

Create IBM Watson IOT Platform And Device

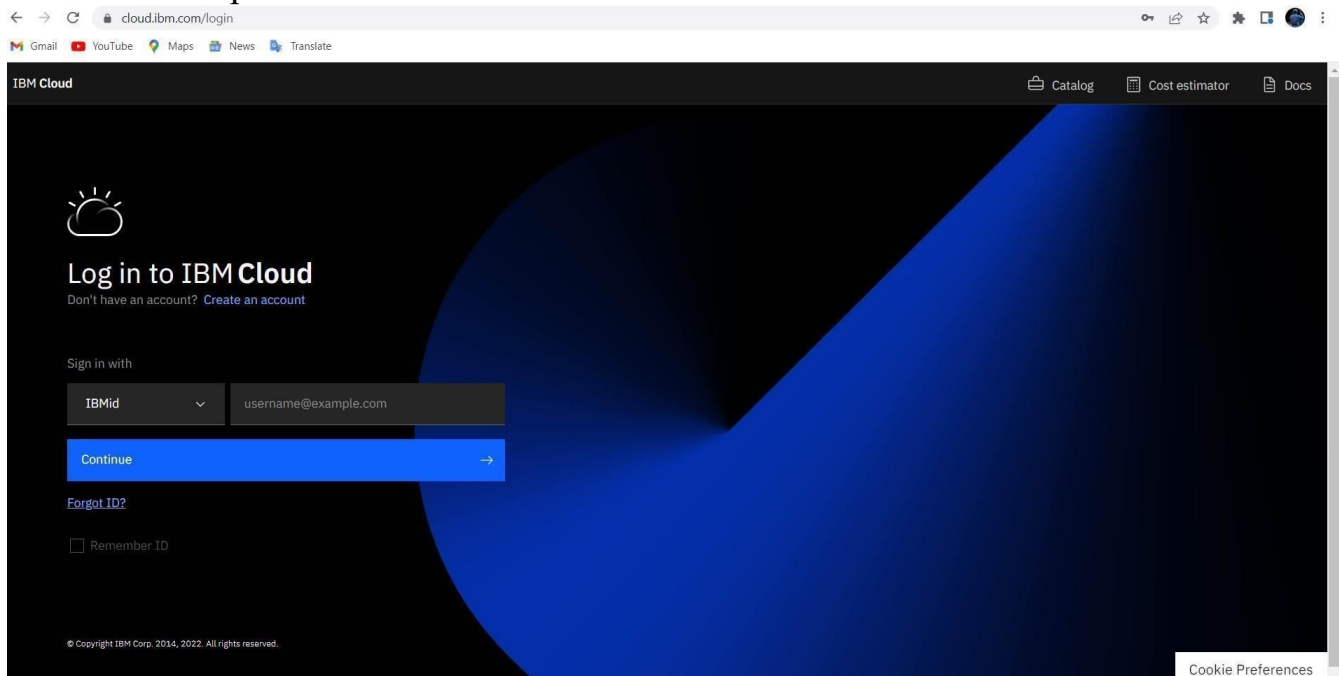
Team ID	PNT2022TMID19393
Project Name	Project - Industry – Specific Intelligent Fire Management System

AIM:

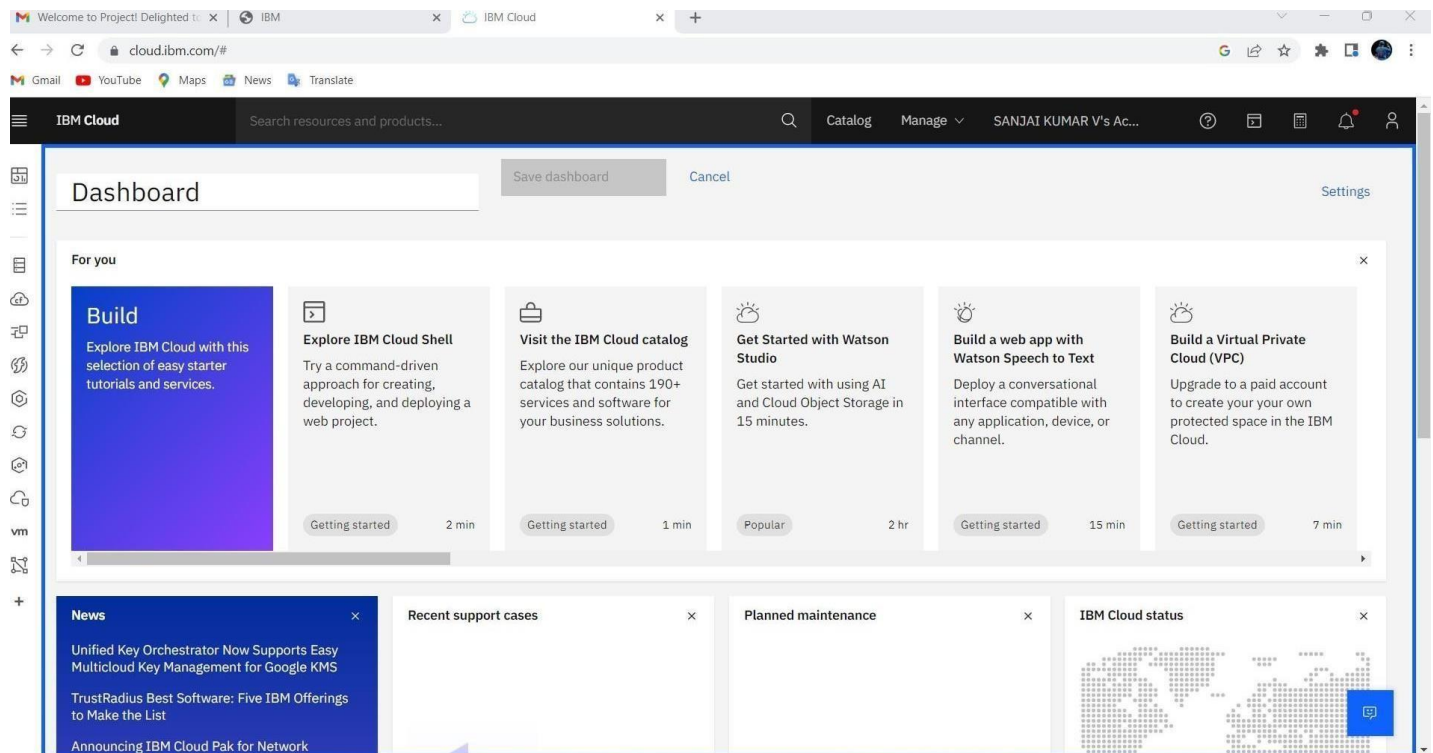
To create the IBM Watson IOT platform and device.

Steps to be followed

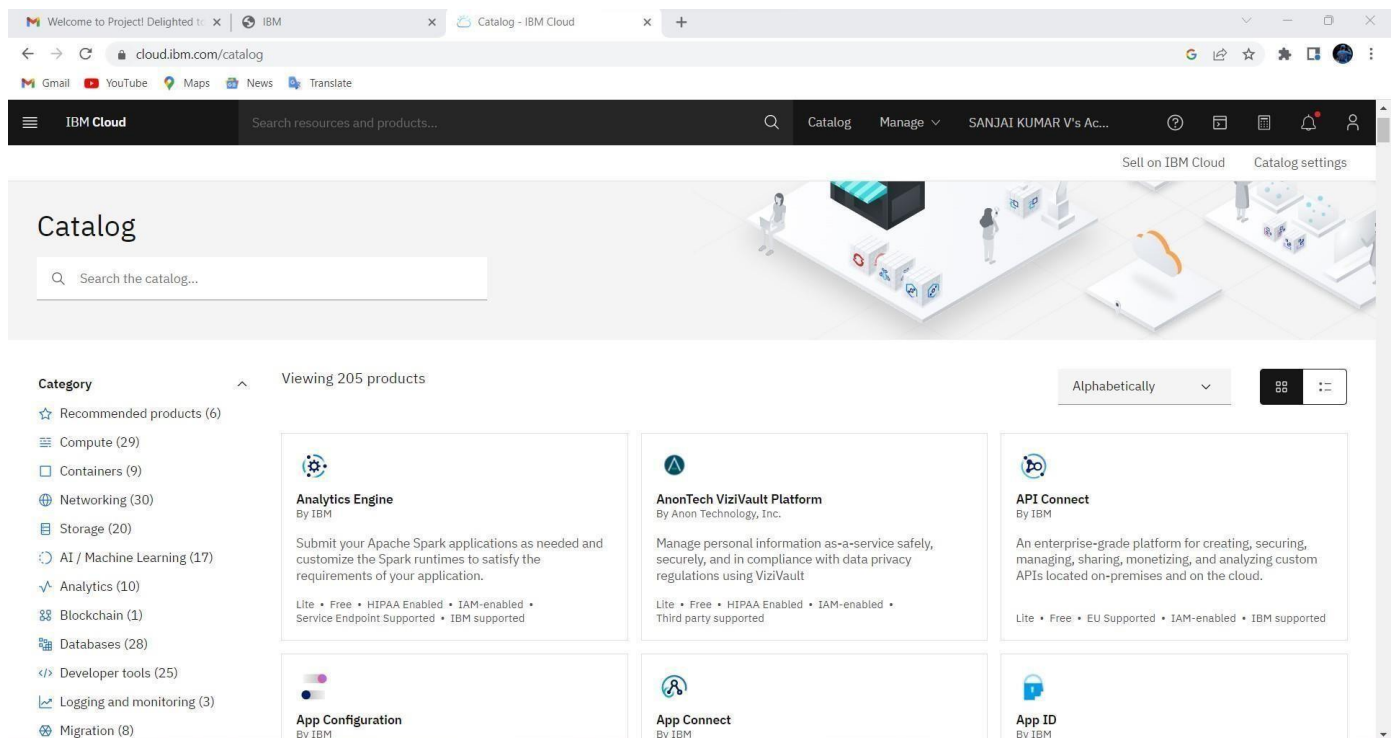
Step 1: Firstly, create an IBM cloud account with IBM and password.



