

CREATE IBM WATSON IOT PLATFORM AND DEVICE CREATE IBM WATSON IOT PLATFORM AND DEVICE

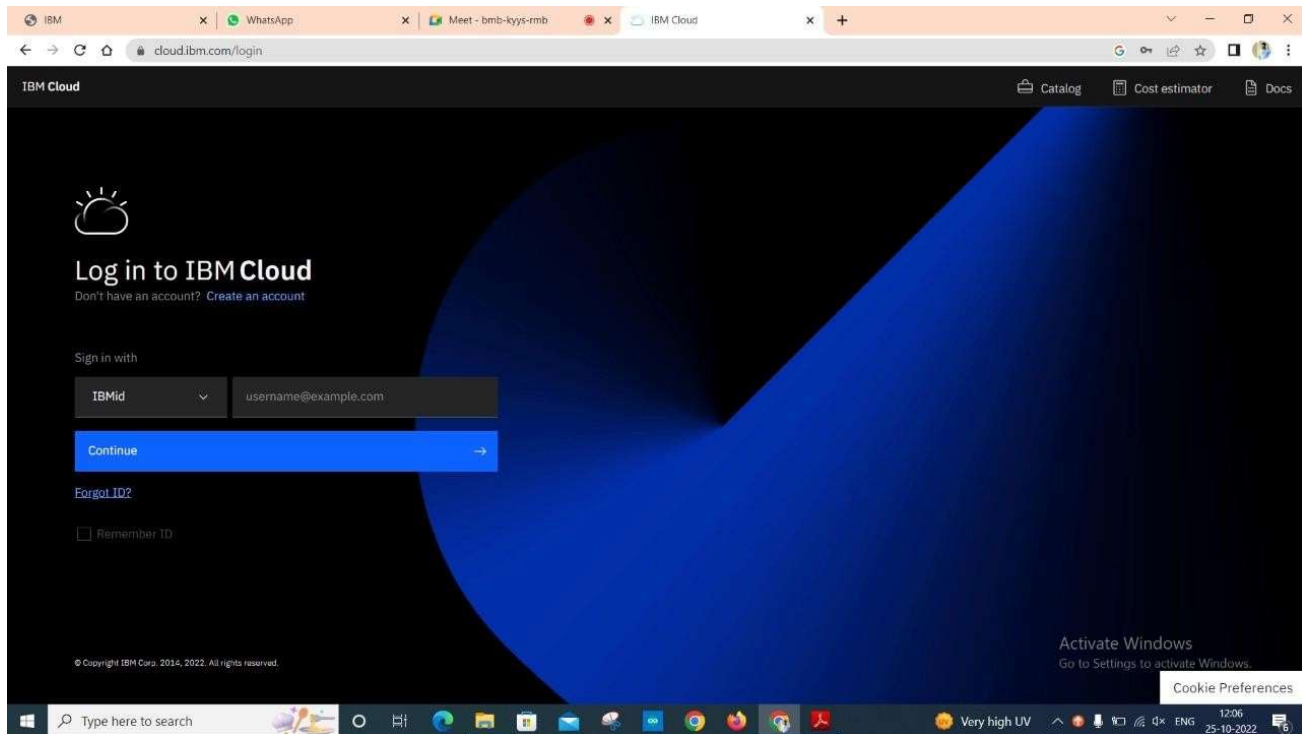
Date	25 October 2022
Team ID	PNT2022TMID28936
Project Name	Gas leakage monitoring and alerting system for industries

AIM:

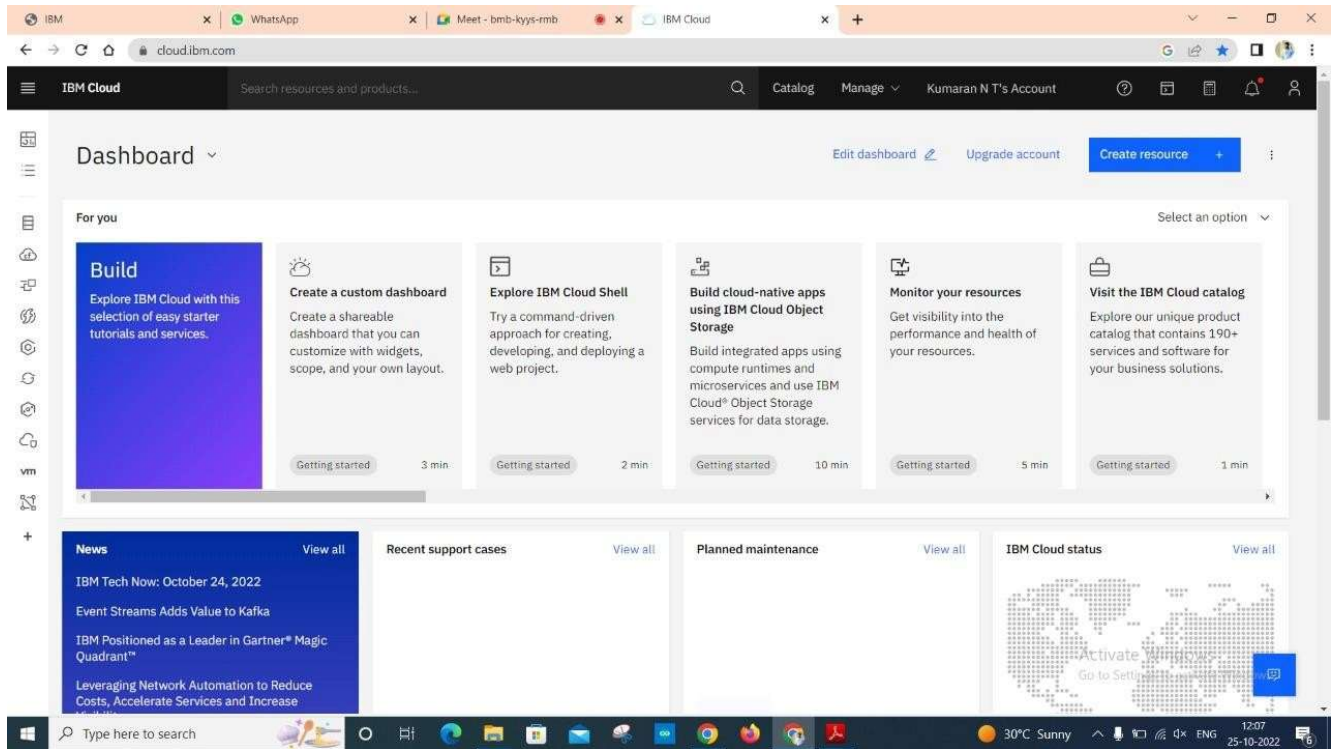
To create the IBM Watson IoT platform and device.

Steps to be followed

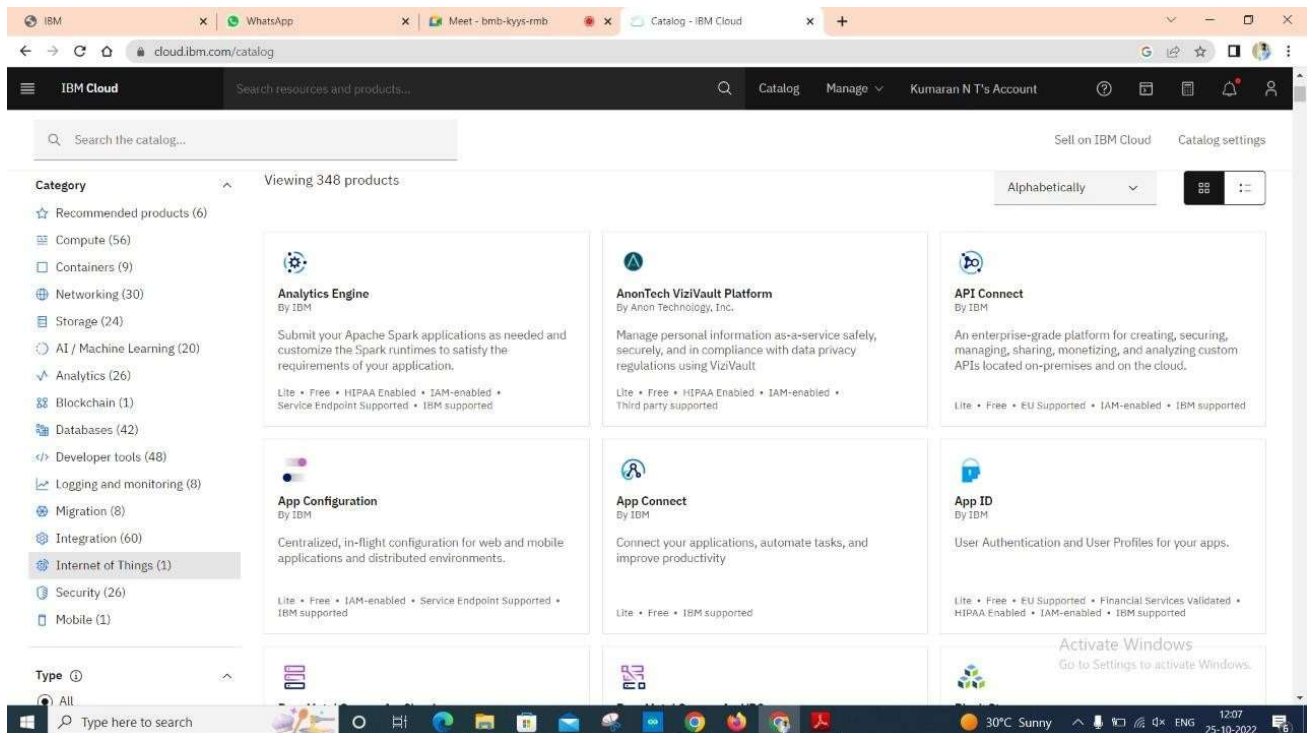
Step 1: Firstly, create an IBM cloud account with IBM id and password.



