

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

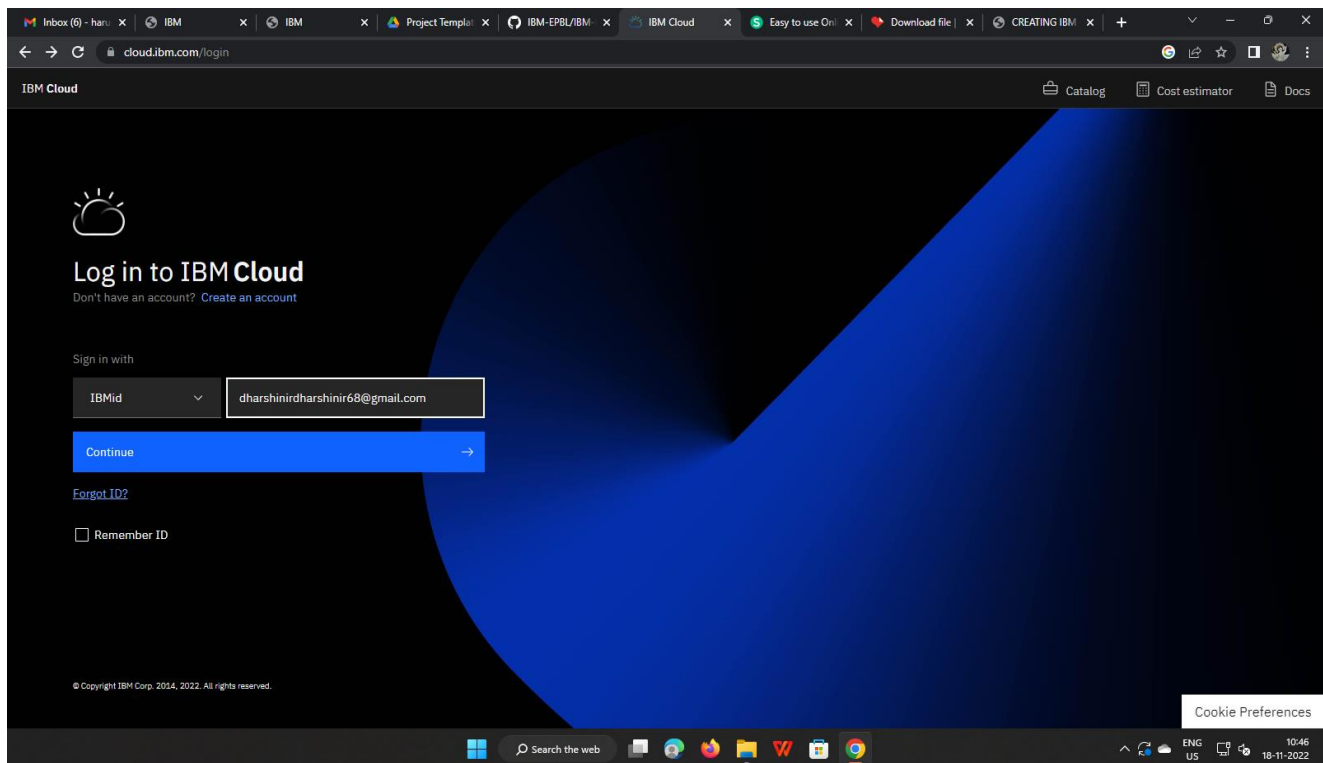
Date	12 November 2022
Team ID	PNT2022TMID33687
Project Name	Gas leakage monitoring and alerting system for industries

