

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

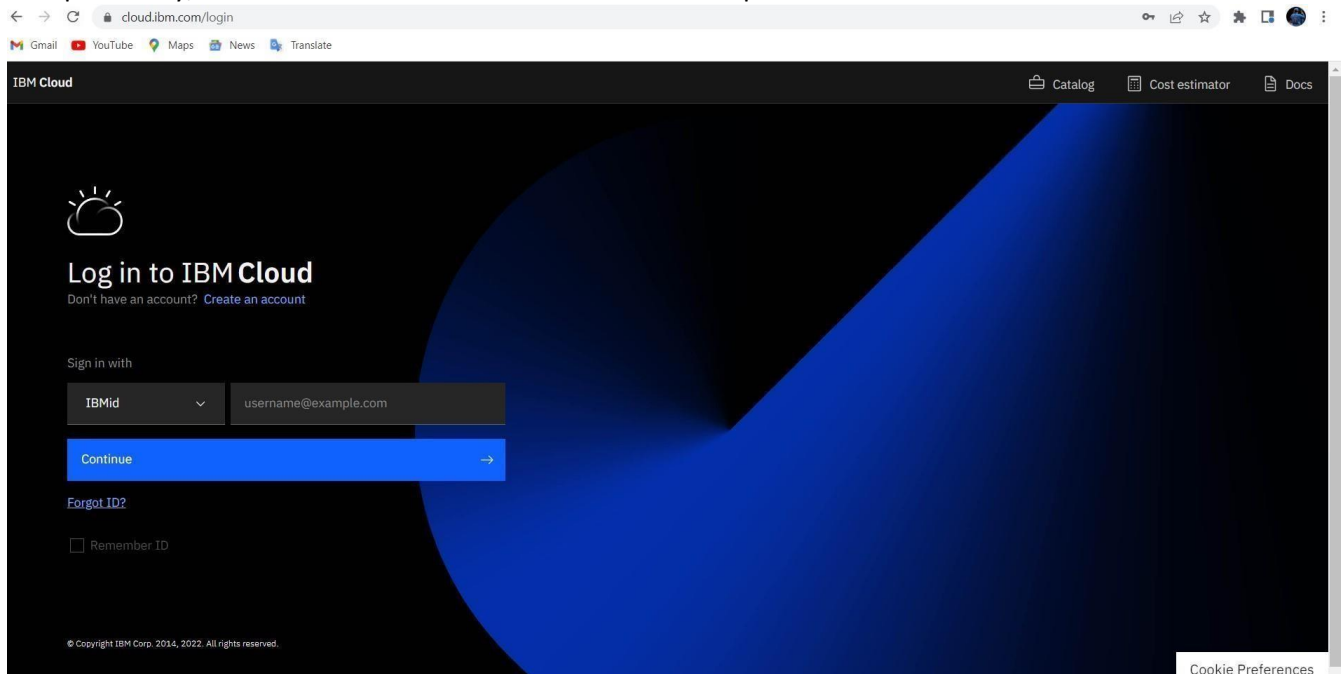
Date	19 November 2022
Team ID	PNT2022TMID04358
Project Name	Gas leakage monitoring and alerting system for industries

AIM:

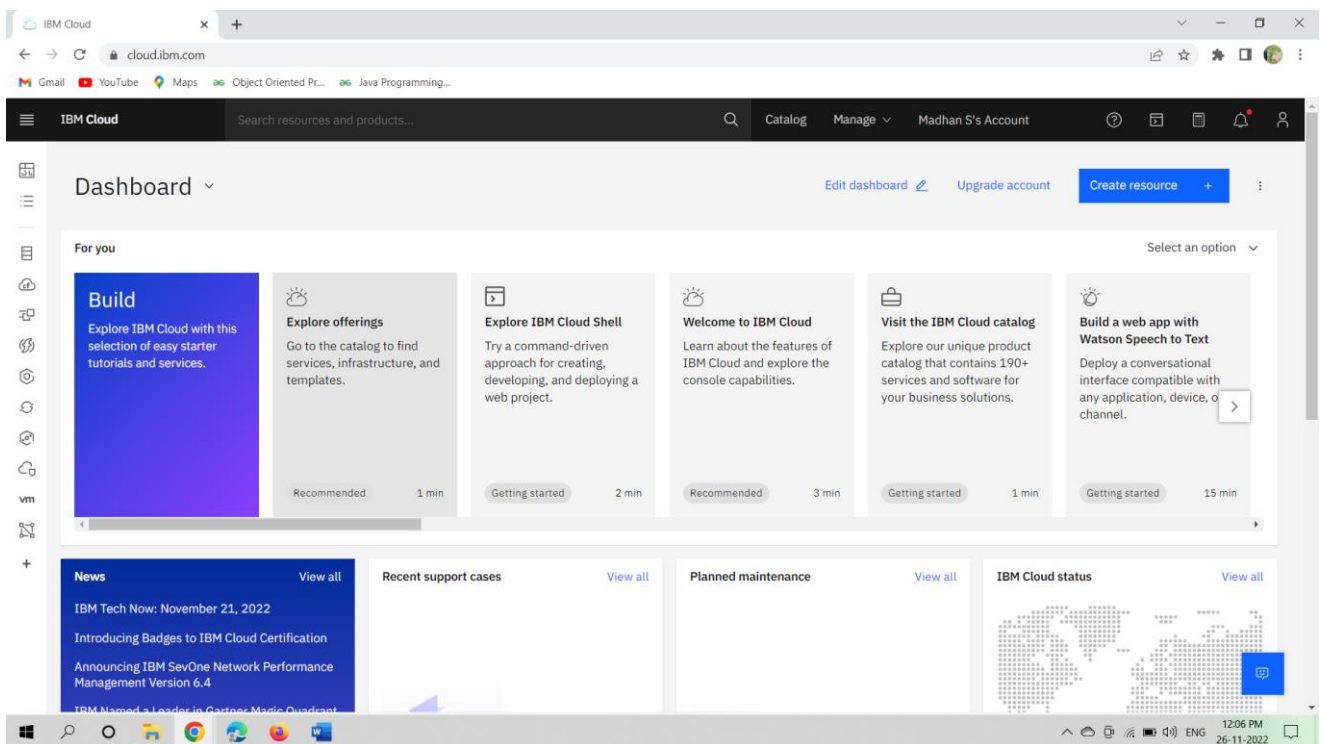
To create the IBM Watson IoT platform and device.

Steps to be followed

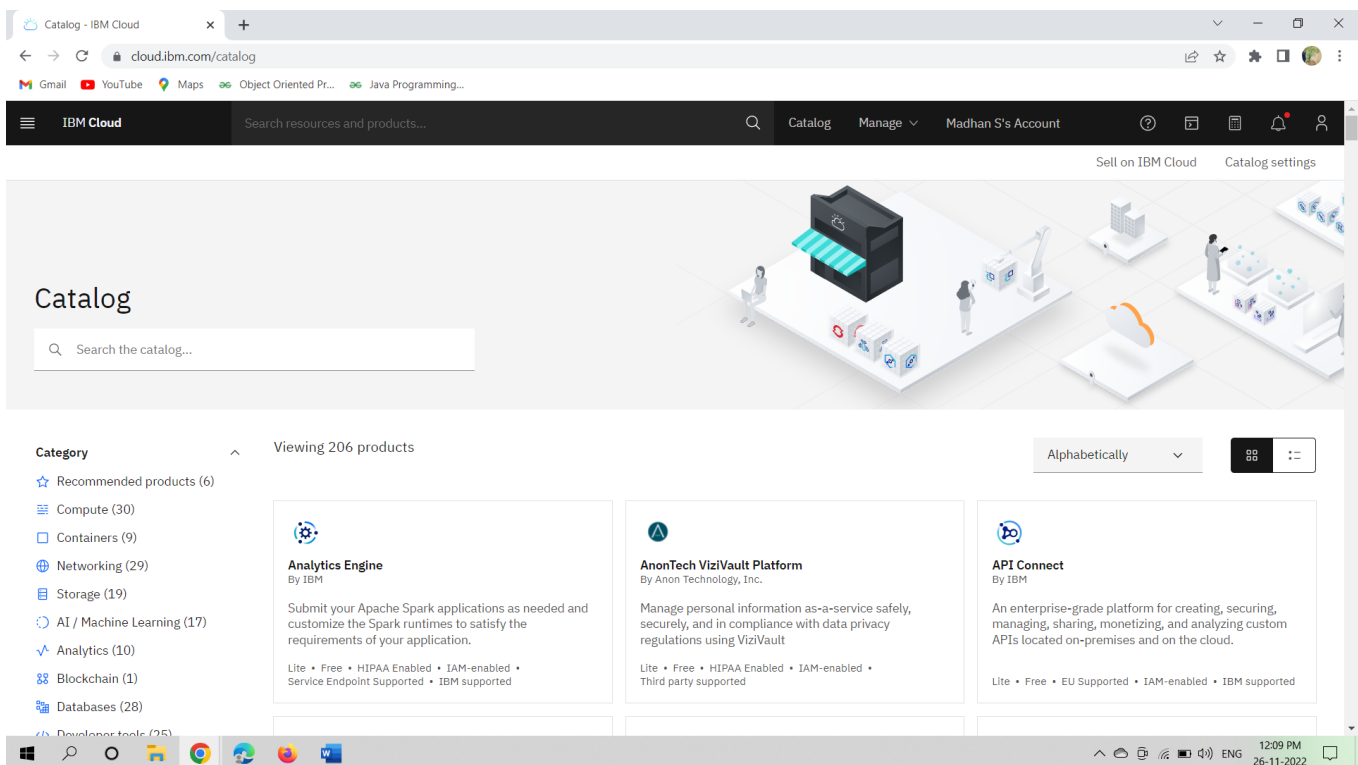
Step 1: Firstly, create an IBM cloud account with IBM id and password.