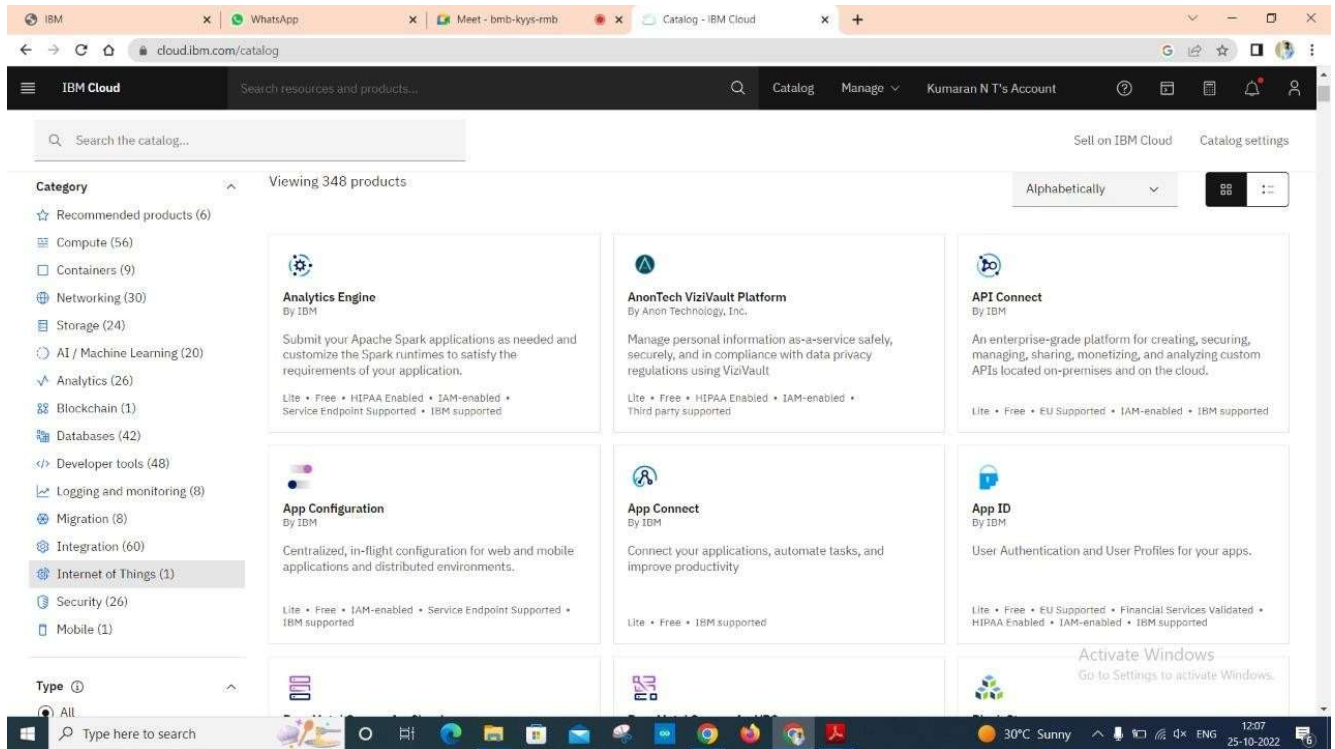
Step 2: Home page of IBM cloud.



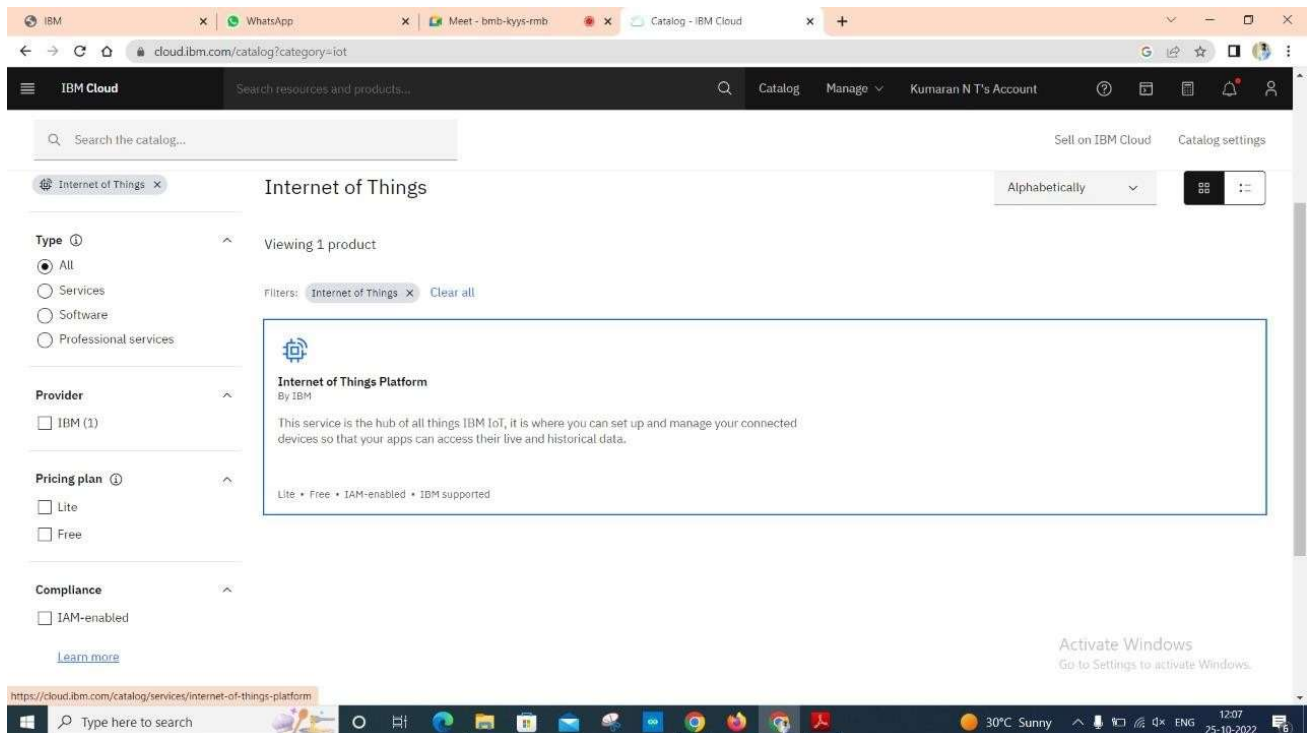
Step 3: Click on the catalog on the top.



Step 4: Click on IoT in the category mentioned.



Step 5: Click on Internet of Things Platform.



Step 6: If already a lite is present delete it else u can't create another.

IBM Cloud catalog showing the Internet of Things Platform Lite plan configuration. The plan is free and includes up to 500 registered devices and 200 MB of data. The configuration page shows the service name 'Internet of Things Platform-9j' and the resource group 'Default'. A warning message on the right states: 'Existing Lite plan instance. You can have only 1 Lite plan instance of this service per resource group. Delete your current Lite plan instance in Default resource group to create a new one, or view the existing instance.' The 'Create' button is disabled.

Step 7: Tick agreements and then click on create.

IBM Cloud catalog showing the Internet of Things Platform Lite plan configuration. The plan is free and includes up to 500 registered devices and 200 MB of data. The configuration page shows the service name 'Internet of Things Platform-9j' and the resource group 'Default'. A warning message on the right states: 'Existing Lite plan instance. You can have only 1 Lite plan instance of this service per resource group. Delete your current Lite plan instance in Default resource group to create a new one, or view the existing instance.' The 'Create' button is disabled.

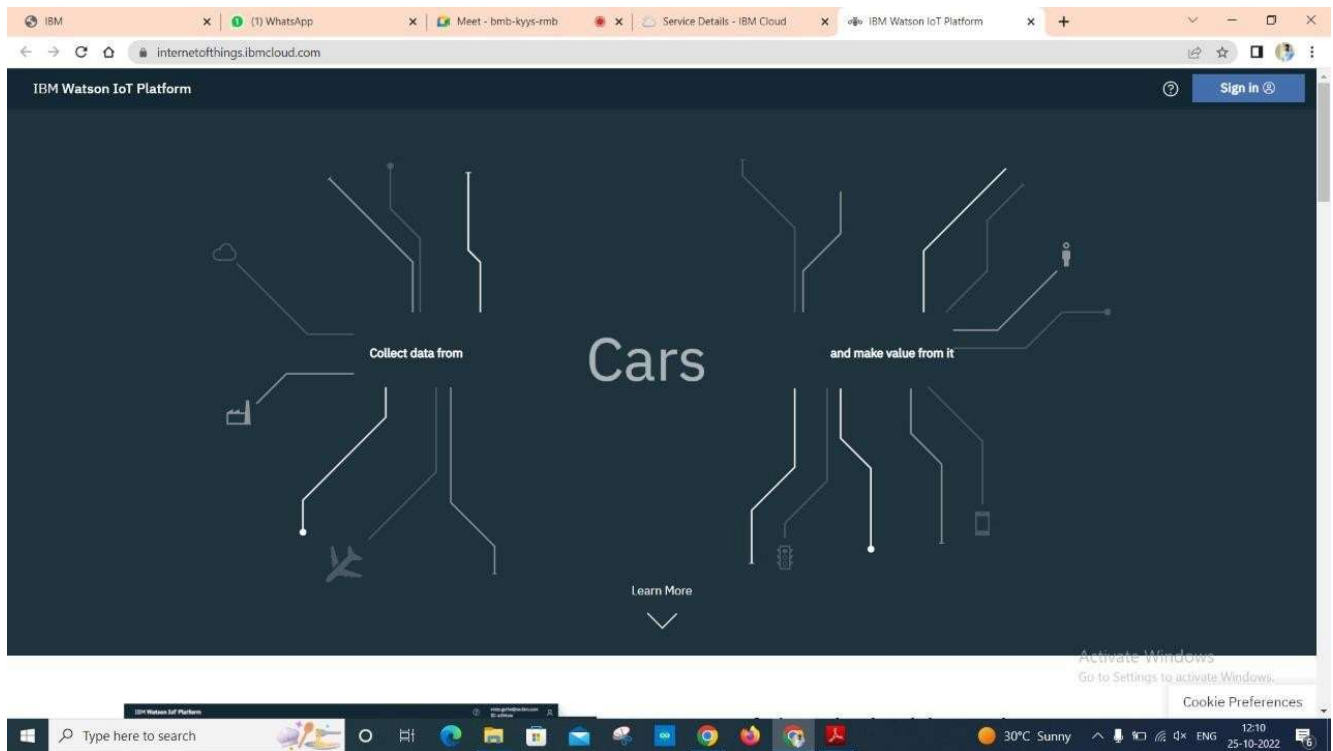
Step 8: Click on the launch button.

The screenshot shows the IBM Cloud interface for the Internet of Things Platform. The browser tabs include IBM, WhatsApp, a meeting link, and Service Details - IBM Cloud. The URL is cloud.ibm.com/services/iotf-service/cm%3Av1%3Abluemix%3Apublic%3AIotf-service%3Aeu-de%3Aa%2F7c78e0d245714182ba5b5c61d6c11283%3Aee595334-0365-4412-8ba2-23567ab... The page title is "Internet of Things Platform-hg" with a green "Active" status and an "Add tags" link. A "Details" link and an "Actions..." dropdown are in the top right. The left sidebar has "Manage" selected, with "Plan" and "Connections" below it. The main content area features a large blue icon representing a network of devices. Below it, the text "Let's get started with IBM Watson IoT Platform" is followed by a description: "Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world." There are "Launch" and "Docs" buttons. Further down, a section titled "Ready for the next level?" introduces the "IBM Watson IoT Platform Journey" with three stages: "Lite", "Non-Production", and "Production". Each stage has a description and a list of features. The "Lite" stage is marked with a checkmark. The "Non-Production" stage is marked with a circle. The "Production" stage is marked with a circle. The "Lite" stage features include: "Free", "200 MB data-transfer limit". The "Non-Production" stage features include: "Starts at \$500 per month", "Capacity limit based on device type". The "Production" stage features include: "Includes IBM Service & Support", "Pricing based on number of devices per". An "Activate Windows" watermark is visible in the bottom right corner of the page.