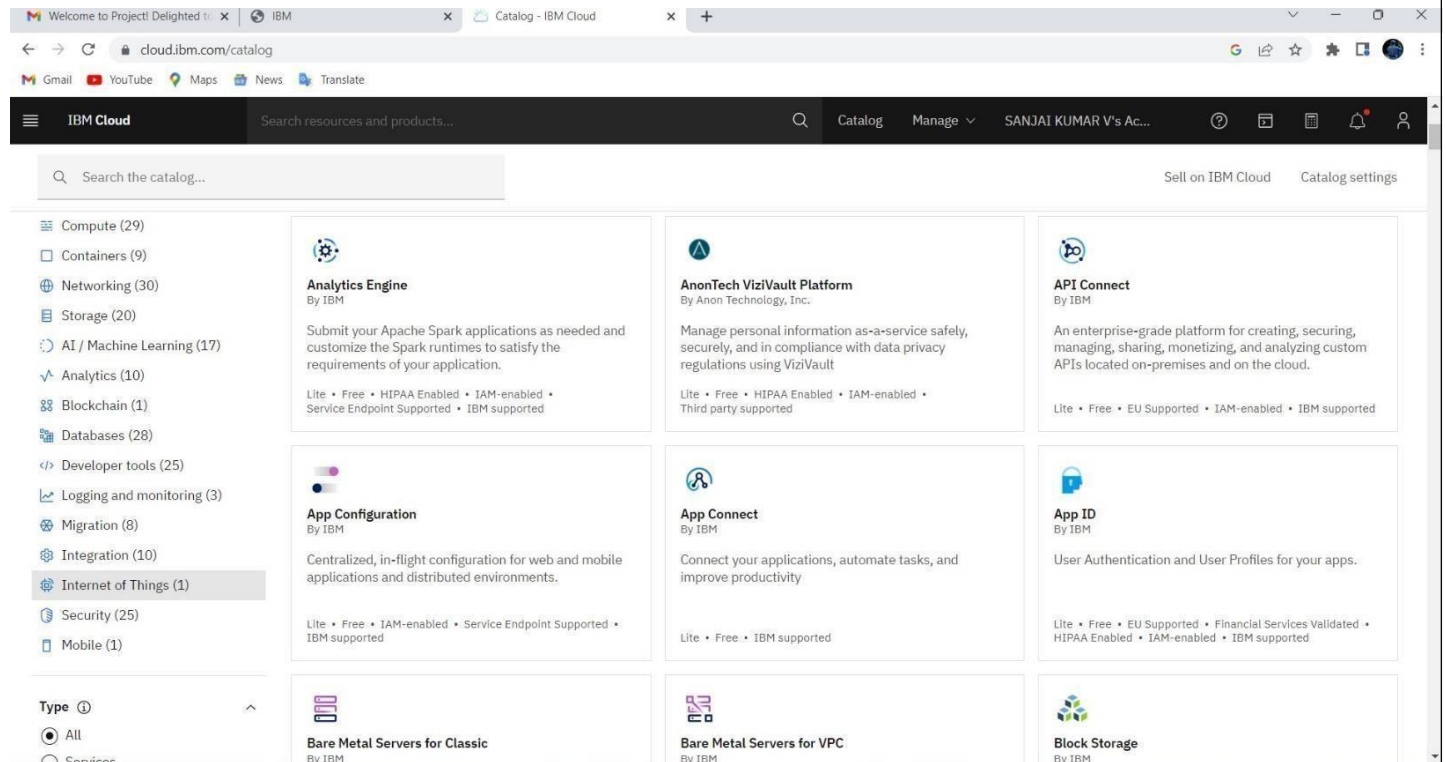
Step 2: Home page of IBM cloud.



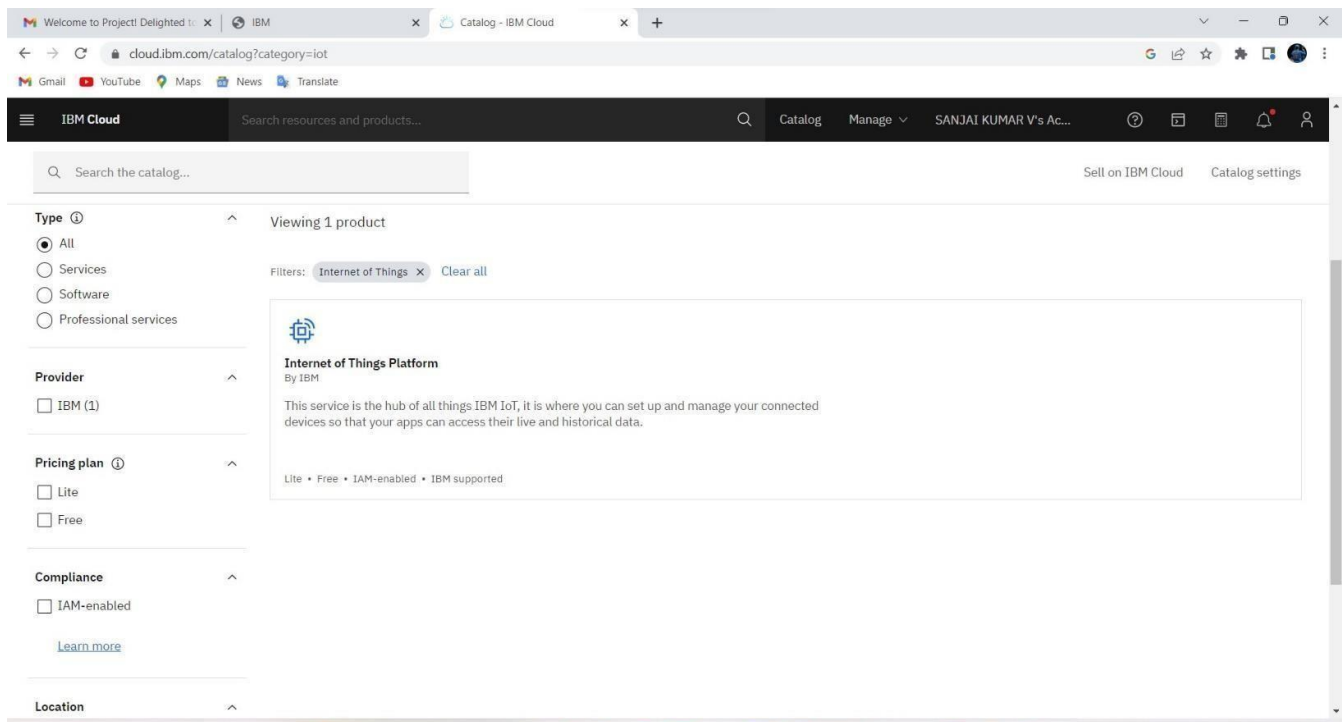
Step 3: Click on the catalog on the top.



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.

The screenshot shows the IBM Cloud console for the Internet of Things Platform. The 'Select a pricing plan' step is active, displaying a table with the 'Lite' plan selected. The plan details include: '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', and 'Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed'. The pricing is 'Free'. A warning message 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, and the 'Add to estimate' button is visible.

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

Configure your resource

Service name: Internet of Things Platform-gm

Select a resource group: Default

Tags: Examples: env:dev, version-1

Access management tags: Examples: access:dev, proj:version-1

Step 7: Tick agreements and then click on create.

The screenshot shows the IBM Cloud console for the Internet of Things Platform. The 'Configure your resource' step is active. The 'I have read and agree to the following license agreements' checkbox is checked. The 'Create' button is now enabled, and the 'Add to estimate' button is visible.

Configure your resource

Service name: Internet of Things Platform-gm

Select a resource group: Default

Tags: Examples: env:dev, version-1

Access management tags: Examples: access:dev, proj:version-1

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

Create

Add to estimate

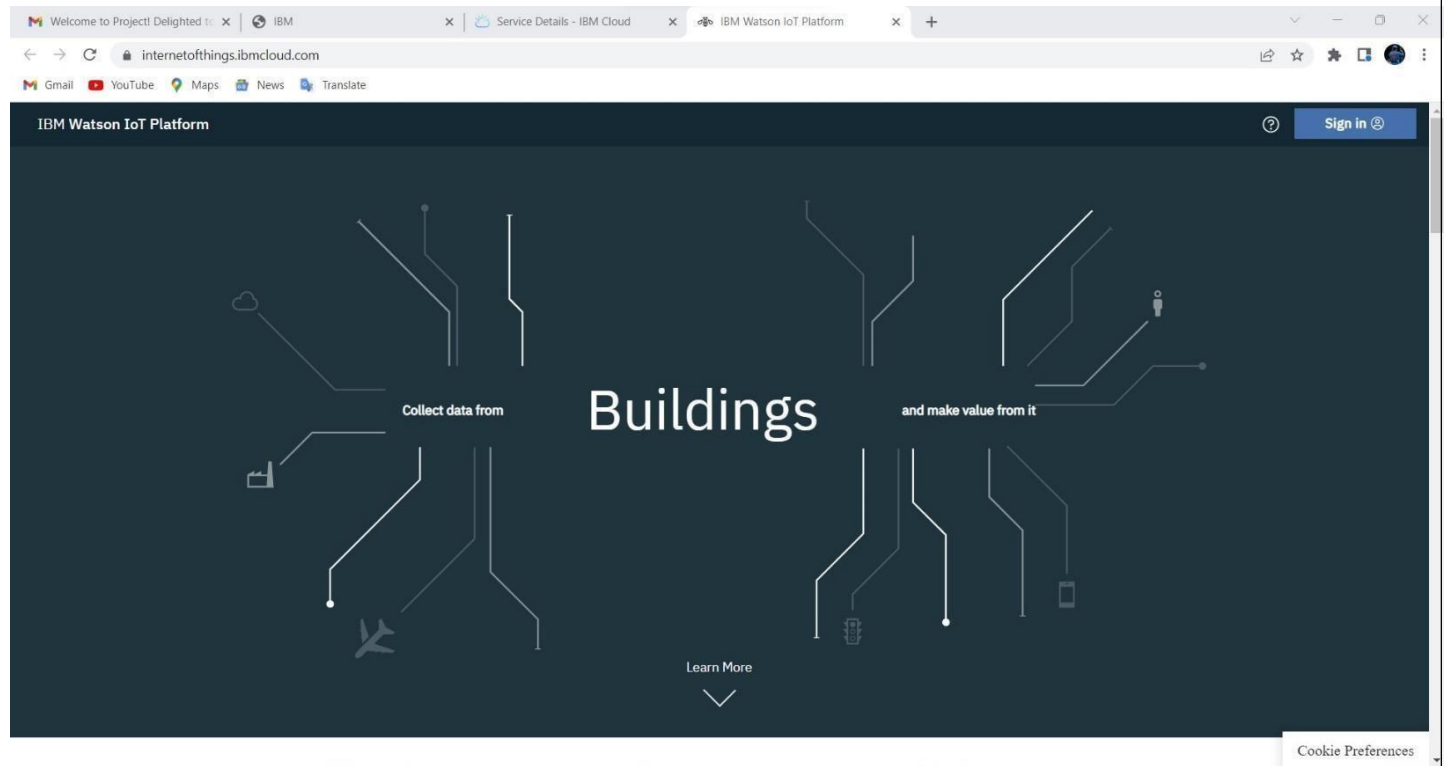
Step 8: Click on the launch button.