Step 2: Home page of IBMcloud.



Step 3: Click on the catalog on the top.



Step 5: Click on Internet of Things Platform.

The screenshot displays the IBM Cloud Catalog interface. The browser address bar shows the URL `cloud.ibm.com/catalog?category=iot`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user's account (Madhan S's Account). The main content area is titled "Internet of Things" and shows "Viewing 1 product". A blue box highlights the "Internet of Things Platform" product card, which includes the IBM IoT icon, the product name, the provider "By IBM", a description stating it is the hub for all things IBM IoT, and pricing details: "Lite • Free • IAM-enabled • IBM supported". The left sidebar contains filters for Type (All, Services, Software, Professional services), Provider (IBM (1)), Pricing plan (Lite, Free), and Compliance (IAM-enabled).

Step 7: Tick agreements and then click on create.

The screenshot shows the IBM Cloud catalog page for the Internet of Things Platform. The page is titled "Internet of Things Platform" and includes a description: "This service is the hub of all things IBM IoT, it is where you can set up and manage your connected devices so that your apps can access their live and historical data." The "Create" tab is active, showing a "Select a location" dropdown menu with "Frankfurt (eu-de)" selected. Below this, there is a "Select a pricing plan" section with a table of plans. The "Lite" plan is selected, which includes up to 500 registered devices and a maximum of 200 MB of each data metric. The pricing is listed as "Free". On the right side, there is a "Summary" panel showing the service name, location, plan, and a checkbox for agreeing to the terms. The "Create" button is highlighted in blue.

Internet of Things Platform - IBM Cloud

cloud.ibm.com/catalog/services/internet-of-things-platform

IBM Cloud

Search resources and products...

Catalog Manage Madhan S's Account

Internet of Things Platform

This service is the hub of all things IBM IoT, it is where you can set up and manage your connected devices so that your apps can access their live and historical data.

Create About

Type Service

Provider IBM

Last updated 08/15/2022

Category Internet of Things

Compliance IAM-enabled

Location Frankfurt London Dallas Washington DC

Related links Docs

Select a location

Frankfurt (eu-de)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features	Pricing
Lite	Includes up to 500 registered devices, and a maximum of 200 MB of each data metric Maximum of 500 registered devices Maximum of 500 application bindings Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed	Free

The Lite service plan for Internet of Things Platform includes up to 500 registered devices, and a maximum of 200 MB each of

Summary

Internet of Things Platform Free

Location: Frankfurt

Plan: Lite

Service name: Internet of Things Platform-iy

Resource group: Default

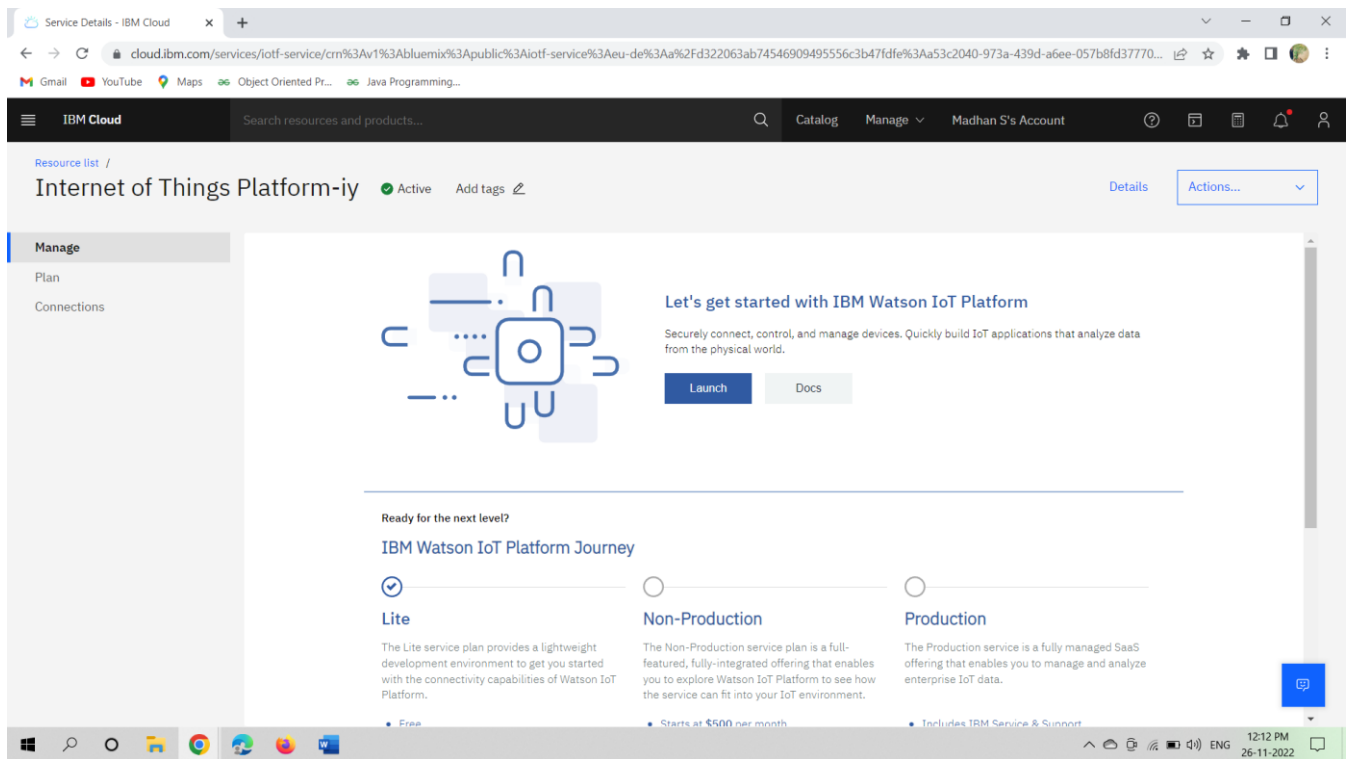
☒ I have read and agree to the following license agreements:
[Terms](#)