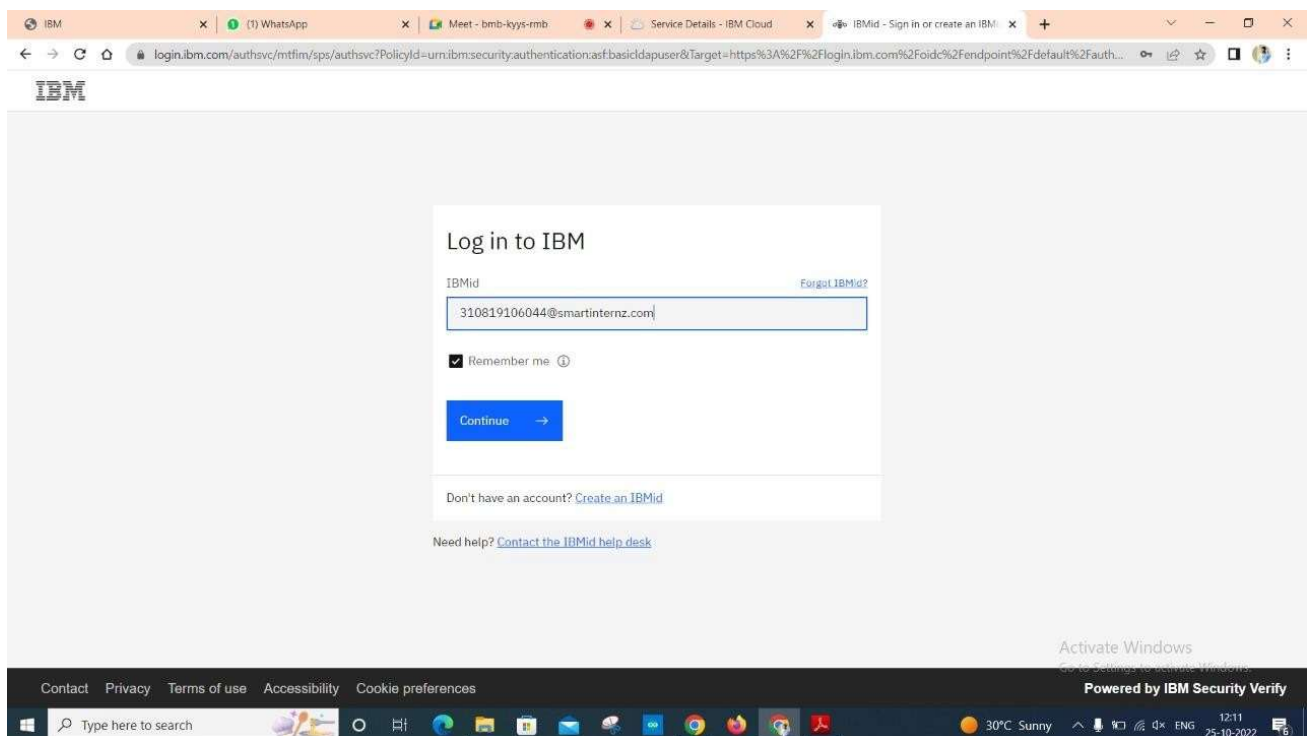
Step 9: After clicking on the launch button this tab will open.

The screenshot shows the IBM Watson IoT Platform dashboard. The browser tabs include IBM, WhatsApp, a meeting link, Service Details - IBM Cloud, and IBM Watson IoT Platform. The URL is internetofthings.ibmcloud.com. The page title is "IBM Watson IoT Platform" with a "Sign in" button in the top right. The main content area features a large blue background with a white circuit-like pattern. The word "Cars" is prominently displayed in the center. To the left of "Cars" is the text "Collect data from" with a small icon of a car. To the right of "Cars" is the text "and make value from it" with a small icon of a car. Below the "Cars" text is a "Learn More" link with a downward arrow. An "Activate Windows" watermark is visible in the bottom right corner of the page.

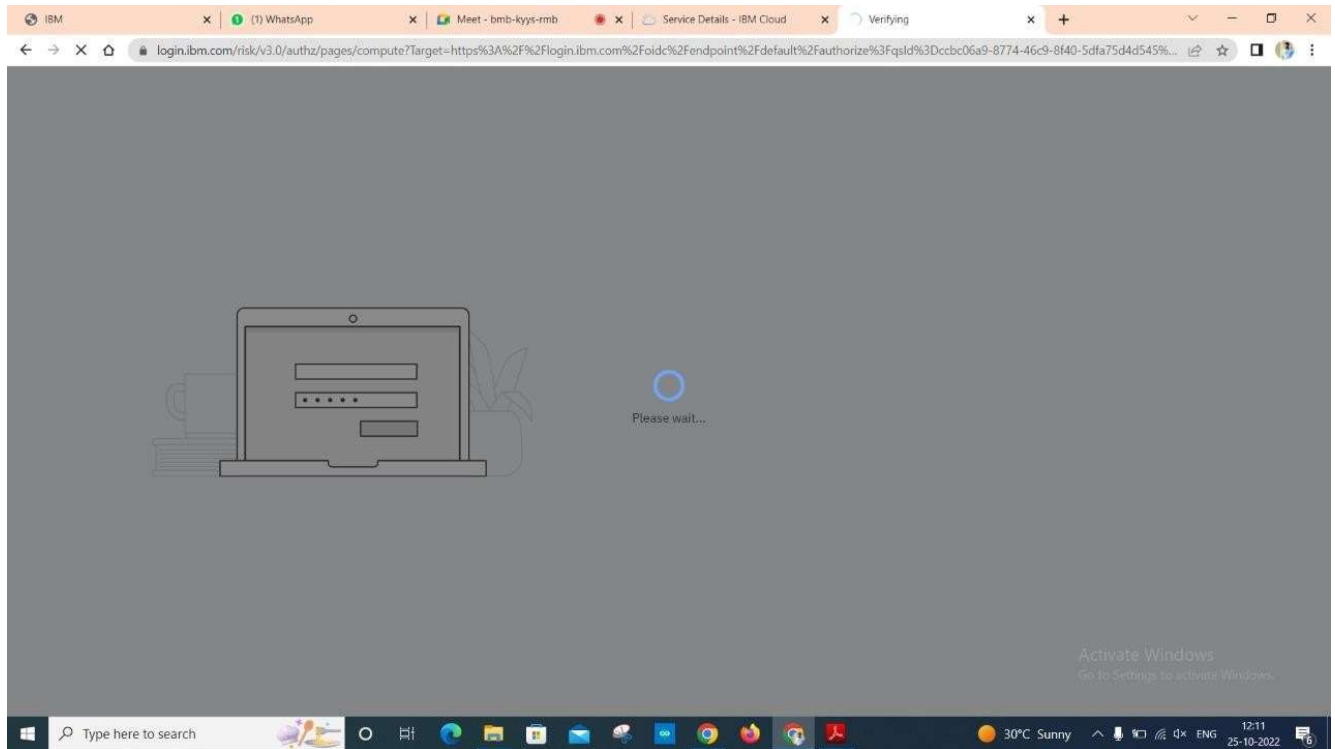
Step 10: Click on Sign in.



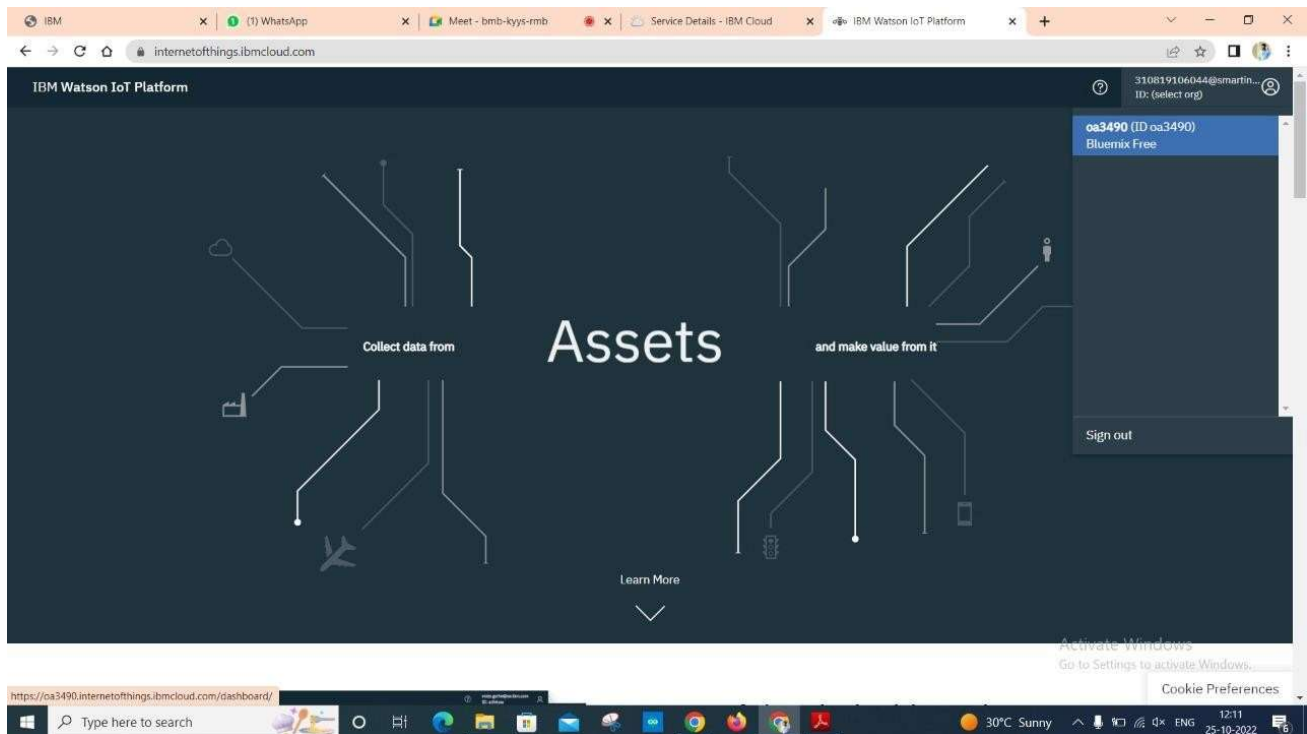
Step 11: Fill the login details.



Step 12: Sign in on progress.



Step 13: Once it is logged in, the name will be displayed click on it and then click on Bluemix Free.



Step 14: This is the IBM Watson platform.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

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: ☒

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
> <input type="checkbox"/>	12345	Disconnected	TestDeviceType	Device	Oct 23, 2022 1:42 PM	

Items per page 50 | 1-1 of 1 item

1 of 1 page

1 Simulation running

Activate Windows
Go to Settings to activate Windows.

