

# CREATE IBM WATSON IOT PLATFORM AND DEVICE

## CREATE IBM WATSON IOT PLATFORM AND DEVICE

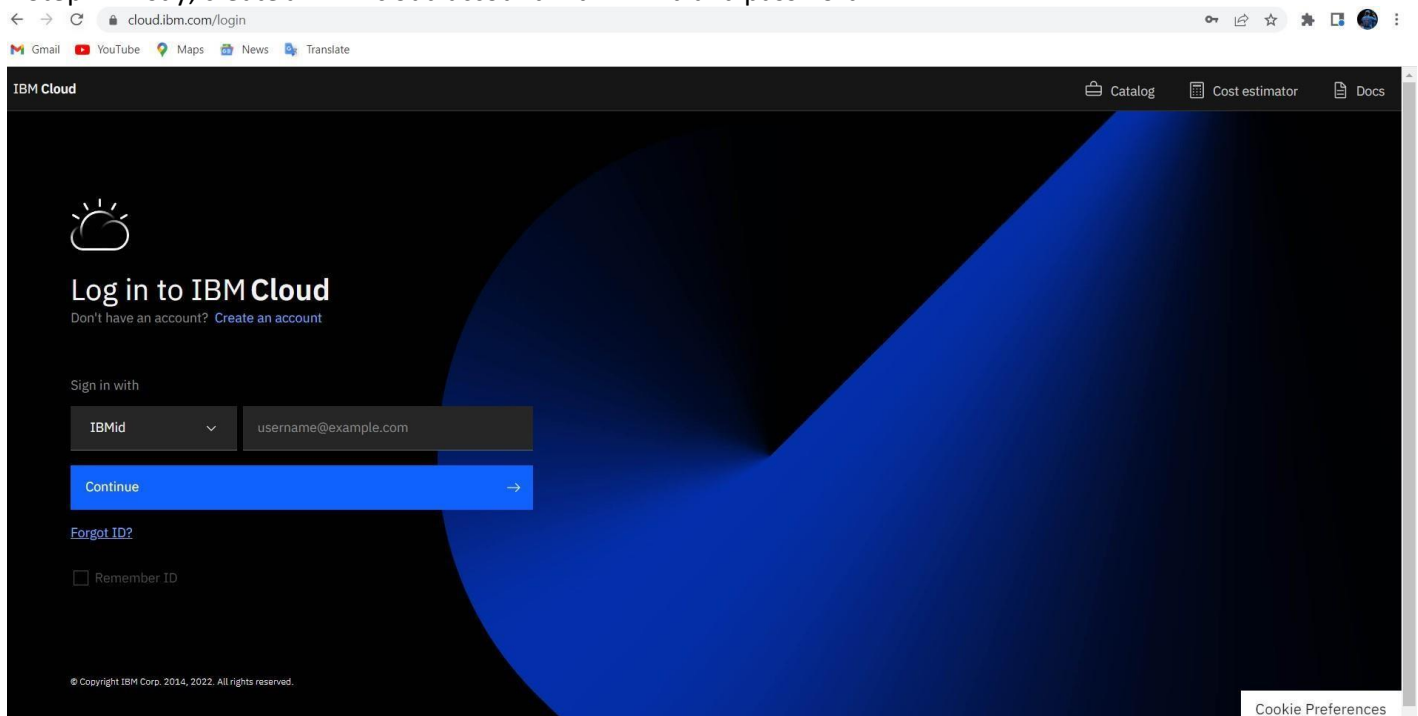
Date	10 November 2022
Team ID	PNT2022TMID18315
Project Name	Gas leakage monitoring and alerting system for industries

### **AIM:**

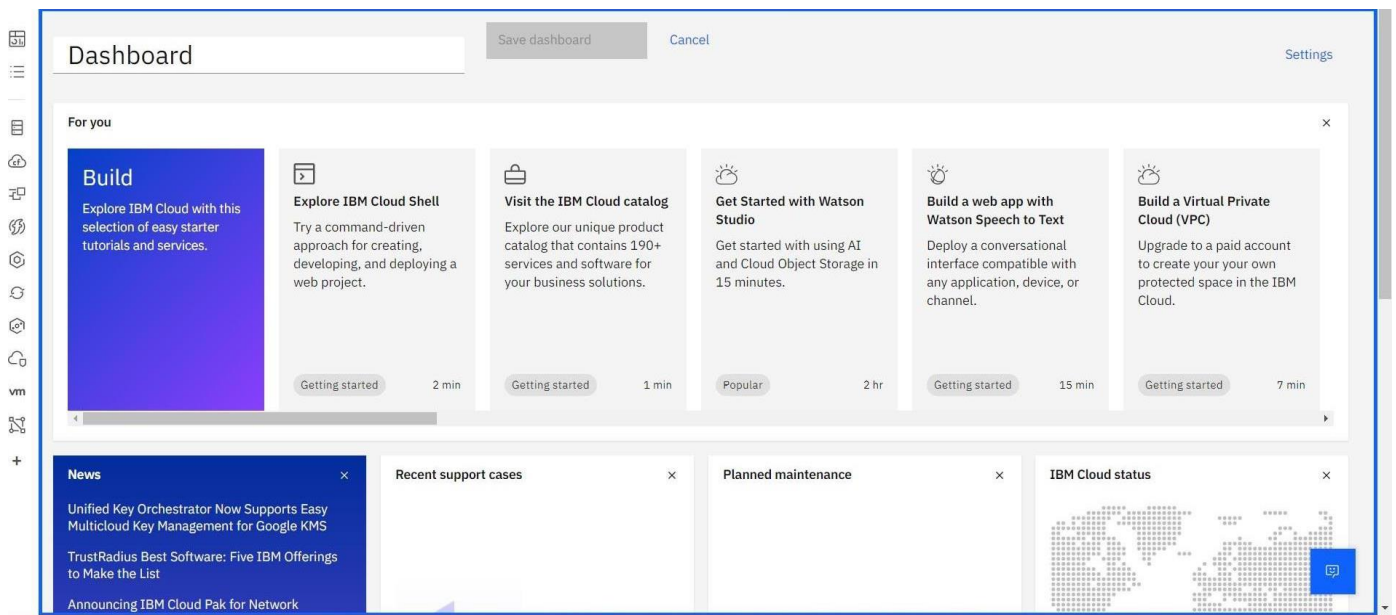
To create the IBM Watson IoT platform and device.