## AIM:

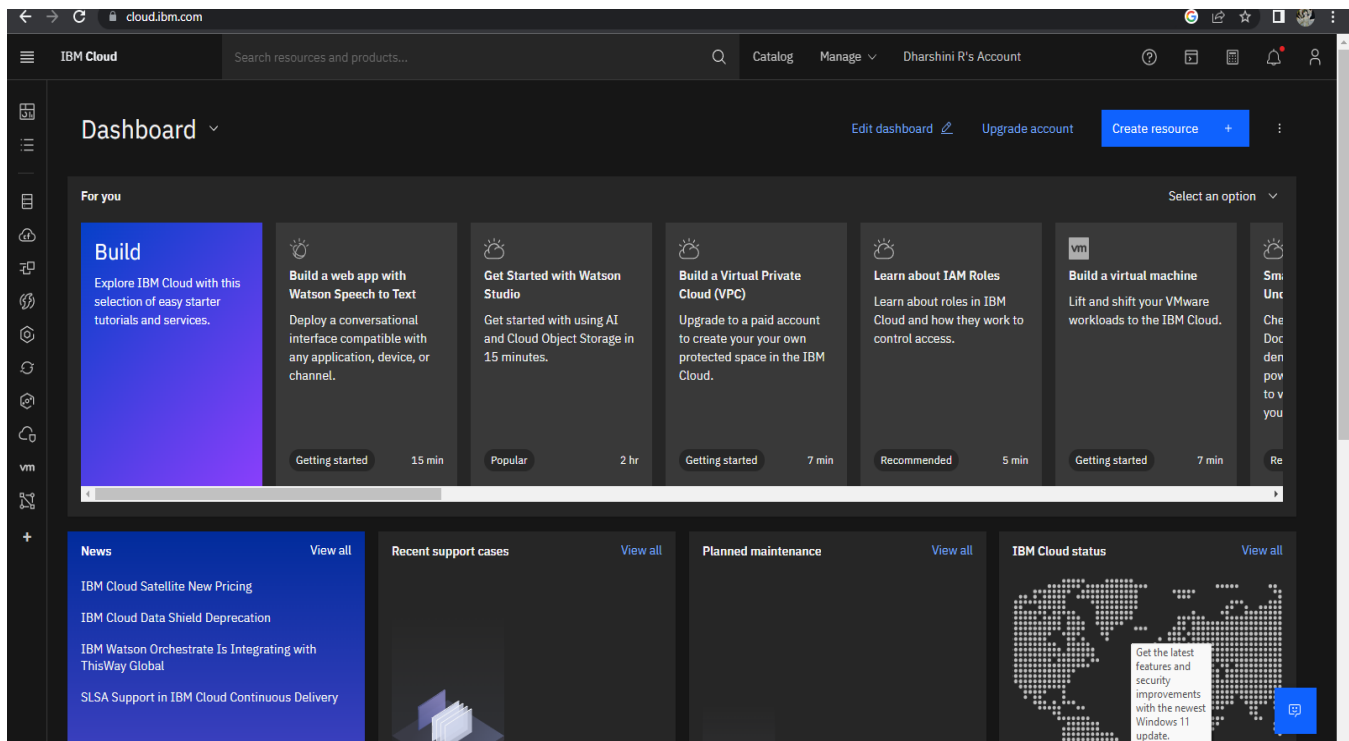
To create the IBM Watson IOT platform and device.

## Steps to be followed

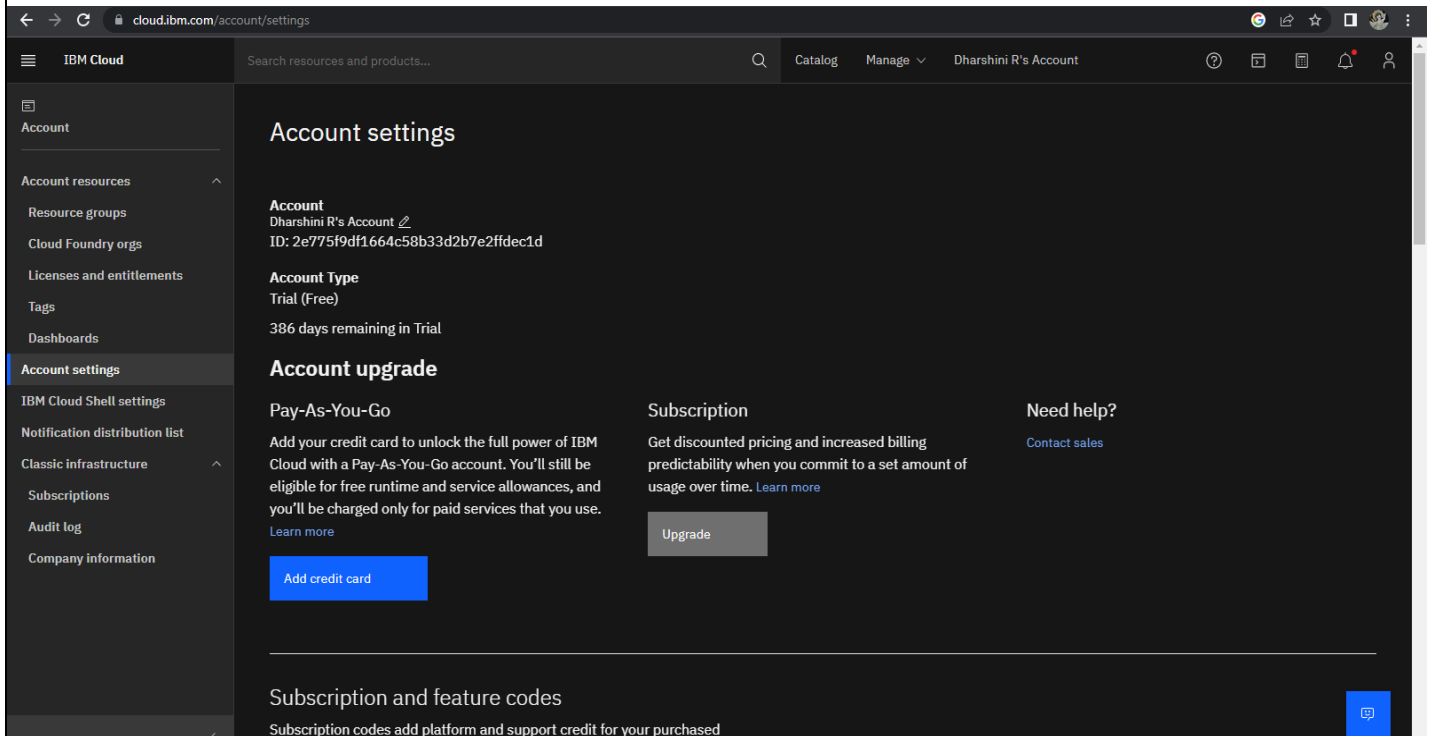
Step 1: Firstly, create an IBM cloud account with IBM id and password.