Create

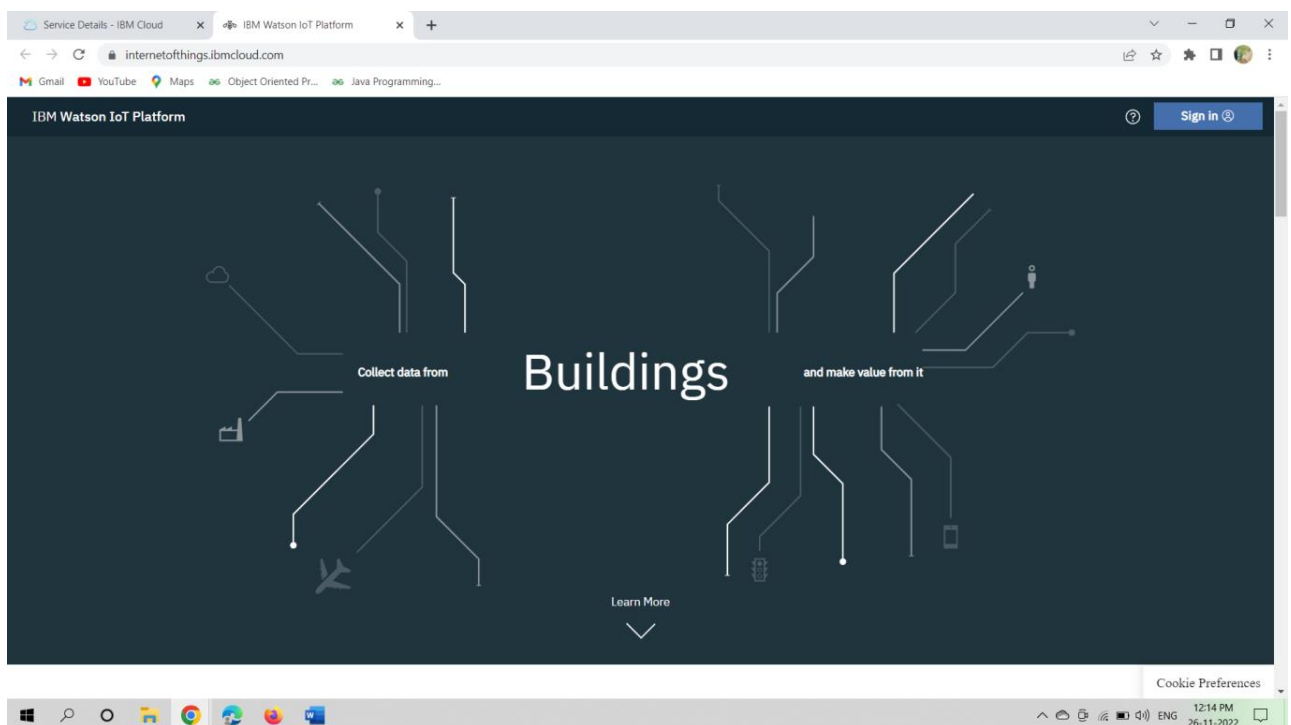
Add to estimate

12:10 PM 26-11-2022

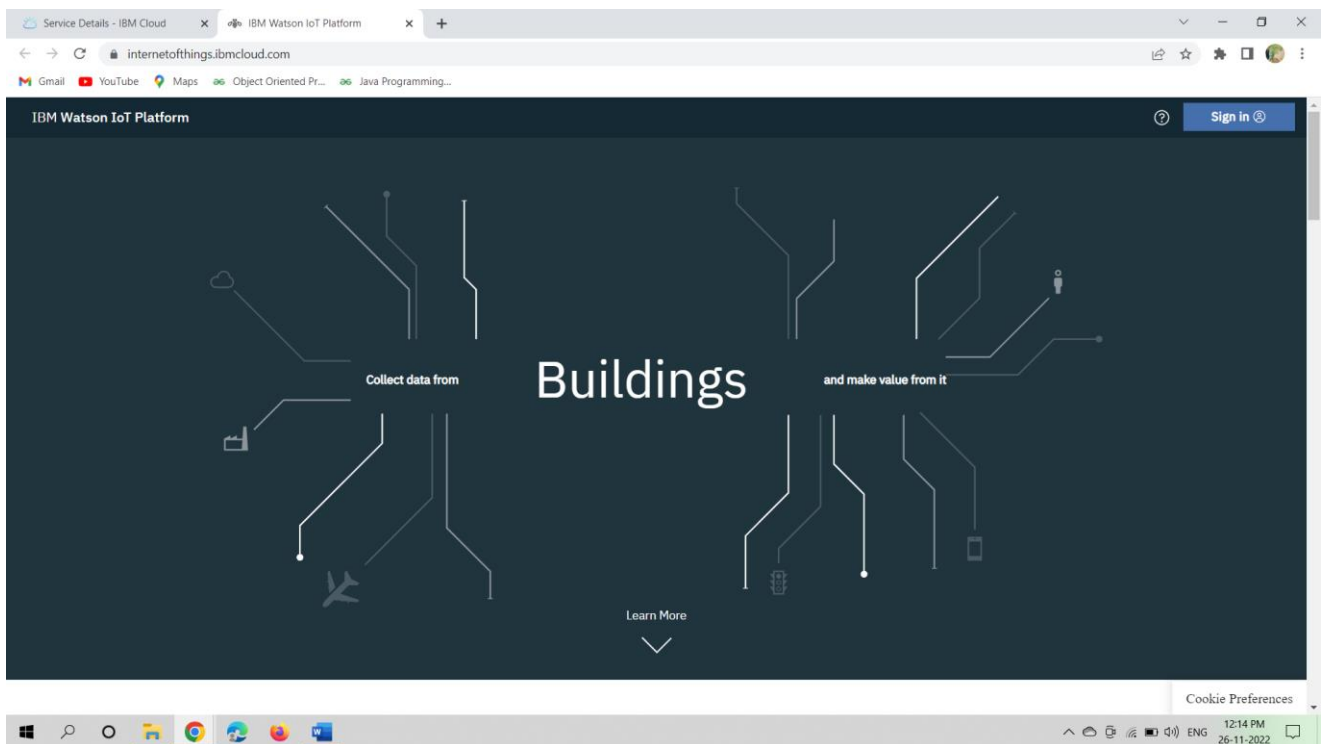
Step 8: Click on the launch button.



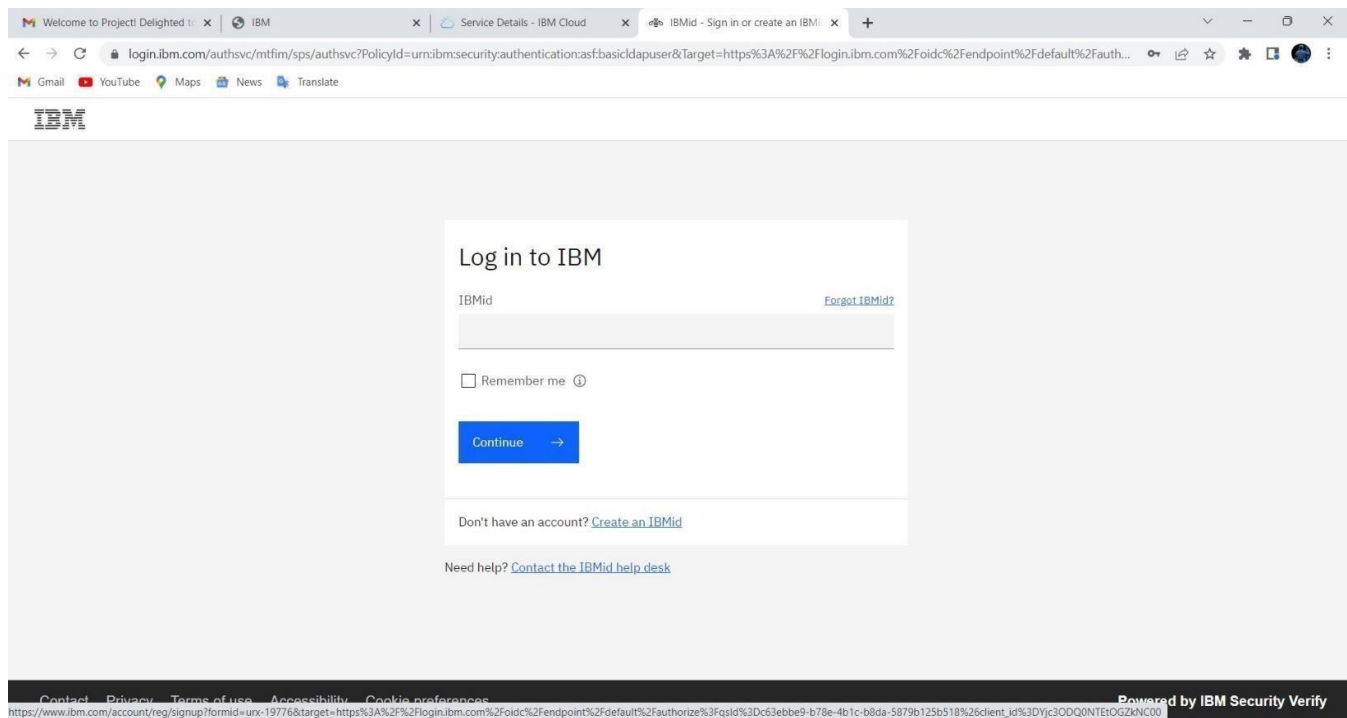
Step 9: After clicking on the launch button this tab will open.



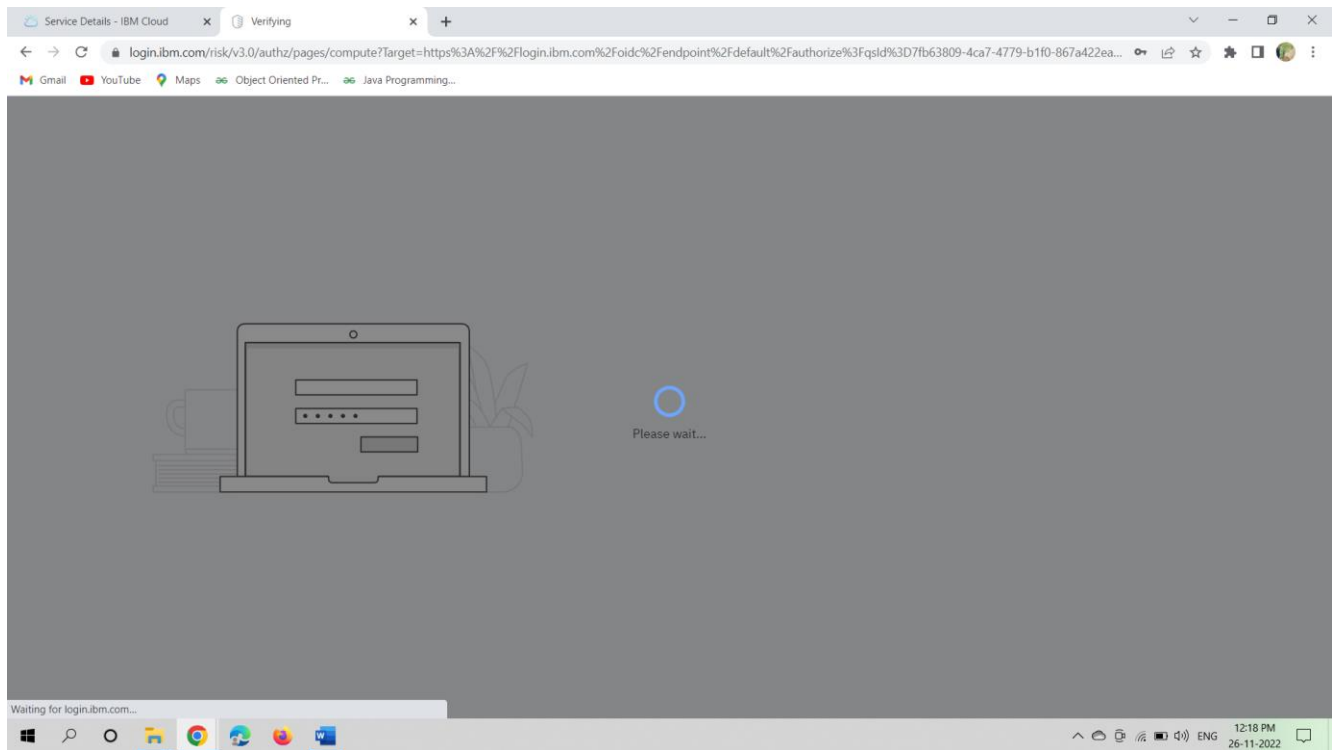
Step 10: Click on Sign in.