### **Steps to be followed**

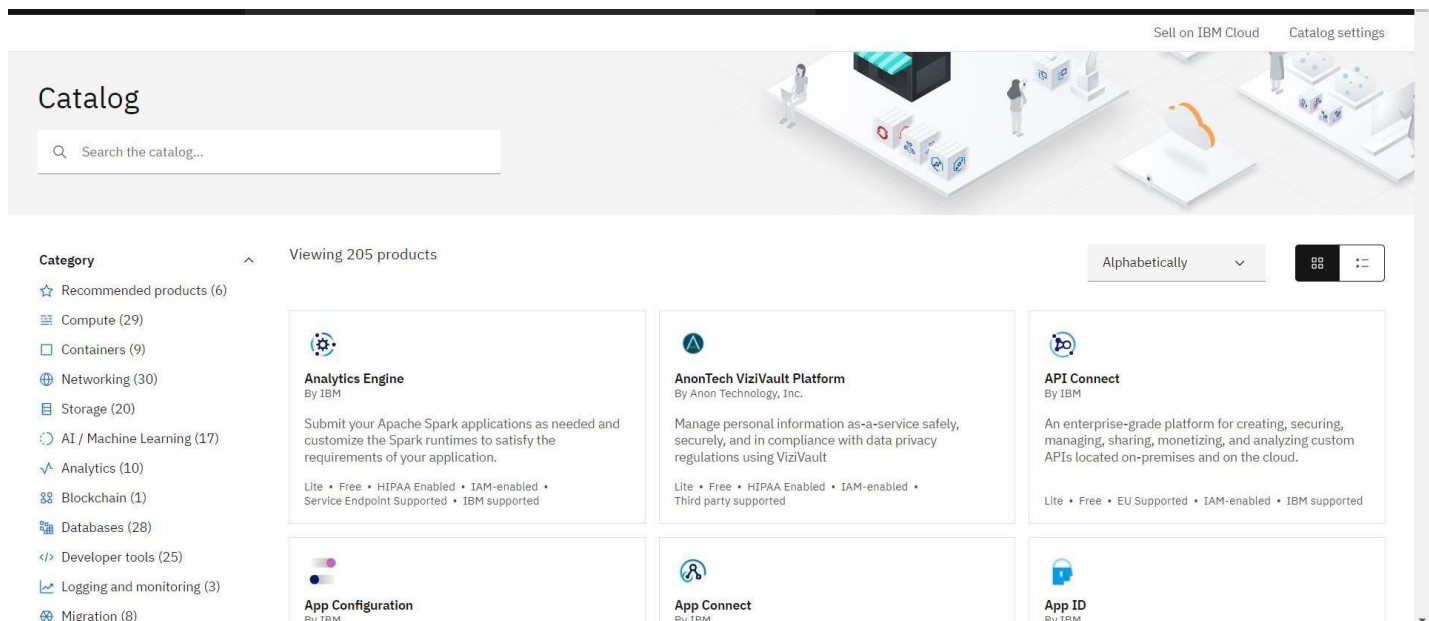
Step 1: Firstly, create an IBM cloud account with IBM id and password.



## 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.

Q Search the catalog...

Sell on IBM CloudCatalog settings

Compute (29)

Containers (9)

Networking (30)

Storage (20)

AI / Machine Learning (17)

Analytics (10)

Blockchain (1)

Databases (28)

Developer tools (25)

Logging and monitoring (3)

Migration (8)

Integration (10)

Internet of Things (1)

Security (25)

Mobile (1)

Type ⓘ

All

Services

**Analytics Engine**

By IBM

Submit your Apache Spark applications as needed and customize the Spark runtimes to satisfy the requirements of your application.

Lite • Free • HIPAA Enabled • IAM-enabled • Service Endpoint Supported • IBM supported

**App Configuration**

By IBM

Centralized, in-flight configuration for web and mobile applications and distributed environments.

Lite • Free • IAM-enabled • Service Endpoint Supported • IBM supported

**Bare Metal Servers for Classic**

By IBM

**AnonTech ViziVault Platform**

By Anon Technology, Inc.

Manage personal information as-a-service safely, securely, and in compliance with data privacy regulations using ViziVault

Lite • Free • HIPAA Enabled • IAM-enabled • Third party supported

**API Connect**

By IBM

An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on-premises and on the cloud.

Lite • Free • EU Supported • IAM-enabled • IBM supported

**App Connect**

By IBM

Connect your applications, automate tasks, and improve productivity

Lite • Free • IBM supported

**Bare Metal Servers for VPC**

By IBM

**App ID**

By IBM

User Authentication and User Profiles for your apps.

Lite • Free • EU Supported • Financial Services Validated • HIPAA Enabled • IAM-enabled • IBM supported

**Block Storage**

By IBM

Step 5: Click on Internet of Things Platform.

Q Search the catalog...

Sell on IBM CloudCatalog settings

Type ⓘ

All

Services

Software

Professional services

Provider

IBM (1)

Pricing plan ⓘ

Lite

Free

Compliance

IAM-enabled

[Learn more](#)

Location

Viewing 1 product

Filters: Internet of Things X Clear all

**Internet of Things Platform**

By IBM

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.

Lite • Free • IAM-enabled • IBM supported

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

Last updated: 08/15/2022

Category  
Internet of Things

Compliance  
IAM-enabled

Location  
Frankfurt  
London  
Dallas  
Washington DC

Related links  
[Docs](#)  
[Terms](#)

Select a pricing plan

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

Plan	Features	Pricing
Lite	<b>Includes up to 500 registered devices, and a maximum of 200 MB of each data metric</b> 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  The Lite service plan for Internet of Things Platform includes up to 500 registered devices, and a maximum of 200 MB each of data exchanged, data analyzed, and edge data analyzed per month.  <b>Lite plan services are deleted after 30 days of inactivity.</b>	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

Summary

**Internet of Things Platform** **Free**

Location: Frankfurt  
Plan: Lite  
Service name: Internet of Things Platform-gm  
Resource group: Default

⚠ 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](#).

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

Create

Add to estimate

Step 7: Tick agreements and then click on create.

Last updated: 08/15/2022

Category  
Internet of Things

Compliance  
IAM-enabled

Location  
Frankfurt  
London  
Dallas  
Washington DC

Related links  
[Docs](#)  
[Terms](#)

Select a pricing plan

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Examples: env:dev, version-1

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**Internet of Things Platform** **Free**

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Resource group: Default

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

Create

Add to estimate

Step 8: Click on the launch button.

Resource list /

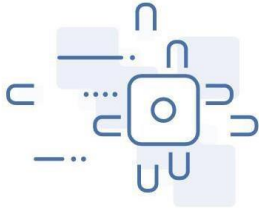
Internet of Things Platform-gb Active Add tags

Details Actions...

Manage

Plan

Connections



### Let's get started with IBM Watson IoT Platform

Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.

LaunchDocs

Ready for the next level?

#### IBM Watson IoT Platform Journey

✓

##### Lite

The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.

##### Non-Production

The Non-Production service plan is a full-featured, fully-integrated offering that enables you to explore Watson IoT Platform to see how the service can fit into your IoT environment.

##### Production

The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.

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

Welcome to Project! Delighted to...