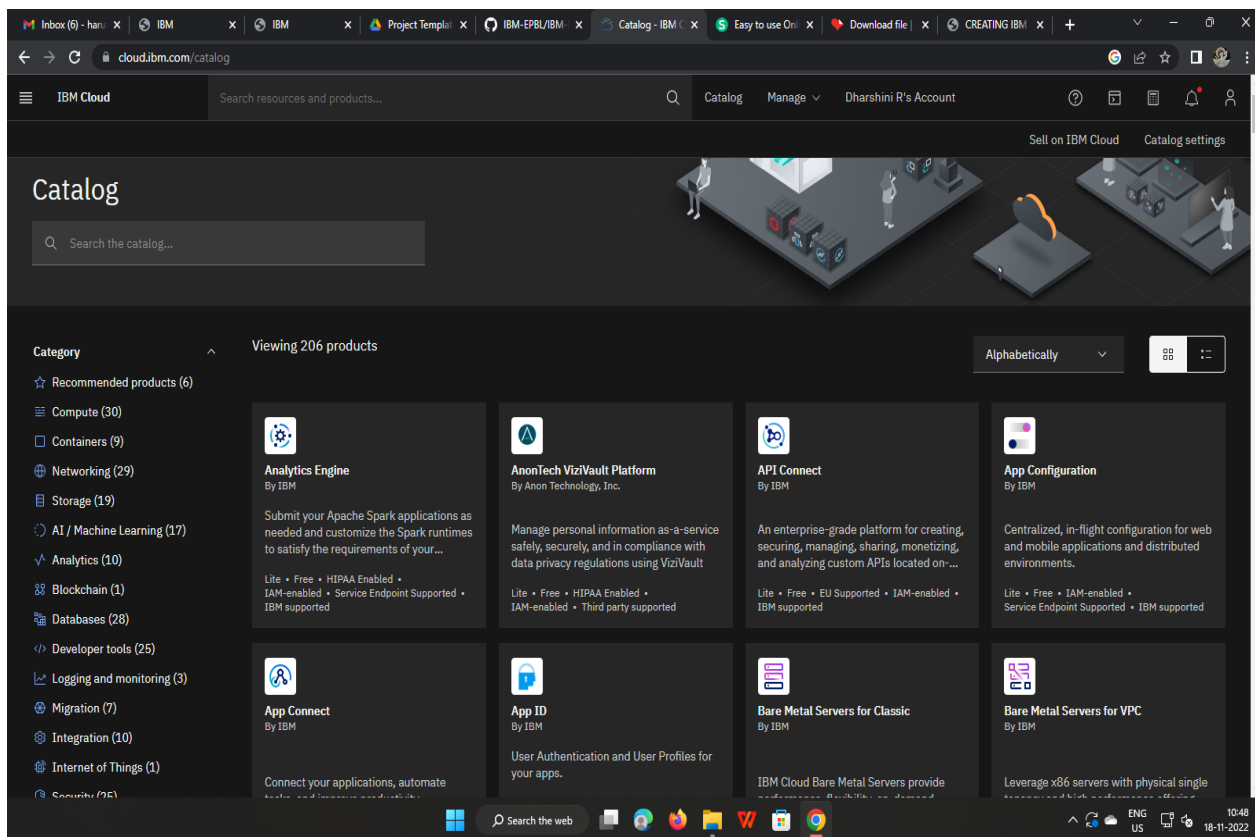
## Step 2: Home page of IBM cloud.