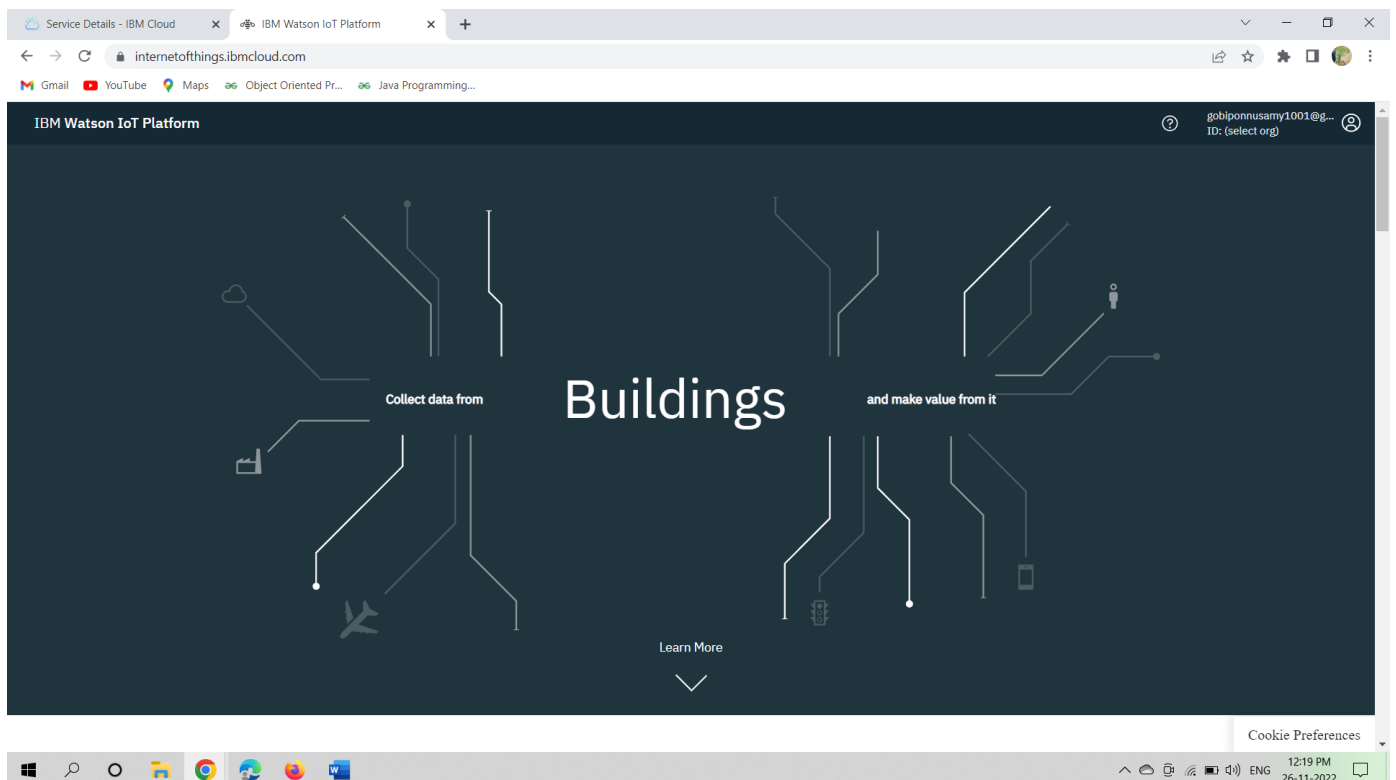
Step 11: Fill the login details.



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

310819106071@smartinternz.com
ID: wlrpm4

Browse Action Device Types Interfaces

Add Device +

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"/>	14325	Disconnected	Testdevicetype	Device	Nov 5, 2022 5:33 AM	

Items per page 50 | 1-1 of 1 item

1 of 1 page

0 Simulations running

Step 15: Click on Add Device.

IBM Watson IoT Platform

310819106071@smartinternz.com
ID: wlrpm4

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0 Simulations running

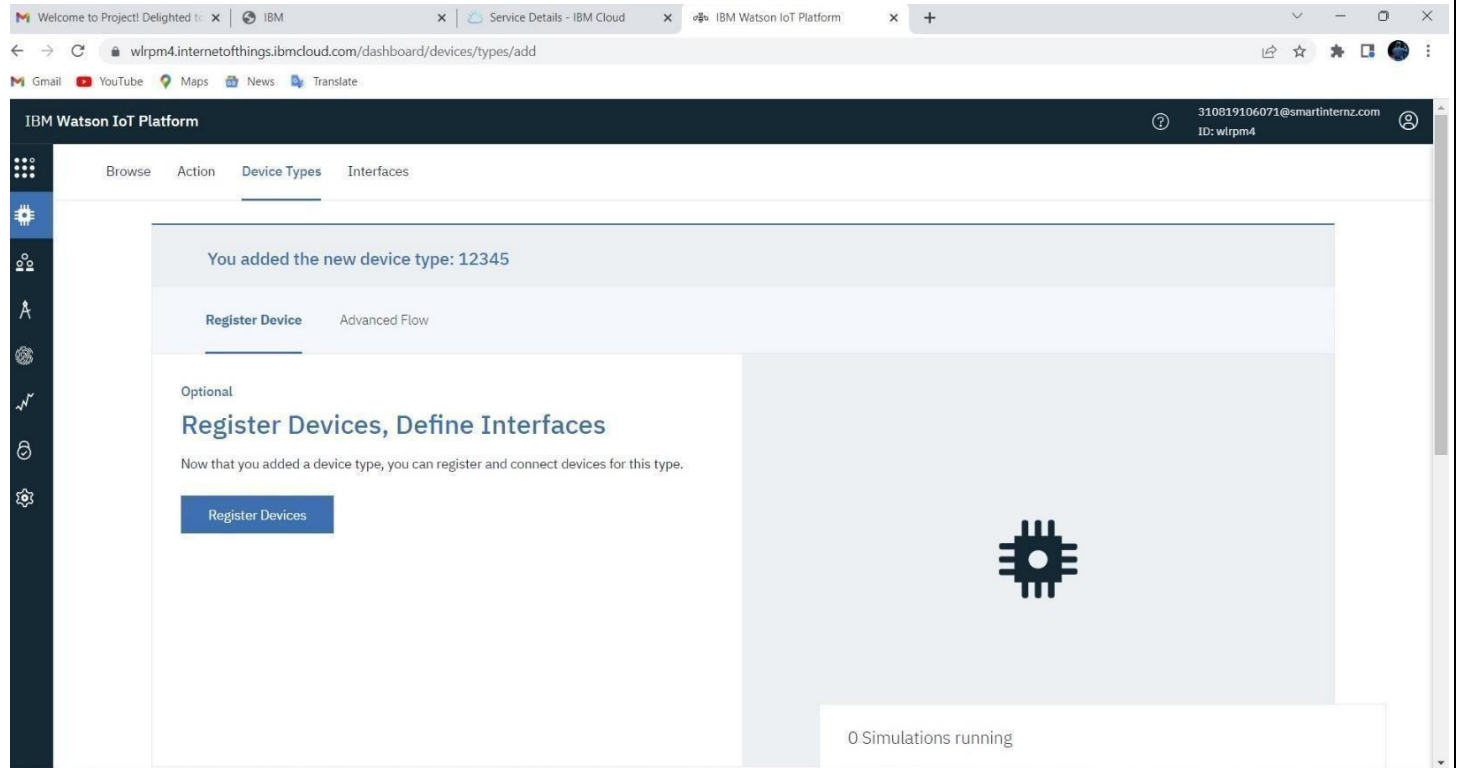
Step 16: Click on Device Type.

The screenshot shows the IBM Watson IoT Platform interface. A modal dialog titled "Add Device" is open, displaying a four-step progress bar: Identity (selected), Device Information, Security, and Summary. Below the progress bar, a message states: "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 dialog are "Cancel" and "Next" buttons. In the background, the "Browse Devices" section is visible, showing "0 Simulations running" and a button for "Adobe Express".

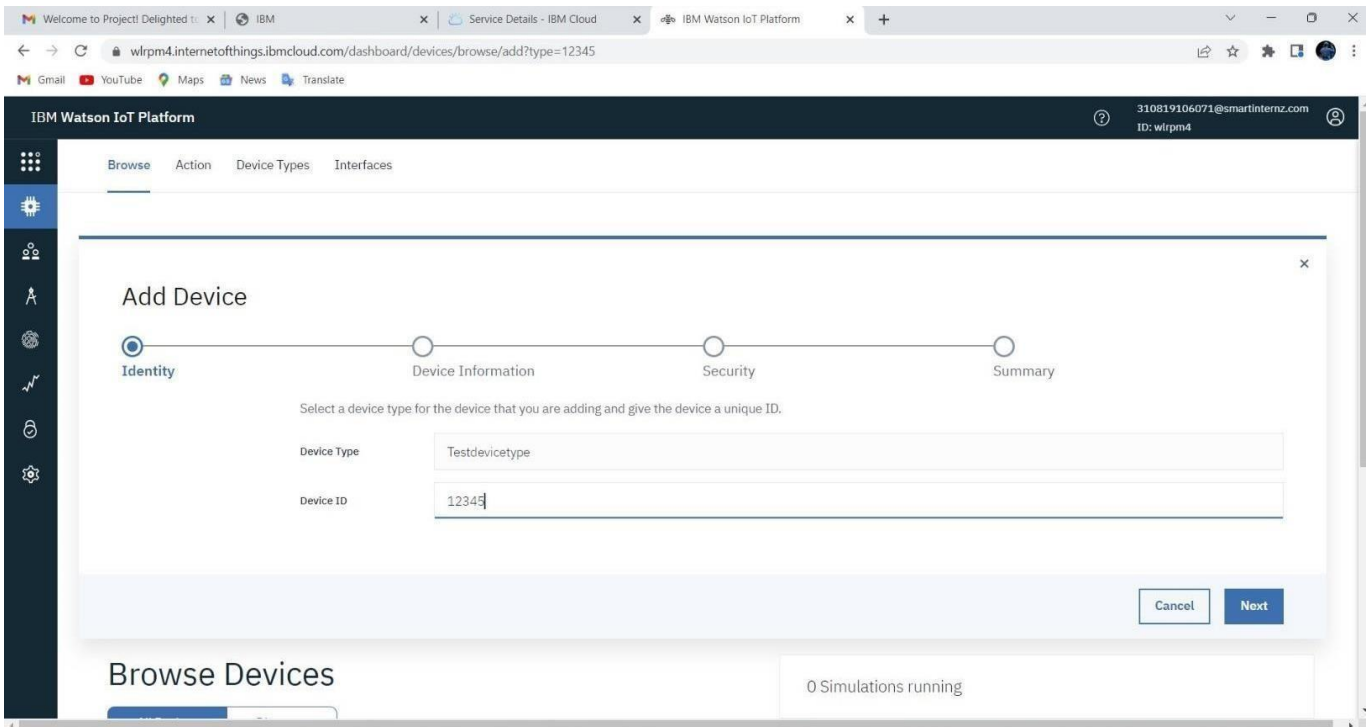
Step 17: Fill the details.