IBM

Service Details - IBM Cloud

IBM Watson IoT Platform

internetofthings.ibmcloud.com

IBM Watson IoT Platform

Sign in

Collect data from

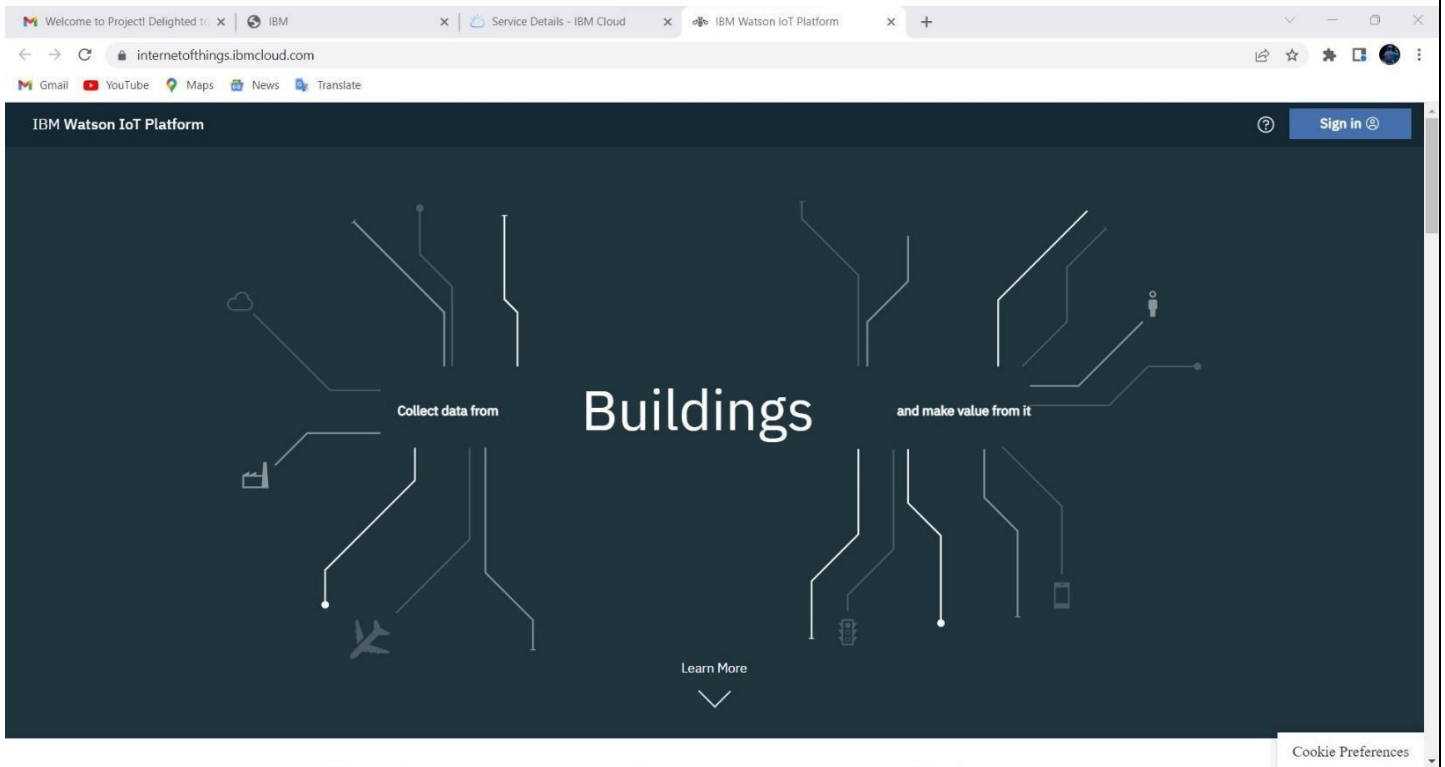
Buildings

and make value from it

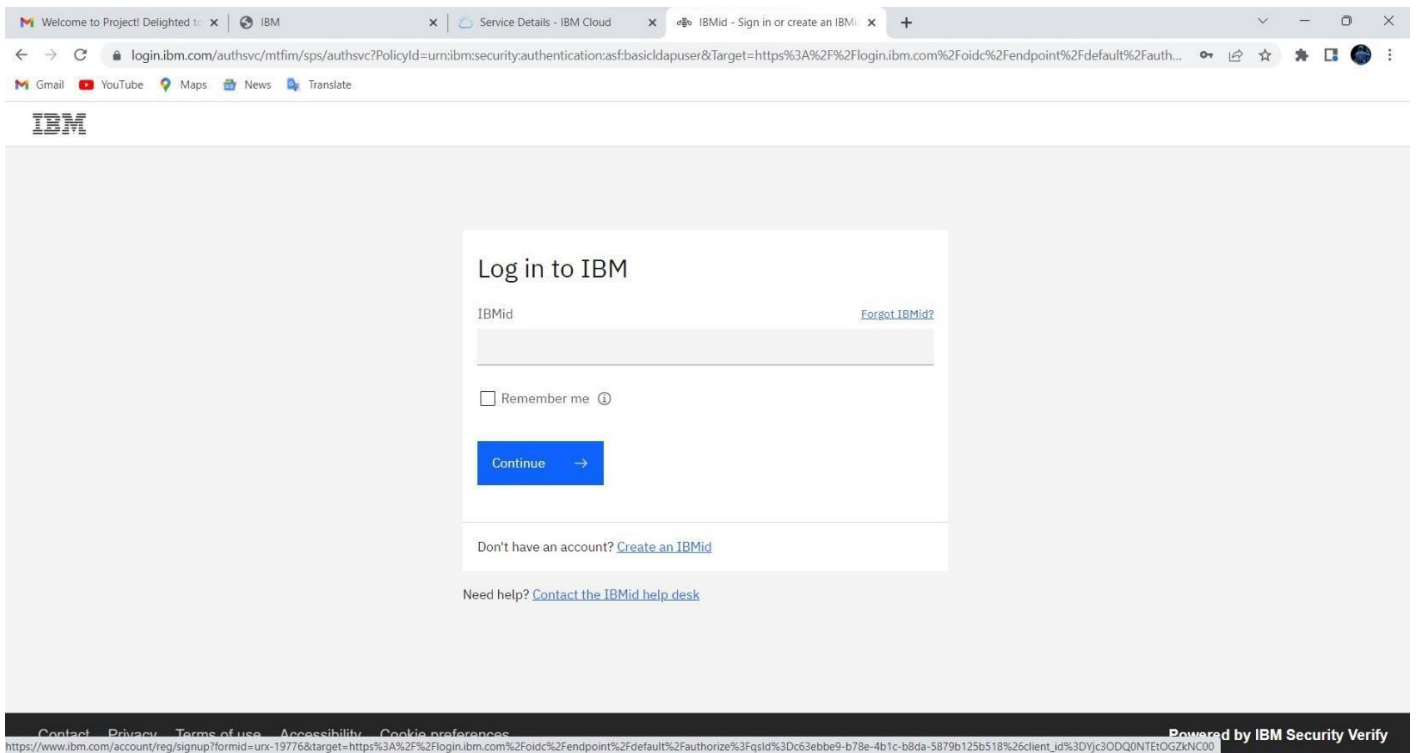
Learn More

Cookie Preferences

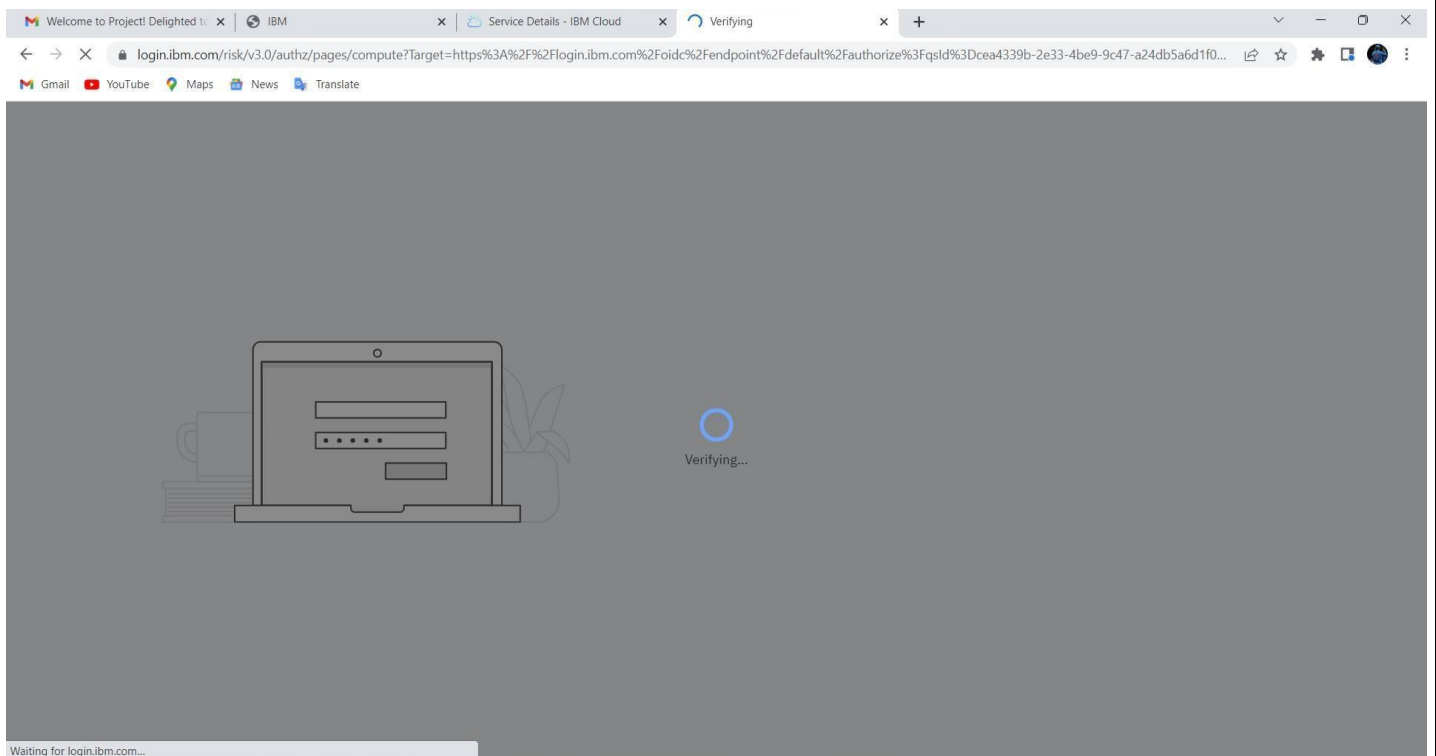
Step 10: Click on Sign in.