The screenshot shows the IBM Cloud interface. The browser tabs include 'Welcome to Project! Delighted to...', 'IBM', and 'Service Details - IBM Cloud'. The address bar shows the URL: cloud.ibm.com/services/iotf-service/cn%3Av1%3Abluemix%3Apublic%3Aiotf-service%3Aeu-de%3Aa%2F5c66f7e635c146c88e1993bc467588db%3A714c2ea9-f01f-437a-bcbd-e1586c33.... The page title is 'Internet of Things Platform-gb' 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 diagram of a central square with four 'U' shaped connectors. To the right, the heading 'Let's get started with IBM Watson IoT Platform' is followed by the text 'Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.' Below this are 'Launch' and 'Docs' buttons. A section titled 'Ready for the next level?' shows the 'IBM Watson IoT Platform Journey' with three stages: 'Lite' (checked), 'Non-Production', and 'Production'. Each stage has a brief description. A blue chat button is in the bottom right corner.

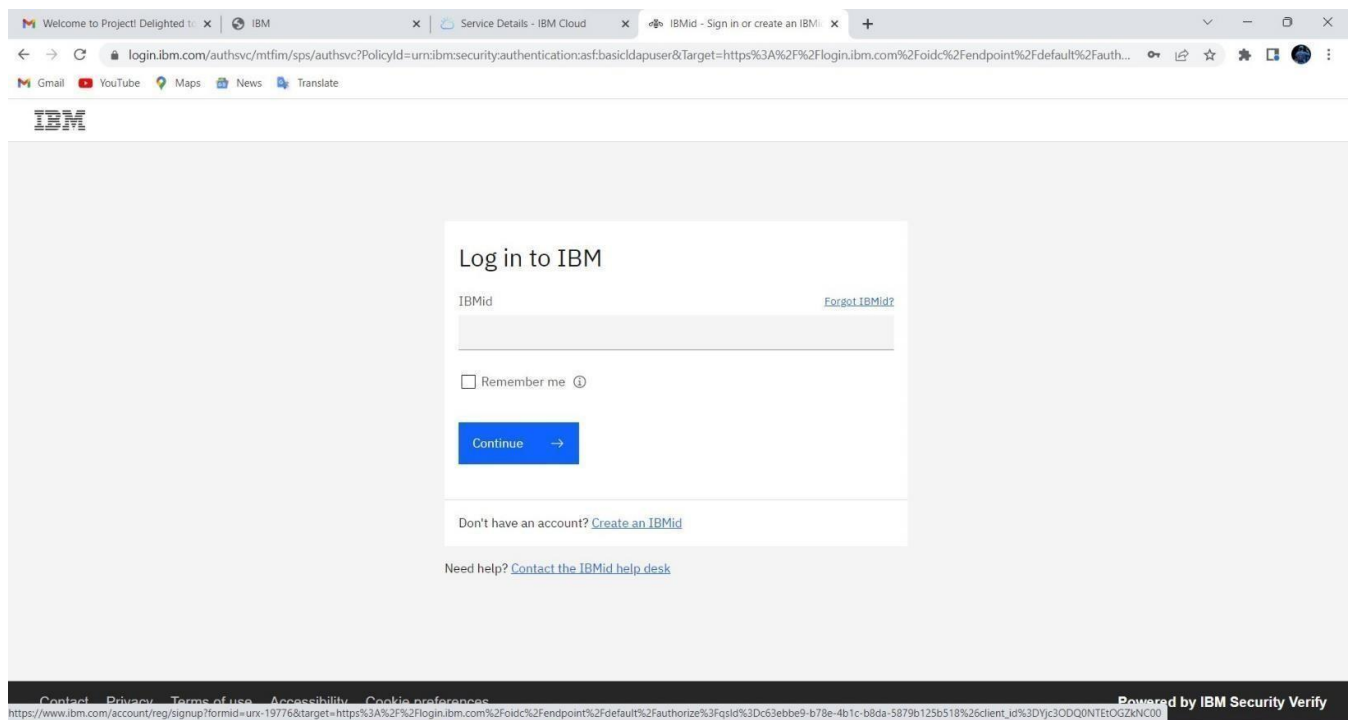
Step 9: After clicking on the launch button this tab will open.

The screenshot shows the IBM Watson IoT Platform landing page. The browser tabs include 'Welcome to Project! Delighted to...', 'IBM', 'Service Details - IBM Cloud', and 'IBM Watson IoT Platform'. The address bar shows the URL: internetofthings.ibmcloud.com. The page has a dark blue background with a circuit-like pattern. The main heading is 'Buildings' in large white text. To the left, it says 'Collect data from' with a building icon. To the right, it says 'and make value from it' with a person icon. Below the heading is a 'Learn More' link with a downward arrow. A 'Sign in' button is in the top right corner. A 'Cookie Preferences' link is in the bottom right corner.

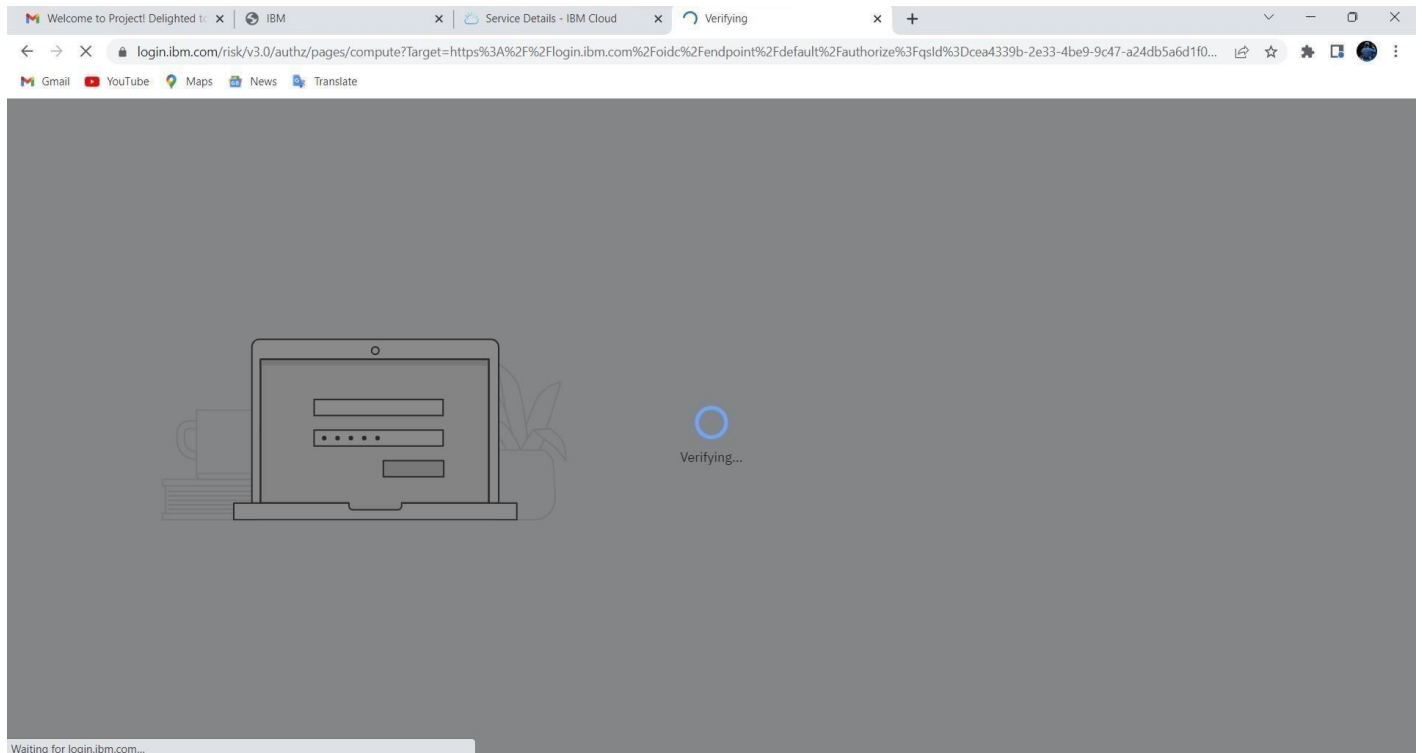
Step 10: Click on Sign in.