The screenshot shows the IBM Watson IoT Platform interface with the "Add Type" modal dialog open. The progress bar has two steps: Identity (selected) and Device Information. A message reads: "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." The form includes a "Type" section with "Device" and "Gateway" buttons, separated by "Or". Below this is a "Name" field with the text "12345" and a description: "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." There is also a "Description" text input field. At the bottom right, it says "0 Simulations running".

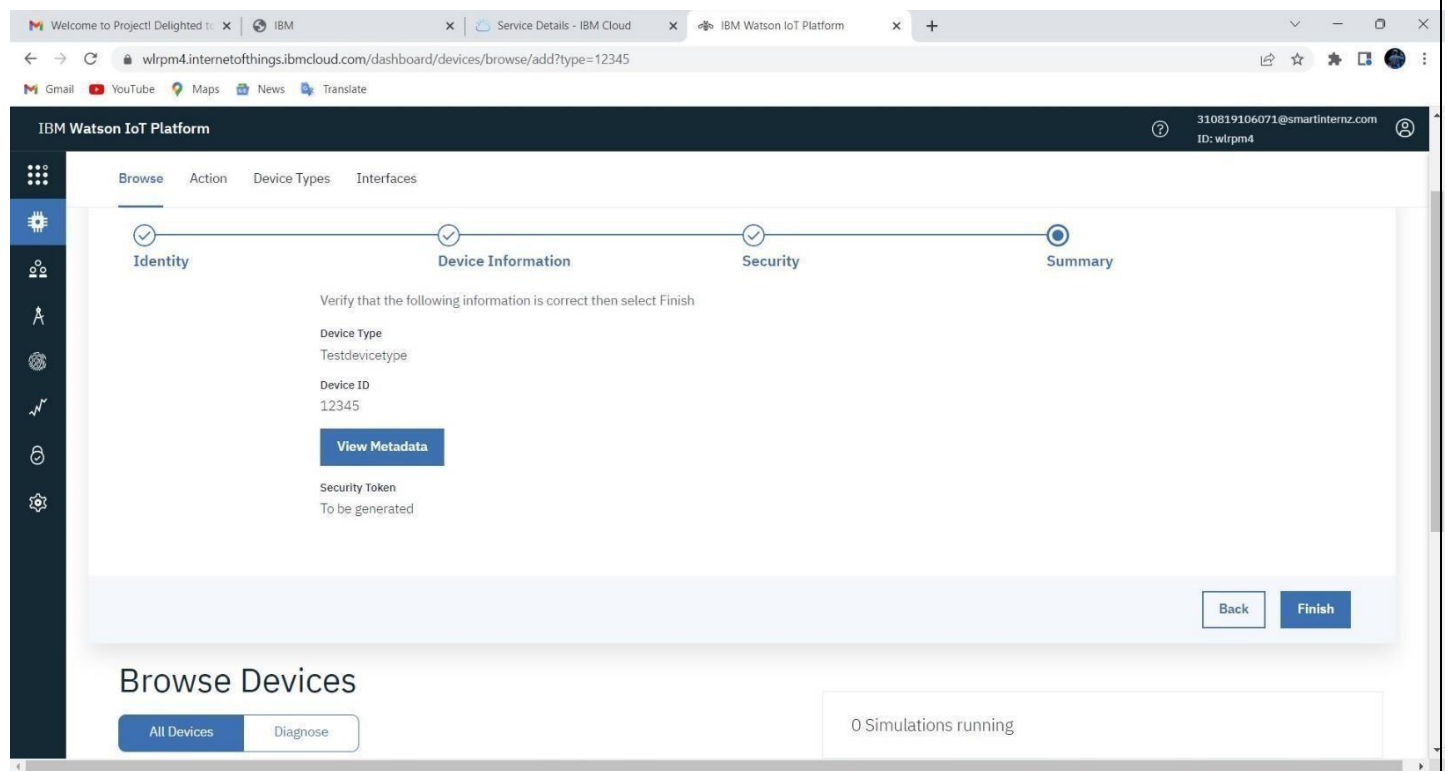
Step 18: Click on Register Devices.



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.

IBM Watson IoT Platform

General Settings

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

Client Connection State API

DATA AND DEVICES

Custom Device Management Packages

Device Simulator

Device Simulator

Simulate devices and device data to get up and running quickly on Watson IoT Platform. For more details see the [documentation](#).

Activate Device Simulator ☒

Connection Security

You can use the Connection Security Policy to configure the security level for device connection.

[Open Connection Security Policy](#)

CA Certificates

Upload a CA certificate which is used to authenticate the signature of client-side [Connection Security policy](#)

0 Simulations running

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

IBM Watson IoT Platform

General Settings

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

Client Connection State API

DATA AND DEVICES

Custom Device Management Packages

Device Simulator

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Activate Device Simulator ☒

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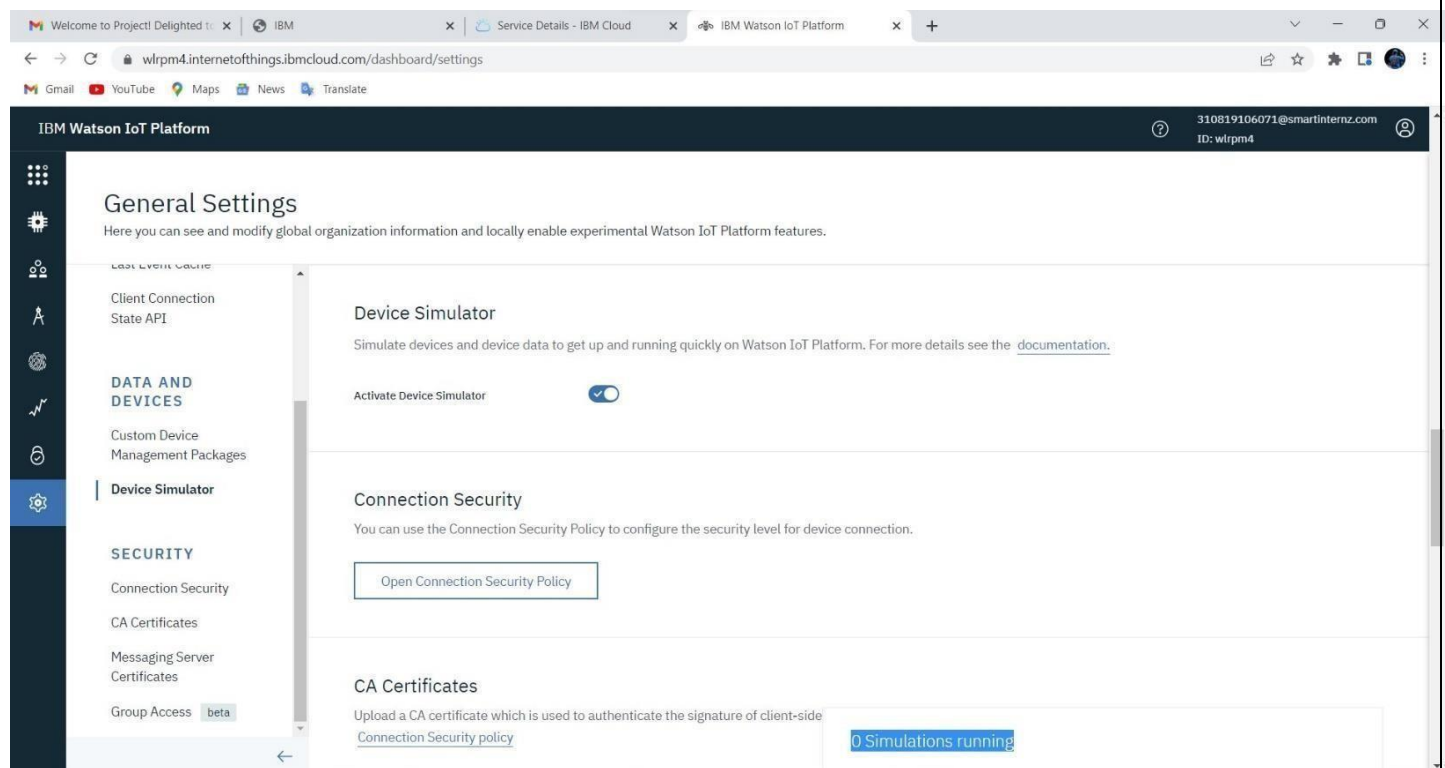
[Open Connection Security Policy](#)

