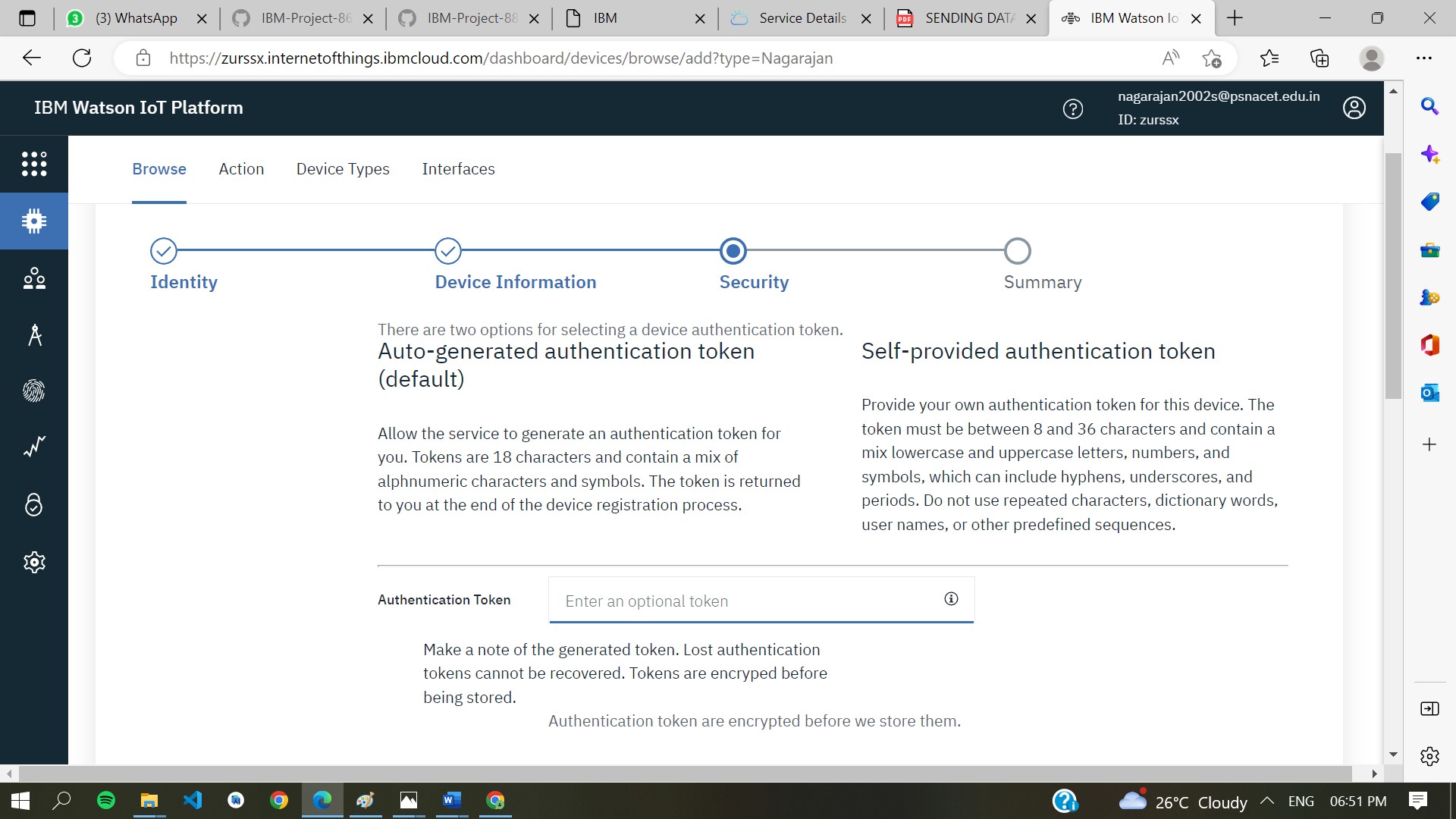
* Choose the device and give device ID and then click on next.