Step 15: Click on Add Device.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

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All Devices Diagnose

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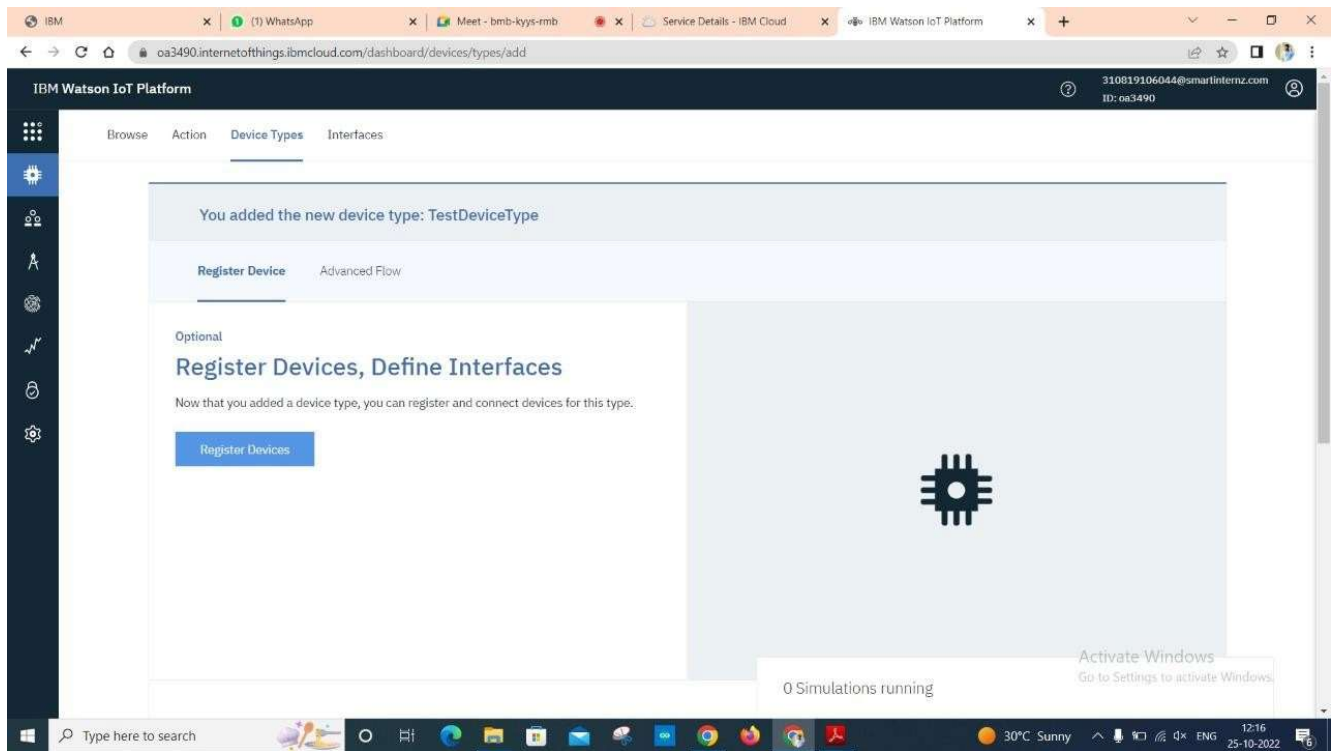
Step 16: Click on Device Type.

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform. The wizard has four steps: Identity, Device Information, Security, and Summary. The 'Identity' step is currently active. Below the step indicator, there is a text prompt: 'Select a device type for the device that you are adding and give the device a unique ID.' There are two input fields: 'Device Type' with a dropdown menu showing 'Select or create a device type...' and 'Device ID' with a text input field containing 'Enter Device ID'. At the bottom right of the wizard, there are 'Cancel' and 'Next' buttons. Below the wizard, the 'Browse Devices' section is visible, showing 'All Devices' and 'Diagnose' buttons. The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying '30°C Sunny' and the date '25-10-2022'.

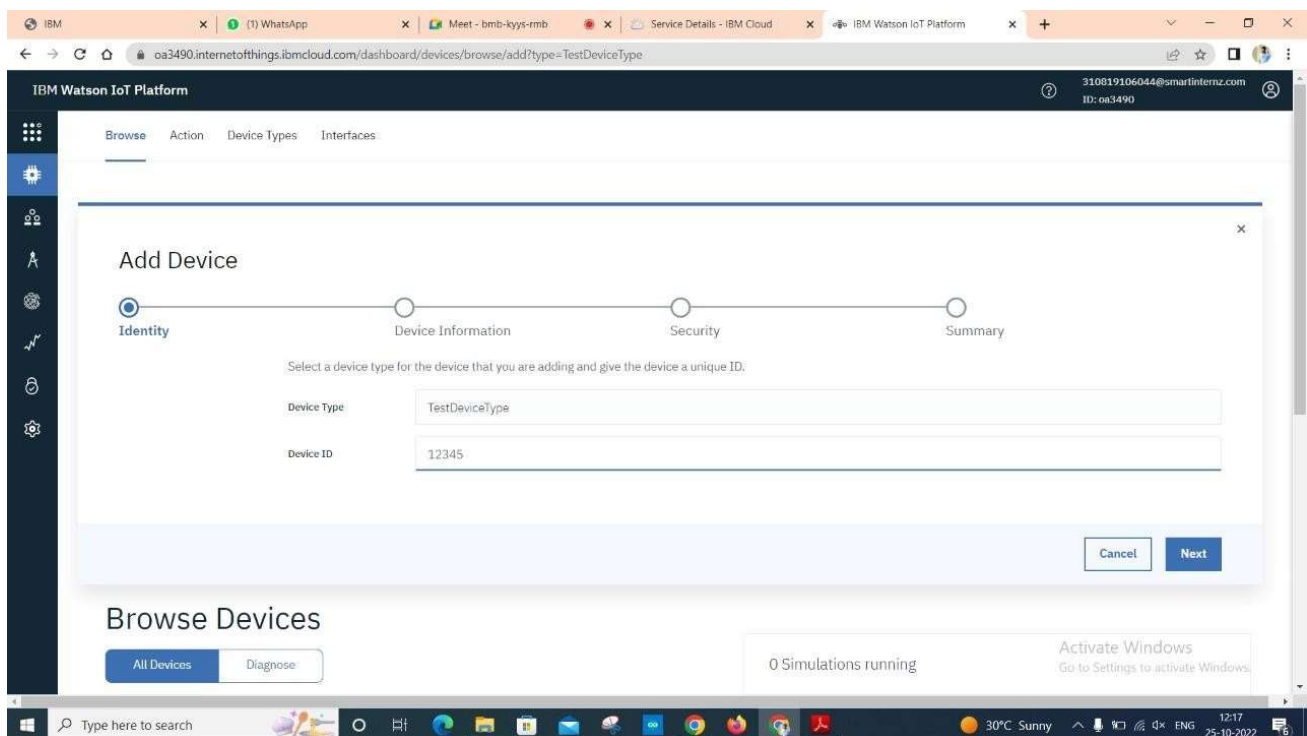
Step 17: Fill the details.

The screenshot shows the 'Add Type' wizard in the IBM Watson IoT Platform. The wizard has two steps: Identity and Device Information. The 'Identity' step is currently active. Below the step indicator, there is a text prompt: 'Device types group devices that have similar characteristics, such as model number, firmware version, or location. Give the device type a unique name and a description that identifies characteristics that are shared by devices of this type.' There are three input fields: 'Type' with a dropdown menu showing 'Device' and 'Gateway' options, 'Name' with a text input field containing 'TestDeviceType', and 'Description' with a text input field. Below the input fields, there is a text prompt: 'The device type name is used to identify the device type uniquely and uses a restricted set of characters to make it suitable for API use.' At the bottom right of the wizard, there are 'Cancel' and 'Next' buttons. Below the wizard, the 'Device Types' section is visible, showing '0 Simulations running' and 'Activate Windows' text. The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying '30°C Sunny' and the date '25-10-2022'.

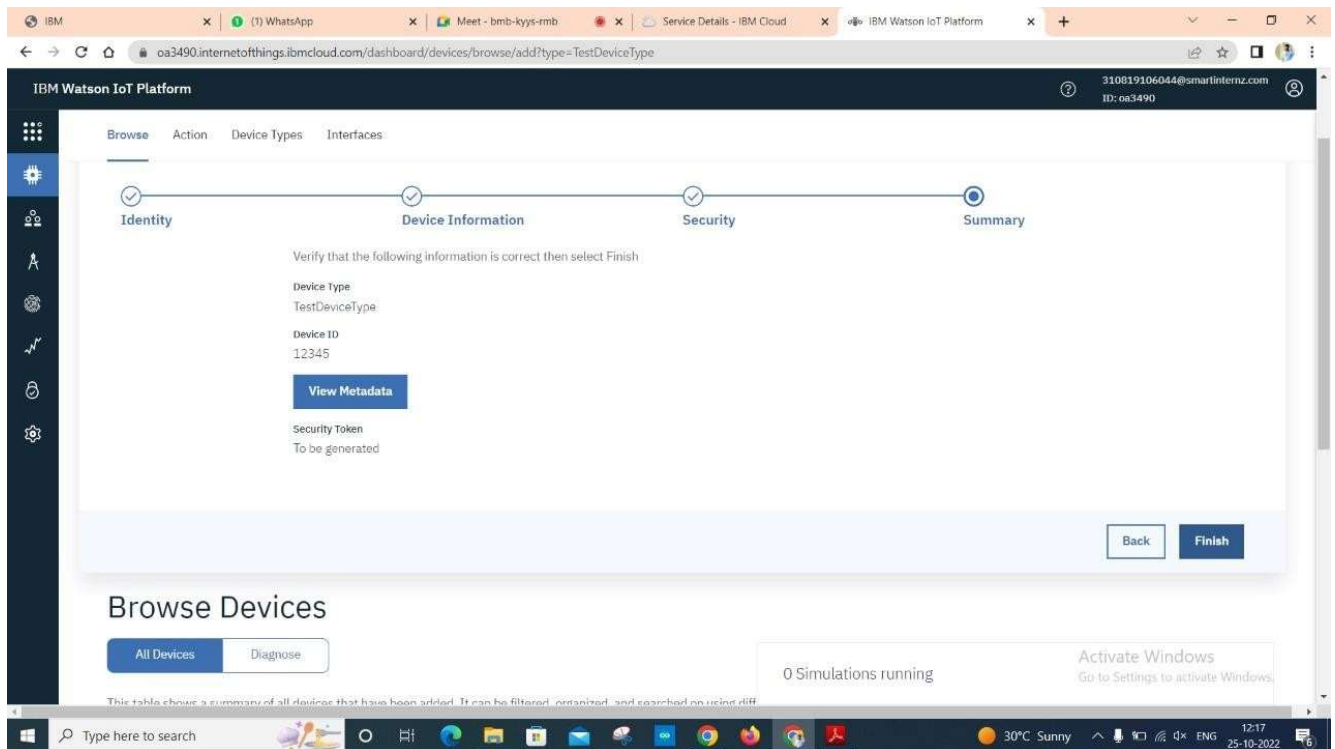
Step 18: Click on Register Devices.



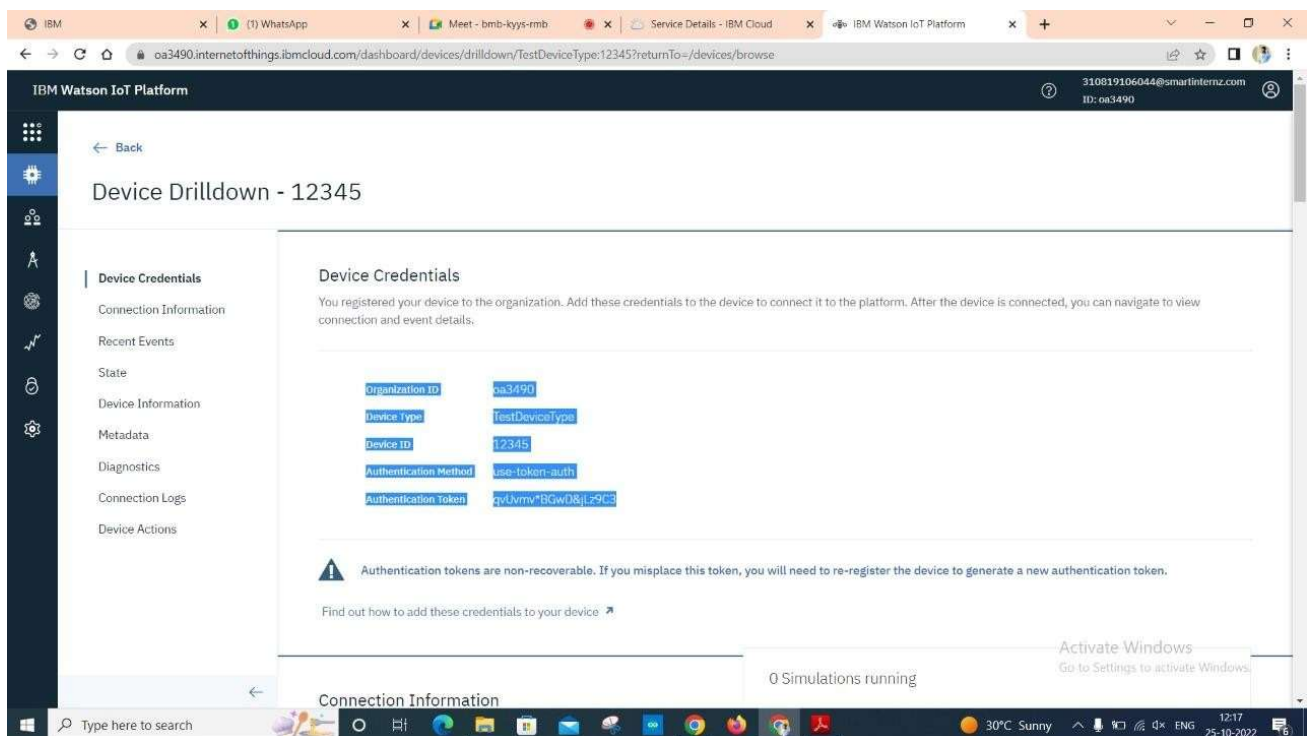
Step 19: Give the device name which you have created and give Device ID.