CA Certificates

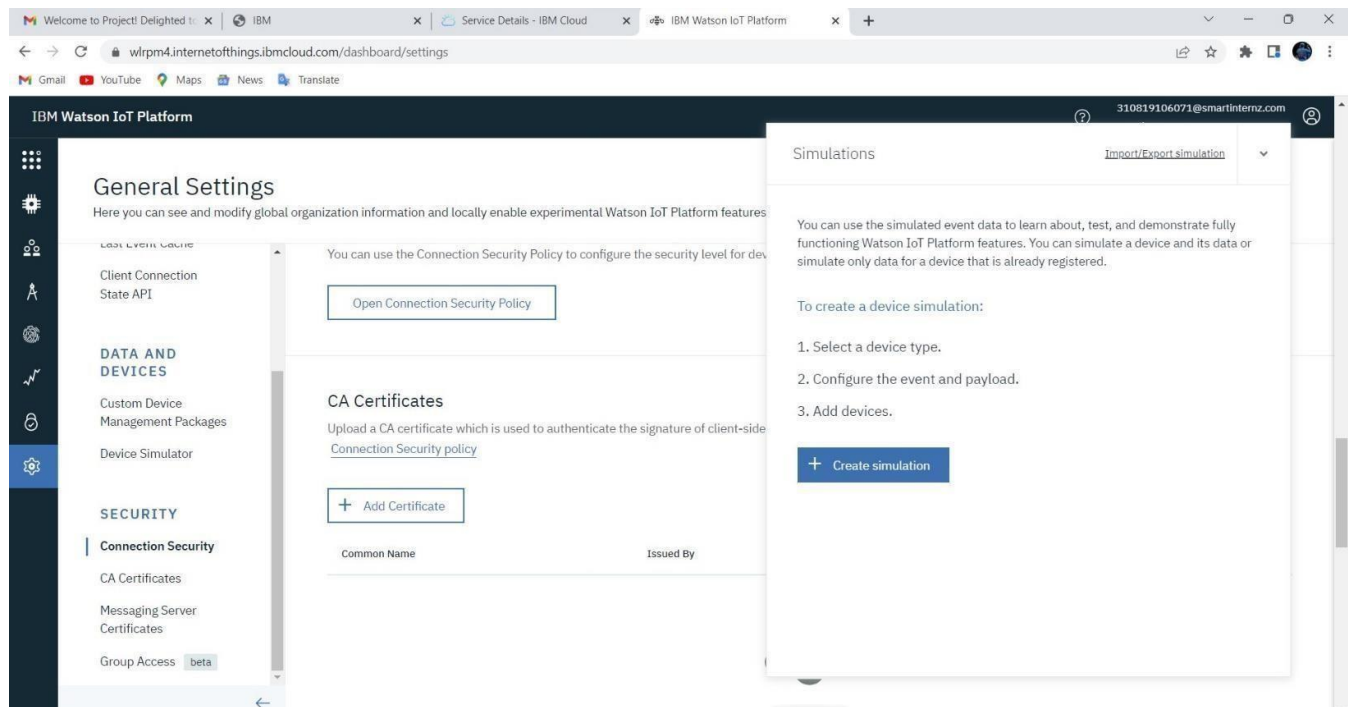
Upload a CA certificate which is used to authenticate the signature of client-side [Connection Security policy](#)

0 Simulations running

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 dashboard. The left sidebar contains navigation links for General Settings, DATA AND DEVICES, and SECURITY. The main content area is titled 'General Settings' and includes sections for 'Last Event Cache', 'Client Connection State API', 'CA Certificates', and 'Connection Security'. A modal window titled 'Simulations' is open on the right. It contains instructions on how to use simulated event data and a list of steps to create a device simulation: 1. Select a device type, 2. Configure the event and payload, 3. Add devices. Below the steps is a text input field labeled 'Select or create a device type...'.

Simulations

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...

Step 27: Type the code.

The screenshot shows the IBM Watson IoT Platform dashboard. The left sidebar contains navigation links for Browse, Action, Device Types, and Interfaces. The main content area is titled 'Browse Devices' and includes a table of devices. A modal window titled 'Events' is open on the right. It contains a form for configuring an event, including an 'Event type name' (event_1), a 'Frequency' (20 x Every Minute), and a 'Payload' editor. The payload editor shows a JSON structure with 'temperature' and 'humidity' fields, each set to a random value between 0 and 100. The modal also includes a 'Send' button and a 'What functions can I apply?' link.

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 ID	Status	Device Type	Class ID	Device Name
12345	Disconnected	Testdevicetype	Device	No
14325	Disconnected	Testdevicetype	Device	No

Items per page 50 | 1-2 of 2 items

Events 1

Event type name event_1 Frequency 20 x Every Minute Send

Payload

You can override field values in the event payload that is sent by this device. Specify the override values in the editor window.

```
0 {
1   "temperature": random(0, 100)
2   "humidity": random(0, 100)
3 }
4
```

What functions can I apply?

Cancel Save

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. The left sidebar contains navigation links for 'Client Connection State API', 'DATA AND DEVICES' (including 'Custom Device Management Packages' and 'Device Simulator'), and 'SECURITY' (including 'Connection Security', 'CA Certificates', 'Messaging Server Certificates', and 'Group Access'). The main content area has sections for 'Connection Security Policy', 'CA Certificates', and 'Add Certificate'. A 'Simulations' panel is open on the right, showing '1/50 Simulations Running' and a 'Device Type' dropdown set to 'Testdevicetype'. Below this, a list shows '1 Device' with ID '12345'. At the bottom of the panel are buttons for '1 x Create Simulated Device' and 'Use Registered Device'. The bottom status bar indicates '2 events sent' and '76 bytes sent'.

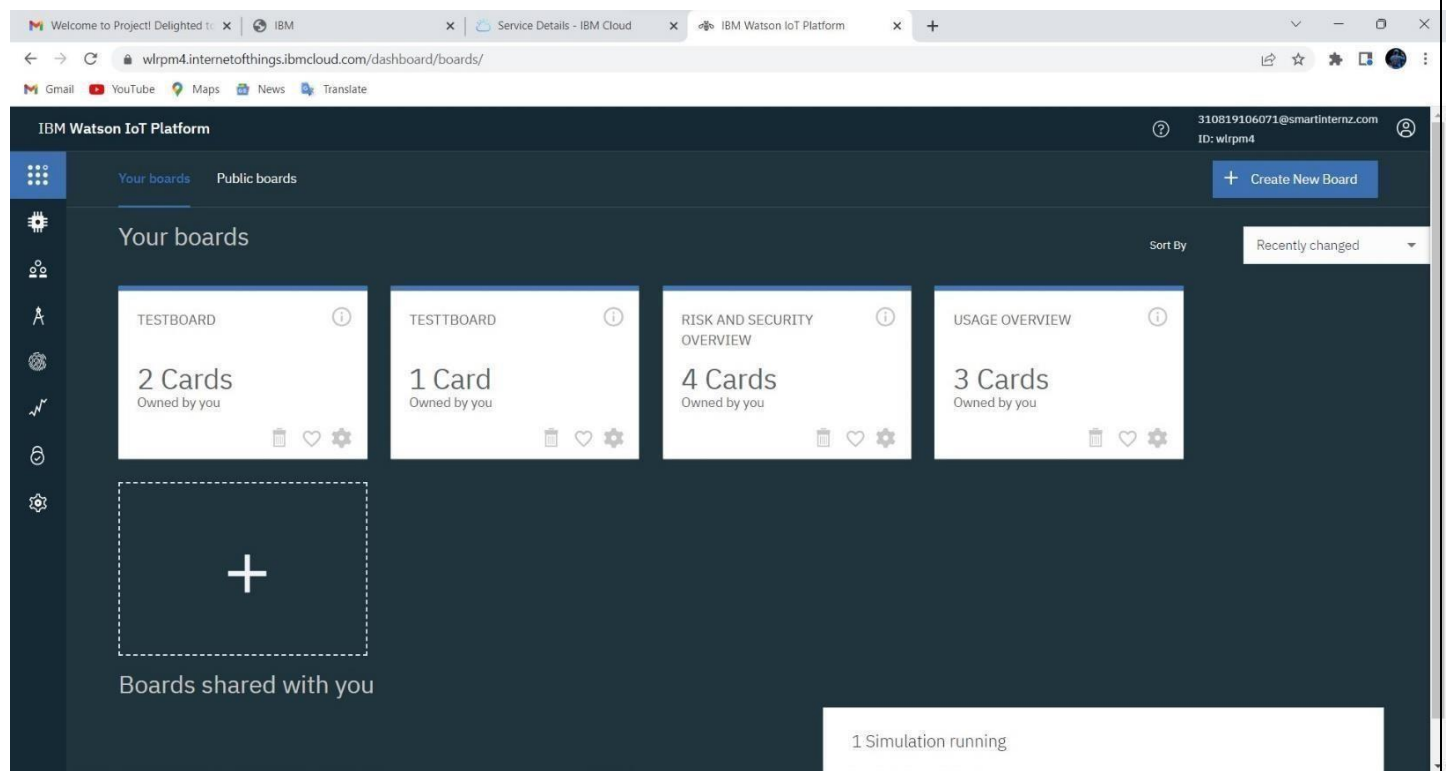
Step 29: Go to devices then click on devices and check the recent events whether the code is running or not.