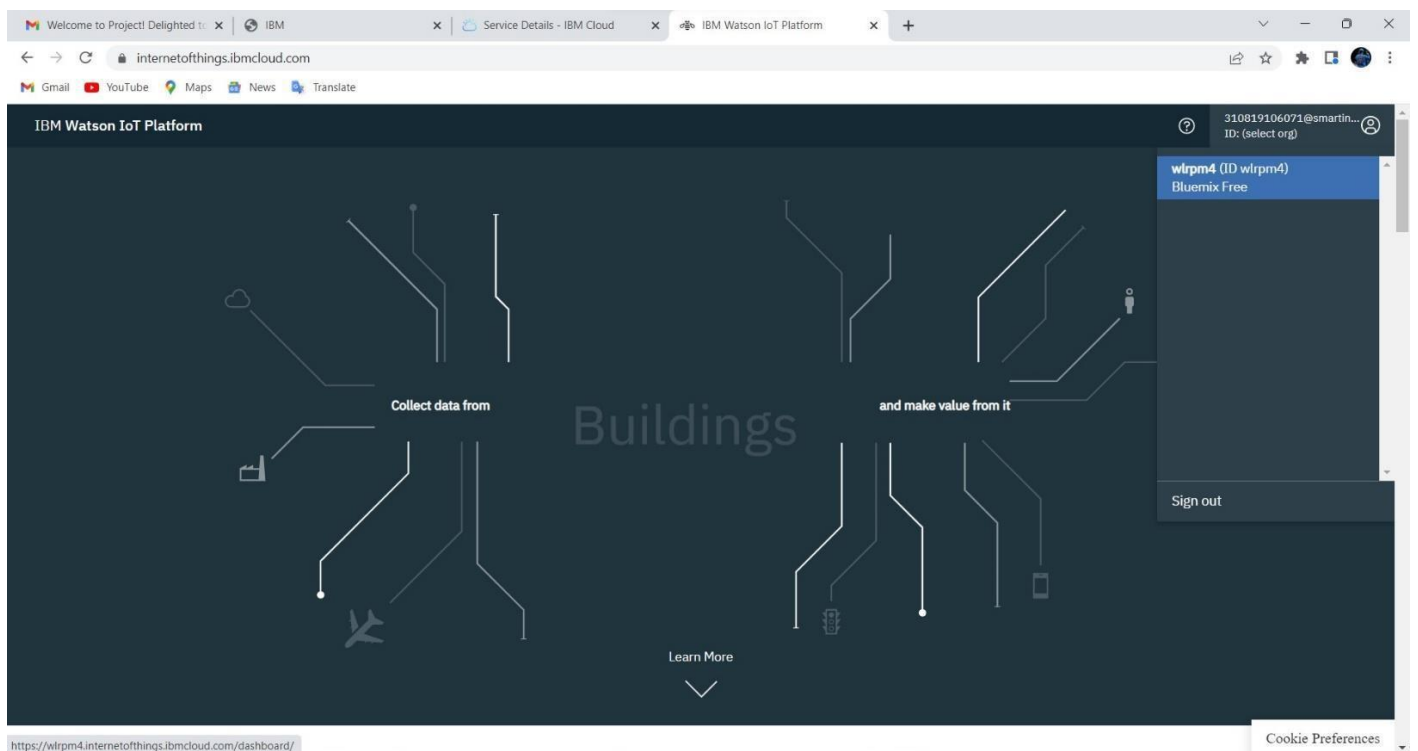
Step 11: Fill the login details.



## 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

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 < 1 >

Microsoft Store

0 Simulations running

Step 15: Click on Add Device.

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

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 'Add Device' form in the IBM Watson IoT Platform. The form is titled 'Add Device' and has a progress bar with four steps: Identity, Device Information, Security, and Summary. The 'Identity' step is currently active. Below the progress bar, 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 placeholder 'Select or create a device type...' and 'Device ID' with a placeholder 'Enter Device ID'. At the bottom right of the form, there are 'Cancel' and 'Next' buttons. Below the form, there is a 'Browse Devices' section and a status bar indicating '0 Simulations running' and 'Adobe Express'.

## Step 17: Fill the details.

The screenshot shows the 'Add Type' form in the IBM Watson IoT Platform. The form is titled 'Add Type' and has a progress bar with two steps: Identity and Device Information. The 'Identity' step is currently active. Below the progress bar, 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', 'Name' with a text input field containing '12345', and 'Description' with a text input field. Below the form, there is a status bar indicating '0 Simulations running'.

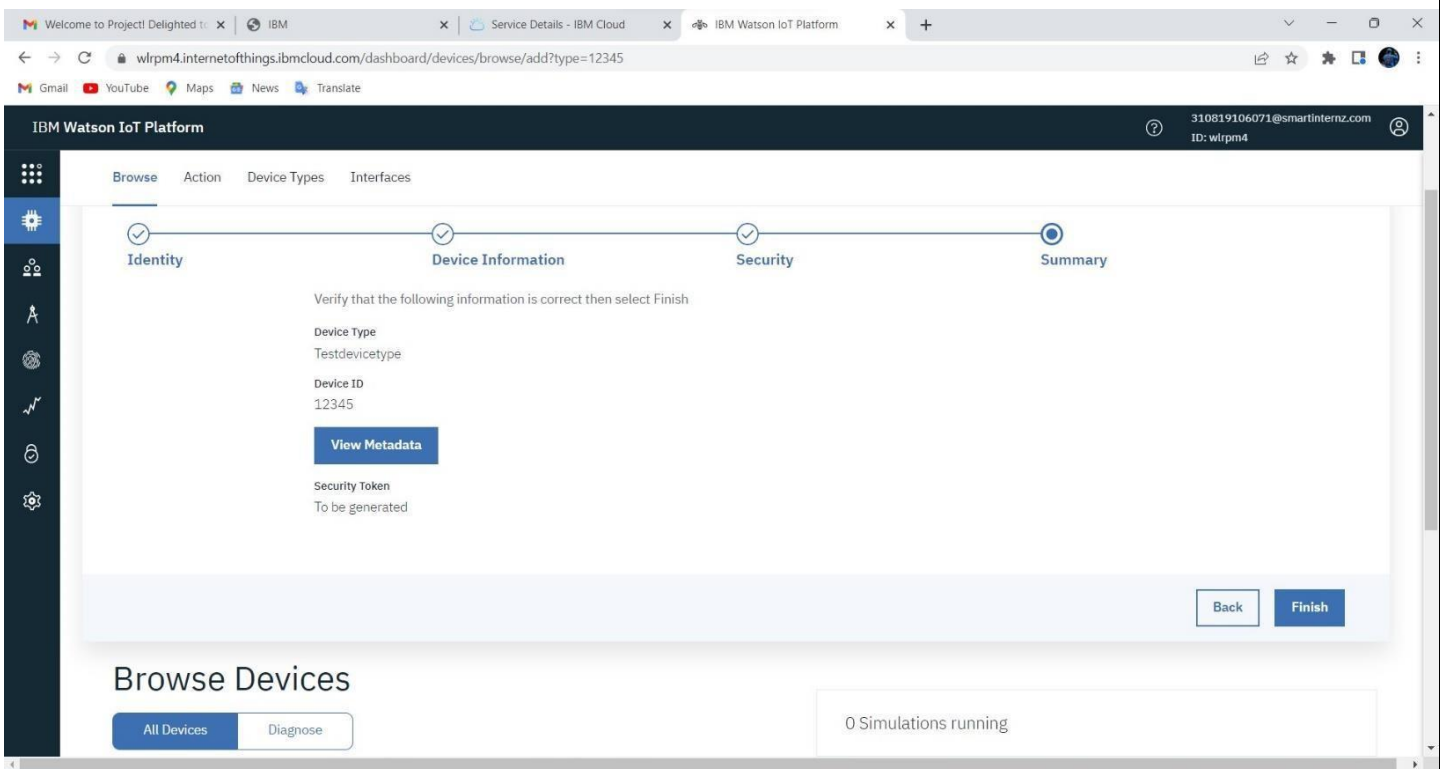
## Step 18: Click on Register Devices.