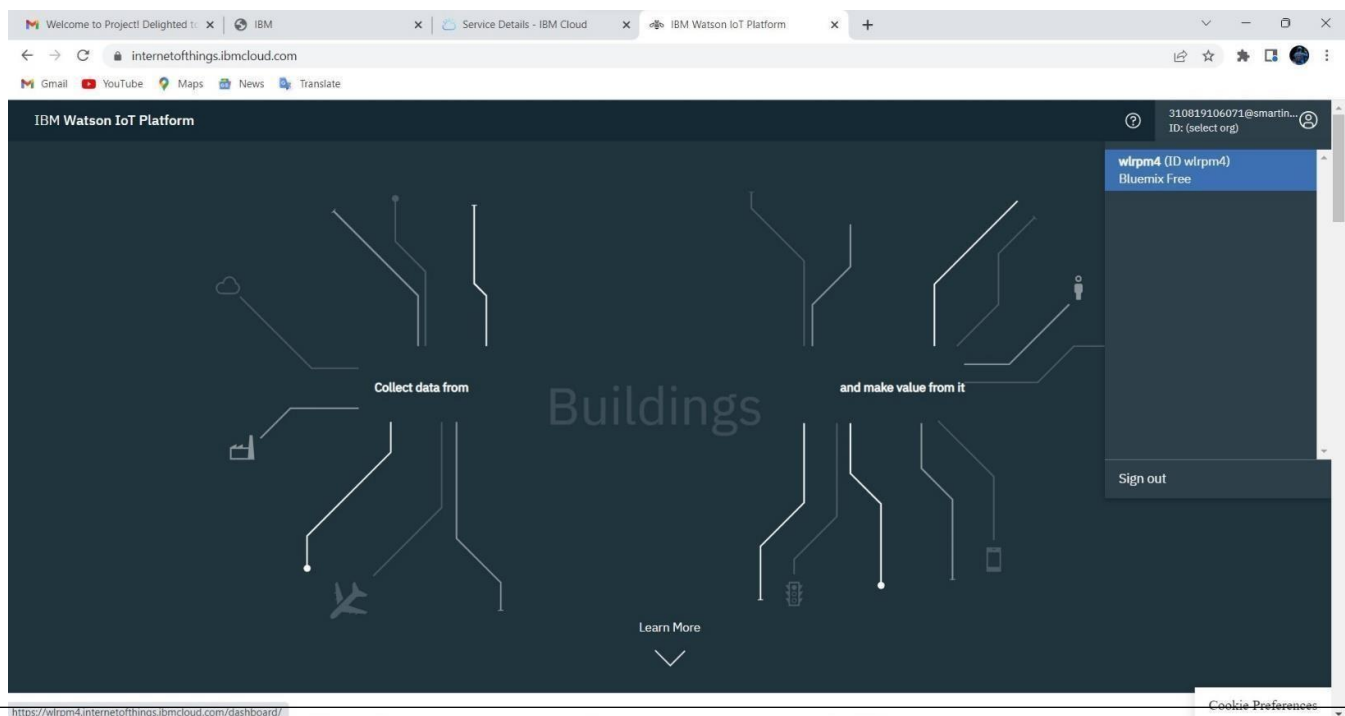
Step 11: Fill the login details.



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.

Welcome to Project! Delighted to... x IBM x Service Details - IBM Cloud x IBM Watson IoT Platform x +

wlrpm4.internetofthings.ibmcloud.com/dashboard/devices/browse

Gmail YouTube Maps News Translate

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 101

<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 < 1 >

Microsoft Store 0 Simulations running

Step 15: Click on Add Device.

Welcome to Project! Delighted to... x IBM x Service Details - IBM Cloud x IBM Watson IoT Platform x +

wlrpm4.internetofthings.ibmcloud.com/dashboard/devices/browse

Gmail YouTube Maps News Translate

IBM Watson IoT Platform 310819106071@smartinternz.com ID: wlrpm4

Browse Action Device Types Interfaces Add Device +

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<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 < 1 >

0 Simulations running

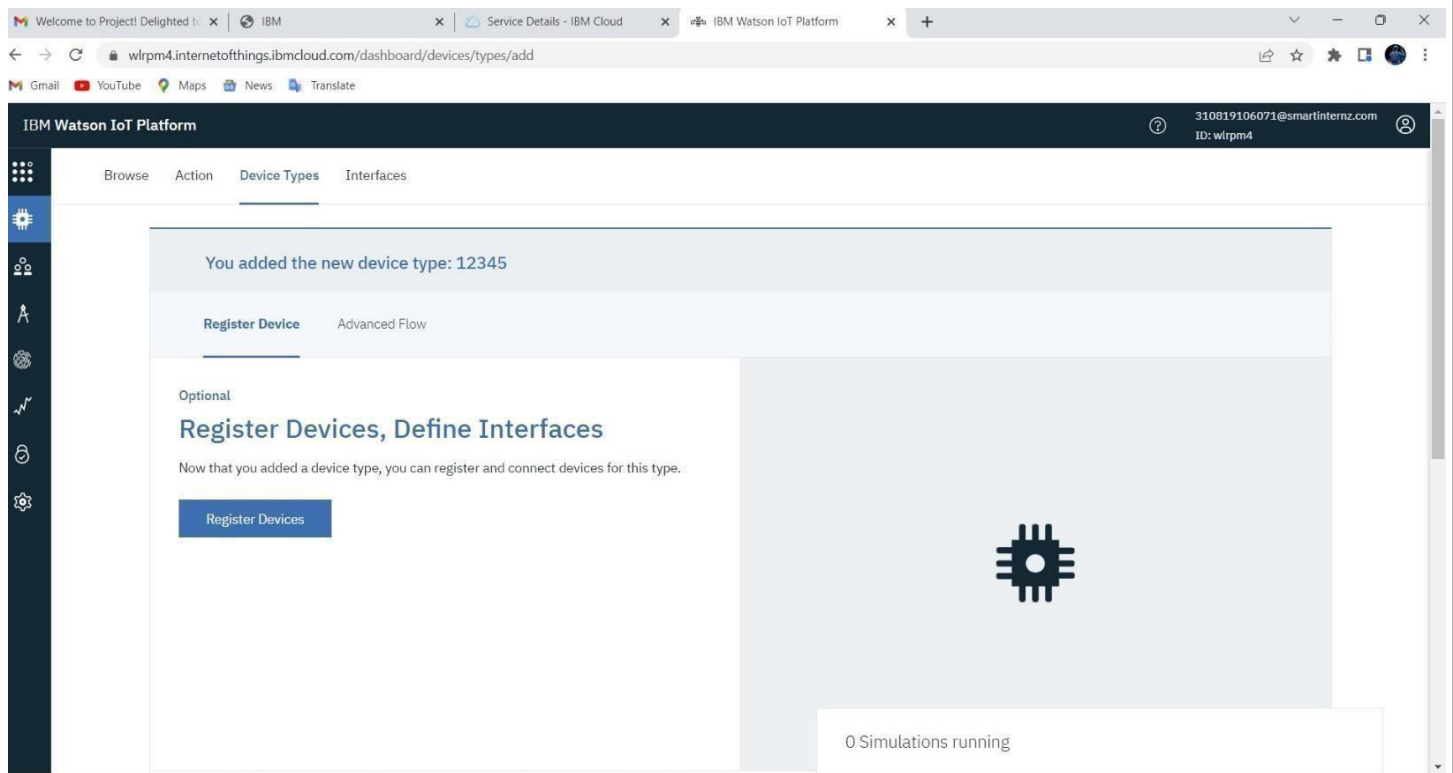
Step 16: Click on Device Type.

The screenshot shows the IBM Watson IoT Platform interface. At the top, there's a navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces'. The 'Device Types' tab is selected. Below the navigation bar, there's a sidebar with various icons. The main content area displays the 'Add Device' dialog. The dialog has a progress bar with four steps: 'Identity' (selected), 'Device Information', 'Security', and 'Summary'. Below the progress bar, there's 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 showing 'Enter Device ID'. At the bottom right of the dialog, there are 'Cancel' and 'Next' buttons. Below the dialog, there's a 'Browse Devices' section with a search bar and a status indicator showing '0 Simulations running' and 'Adobe Express'.

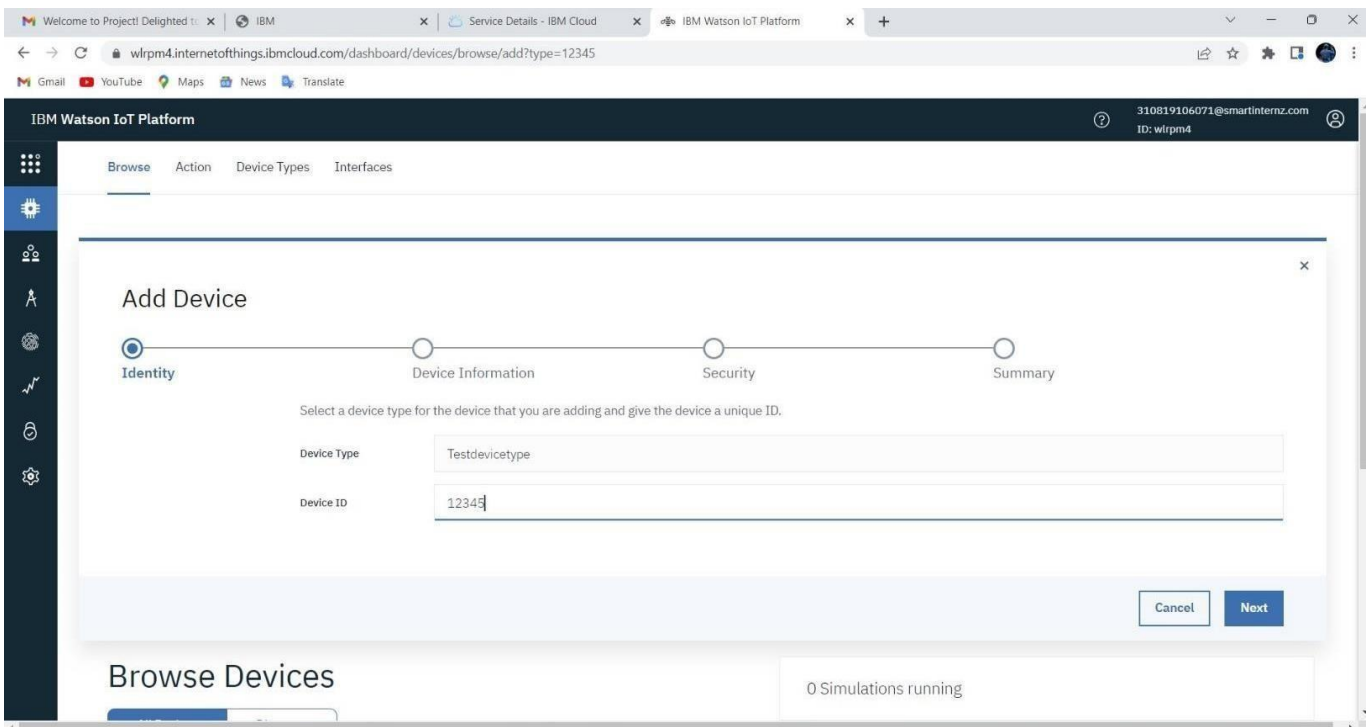
Step 17: Fill the details.