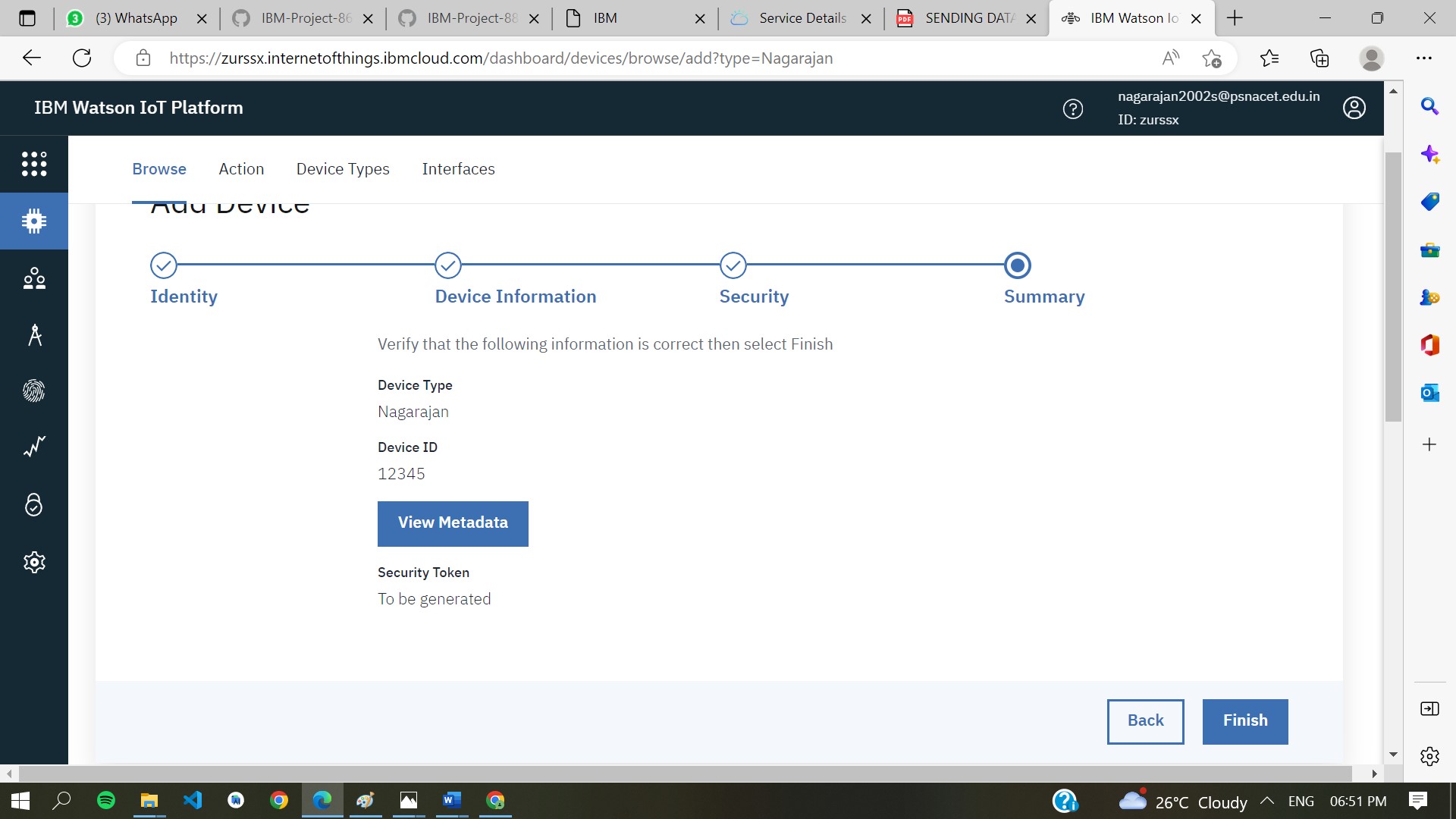
Next



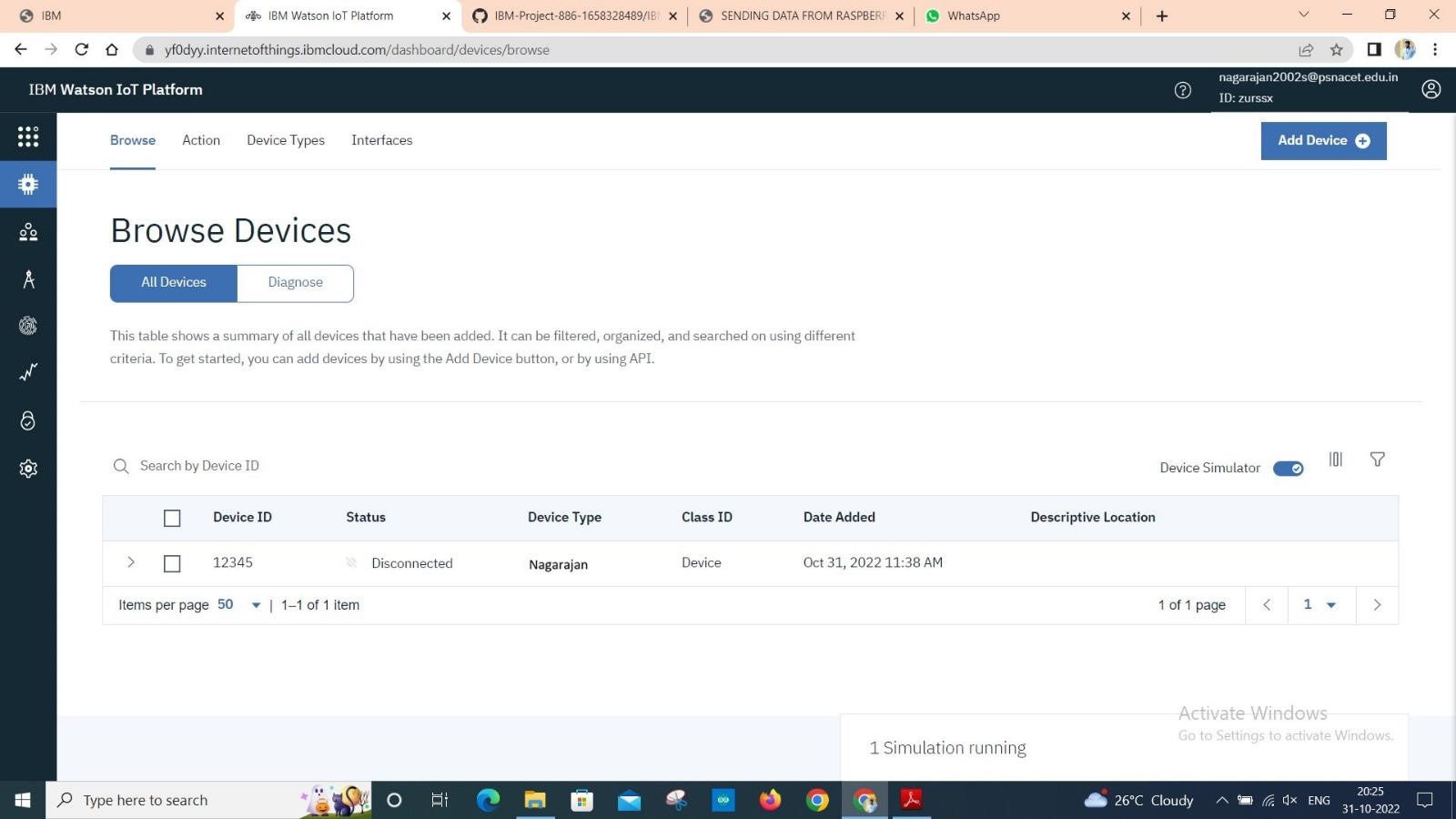
* Click on Next



Finish



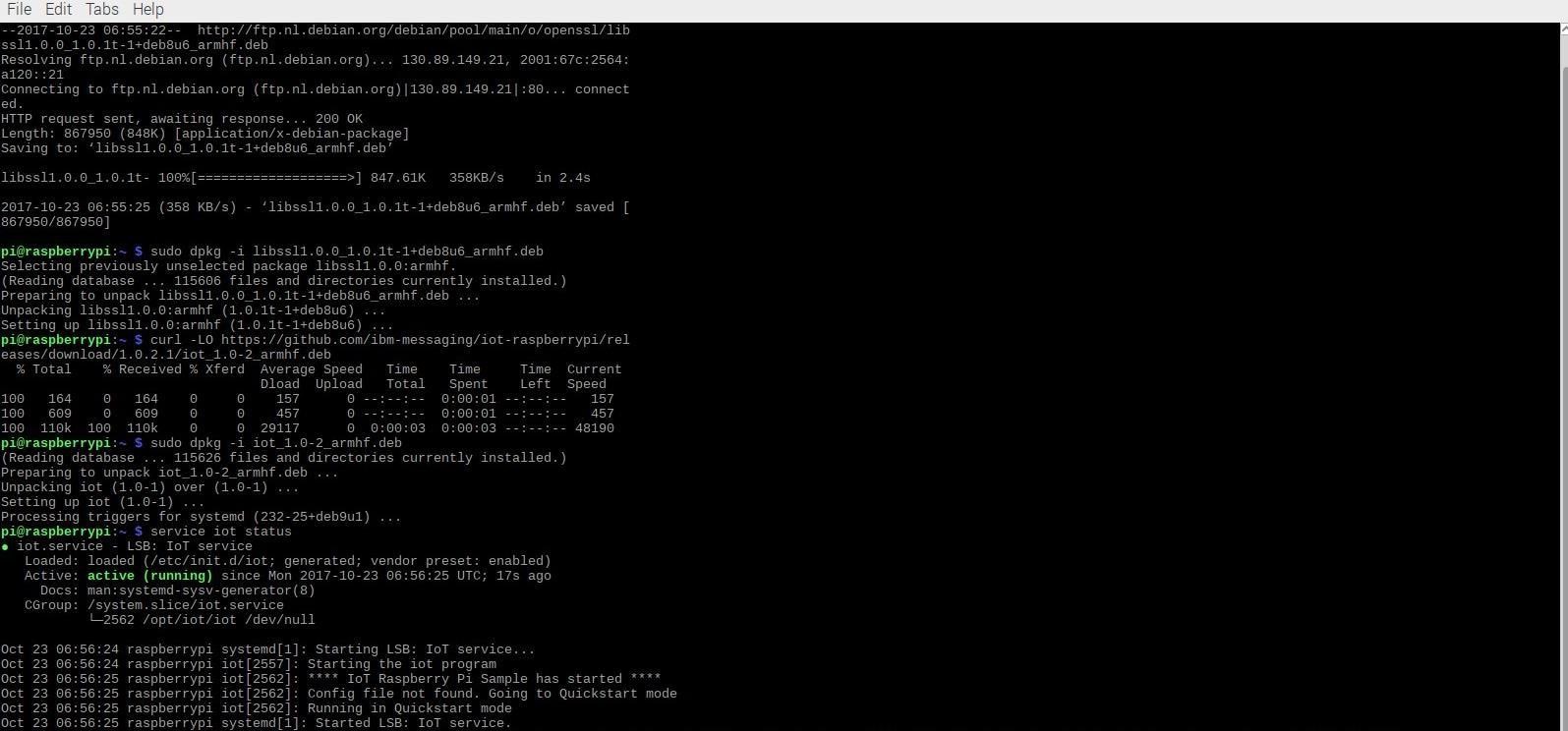
* Device is created



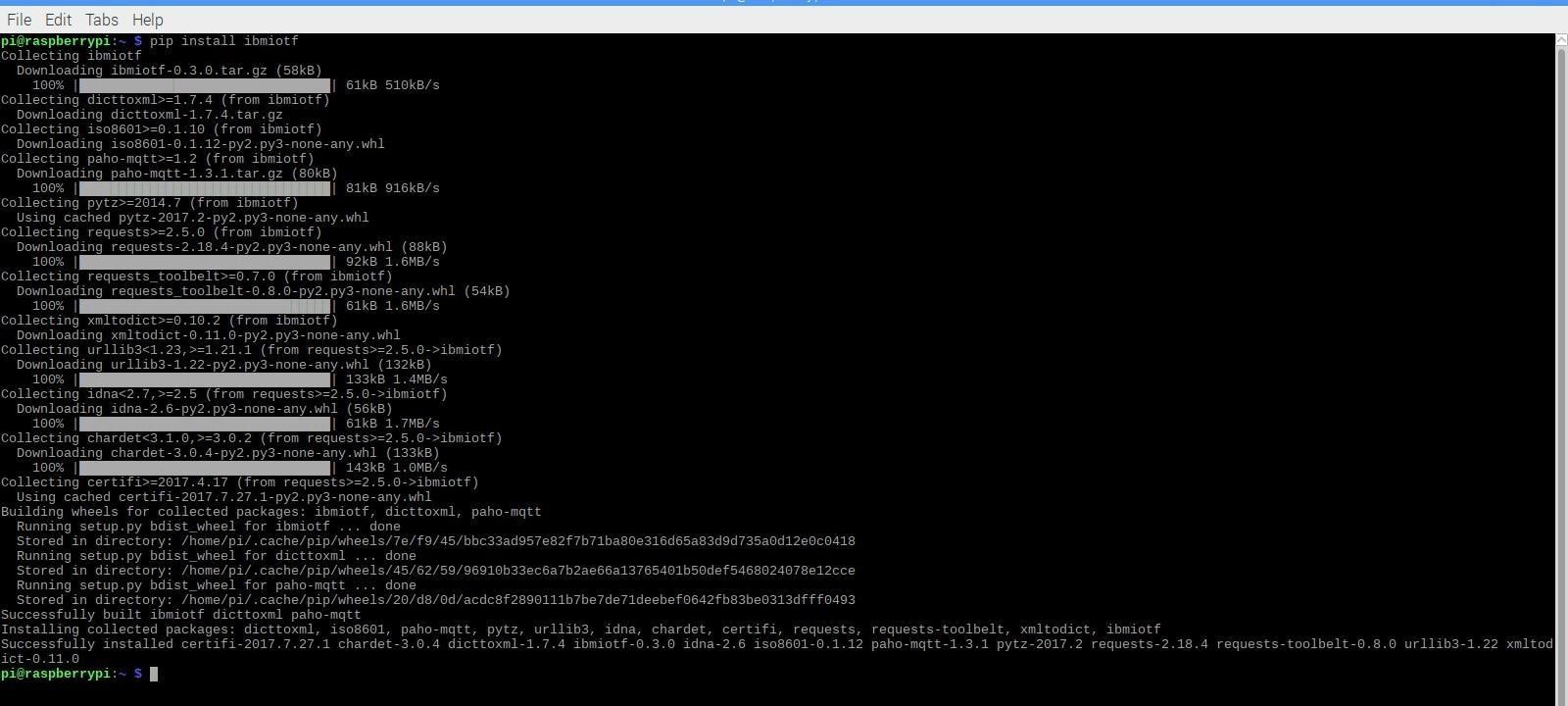
**STEP-2: INSTALLING NECESSARY PACKAGES ON YOUR PI:**

* 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

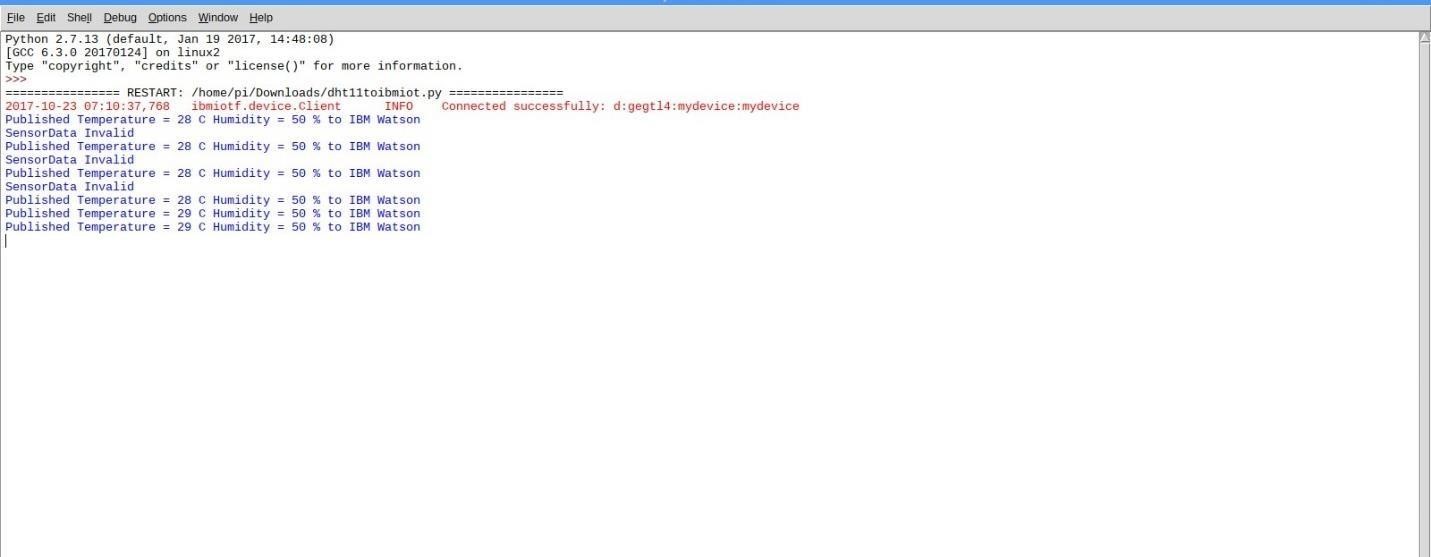