Step 20: After giving all the data, Click on Finish.



Step 21: After creating the device, Copy the Device Credentials.



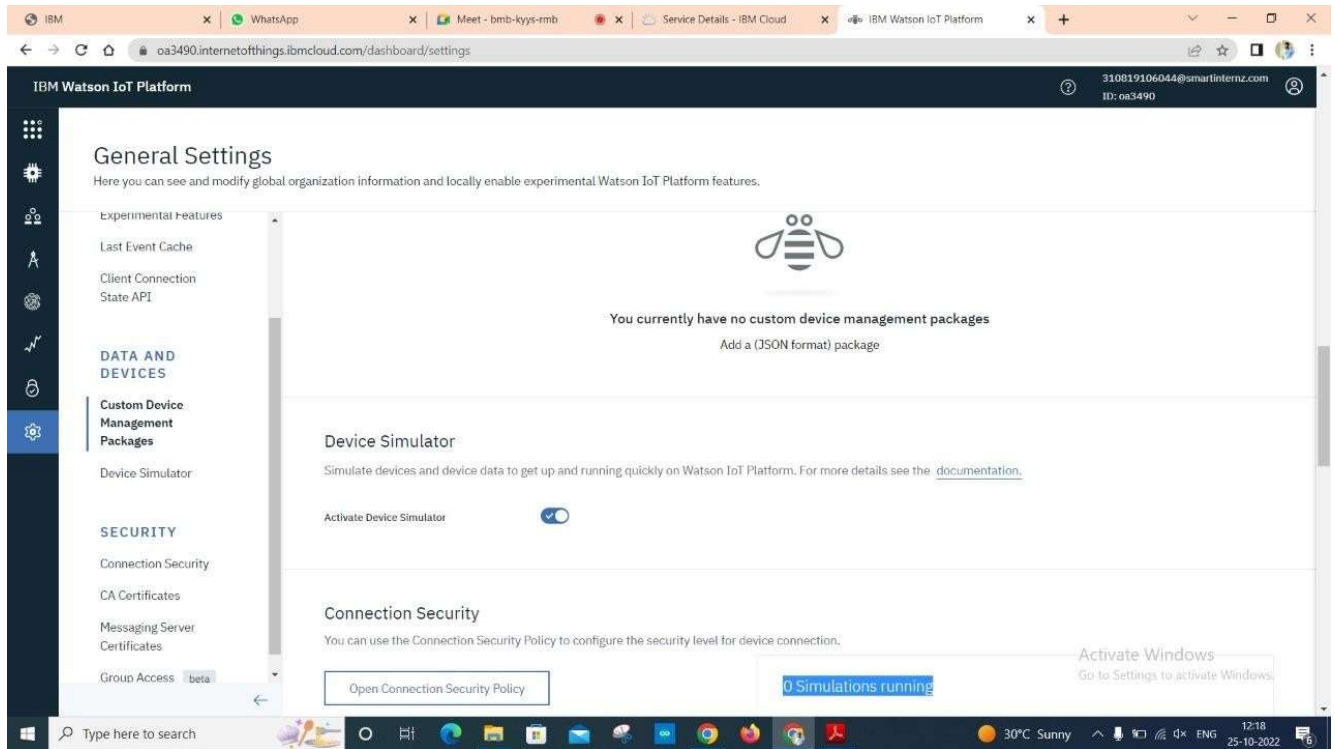
Step 22: Go to Setting, click on Data and Devices.

The screenshot shows the IBM Watson IoT Platform Settings page. The left sidebar contains a navigation menu with the following items: Boards, Devices, Members, Apps, Access Management, Usage, Security, and Settings (which is highlighted). The main content area is titled 'Settings' and includes a description: 'Here you can see and modify global organization information and locally enable experimental Watson IoT Platform features.' Below this, there are three sections: 'About' (showing Date Created: 10/23/2022, Organization Type: Bluemix Free, and Geographic Location: eu-de), 'Identity' (showing Organization ID: oa3490 and a Friendly Name input field), and 'Experimental Features' (showing 0 Simulations running). A Windows watermark is visible in the bottom right corner.

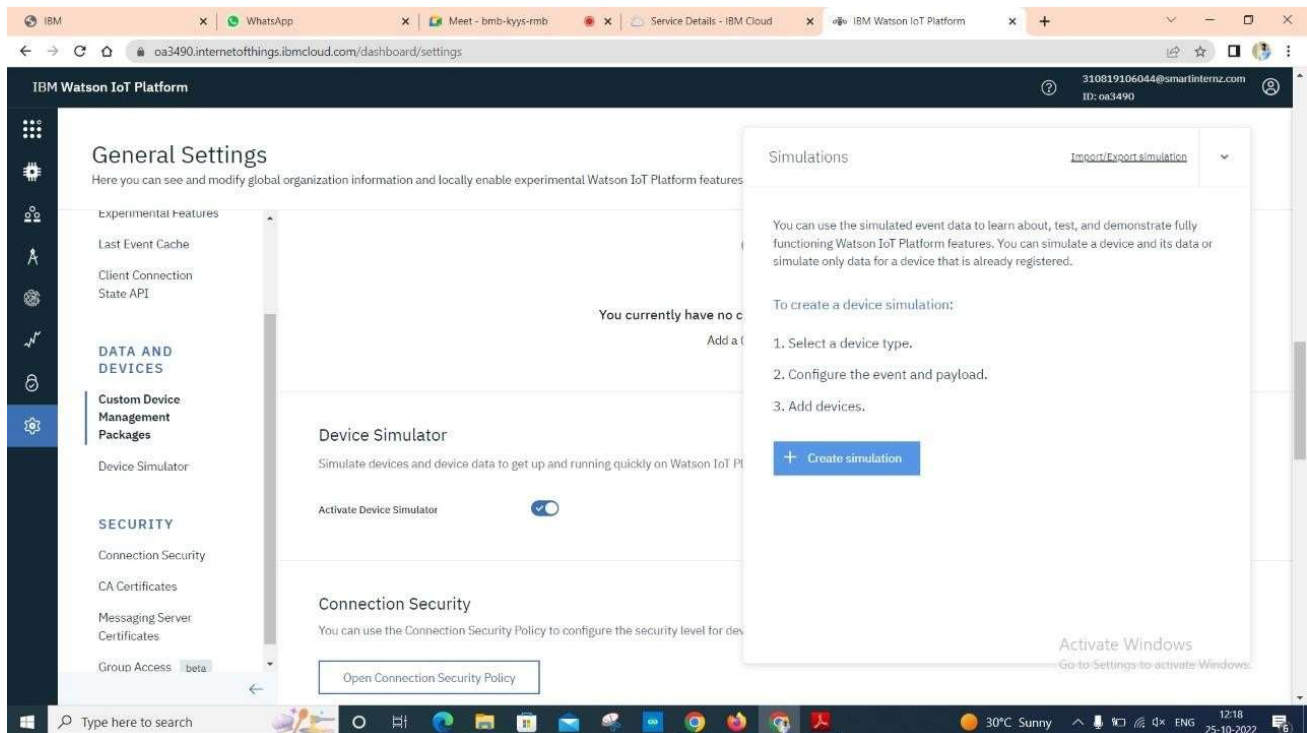
Step 23: Then click on Device Simulator and Activate Device Simulator.

The screenshot shows the IBM Watson IoT Platform General Settings page. The left sidebar contains a navigation menu with the following items: Boards, Devices, Members, Apps, Access Management, Usage, Security, and Settings (which is highlighted). The main content area is titled 'General Settings' and includes a description: 'Here you can see and modify global organization information and locally enable experimental Watson IoT Platform features.' Below this, there are three sections: 'Device Simulator' (showing a toggle switch for 'Activate Device Simulator' which is turned on), 'Connection Security' (showing a button for 'Open Connection Security Policy'), and 'CA Certificates' (showing a button for 'Add Certificate'). A Windows watermark is visible in the bottom right corner.

Step 24: Click on the pop-up screen on the right side.



Step 25: Click on Create Simulation.



Step 26: Choose the Device.

The screenshot shows the IBM Watson IoT Platform 'General Settings' page. The left sidebar contains navigation links for 'Experimental Features', 'DATA AND DEVICES', and 'SECURITY'. The main content area includes sections for 'Device Simulator' (with an 'Activate Device Simulator' toggle) and 'Connection Security'. A 'Simulations' modal is open, displaying instructions on how to create a device simulation. The modal lists three steps: 1. Select a device type, 2. Configure the event and payload, and 3. Add devices. Below these steps is a text input field labeled 'Select or create a device type...' with 'TestDeviceType' entered. The modal also includes an 'Import/Export simulation' dropdown and an 'Activate Windows' watermark.

IBM Watson IoT Platform

General Settings

Here you can see and modify global organization information and locally enable experimental Watson IoT Platform features

Experimental Features

Last Event Cache

Client Connection State API

DATA AND DEVICES

Custom Device Management Packages

Device Simulator

Activate Device Simulator

SECURITY

Connection Security

CA Certificates

Messaging Server Certificates

Group Access beta

You currently have no c

Add a

Simulations

Import/Export simulation

You can use the simulated event data to learn about, test, and demonstrate fully functioning Watson IoT Platform features. You can simulate a device and its data or simulate only data for a device that is already registered.

To create a device simulation:

1. Select a device type.
2. Configure the event and payload.
3. Add devices.

Select or create a device type...

TestDeviceType

Activate Windows

Go to Settings to activate Windows.

Step 27: Type the code.

The screenshot shows the IBM Watson IoT Platform 'General Settings' page with the 'Device Type: TestDeviceType' modal open. The modal displays a configuration interface for a device simulation. It includes a 'New event type' button, a 'Send' button, and a 'Schedule' dropdown set to 'Every Minute'. The 'Payload' section contains a JSON object with 'Temperature' and 'Humidity' fields, both set to 'random(0, 100)'. There is also an 'Upload a CSV file' button and 'Cancel'/'Save' buttons at the bottom. The background shows the same 'General Settings' page as in Step 26.