The screenshot shows the IBM Watson IoT Platform 'Devices' page. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. A table lists devices with columns: Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. The first device listed is ID '12345', Status 'Disconnected', Device Type 'Testdevicetype', Class ID 'Device', and Date Added 'Nov 5, 2022 1:04 PM'. Below the table, a detailed view for device 12345 is shown with tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, displaying a table of events with columns: Event, Value, Format, and Last Received. The events are as follows:

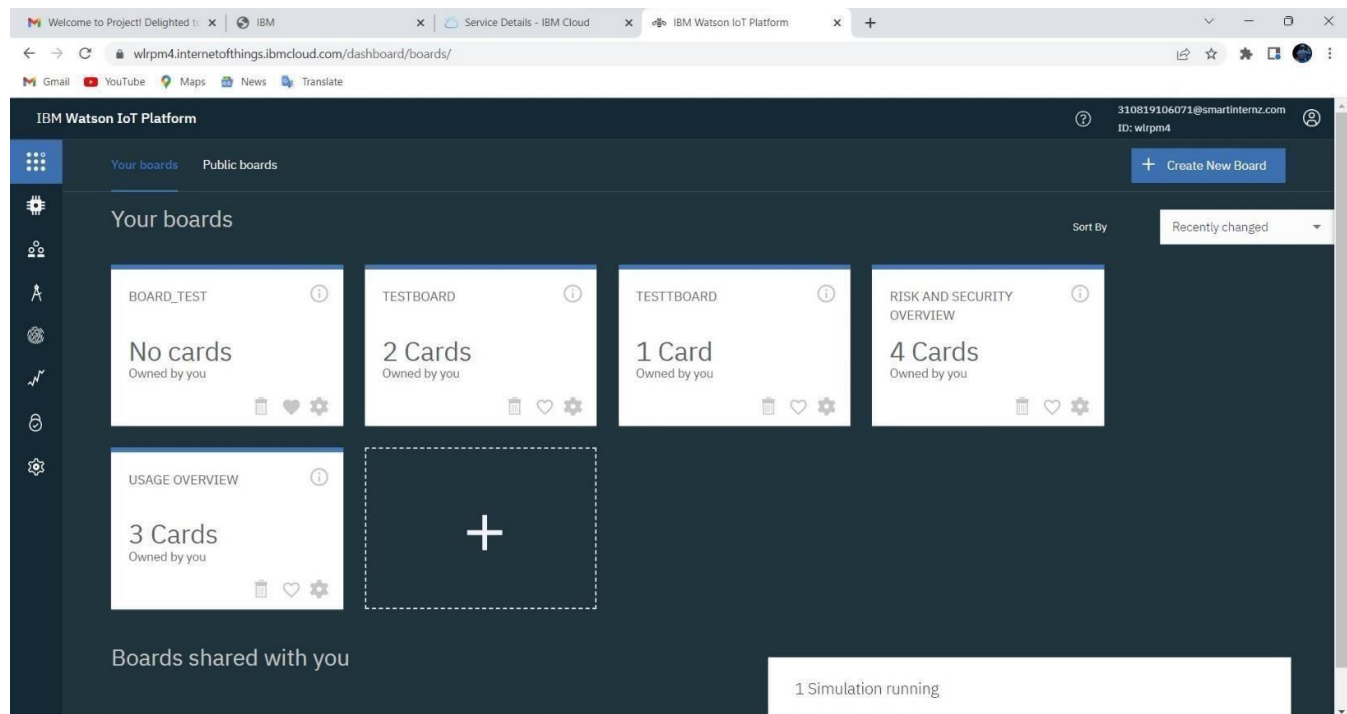
Event	Value	Format	Last Received
event_1	{"temperature":63,"humidity":8}	json	a few seconds ago
event_1	{"temperature":56,"humidity":9}	json	a few seconds ago
event_1	{"temperature":40,"humidity":76}	json	a few seconds ago
event_1	{"temperature":61,"humidity":36}	json	a few secor

At the bottom right of the detailed view, it says '1 Simulation running'.

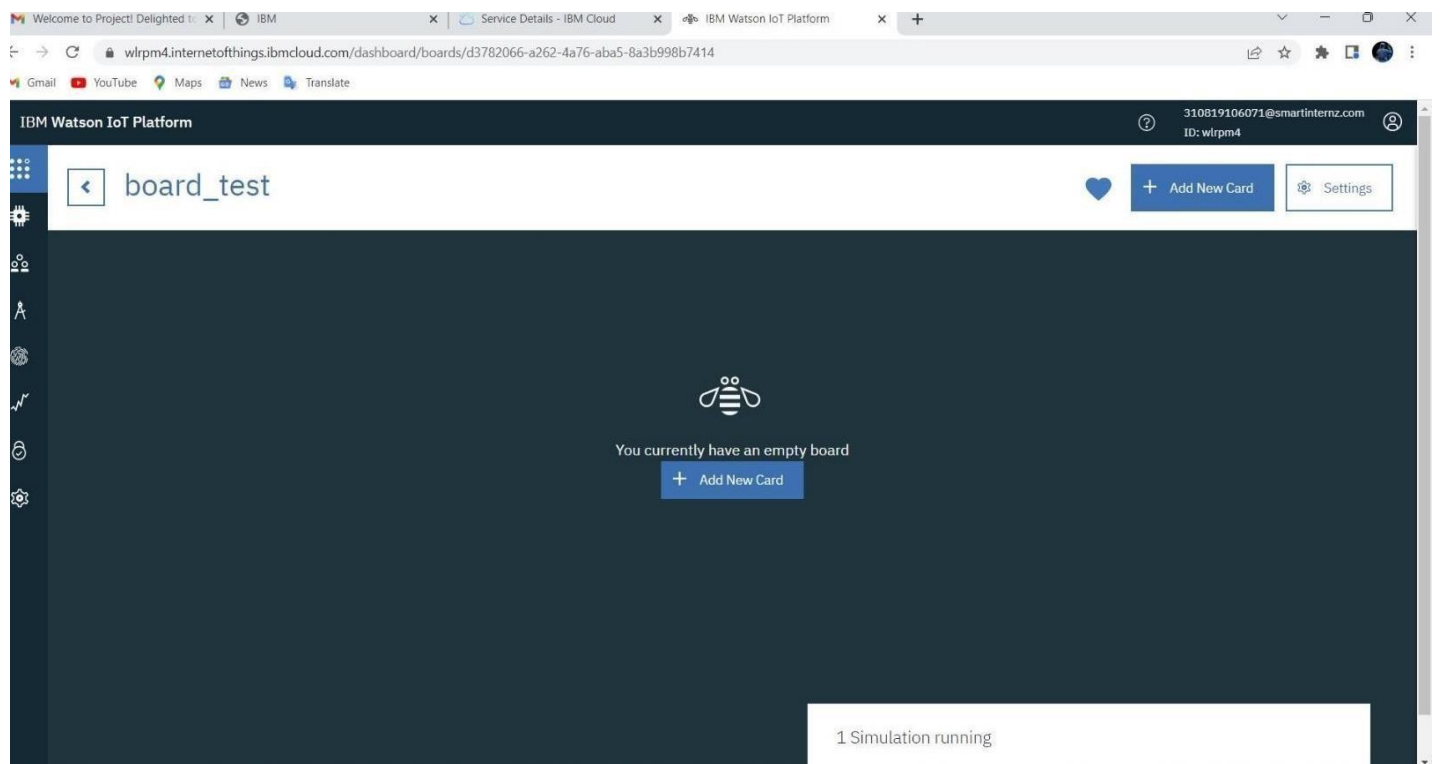
Step 30: Go to Board and click on + Create New Board, fill the details and create a board.



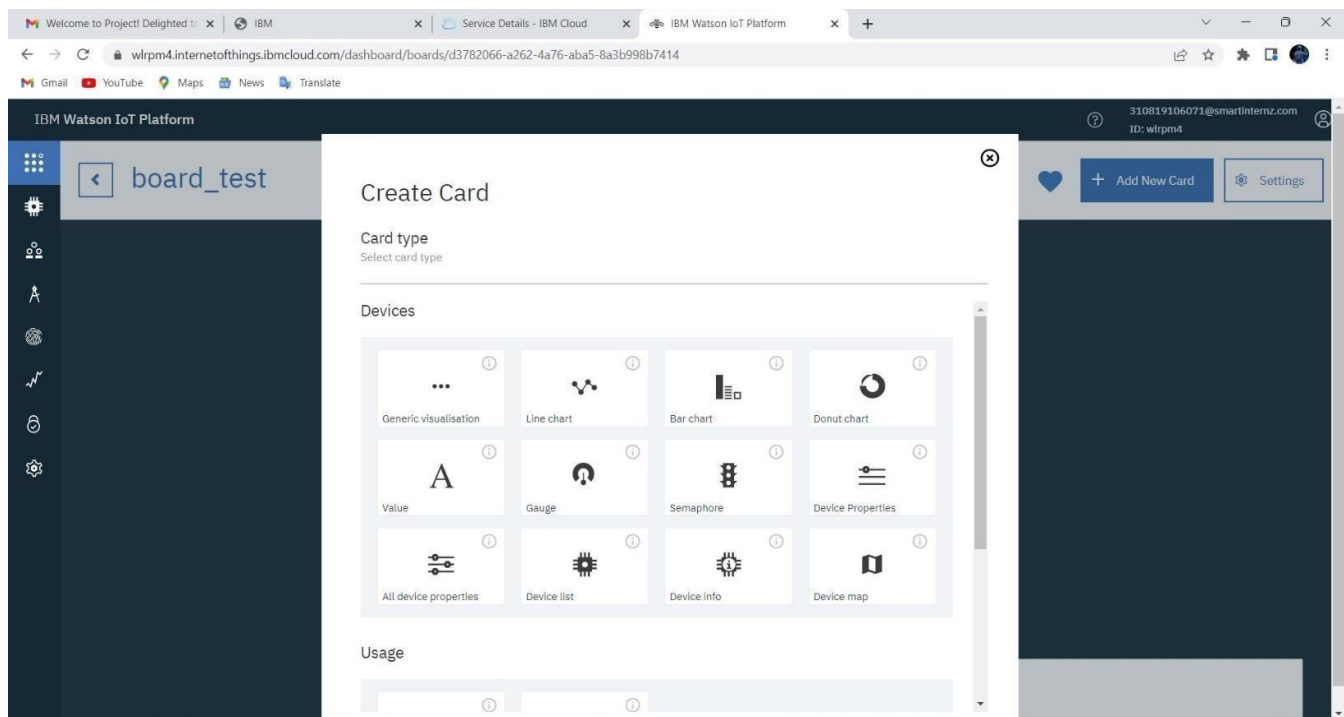
Step 31: Click on the board which is created.