Following are the images as to what appears on your pi’s terminal when u type these commands



* Then open your terminal and type pip install ibmiotf

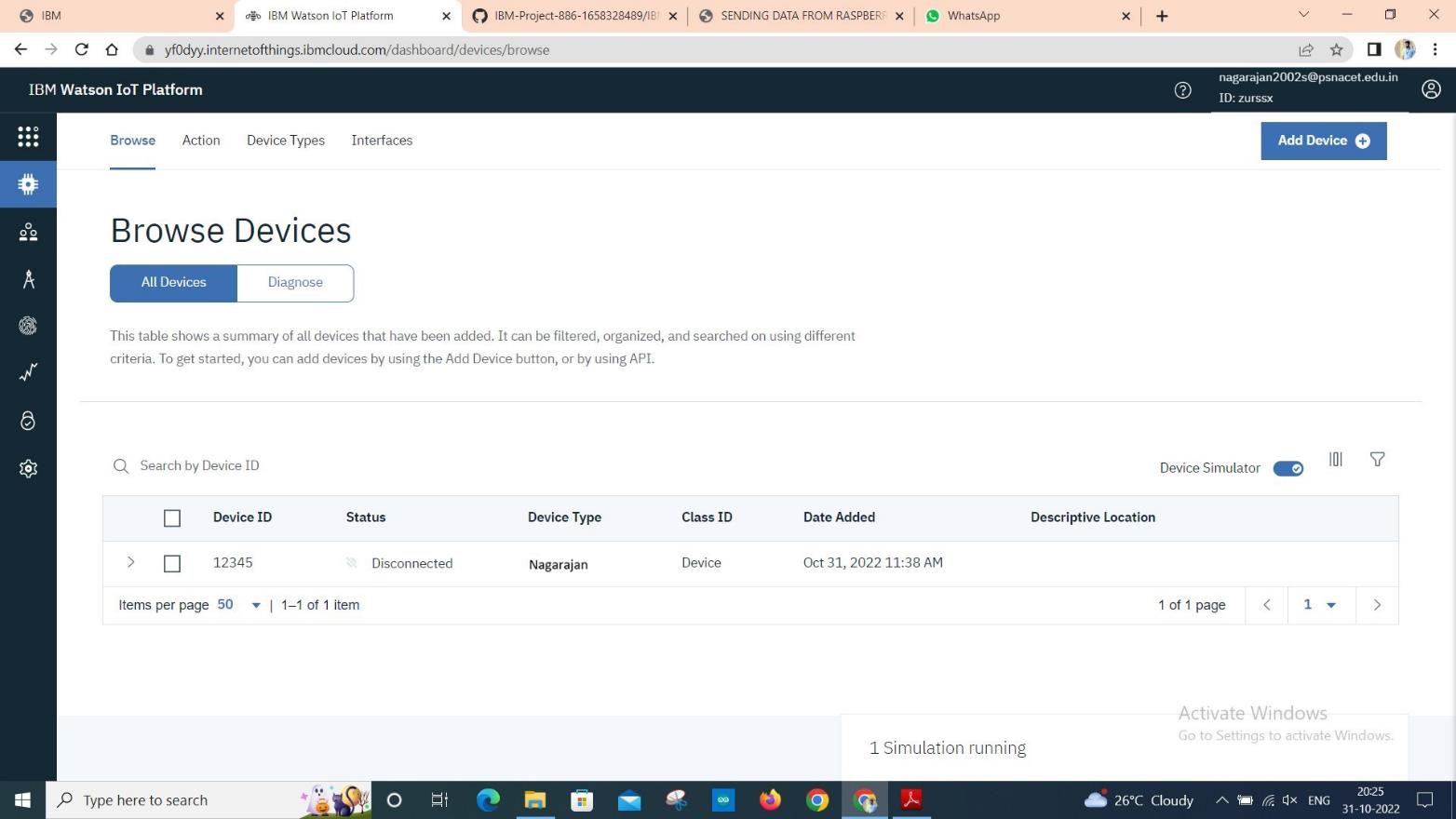


* I have sent DHT-11 Sensors data to ibm bluemix .To get the code u need to login into IOT GYAN. ➢ Then I get the image as follows in my pi’s shell:

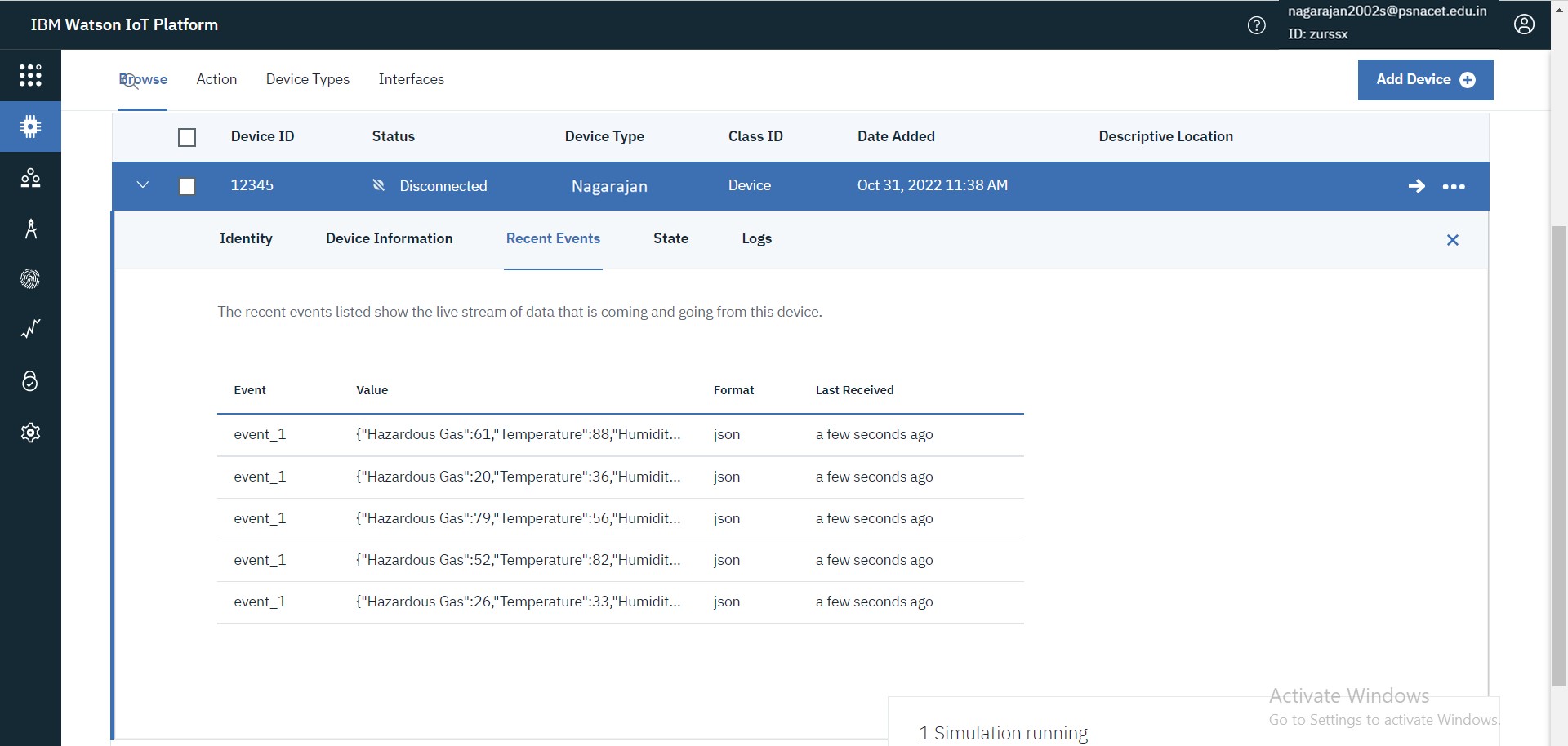


**Step-3: checking your data sent on IBM Bluemix:**

* 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.

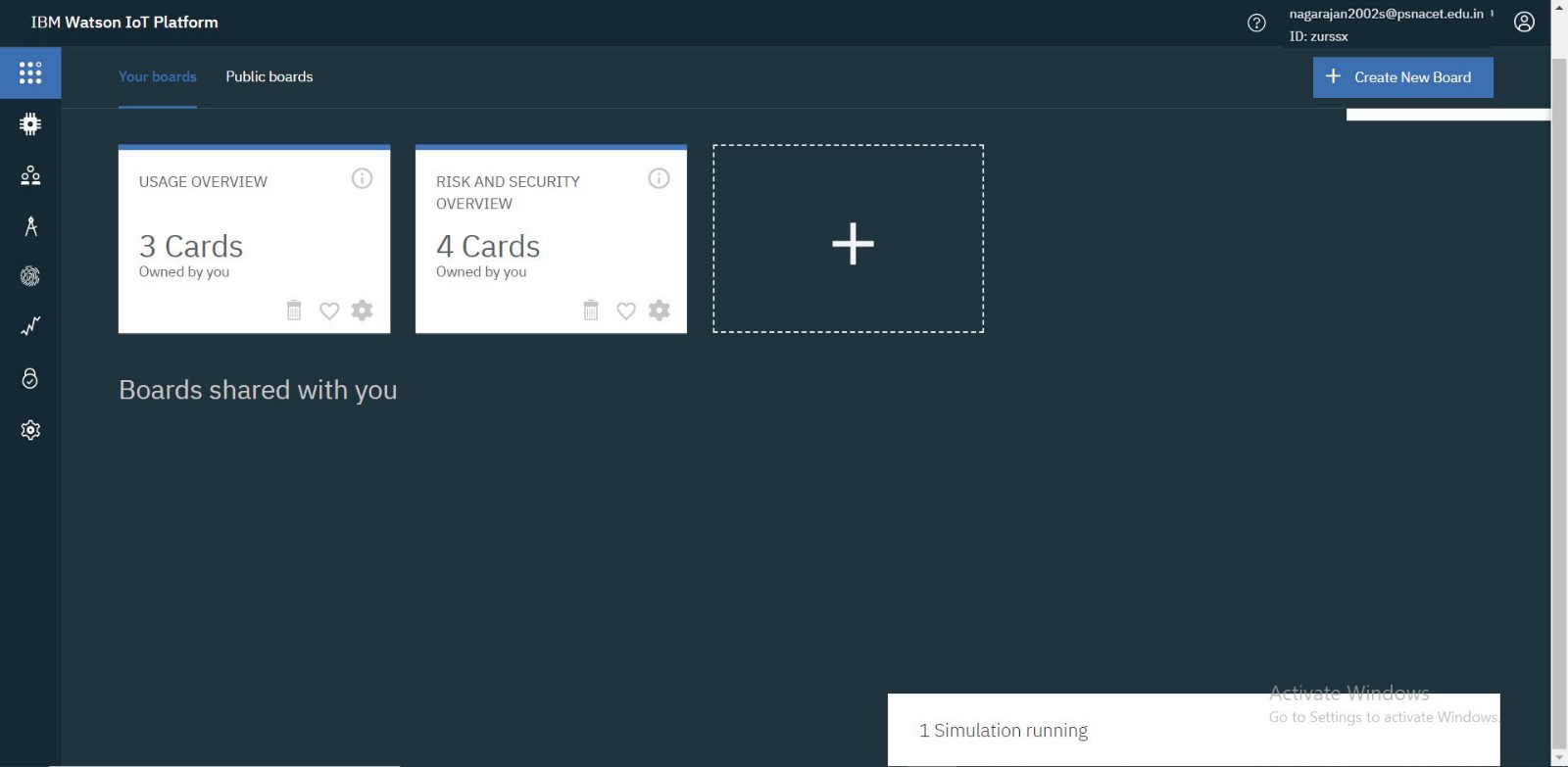


* After double clicking on your created device you can see the received data as shown in image



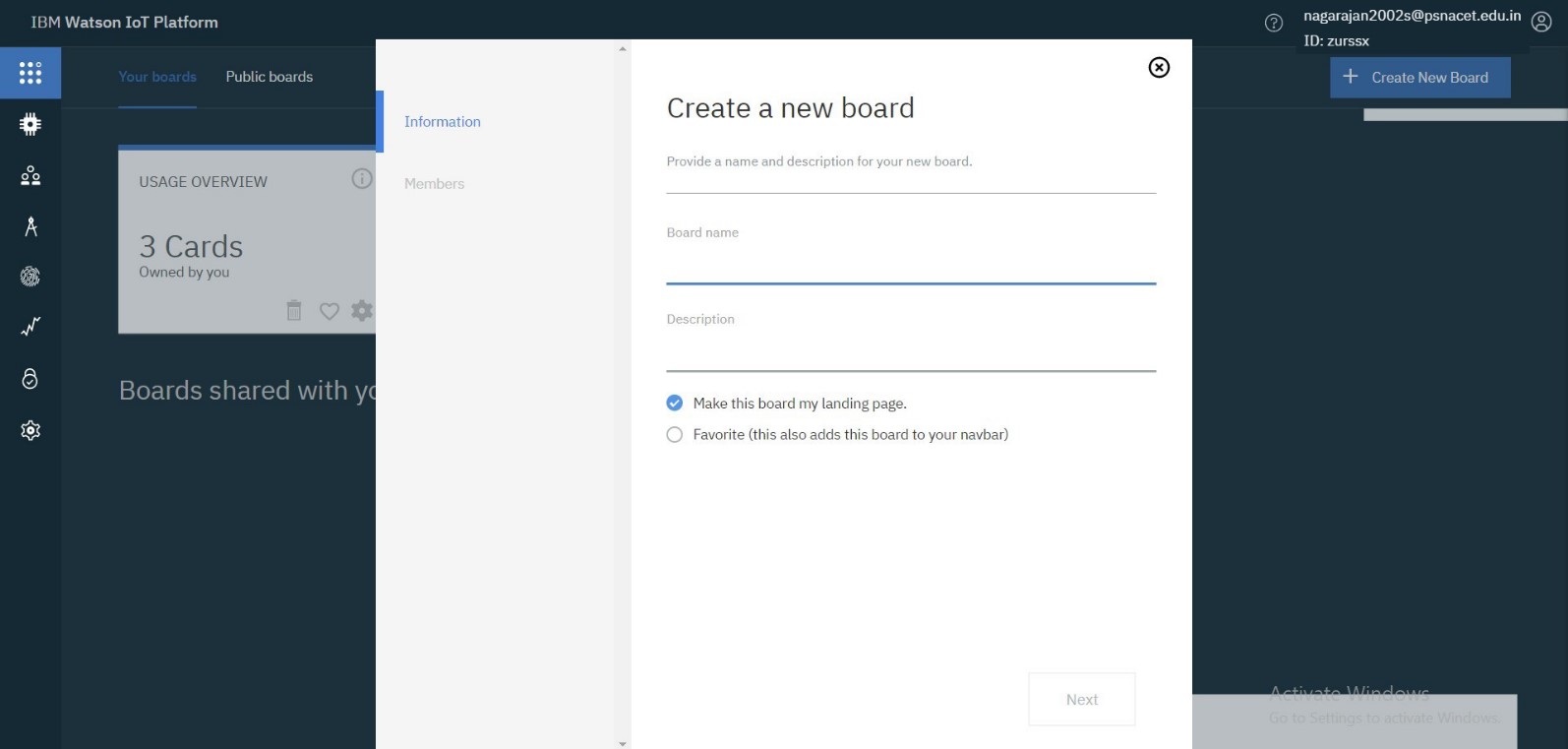
**Step-4: Creating boards and cards for visualization of data:**