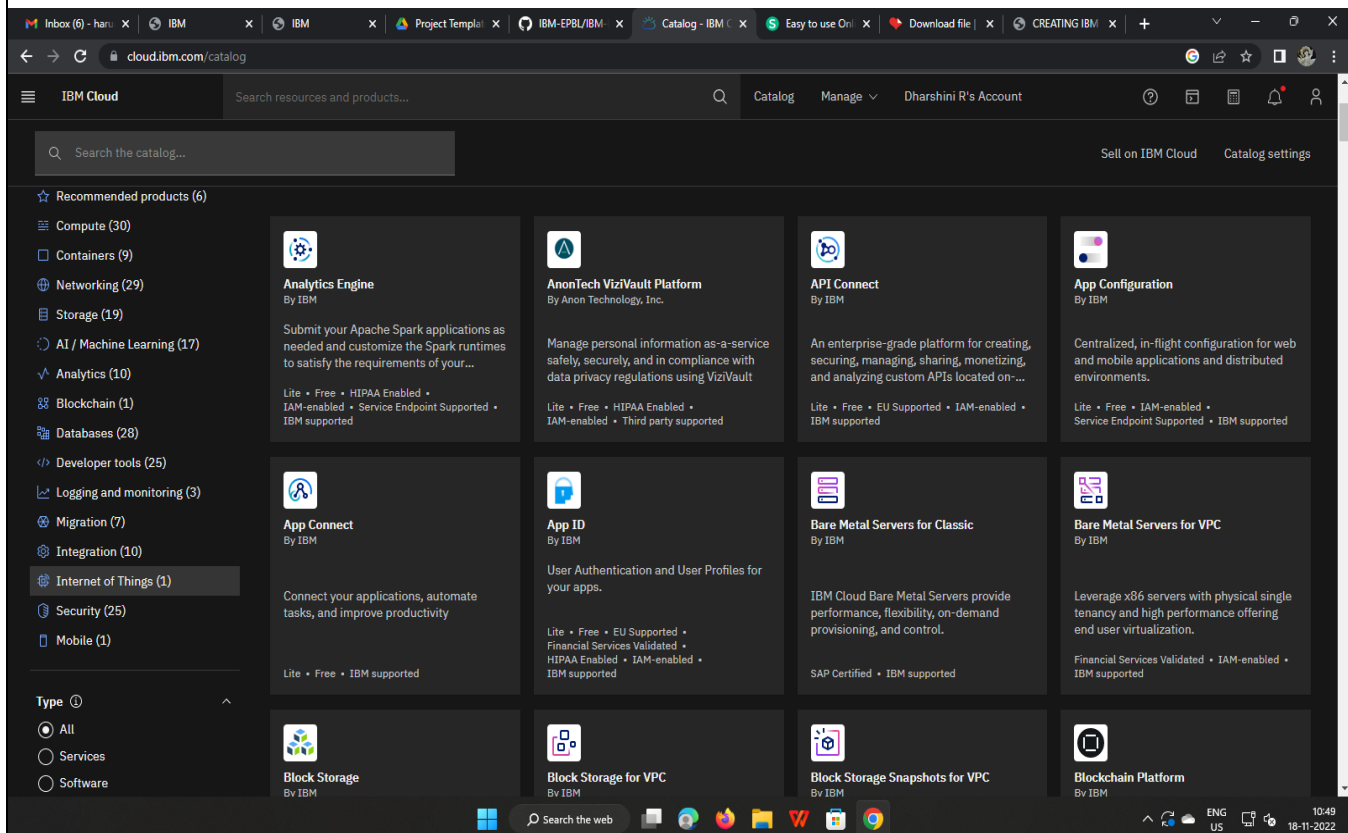
## Step 3: Click on the catalog on the top.