The screenshot shows the IBM Watson IoT Platform interface. At the top, there's a navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces'. The 'Device Types' tab is selected. Below the navigation bar, there's a sidebar with various icons. The main content area displays the 'Add Type' dialog. The dialog has a progress bar with two steps: 'Identity' (selected) and 'Device Information'. Below the progress bar, there's 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' separated by 'Or', 'Name' with a text input field showing '12345', and 'Description' with a text input field. Below the input fields, there's a status indicator showing '0 Simulations running'.

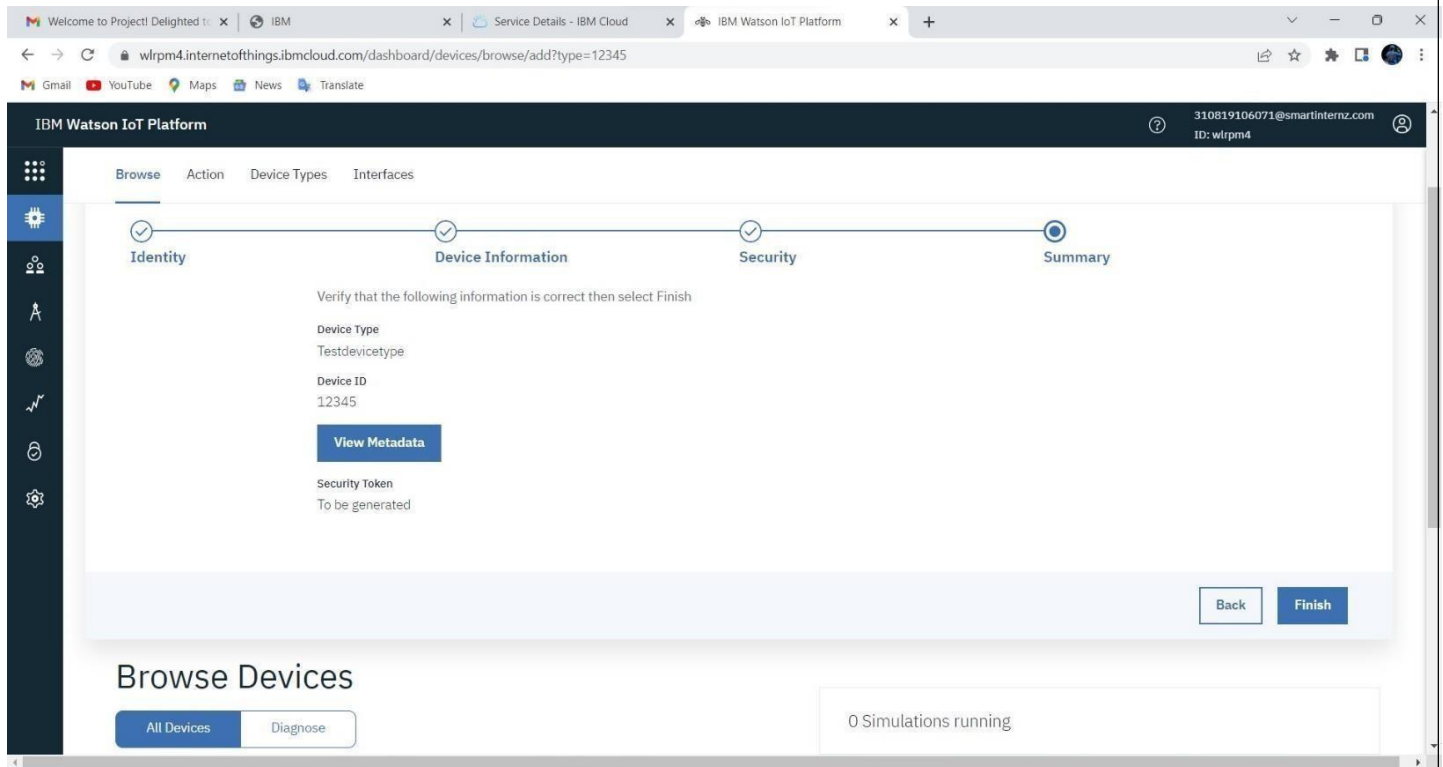
Step 18: Click on Register Devices.



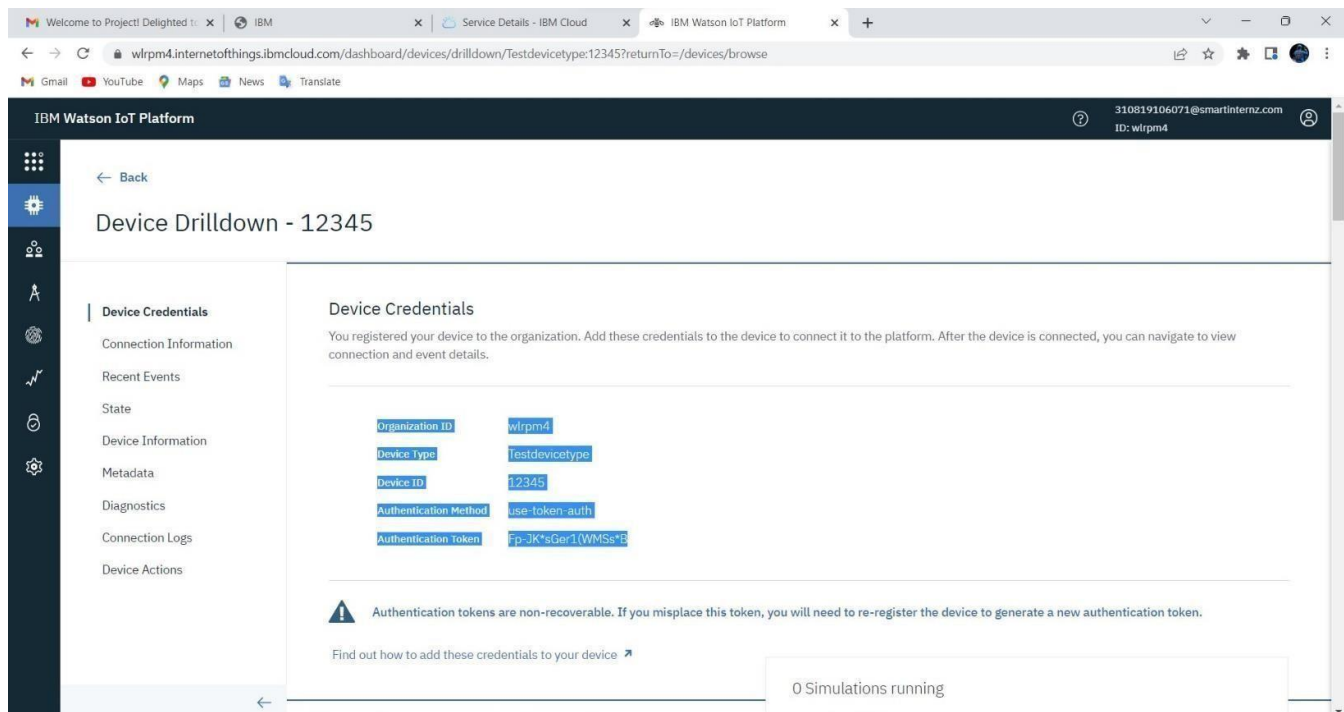
Step 19: Give the device name which you have created and give Device ID.



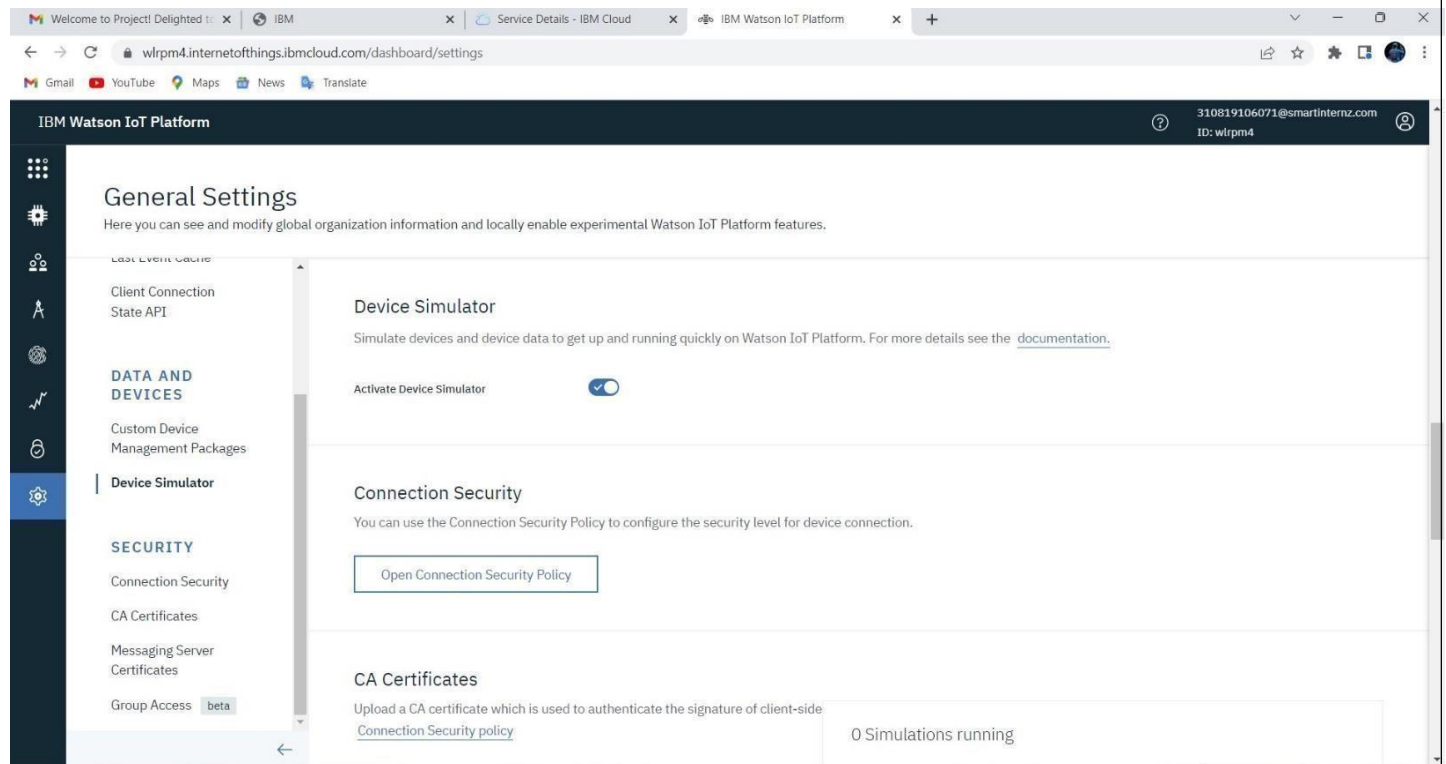
Step 20: After giving all the data, Click on Finish.