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

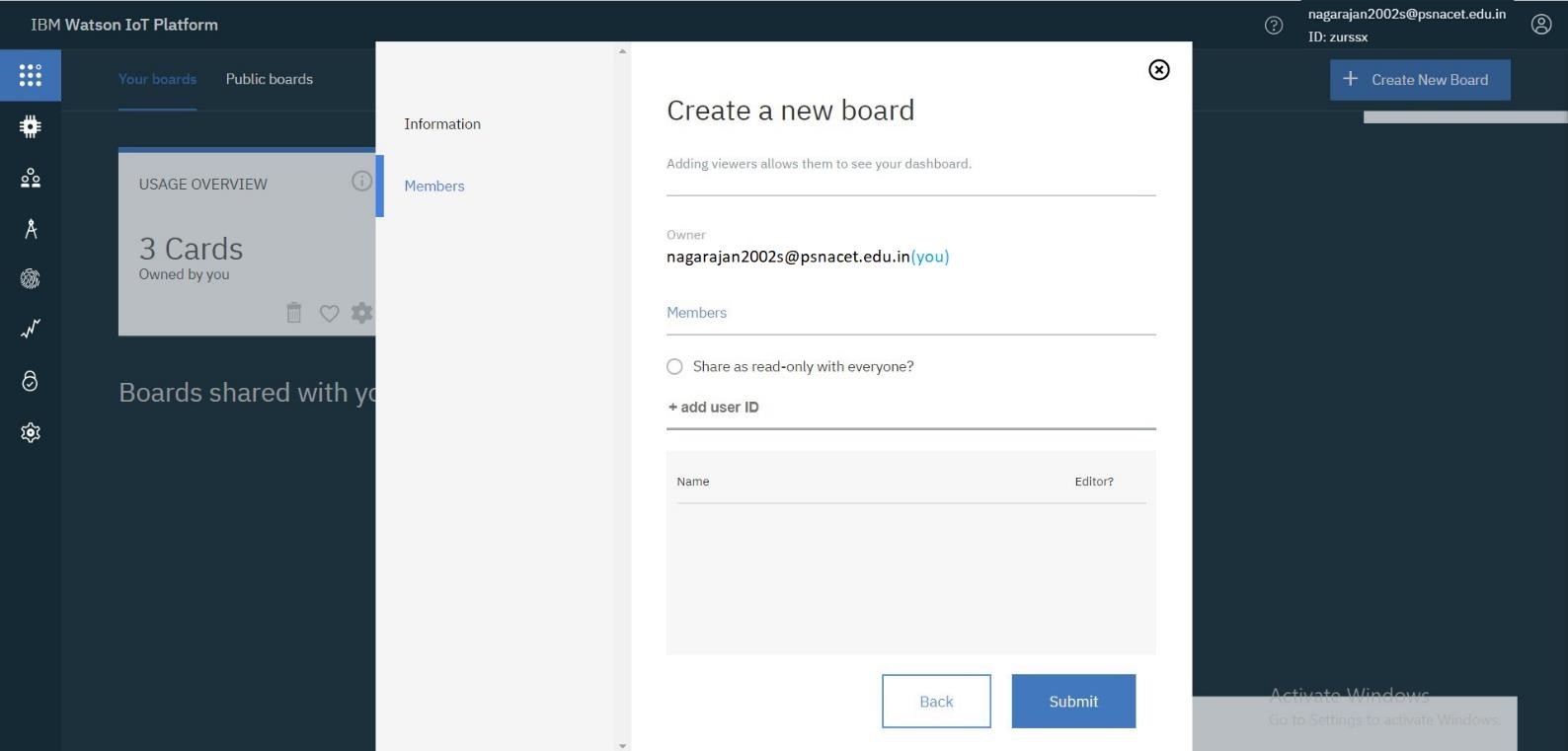


* Click on Create a new board to create a board .

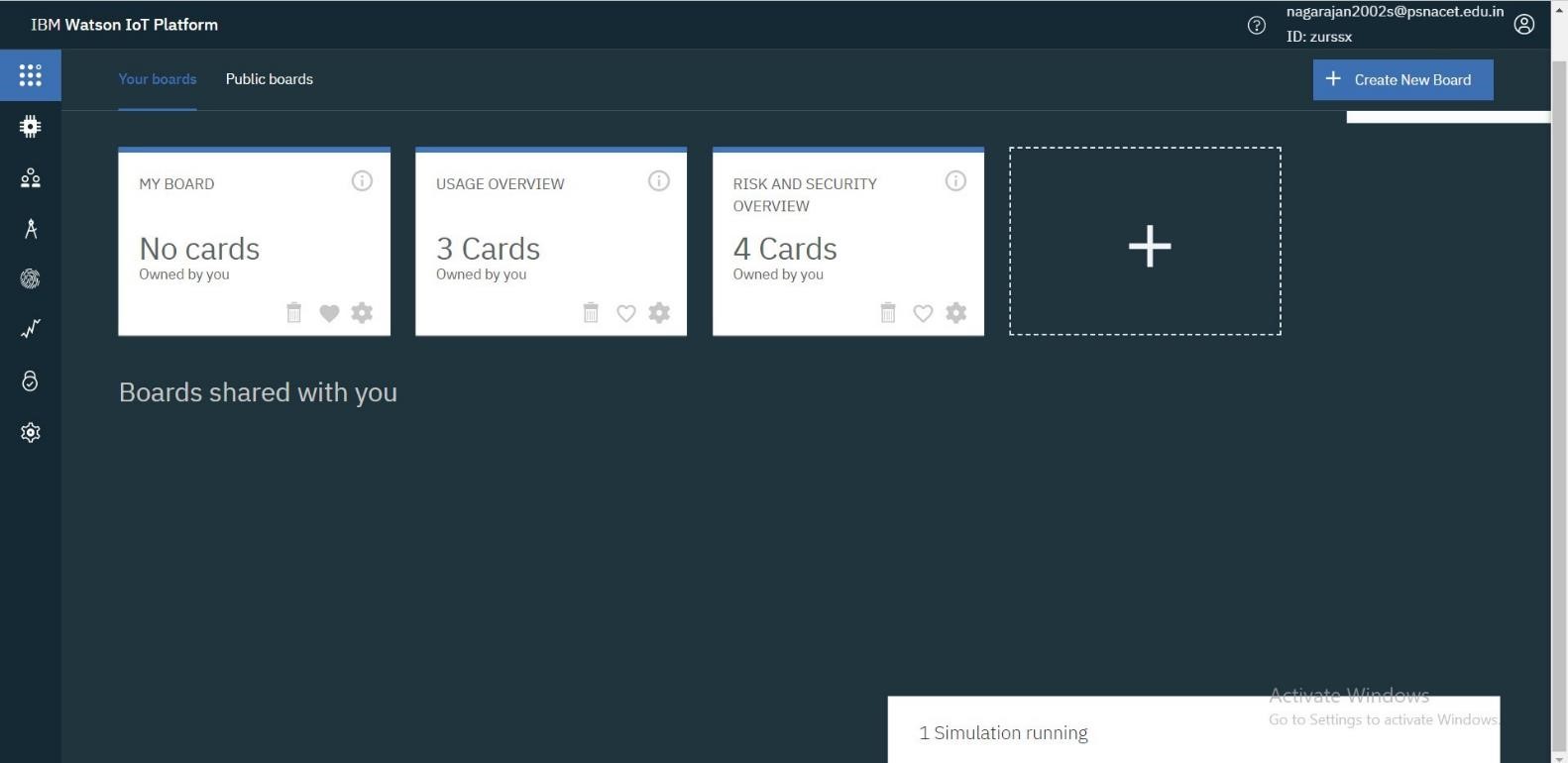
The given below window appears give a name and description to your board as shown in the window below.