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The 'Device Types' tab is active. A message at the top states 'You added the new device type: 12345'. Below this, there are two tabs: 'Register Device' and 'Advanced Flow'. The 'Register Device' tab is selected, displaying the heading 'Optional Register Devices, Define Interfaces' and the text 'Now that you added a device type, you can register and connect devices for this type.' A blue button labeled 'Register Devices' is visible. On the right side of the dashboard, there is a large gear icon and a status bar indicating '0 Simulations running'.

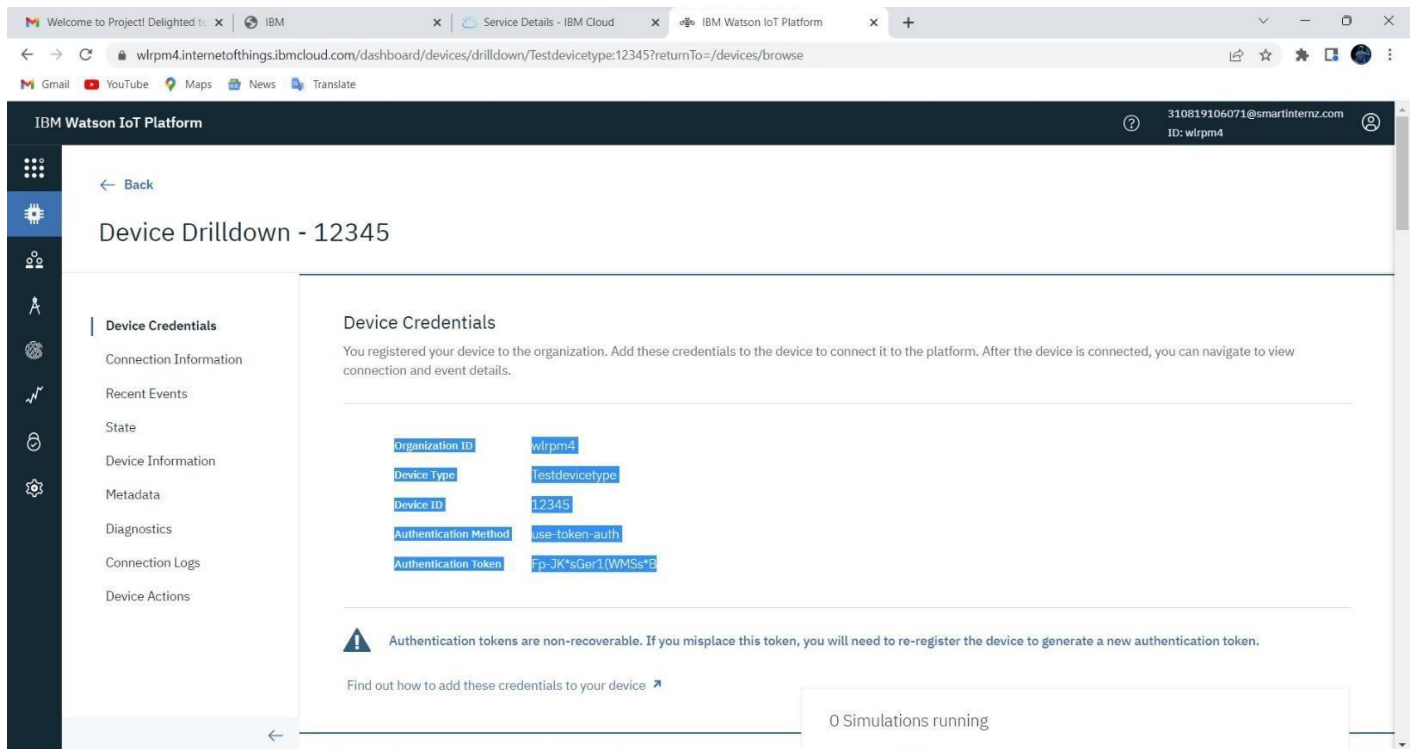
## Step 19: Give the device name which you have created and give Device ID.

The screenshot shows the 'Add Device' dialog box in the IBM Watson IoT Platform. The dialog has a progress bar with four steps: 'Identity', 'Device Information', 'Security', and 'Summary'. The 'Identity' step is currently active. Below the progress bar, 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 the value 'Testdevicetype' and 'Device ID' with the value '12345'. At the bottom right of the dialog, there are 'Cancel' and 'Next' buttons. The background shows the 'Browse Devices' section of the dashboard with '0 Simulations running'.

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 contains a navigation menu with icons for various settings. The 'DATA AND DEVICES' section is highlighted, and the 'Device Simulator' option is selected. The main content area displays the 'General Settings' for the Device Simulator. It includes a description: 'Simulate devices and device data to get up and running quickly on Watson IoT Platform. For more details see the [documentation](#).' Below this, there is a toggle switch for 'Activate Device Simulator' which is currently turned on. Further down, there is a section for 'Connection Security' with a button to 'Open Connection Security Policy'. At the bottom, there is a section for 'CA Certificates' with a description and a button to 'Upload a CA certificate'. The bottom right corner of the main content area shows '0 Simulations running'.

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

This screenshot is identical to the one above, showing the IBM Watson IoT Platform dashboard with the 'Device Simulator' settings. The 'Activate Device Simulator' toggle switch is clearly visible and turned on, indicating that the device simulator is now active.

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

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

wlrpm4.internetofthings.ibmcloud.com/dashboard/settings

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

## 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 ☒

### SECURITY

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.

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

wlrpm4.internetofthings.ibmcloud.com/dashboard/settings

IBM Watson IoT Platform 310819106071@smartinternz.com

## 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

### SECURITY

**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 use simulated event data and a list of steps to create a device simulation. The modal also includes 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 '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 is open on the right, allowing the user to configure an event for a selected device. The modal includes fields for 'Event type name', 'Frequency', and 'Payload'. The 'Payload' field contains a JSON object 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

Testdevicetype 12345

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 'Last Event Cache', 'Client Connection State API', 'DATA AND DEVICES' (with sub-links for 'Custom Device', 'Management Packages', and 'Device Simulator'), and 'SECURITY' (with sub-links for 'Connection Security', 'CA Certificates', 'Messaging Server Certificates', and 'Group Access' marked as 'beta'). The main content area is titled 'General Settings' and includes sections for 'Connection Security Policy' (with an 'Open Connection Security Policy' button), 'CA Certificates' (with an 'Add Certificate' button), and a 'Microsoft Store' button. A 'Simulations' panel is open on the right, showing '1/50 Simulations Running' and a 'New Simulation' button. Below this, it lists 'Device Type' as 'Testdevicetype' with '1 Event' and a toggle. A table 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.