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

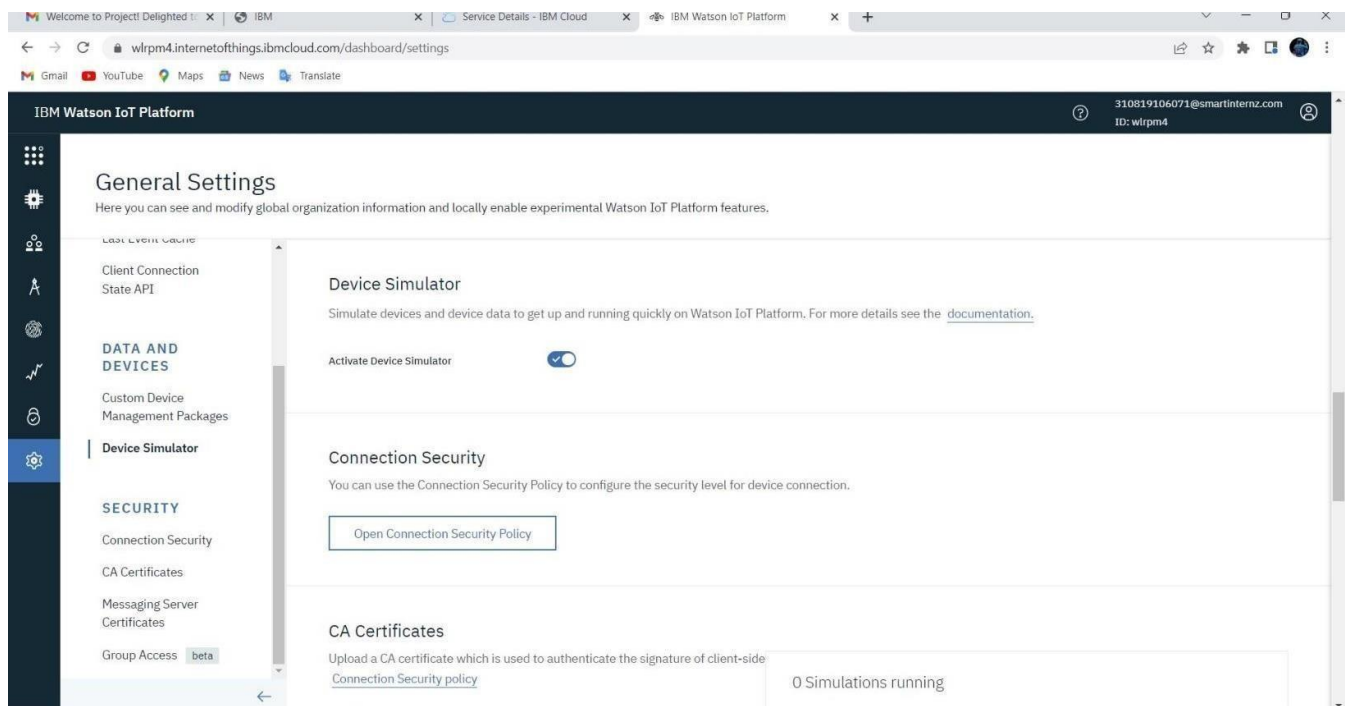


Step 22: Go to Setting, click on Data and Devices.



The screenshot shows the IBM Watson IoT Platform dashboard. The left sidebar is expanded, showing the 'DATA AND DEVICES' section selected. The main content area displays the 'General Settings' page. Under the 'Device Simulator' section, the 'Activate Device Simulator' toggle is turned on. Below this, there is a 'Connection Security' section with a button to 'Open Connection Security Policy'. At the bottom, there is a 'CA Certificates' section with a button to 'Upload a CA certificate'. The status bar at the bottom right indicates '0 Simulations running'.

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



The screenshot shows the IBM Watson IoT Platform dashboard. The left sidebar is expanded, showing the 'Device Simulator' section selected. The main content area displays the 'General Settings' page. Under the 'Device Simulator' section, the 'Activate Device Simulator' toggle is turned on. Below this, there is a 'Connection Security' section with a button to 'Open Connection Security Policy'. At the bottom, there is a 'CA Certificates' section with a button to 'Upload a CA certificate'. The status bar at the bottom right indicates '0 Simulations running'.

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

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

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 25: Click on Create Simulation.

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

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

+ Add Certificate

Common Name Issued By

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.

+ 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 'General Settings', 'DATA AND DEVICES', and 'SECURITY'. The main content area is titled 'General Settings' and includes sections for 'Client Connection State API', 'CA Certificates', and 'Connection Security'. A modal window titled 'Simulations' is open on the right, displaying instructions on how to create a device simulation. The modal includes a list of steps: 1. Select a device type, 2. Configure the event and payload, and 3. Add devices. Below the steps is a text input field labeled 'Select or create a device type...'. The background page shows the 'CA Certificates' section with an 'Add Certificate' button and a table with columns 'Common Name' and 'Issued By'.

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 'Browse Devices' page. 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, displaying configuration options for a device simulation. The modal includes fields for 'Event type name' (event_1), 'Frequency' (20 x Every Minute), and 'Payload'. The payload is a JSON object with 'temperature' and 'humidity' fields, both set to 'random(0, 100)'. The modal also includes a 'Send' button and a 'What functions can I apply?' link. The background page shows the 'Browse Devices' table with columns 'Device ID', 'Status', 'Device Type', 'Class ID', and 'Data'. The table lists two devices: '12345' and '14325', both with a status of 'Disconnected' and a device type of 'Testdevicetype'.

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	Data
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', 'Custom Device', 'Management Packages', 'Device Simulator', 'SECURITY', 'Connection Security', 'CA Certificates', 'Messaging Server', 'Certificates', and 'Group Access'. The main content area includes sections for 'Connection Security Policy', 'CA Certificates', and 'Add Certificate'. An overlay window titled 'Simulations' is open on the right, showing '1/50 Simulations Running' and a 'Device Type' dropdown set to 'Testdevicetype'. Below this, a list of devices shows '1 Device' with ID '12345'. At the bottom of the overlay, there are buttons for 'Create Simulated Device' and 'Use Registered Device'. The bottom status bar of the overlay indicates '2 events sent' and '76 bytes sent'.

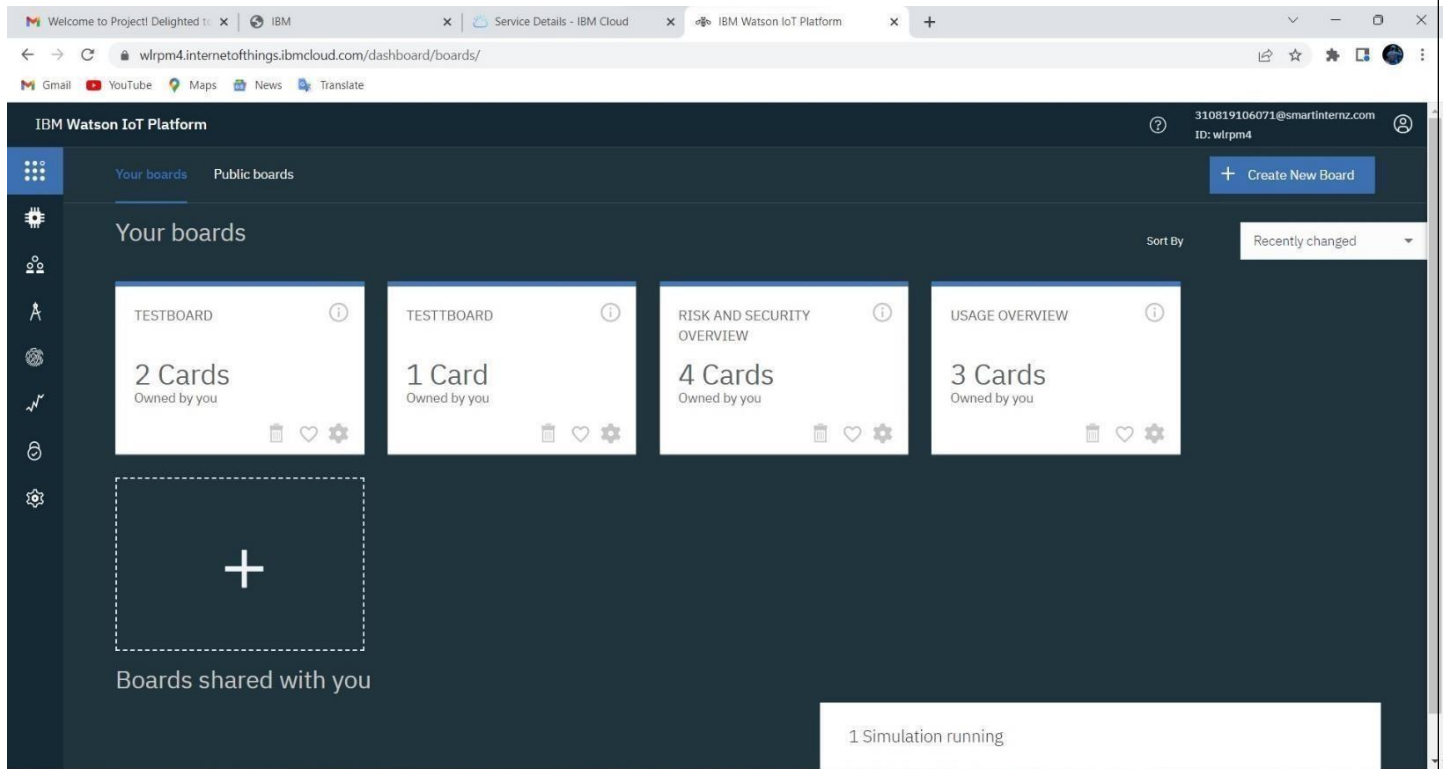
Step 29: Go to devices then click on devices and check the recent events whether the code is running or not.