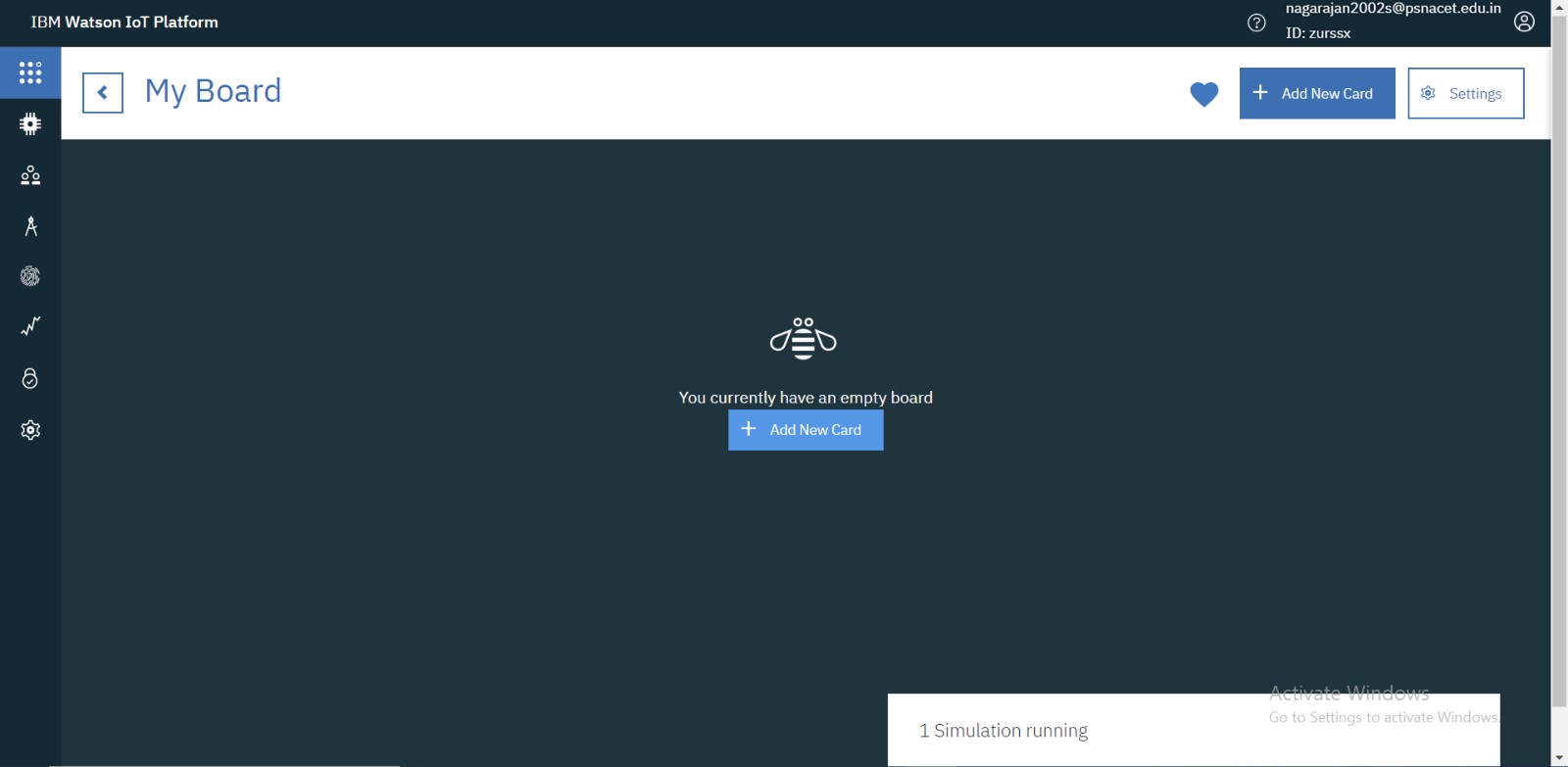
* Then click on Next you get the below window then again click on Submit



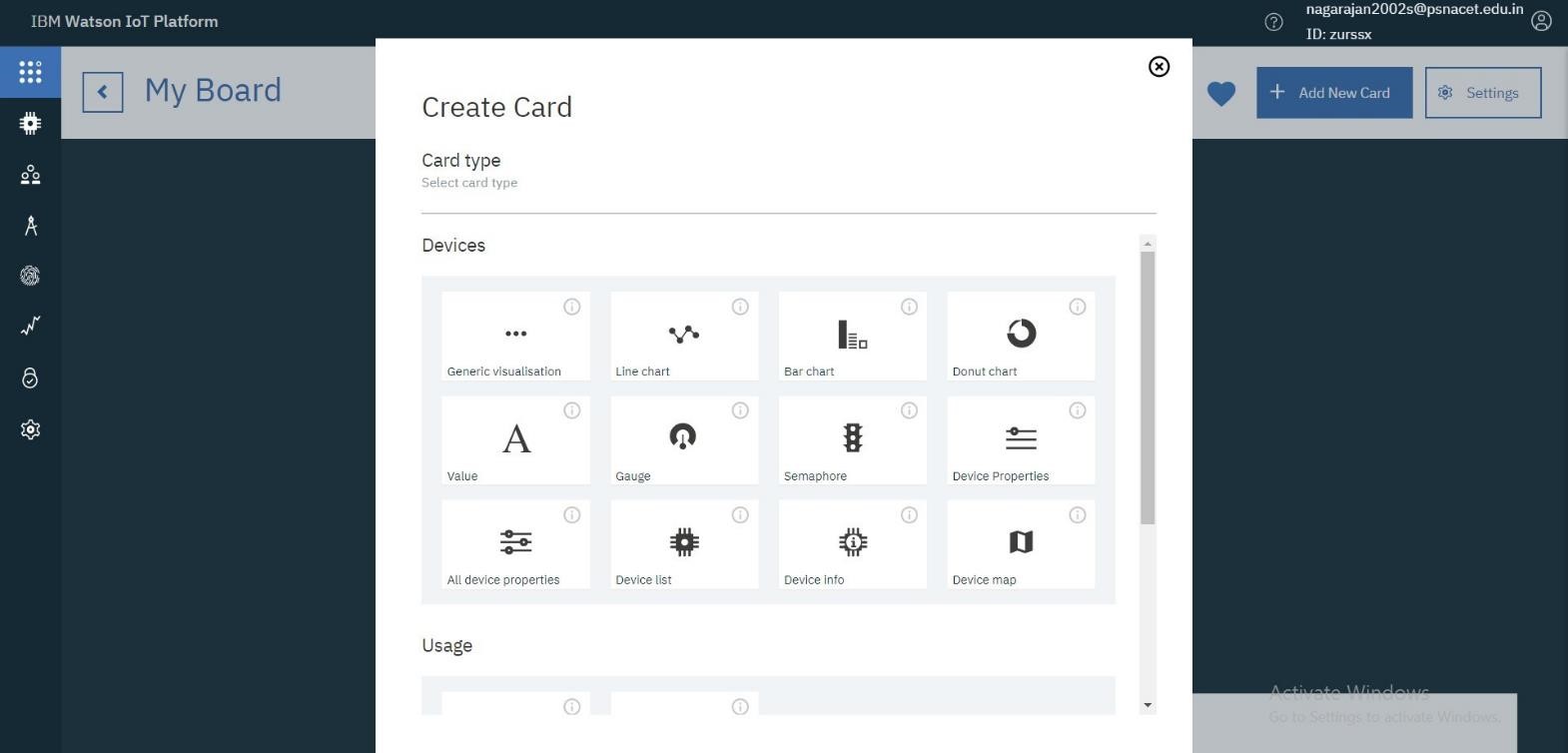
* Then double click on your boards name which you have created.