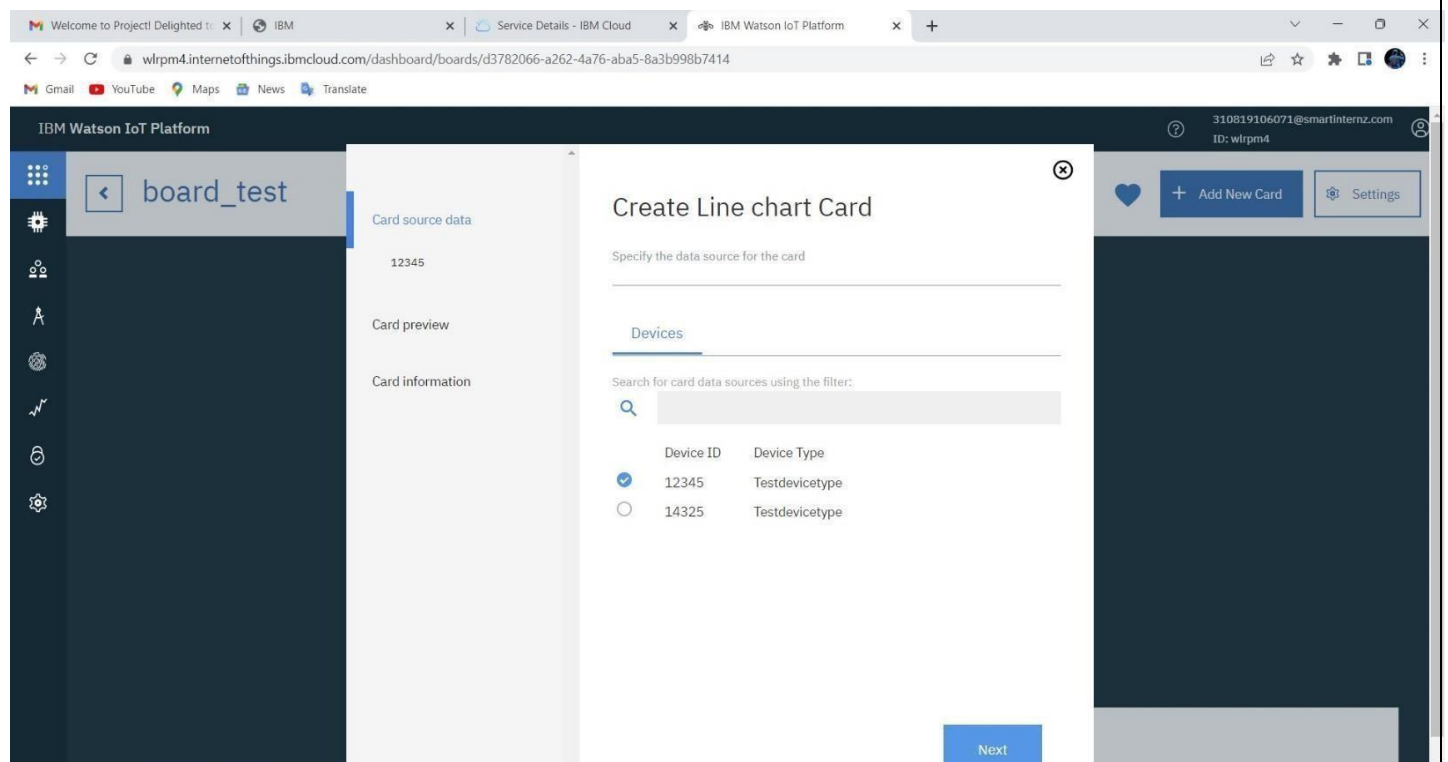
Step 32: Go Add New Card.



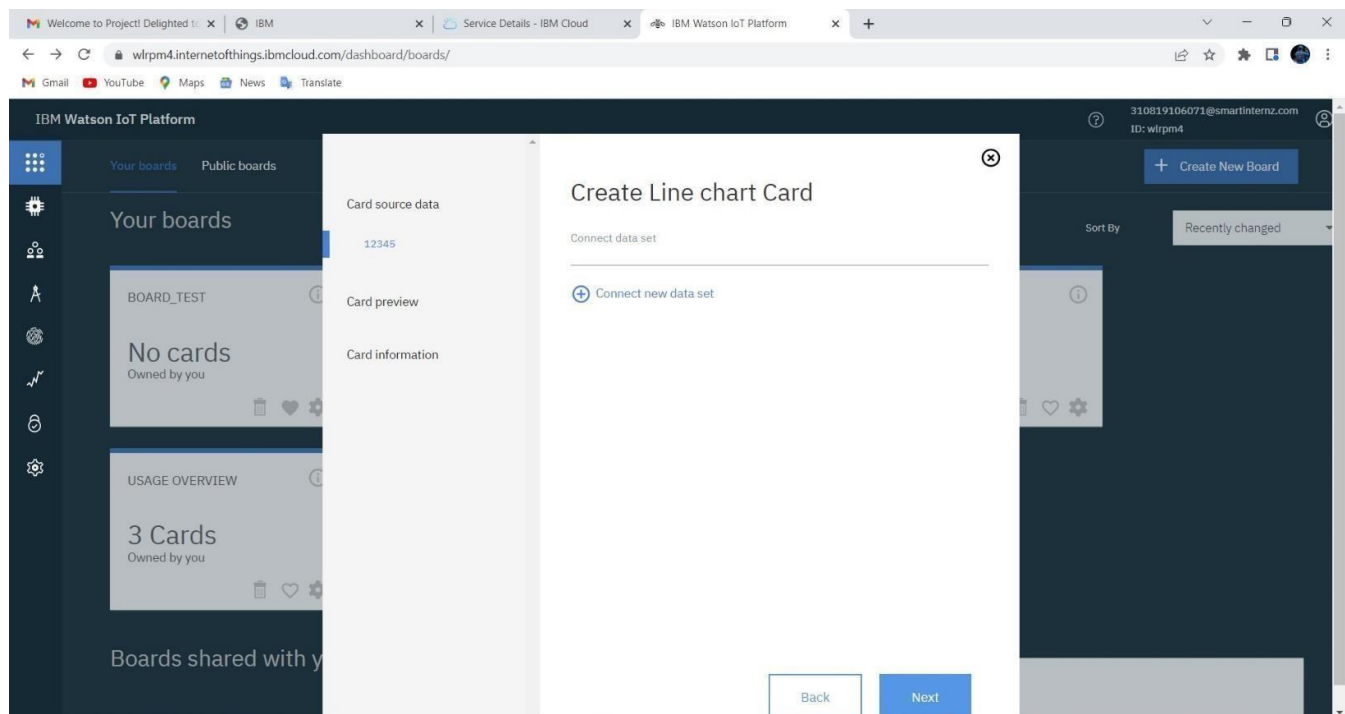
Step 33: Choose the Card Type.



Step 34: Choose the device.



Step 35: Click on Connect new data set.



Step 36: Fill the details to get Temperature graph.

The screenshot shows the 'Create Line chart Card' form in the IBM Watson IoT Platform. The form is titled 'Create Line chart Card' and has a close button in the top right corner. It is divided into several sections: 'Connect data set', 'Event', 'Property', 'Name', 'Type', 'Unit', 'Min', and 'Max'. The 'Event' field is filled with 'event_1', the 'Property' field with 'temperature', and the 'Name' field with 'temperature'. The 'Type' dropdown is set to 'Number' and the 'Unit' dropdown is set to '°C'. The 'Min' field is filled with '0' and the 'Max' field is filled with '100'. There are 'Back' and 'Next' buttons at the bottom right of the form. The background shows the 'board_test' dashboard with a sidebar containing various icons and a top navigation bar with the user's name and ID.

Step 37: Choose the Colour.

The screenshot shows the 'Create Line chart Card' form in the IBM Watson IoT Platform, specifically the 'Choose the Colour' step. The form is titled 'Create Line chart Card' and has a close button in the top right corner. It is divided into several sections: 'Enter title and description of the card', 'Title', 'Color scheme', and a description. The 'Title' field is filled with 'Line chart'. The 'Color scheme' section shows a selection of five color swatches: purple, red, green, blue, and teal. Below the color swatches, there is a description: 'A line chart to display time series information with historic and live data'. There are 'Back' and 'Submit' buttons at the bottom right of the form. The background shows the 'Your boards' dashboard with a sidebar containing various icons and a top navigation bar with the user's name and ID.

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

The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons and a 'board_test' panel with a 'Line chart' card. The main area displays the 'Create Gauge Card' dialog. The dialog has a 'Card source data' section with the value '12345'. Below it is a 'Card preview' section showing a gauge card. The 'Card information' section is also visible. The 'Devices' tab is selected, showing a search bar and a table of devices. The table has two columns: 'Device ID' and 'Device Type'. The first row shows '12345' and 'Testdevicetype' with a checked checkbox. The second row shows '14325' and 'Testdevicetype' with an unchecked checkbox. A 'Next' button is at the bottom right.

Device ID	Device Type
<input checked="" type="checkbox"/> 12345	Testdevicetype
<input type="checkbox"/> 14325	Testdevicetype

Step 39: Here is the Final graph.

The screenshot shows the IBM Watson IoT Platform dashboard. The top bar includes the 'board_test' title and 'Add New Card' and 'Settings' buttons. The main area contains two cards: a 'Gauge' card on the left and a 'Line chart' card on the right. The 'Gauge' card displays a value of '80.0 %'. The 'Line chart' card displays a line graph with a y-axis from 0 to 80 and an x-axis from 13:21 to 13:25. The graph shows a fluctuating line representing 'temperature'. A '5 minutes' dropdown is at the bottom left of the chart, and a 'now' button is at the bottom right. A status bar at the bottom right indicates '1 Simulation running'.

Result:

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