IBM Watson IoT Platform

General Settings

Here you can see and modify global organization information and locally enable experimental Watson IoT Platform features

Experimental Features

Last Event Cache

Client Connection State API

DATA AND DEVICES

Custom Device Management Packages

Device Simulator

Activate Device Simulator

SECURITY

Connection Security

CA Certificates

Messaging Server Certificates

Group Access beta

You currently have no c

Add a

Device Type: TestDeviceType

Events 1

New event type

Event type name event_1

Send

Schedule

20 Every Minute

Payload

Specify the event payload in the editor window or by uploading a CSV file.

```
{
  1 "Temperature": random(0, 100),
  2 "Humidity": random(0, 100),
  3 }
4
```

Upload a CSV file

Cancel Save

Activate Windows

Go to Settings to activate Windows.

Step 28: Click on Use Registered Device and choose the device and run it.

The screenshot shows the IBM Watson IoT Platform 'General Settings' page. A modal window titled 'Simulations' is open, displaying '1/50 Simulations Running' and a '+ New Simulation' button. Under 'Device Type', 'TestDeviceType' is selected with '1 Event' and a toggle switch. A list of devices shows '12345'. At the bottom of the modal, there are buttons for '1 x Create Simulated Device' and 'Use Registered Device'. The background settings page includes sections for 'Experimental Features', 'DATA AND DEVICES', 'Device Simulator' (with an 'Activate Device Simulator' toggle), and 'Connection Security'.

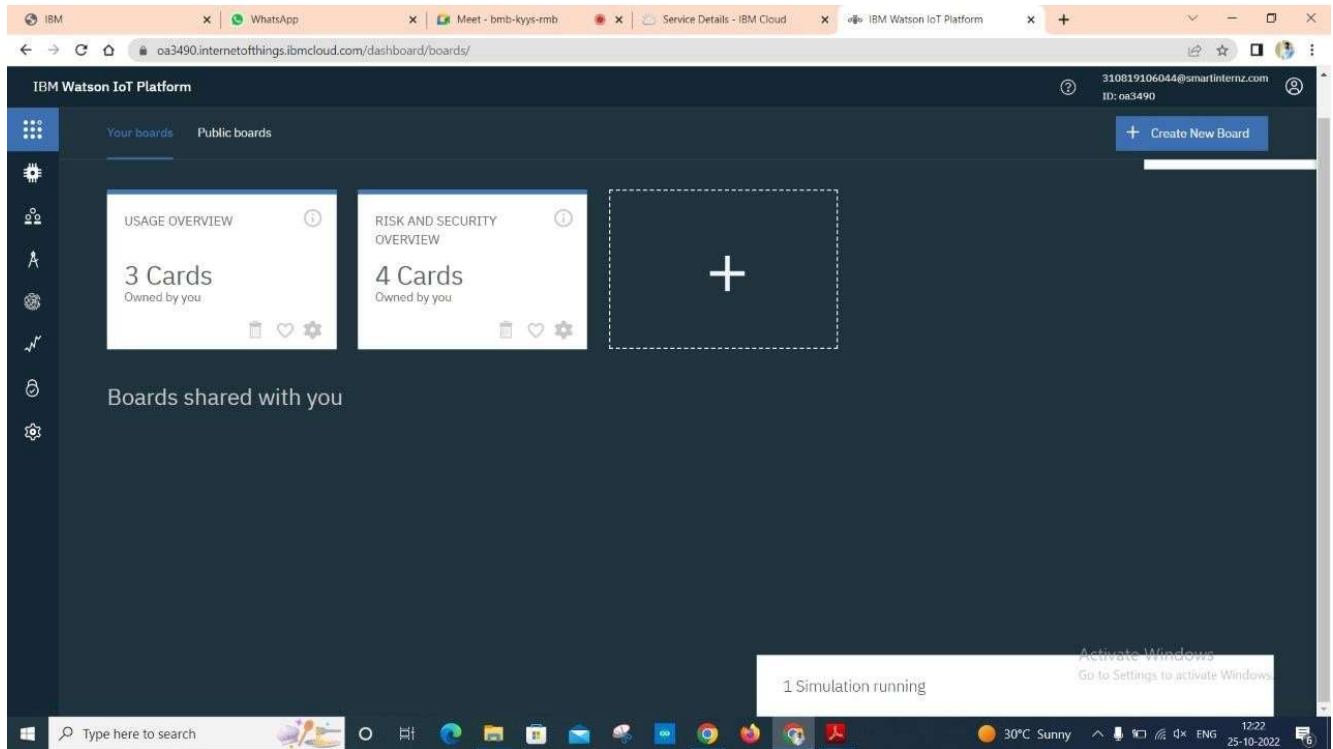
Step 29: Go to devices then click on devices and check the recent events whether the code is running or not.

The screenshot shows the 'Devices' page in the IBM Watson IoT Platform. A modal window for device '12345' is open, showing its 'Recent Events'. The device status is 'Disconnected'. The modal contains a table of recent events:

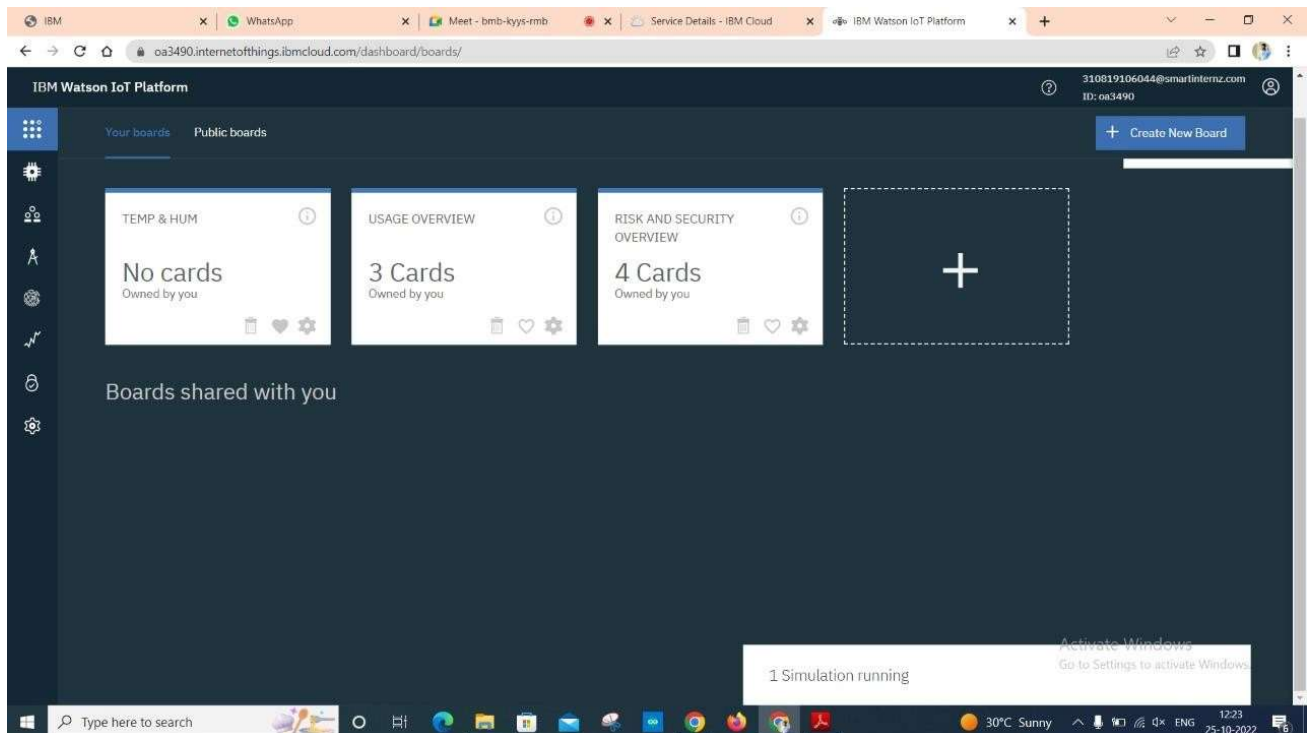
Event	Value	Format	Last Received
event_1	{"Temperature":42,"Humidity":88}	json	a few seconds ago
event_1	{"Temperature":71,"Humidity":36}	json	a few seconds ago
event_1	{"Temperature":3,"Humidity":53}	json	a few seconds ago

Below the table, it says 'Items per page 50 | 1--1 of 1 item'. At the bottom of the modal, it indicates '1 Simulation running'. The background shows the 'Browse' view of the devices page with a table listing device details.

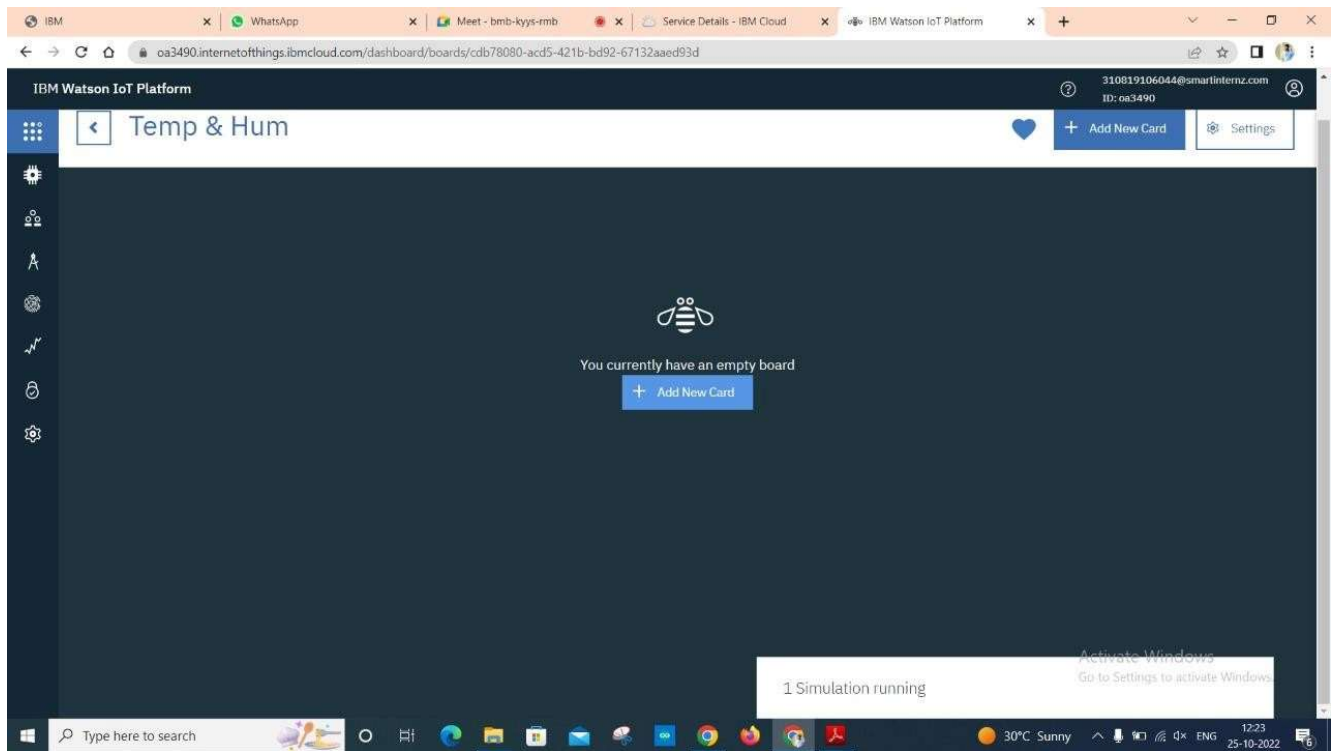
Step 30: Go to Board and click on + Create New Board, fill the details and create a board.