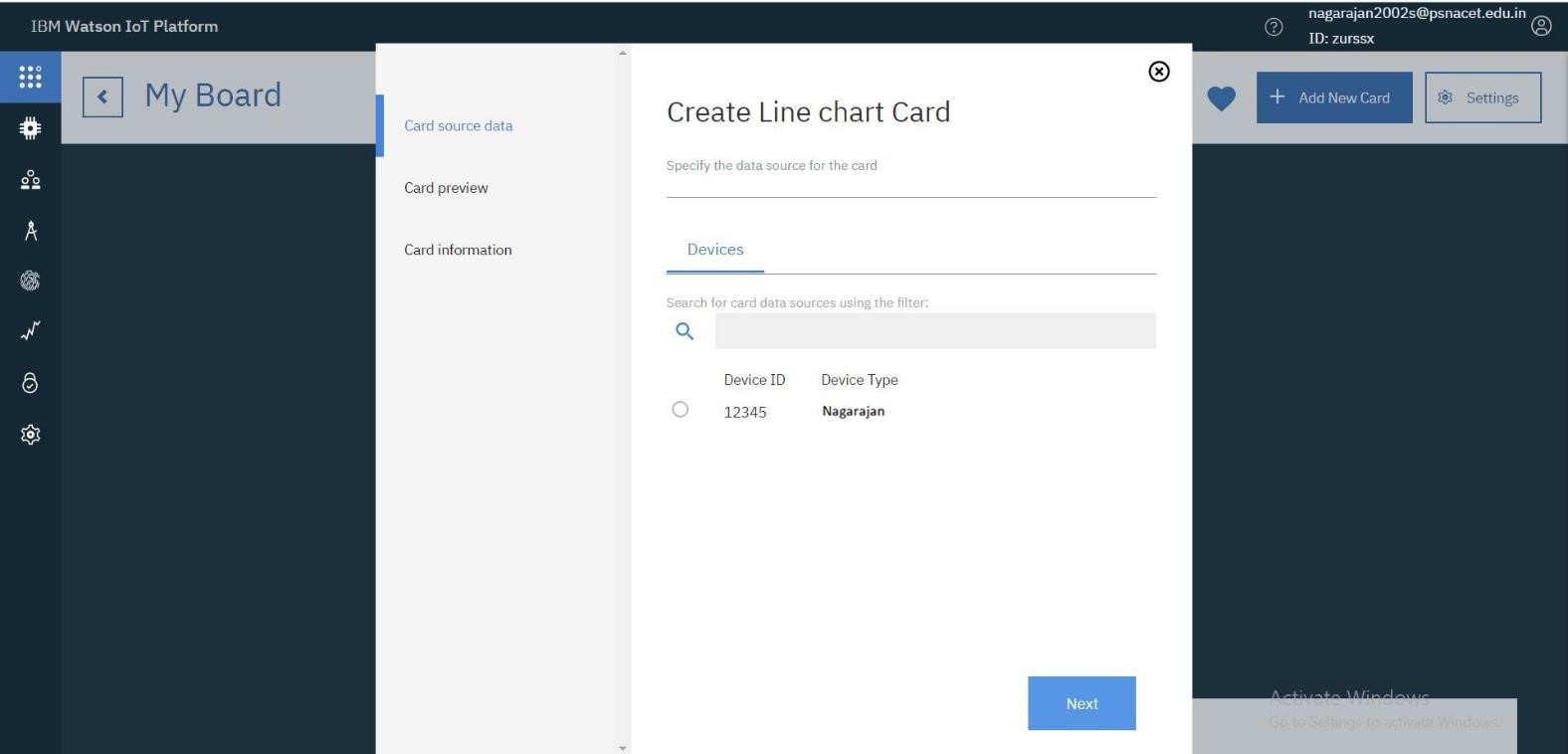
* Click on Add New Card



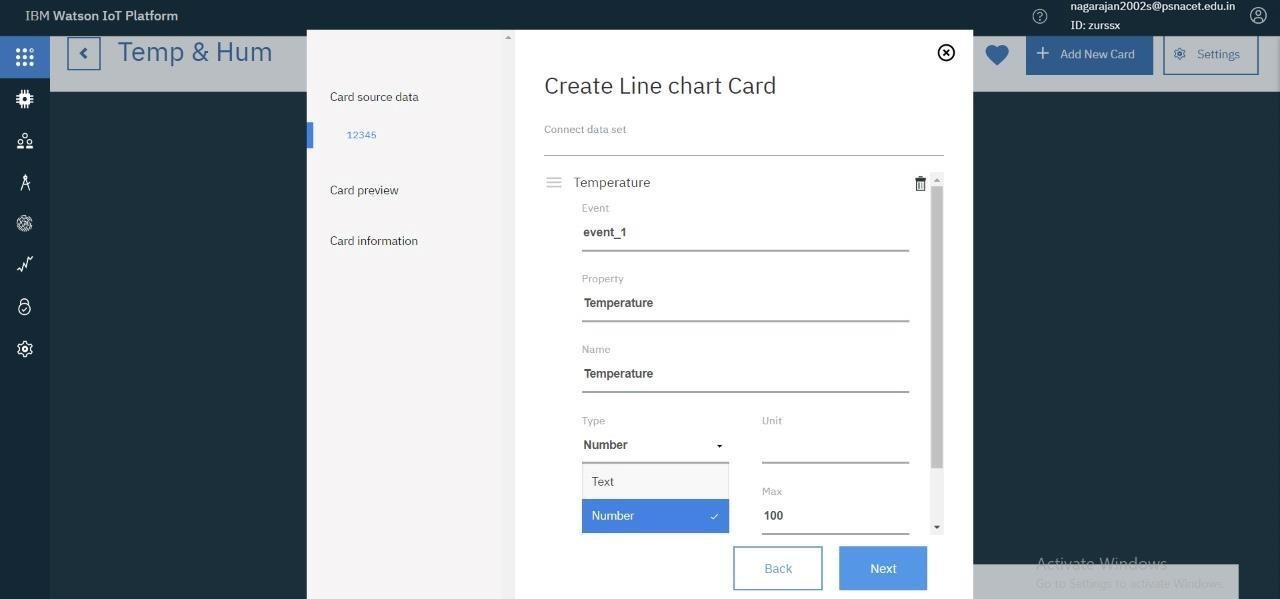
* Select the type of Graph u want accordingly and click next



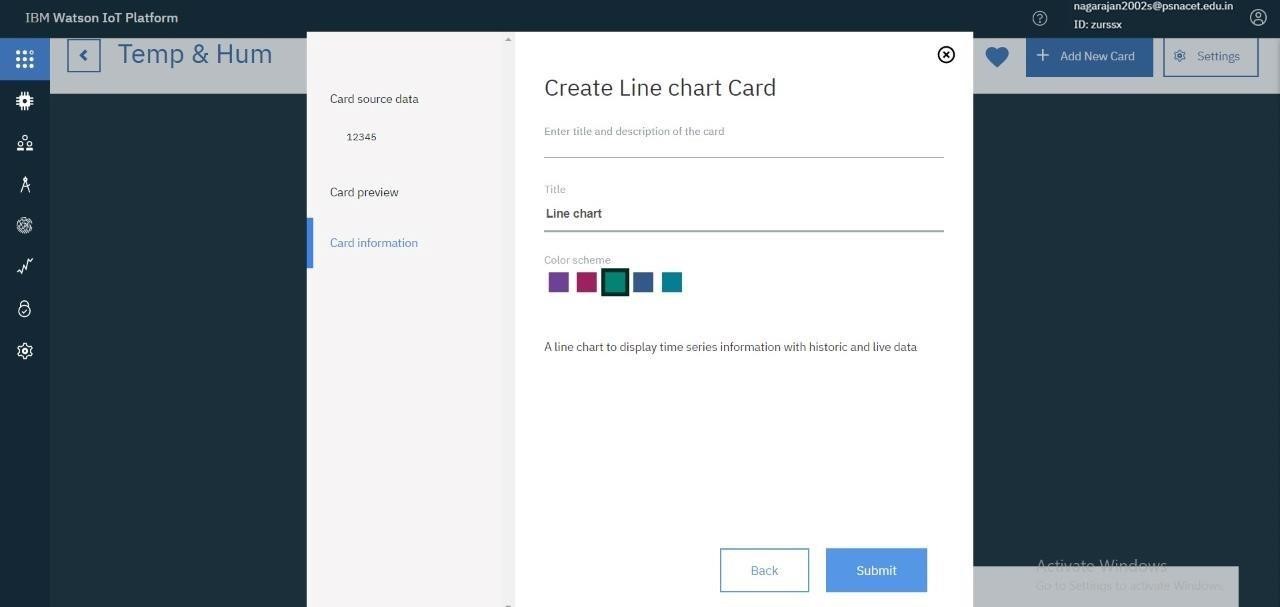
* You get the below window, choose the Device and click on Next.



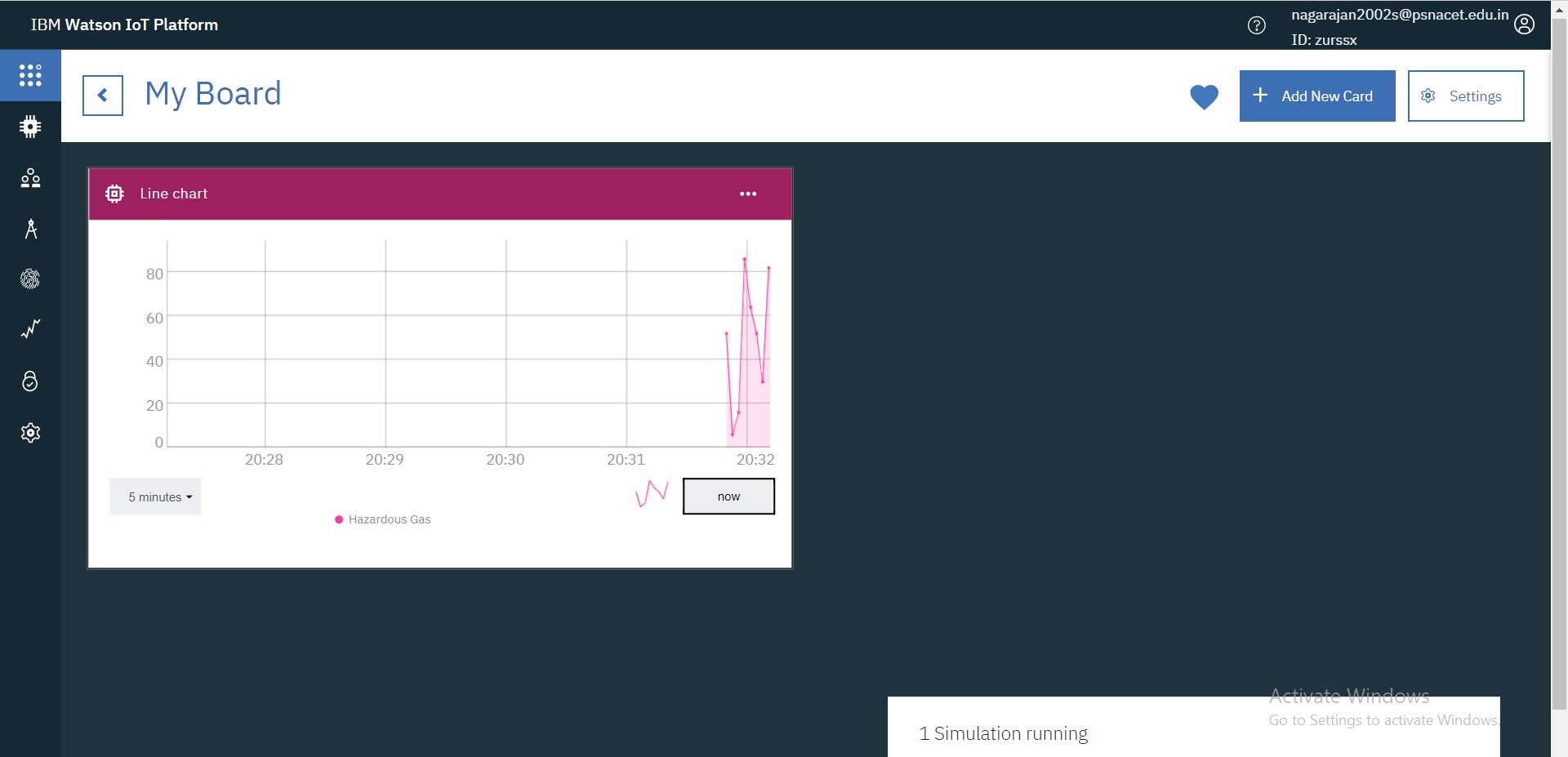
* Select the event, properly to be visualized on your graph and click next. In my case it is humidity