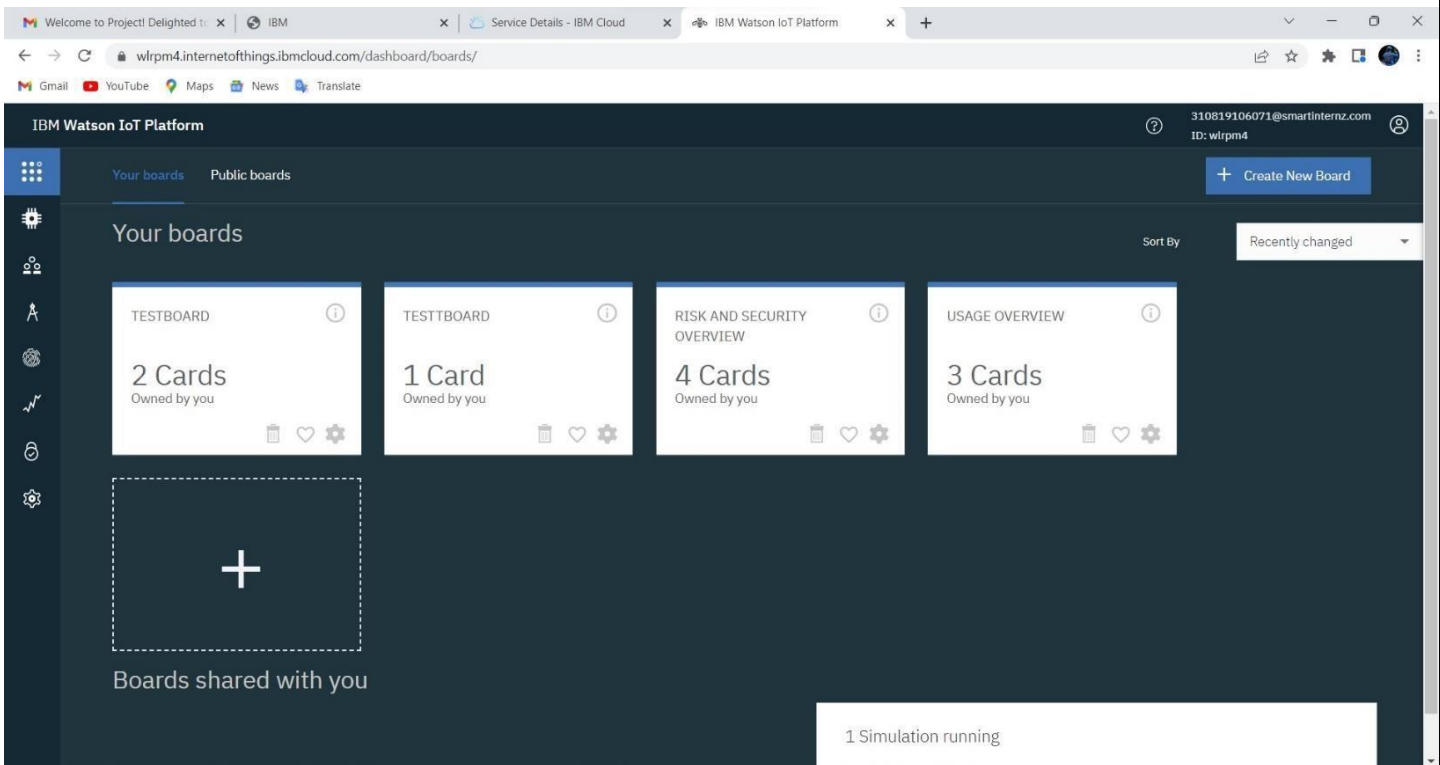
The screenshot shows the IBM Watson IoT Platform 'Devices' page. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces', along with an 'Add Device' button. A search bar is labeled 'Search by Device ID'. The 'Device Simulator' toggle is turned on. A table lists devices with columns: Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. One device is listed with ID '12345', Status 'Disconnected', and Device Type 'Testdevicetype'. Below the table, a modal window titled 'Identity' is open, showing tabs for 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, displaying a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this is 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 seconds ago

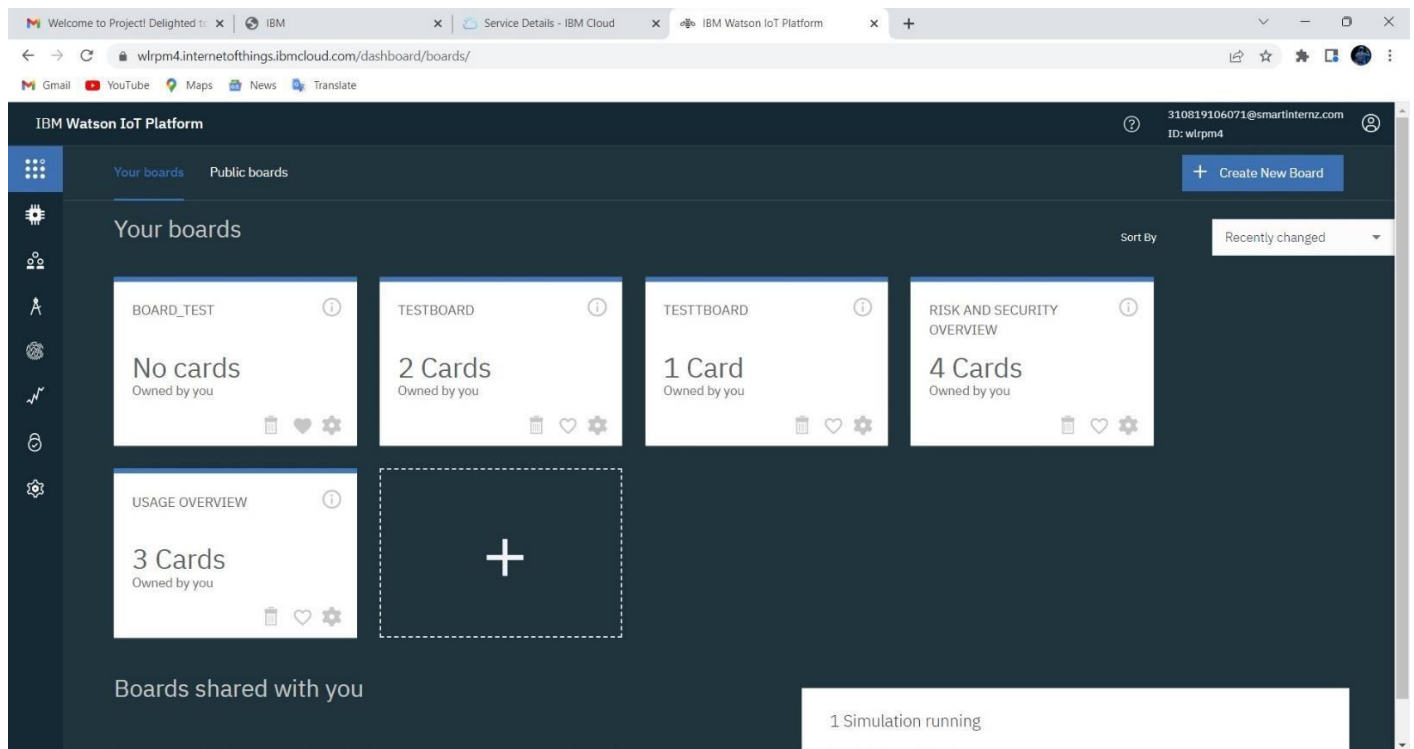
At the bottom right of the modal, a status indicator shows '1 Simulation running'.