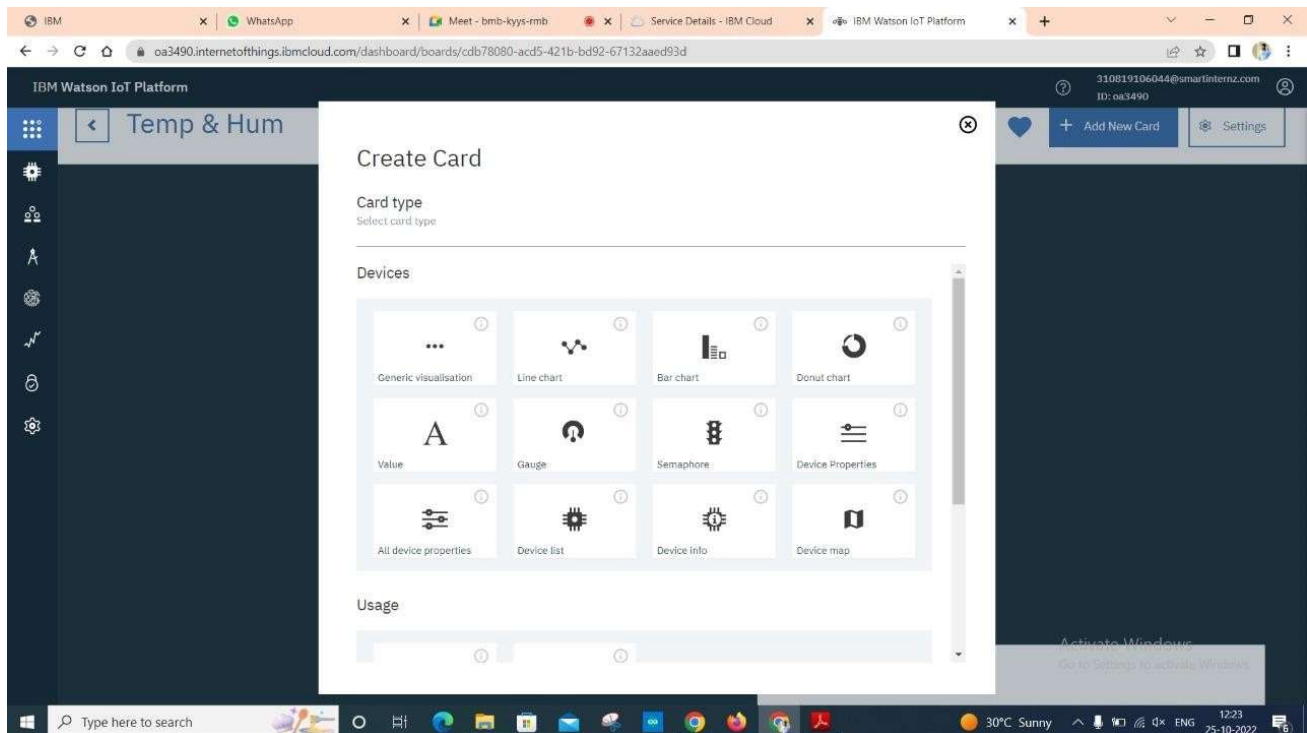
Step 31: Click on the board which is created.



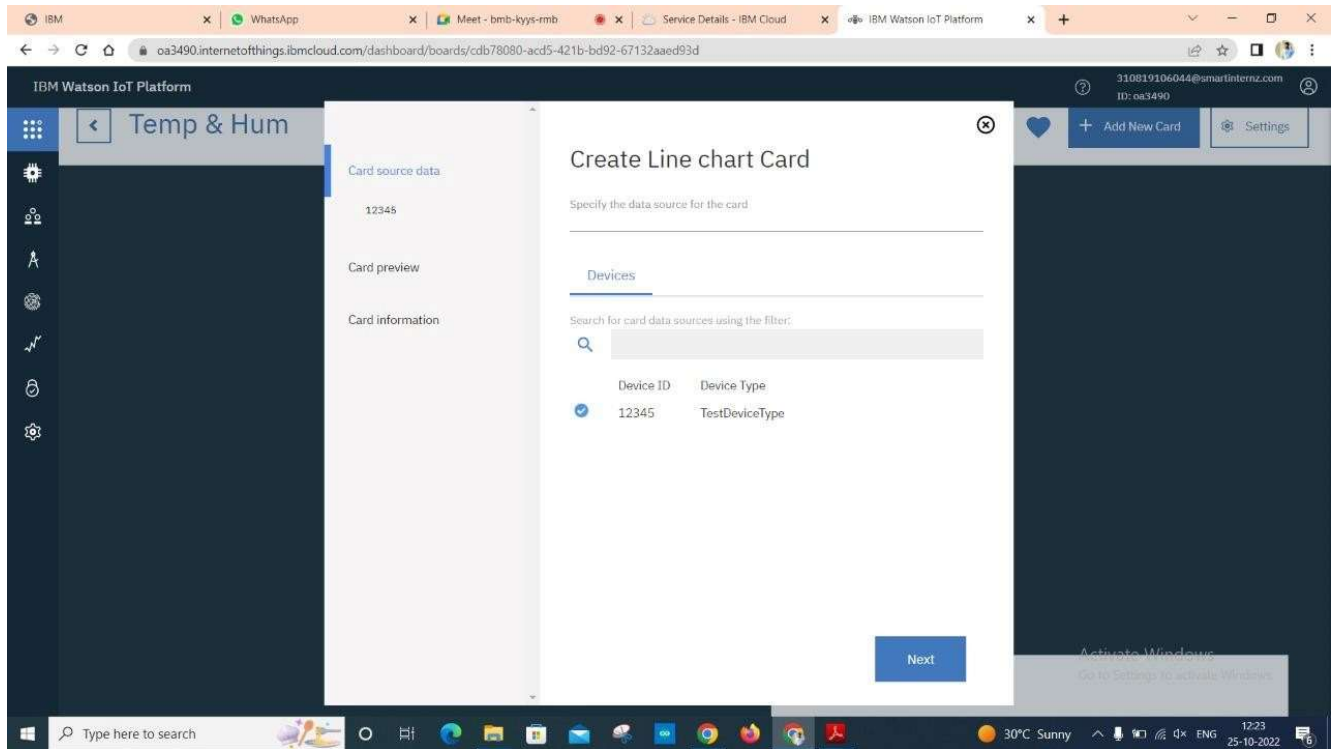
Step 32: Go Add New Card.



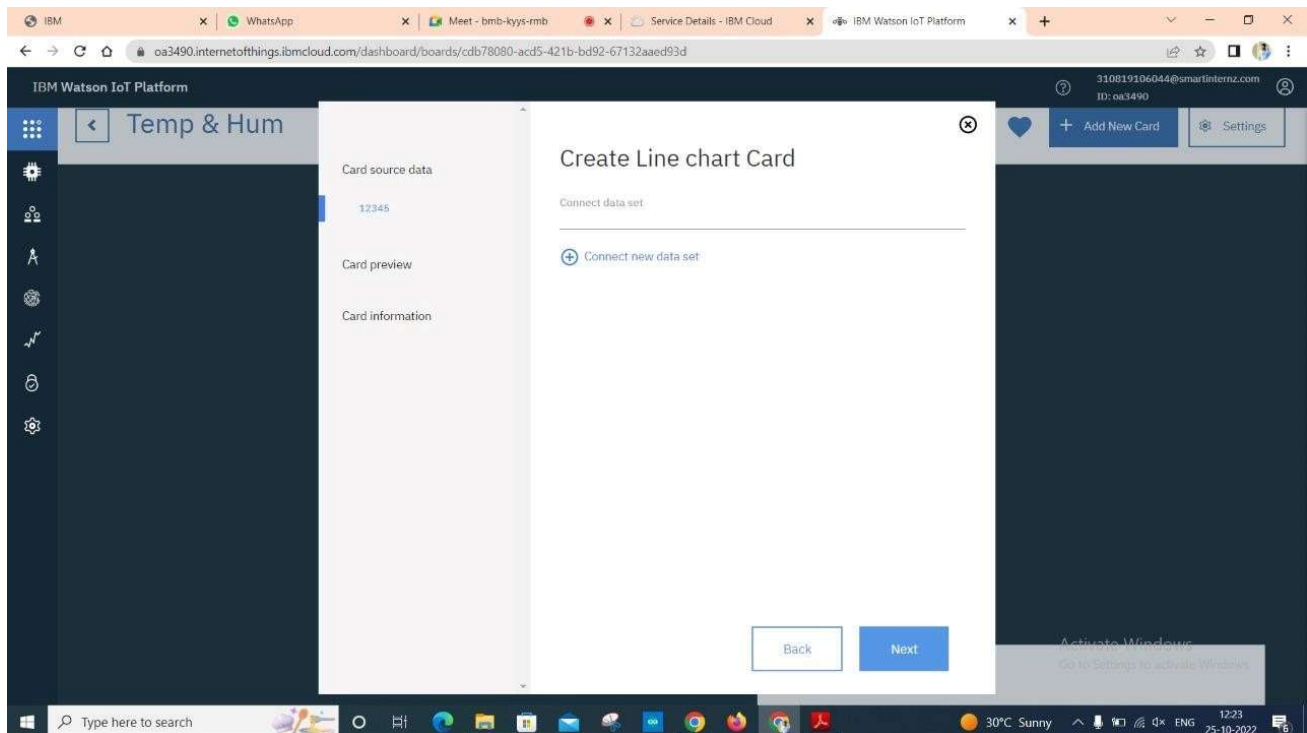
Step 33: Choose the Card Type.