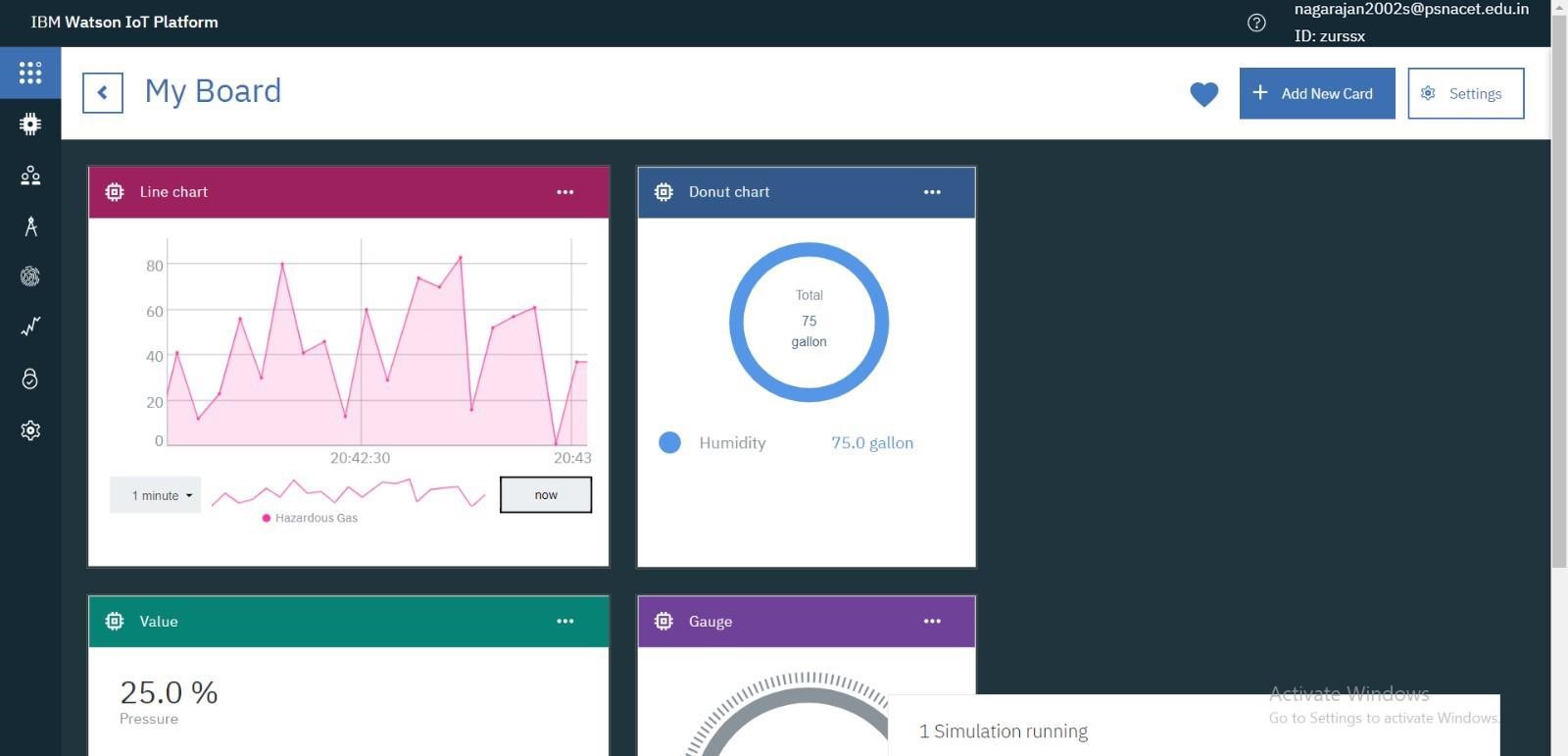
* Then select the size of the graph and color of the graph board you want and click next

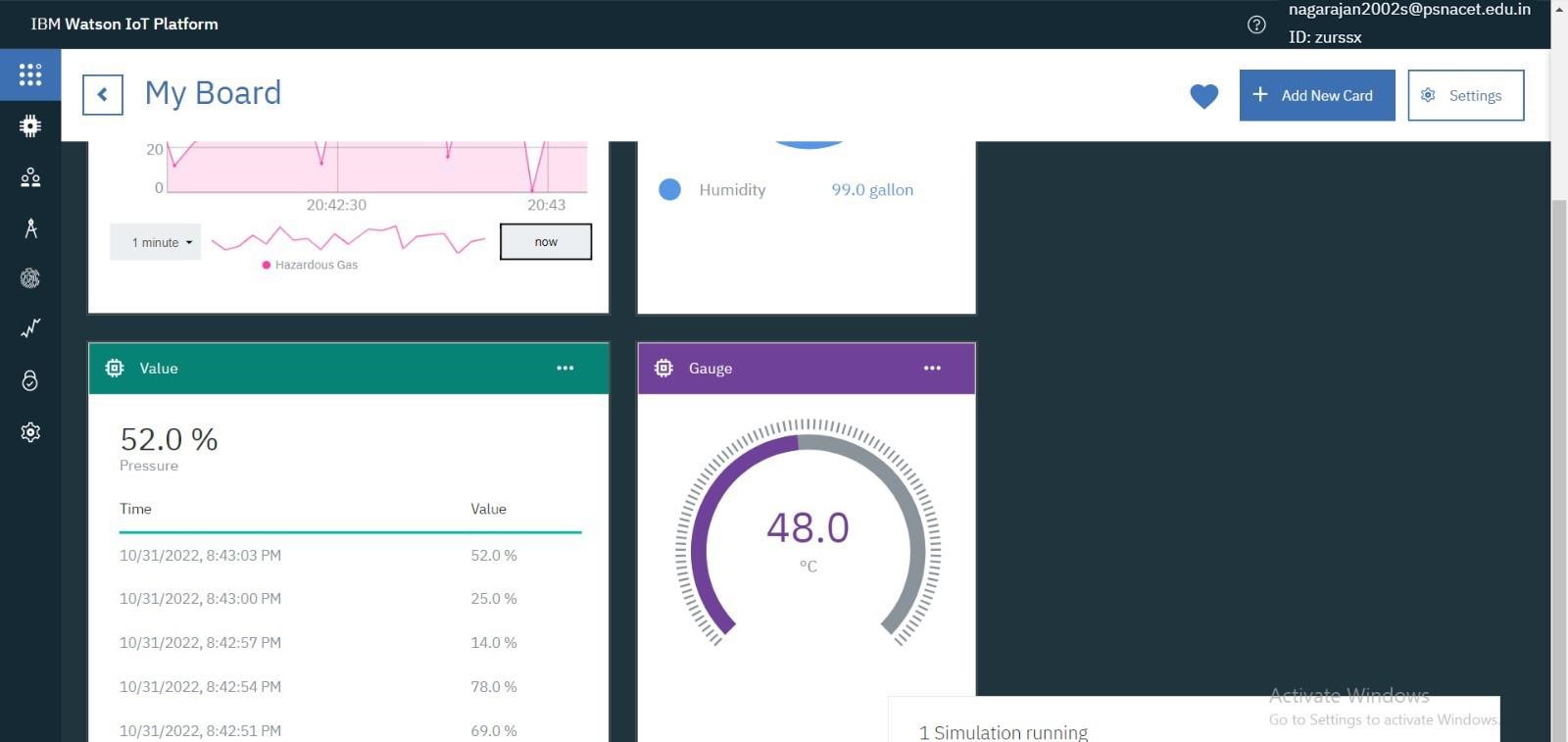


* Here is the graph



* 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.