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'. Below the navigation bar, there is a table listing devices. The table has columns for 'Device ID', 'Status', 'Device Type', 'Class ID', 'Date Added', and 'Descriptive Location'. The first device listed is '12345' with status 'Disconnected' and type 'Testdevicetype'. Below the table, there is a detailed view for the selected device, showing tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, displaying a list of events with columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are as follows:

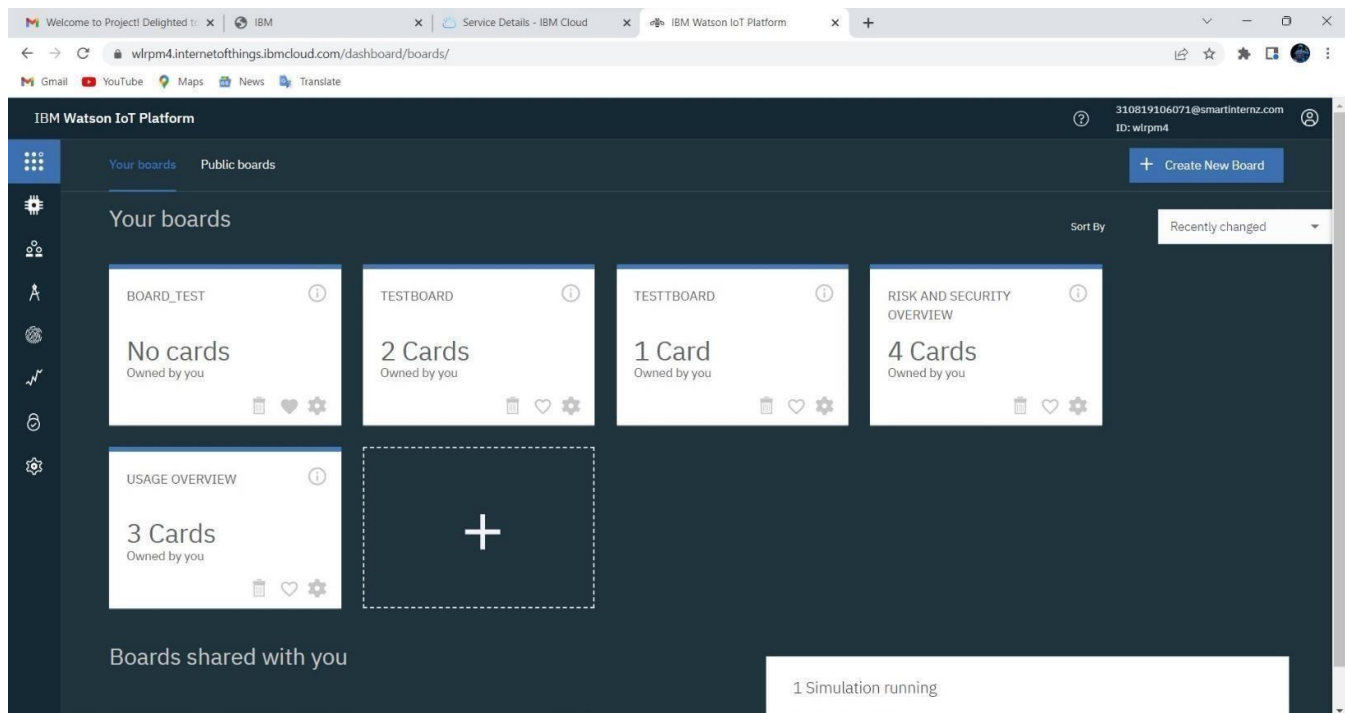
Event	Value	Format	Last Received
event_1	{"temperature":63,"humidity":8}	json	a few seconds ago
event_1	{"temperature":56,"humidity":9}	json	a few seconds ago
event_1	{"temperature":40,"humidity":76}	json	a few seconds ago
event_1	{"temperature":61,"humidity":36}	json	a few seconds ago

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

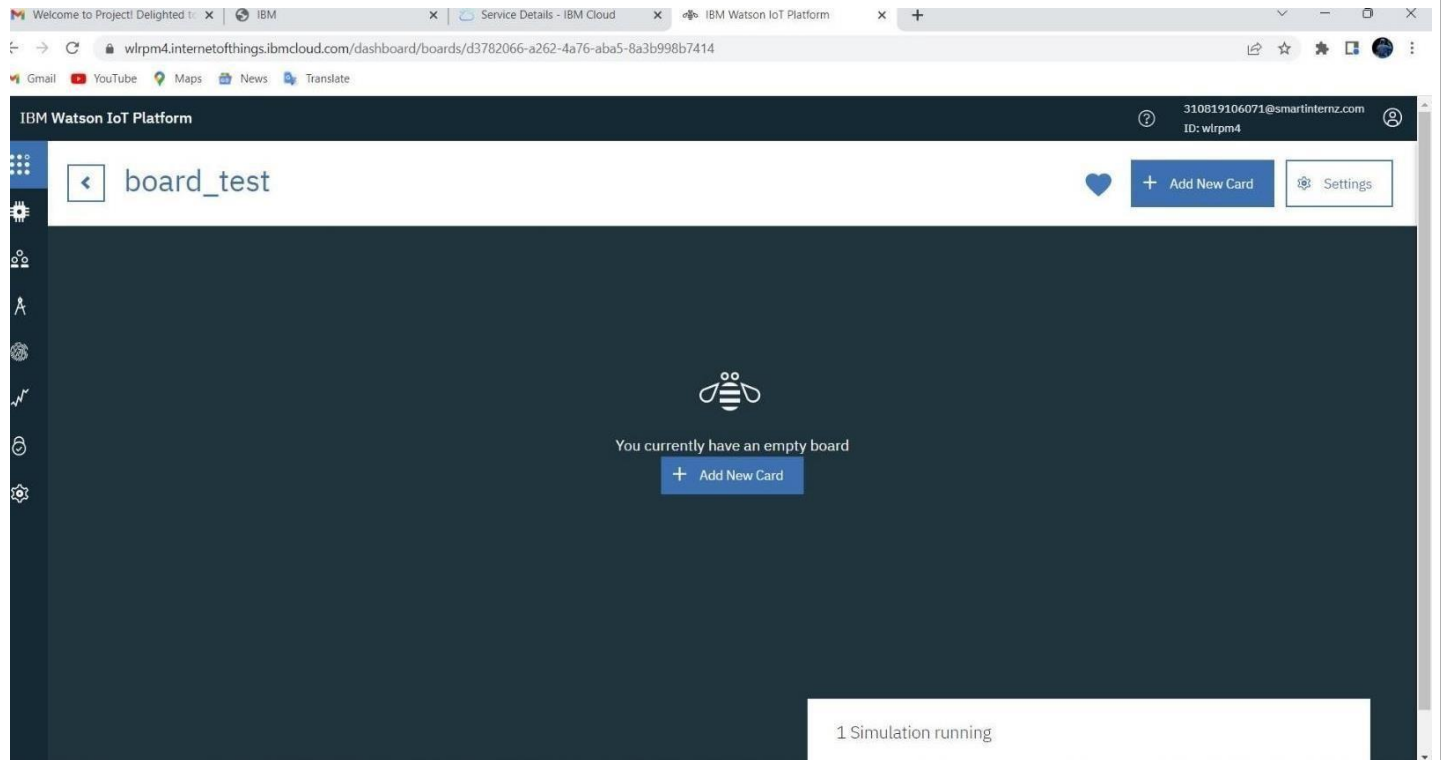
Step 30: Go to Board and click on + Create New Board, fill the details and create a board.



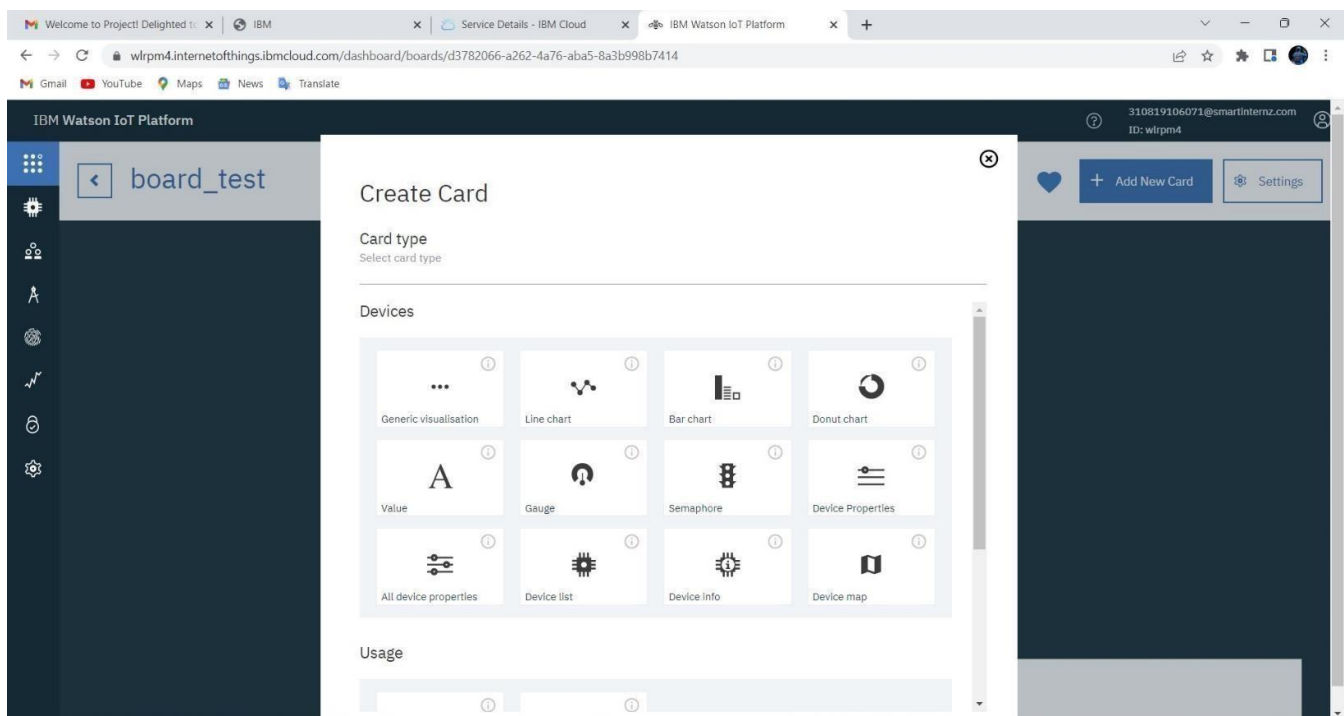
Step 31: Click on the board which is created.