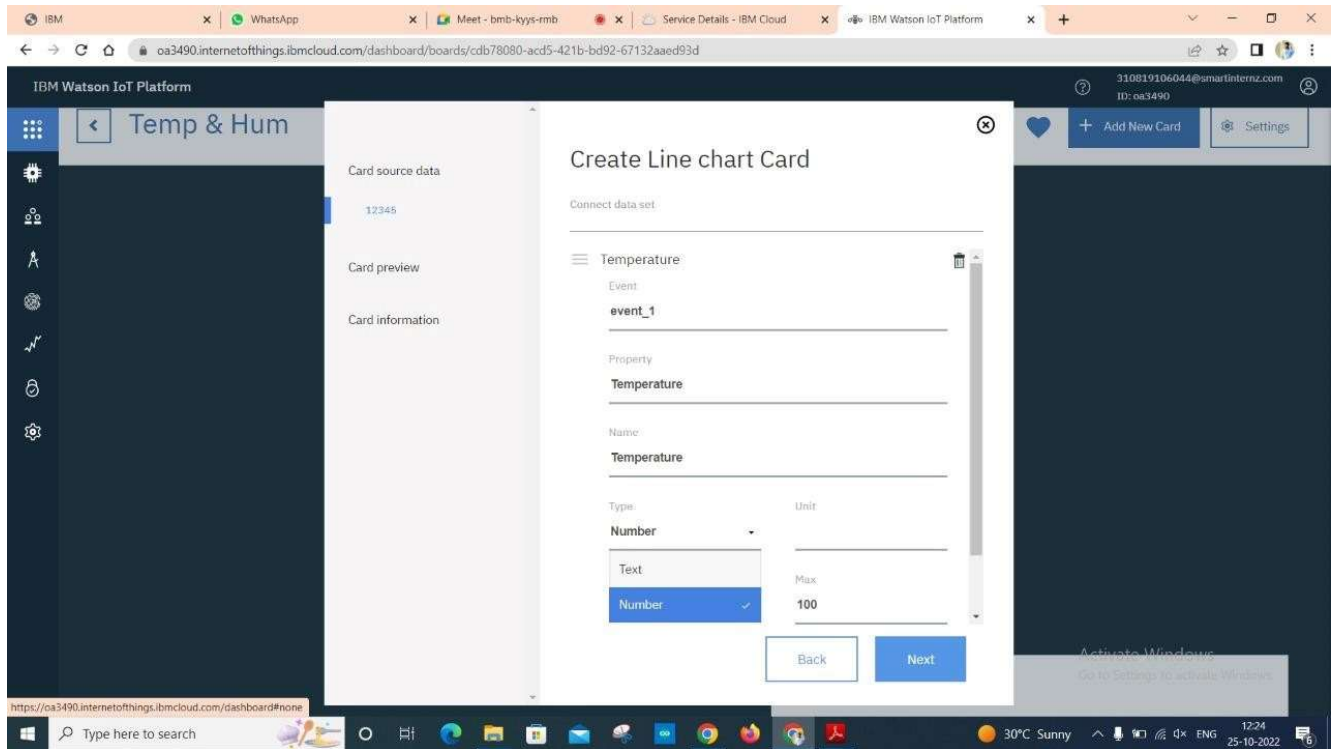
Step 34: Choose the device.



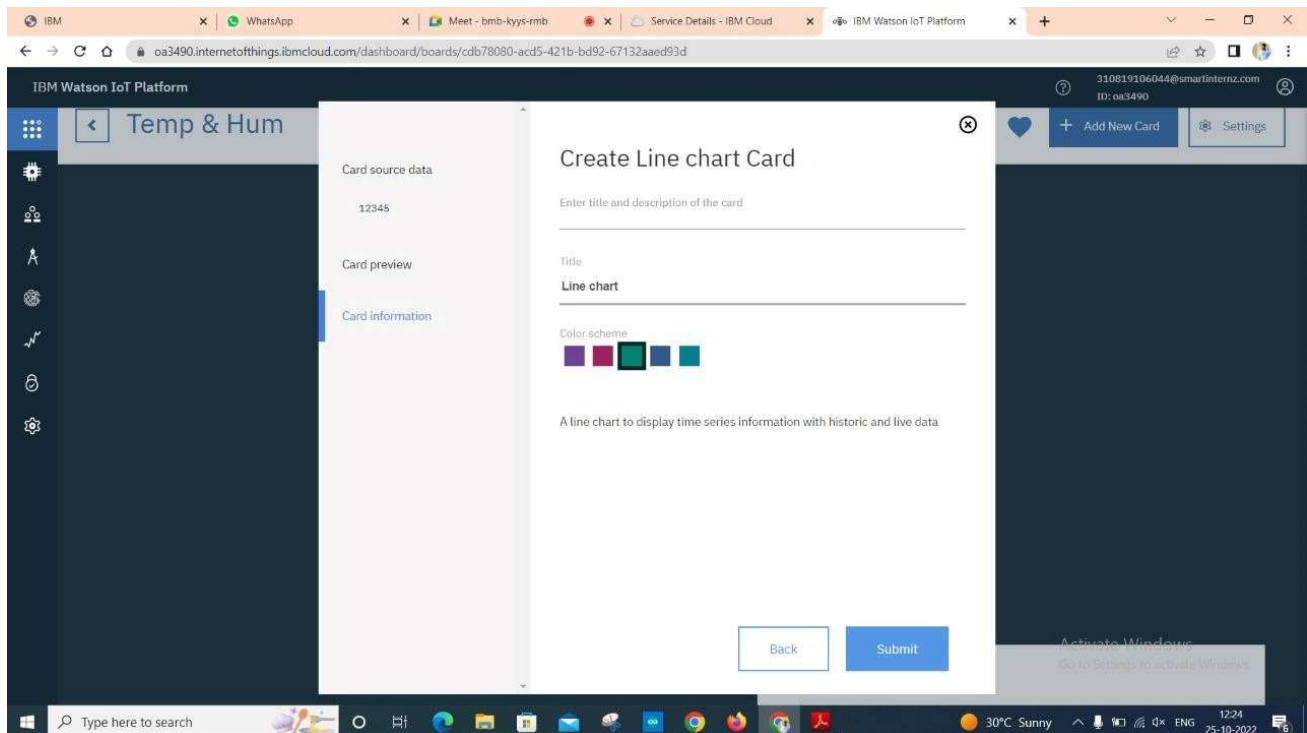
Step 35: Click on Connect new data set.



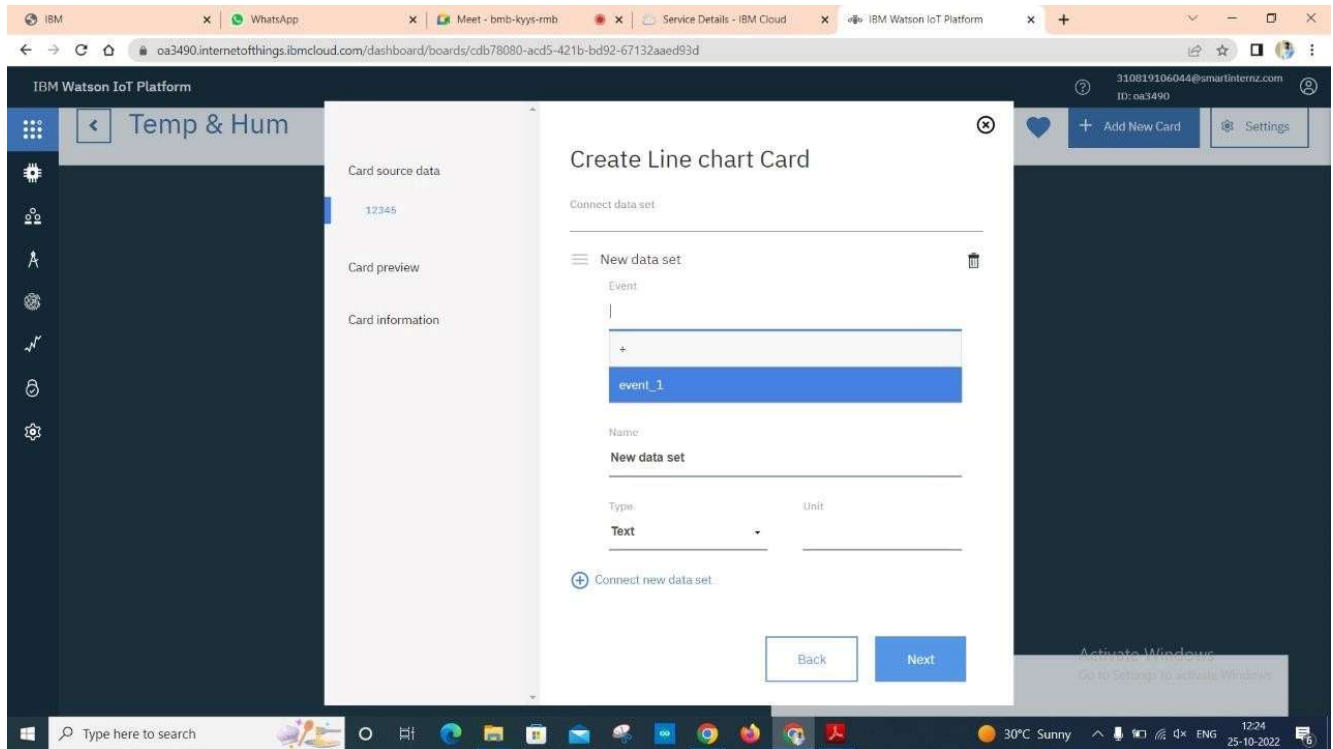
Step 36: Fill the details to get Temperature graph.



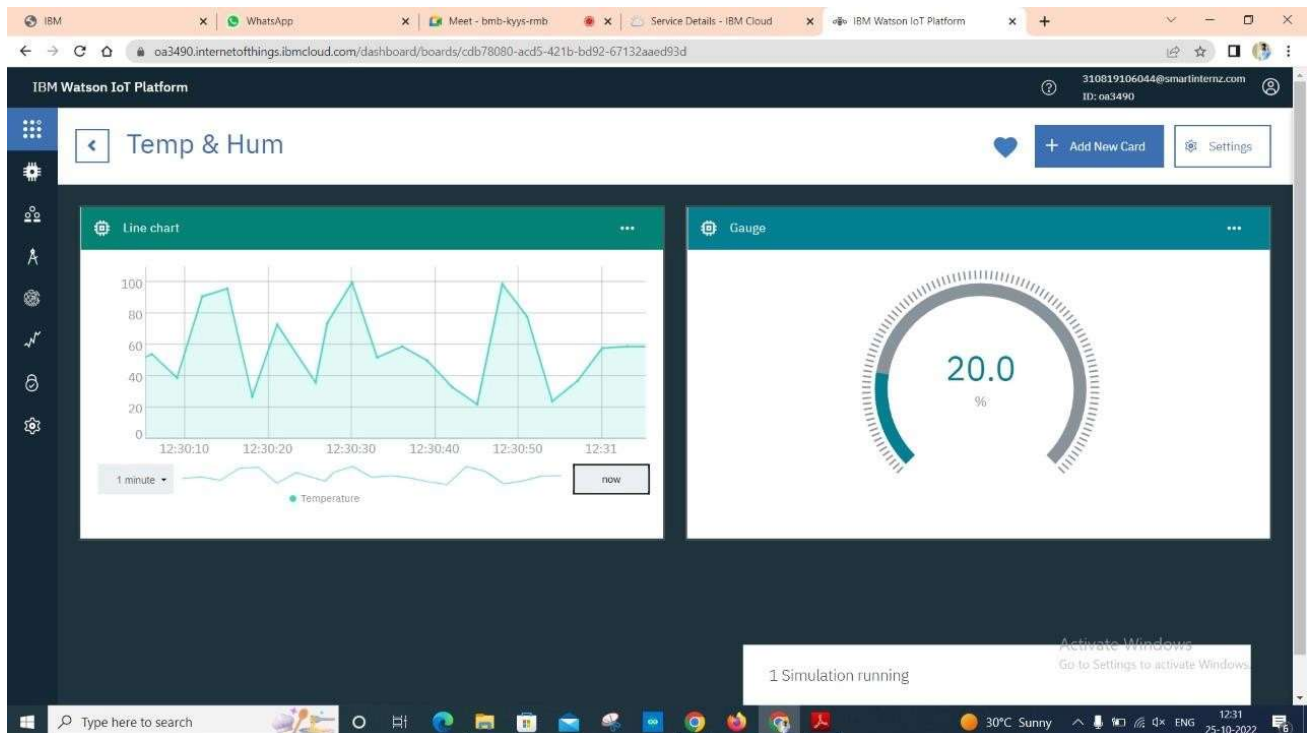
Step 37: Choose the Colour.



Step 38: Repeat the same process again to get the Humidity graph.



Step 39: Here is the Final graph.



Result:

An IBM Watson cloud for IoT and a device is created successfully.