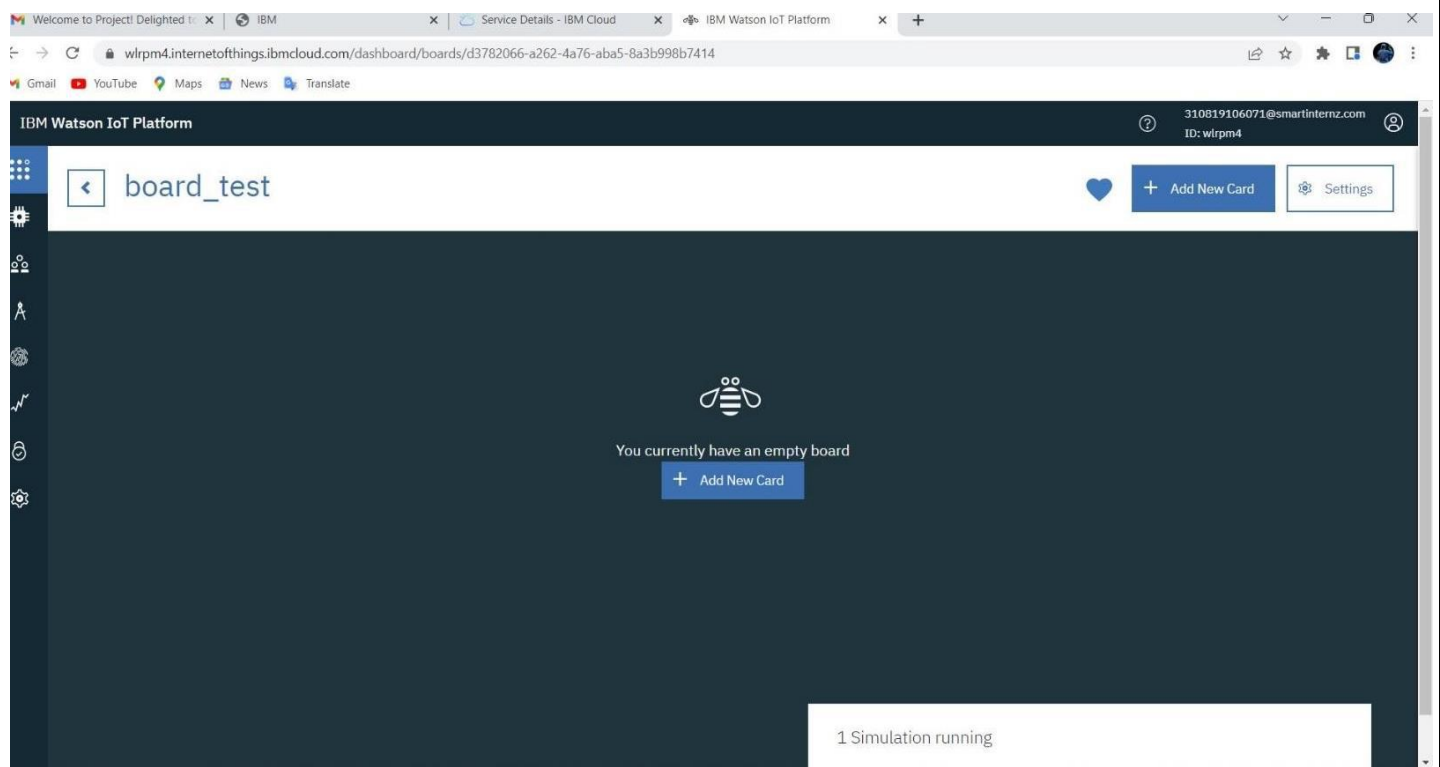
Step 30: Go to Board and click on + Create New Board, fill the details and create a board.



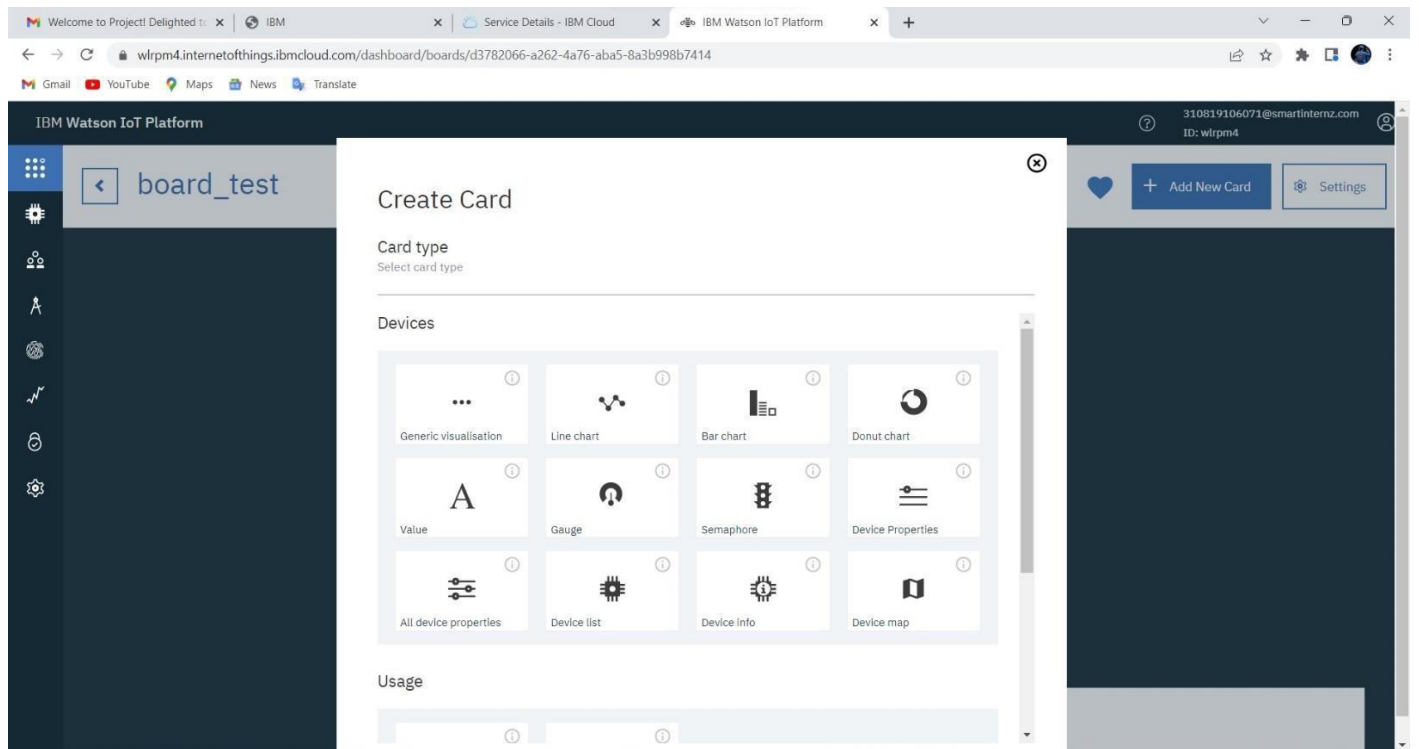
Step 31: Click on the board which is created.