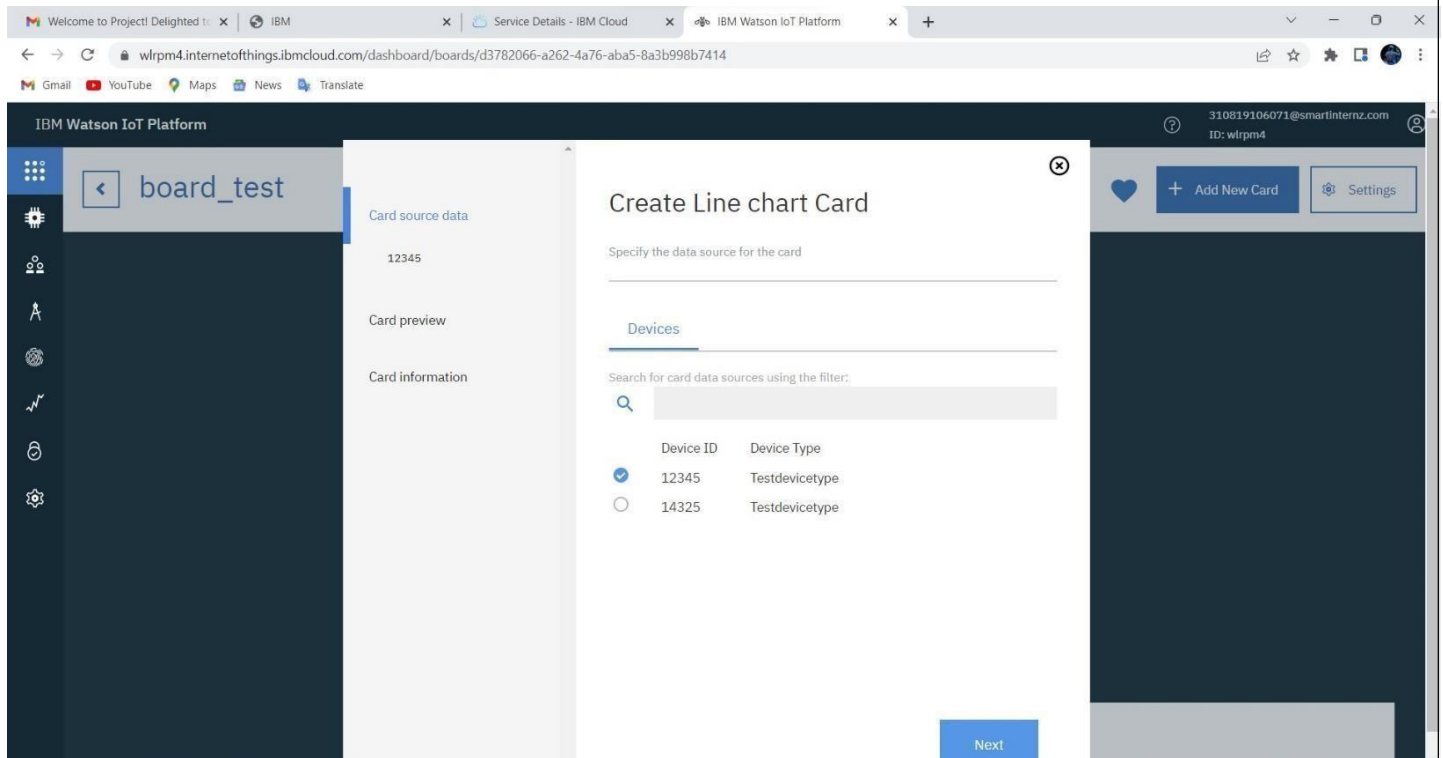
Step 32: Go Add New Card.



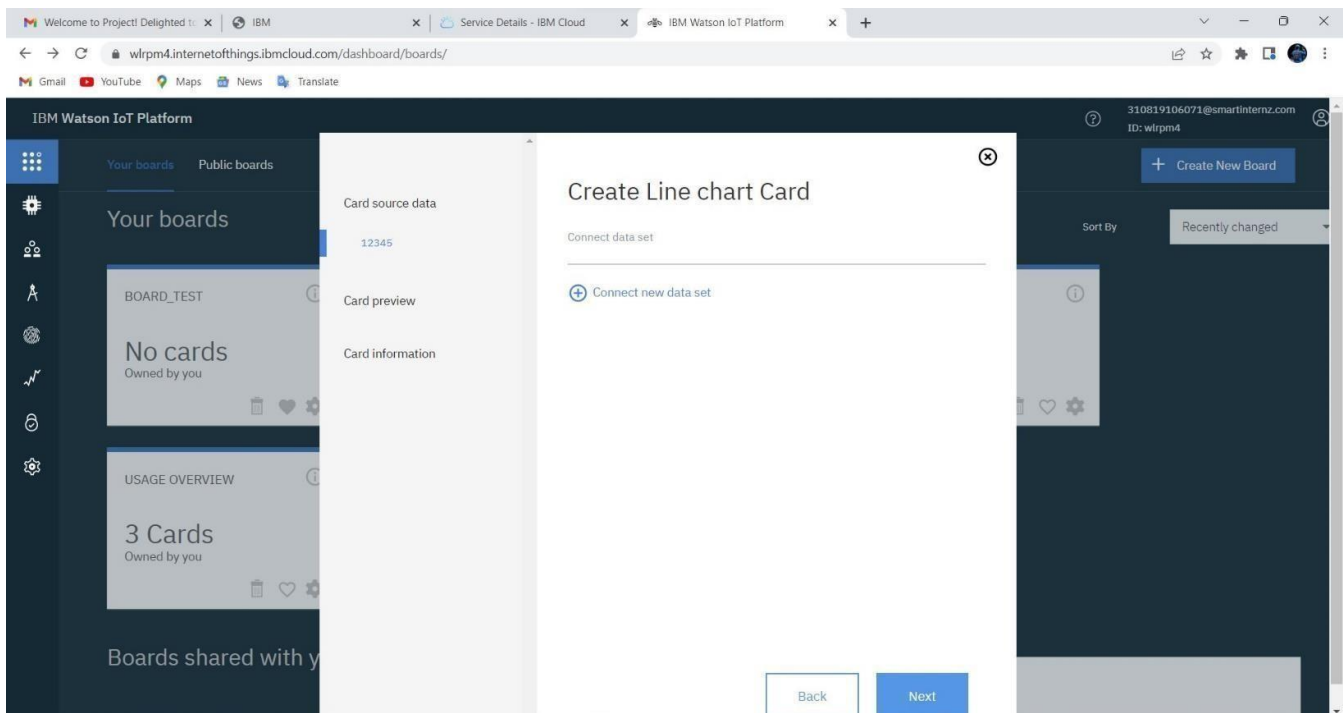
Step 33: Choose the Card Type.



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 IBM Watson IoT Platform interface. A modal dialog titled "Create Line chart Card" is open. The left sidebar shows a navigation menu with icons for home, users, devices, data, and settings. The main content area is divided into three sections: "Card source data" (showing "12345"), "Card preview", and "Card information". The "Create Line chart Card" dialog has the following fields:

- Connect data set:** A dropdown menu showing "temperature".
- Event:** A text input field containing "event_1".
- Property:** A text input field containing "temperature".
- Name:** A text input field containing "temperature".
- Type:** A dropdown menu showing "Number".
- Unit:** A text input field containing "°C".
- Min:** A text input field containing "0".
- Max:** A text input field containing "100".

At the bottom of the dialog are "Back" and "Next" buttons.

Step 37: Choose the Colour.

The screenshot shows the IBM Watson IoT Platform interface. A modal dialog titled "Create Line chart Card" is open. The left sidebar shows a navigation menu with icons for home, users, devices, data, and settings. The main content area is divided into three sections: "Card source data" (showing "12345"), "Card preview", and "Card information". The "Create Line chart Card" dialog has the following fields:

- Enter title and description of the card:** A text input field.
- Title:** A text input field containing "Line chart".
- Color scheme:** A dropdown menu showing a color scheme with five colored squares (purple, red, green, blue, teal).
- Description:** A text input field containing "A line chart to display time series information with historic and live data".

At the bottom of the dialog are "Back" and "Submit" buttons.

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 icons for various dashboard components. The main area displays a 'board_test' dashboard with a 'Line chart' card. A 'Create Gauge Card' dialog is open, prompting the user to 'Specify the data source for the card'. The dialog has a 'Devices' tab selected, showing a search bar and a table of available devices. The table lists two devices: '12345' and '14325', both of type 'Testdevicetype'. The '12345' device is selected with a blue checkmark. A 'Next' button is at the bottom right of the dialog.

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

Step 39: Here is the Final graph.

The screenshot shows the final dashboard configuration. The 'board_test' dashboard now features 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 shows a line graph for 'temperature' data, with a time range from 13:21 to 13:25. The graph shows a fluctuating line. A status bar at the bottom right indicates '1 Simulation running'.

Result:

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