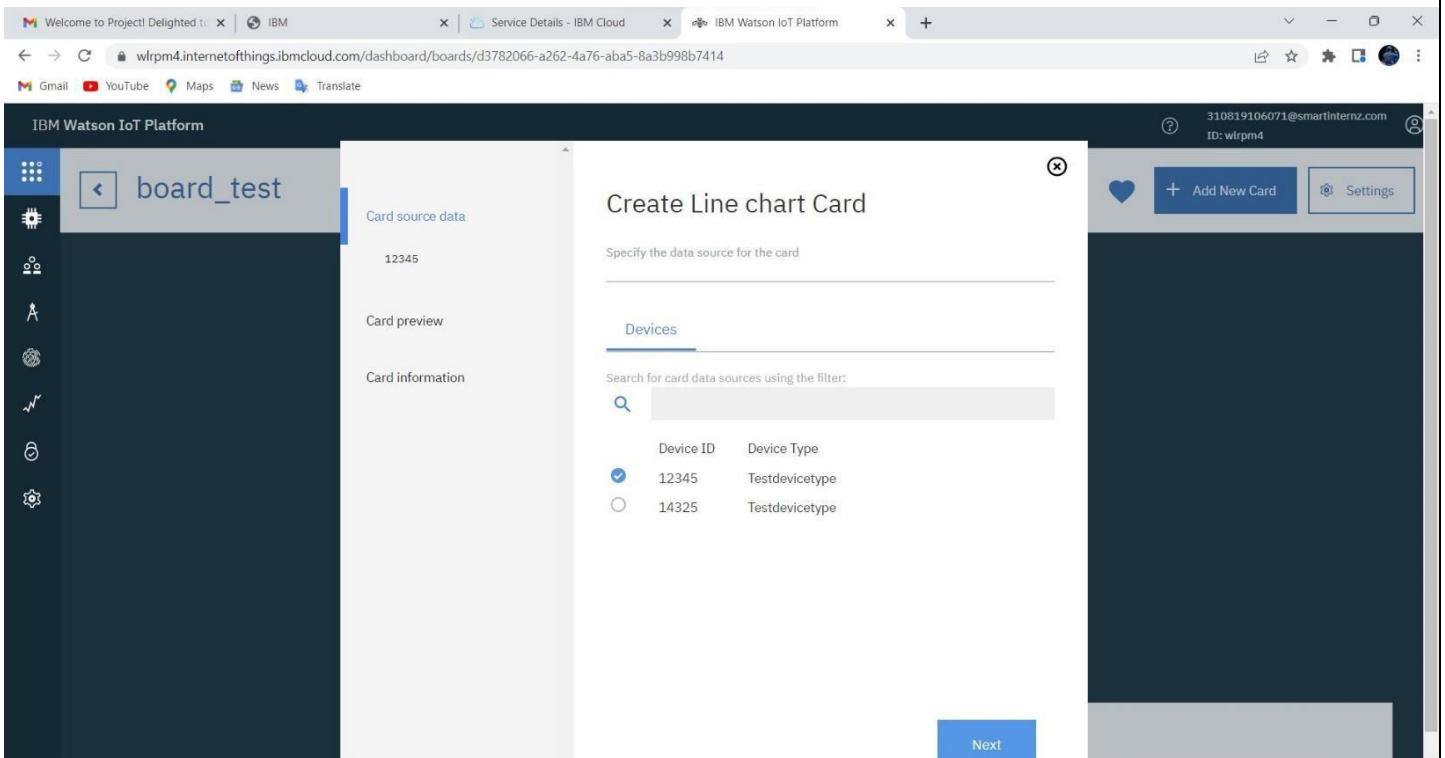
## Step 32: Go Add New Card.



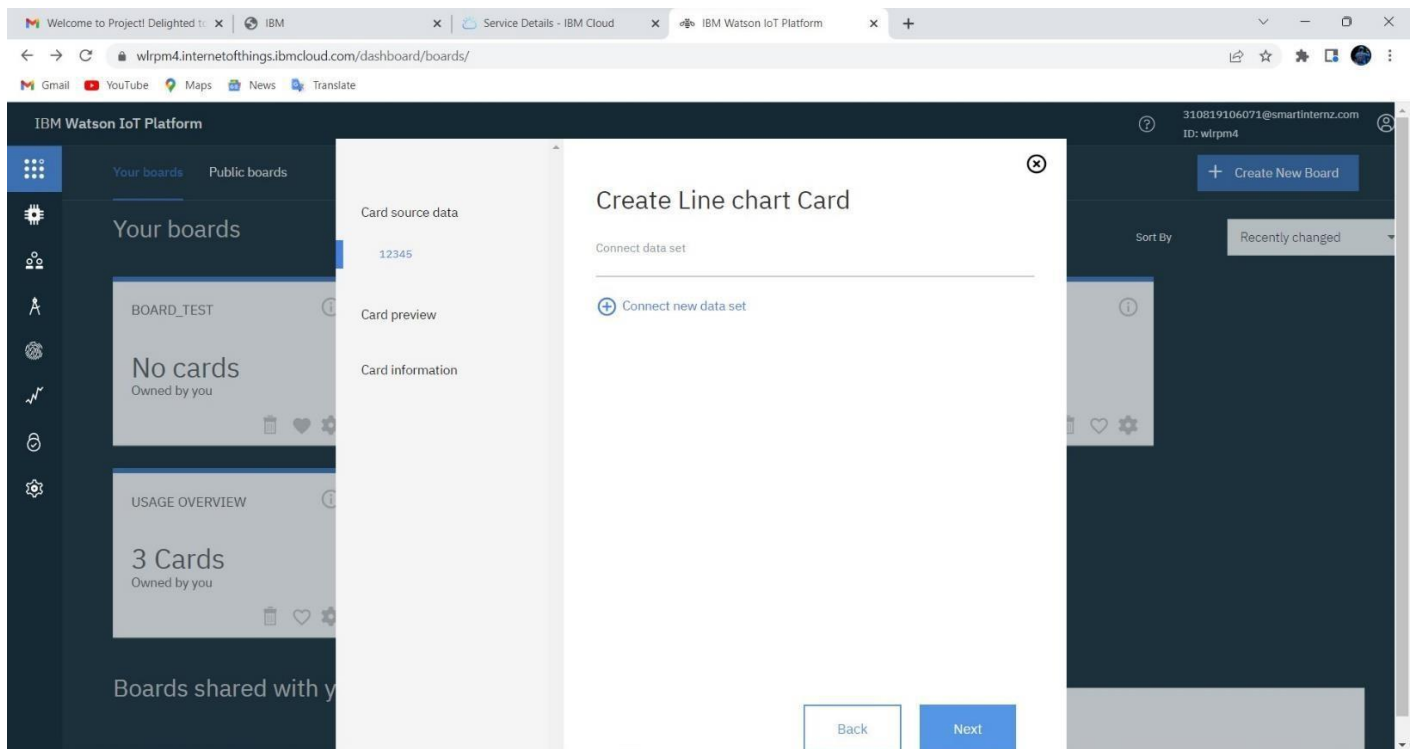
## Step 33: Choose the Card Type.



## 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 'Connect data set' section. The data set is 'temperature'. The 'Event' field is 'event\_1'. The 'Property' field is 'temperature'. The 'Name' field is 'temperature'. The 'Type' field is 'Number' and the 'Unit' field is '°C'. The 'Min' field is '0' and the 'Max' field is '100'. There are 'Back' and 'Next' buttons at the bottom.

IBM Watson IoT Platform

board\_test

Card source data

12345

Card preview

Card information

Create Line chart Card

Connect data set

temperature

Event

event\_1

Property

temperature

Name

temperature

Type

Number

Unit

°C

Min

0

Max

100

Back

Next

Step 37: Choose the Colour.

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 an 'Enter title and description of the card' section. The 'Title' field is 'Line chart'. The 'Color scheme' field shows five color options: purple, red, green, blue, and teal. The description is 'A line chart to display time series information with historic and live data'. There are 'Back' and 'Submit' buttons at the bottom.

IBM Watson IoT Platform

Your boards

Public boards

BOARD\_TEST

No cards

Owned by you

USAGE OVERVIEW

3 Cards

Owned by you

Boards shared with you

Create Line chart Card

Enter title and description of the card

Title

Line chart

Color scheme

A line chart to display time series information with historic and live data

Back

Submit

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. The main area displays a 'Create Gauge Card' dialog. The dialog has a 'Specify the data source for the card' section with a 'Devices' tab selected. Below this, there is a search bar and a table of devices. The table has two columns: 'Device ID' and 'Device Type'. The first row shows '12345' as the Device ID and 'Testdevicetype' as the Device Type, with a checked radio button next to it. The second row shows '14325' as the Device ID and 'Testdevicetype' as the Device Type, with an unchecked radio button next to it. A 'Next' button is at the bottom right of the dialog. In the background, a line chart is visible on the dashboard.

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 IBM Watson IoT Platform dashboard. The top bar includes the IBM logo and user information. The main area is divided into two panels. The left panel, titled 'Gauge', displays a semi-circular gauge with the value '80.0 %'. The right panel, titled 'Line chart', displays a line graph with a purple line representing 'temperature' data over time. The x-axis shows timestamps from 13:21 to 13:25. A '5 minutes' dropdown menu is visible below the chart. At the bottom right, a status bar indicates '1 Simulation running'.

**Result:**

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