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.

The screenshot shows the IBM Cloud console interface for the 'Internet of Things Platform'. The 'Select a pricing plan' section is active, displaying a table with the 'Lite' plan selected. The plan details include up to 500 registered devices and 200 MB of data per month. The 'Configure your resource' section is also visible, showing fields for 'Service name' (Internet of Things Platform-fi), 'Resource group' (Default), and 'Tags'.

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-fi

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-fi  
Resource group: Default

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

Create

Add to estimate

Step 7: Tick agreements and then click on create.

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**Internet of Things Platform** Free

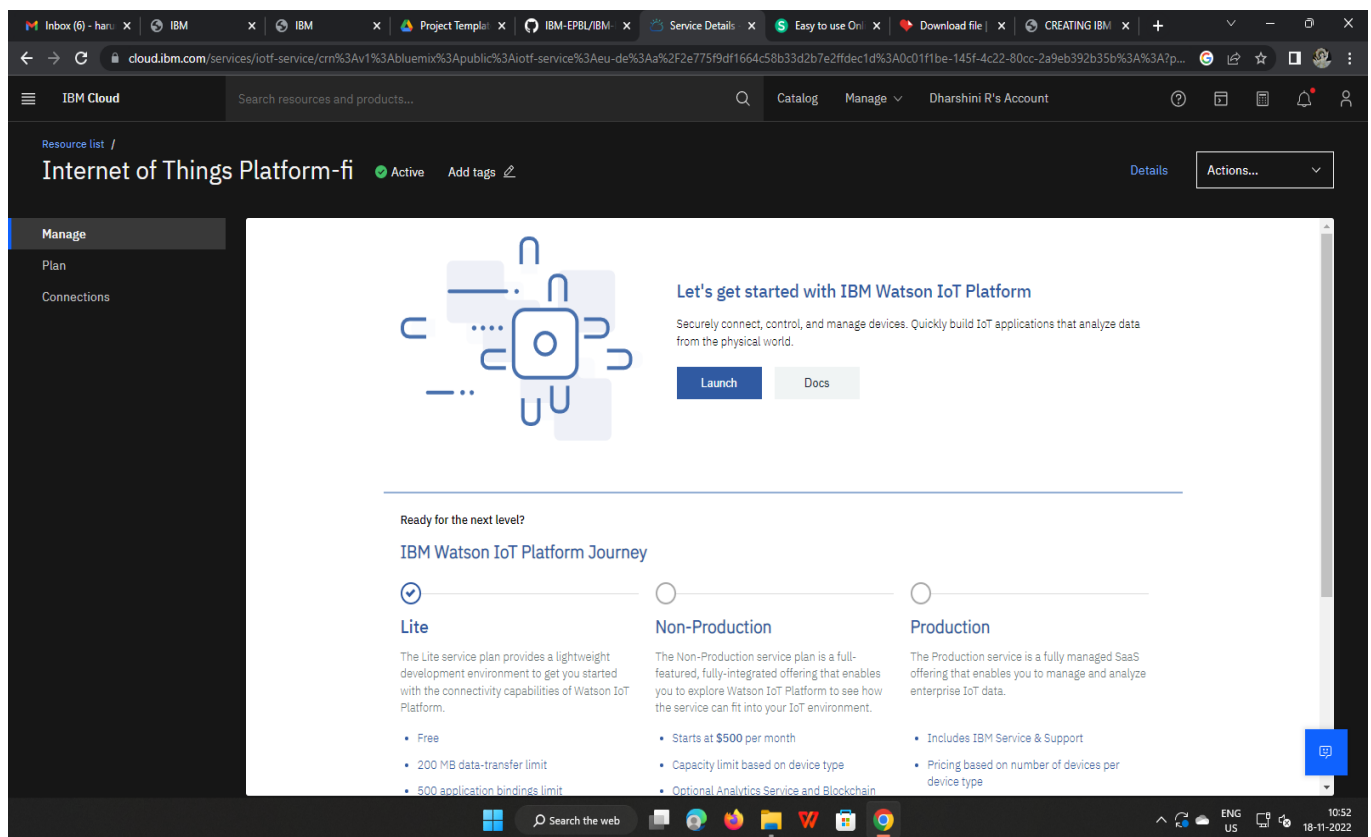
Location: Frankfurt  
Plan: Lite  
Service name: Internet of Things Platform-fi  
Resource group: Default

☒ I have read and agree to the following license agreements:  
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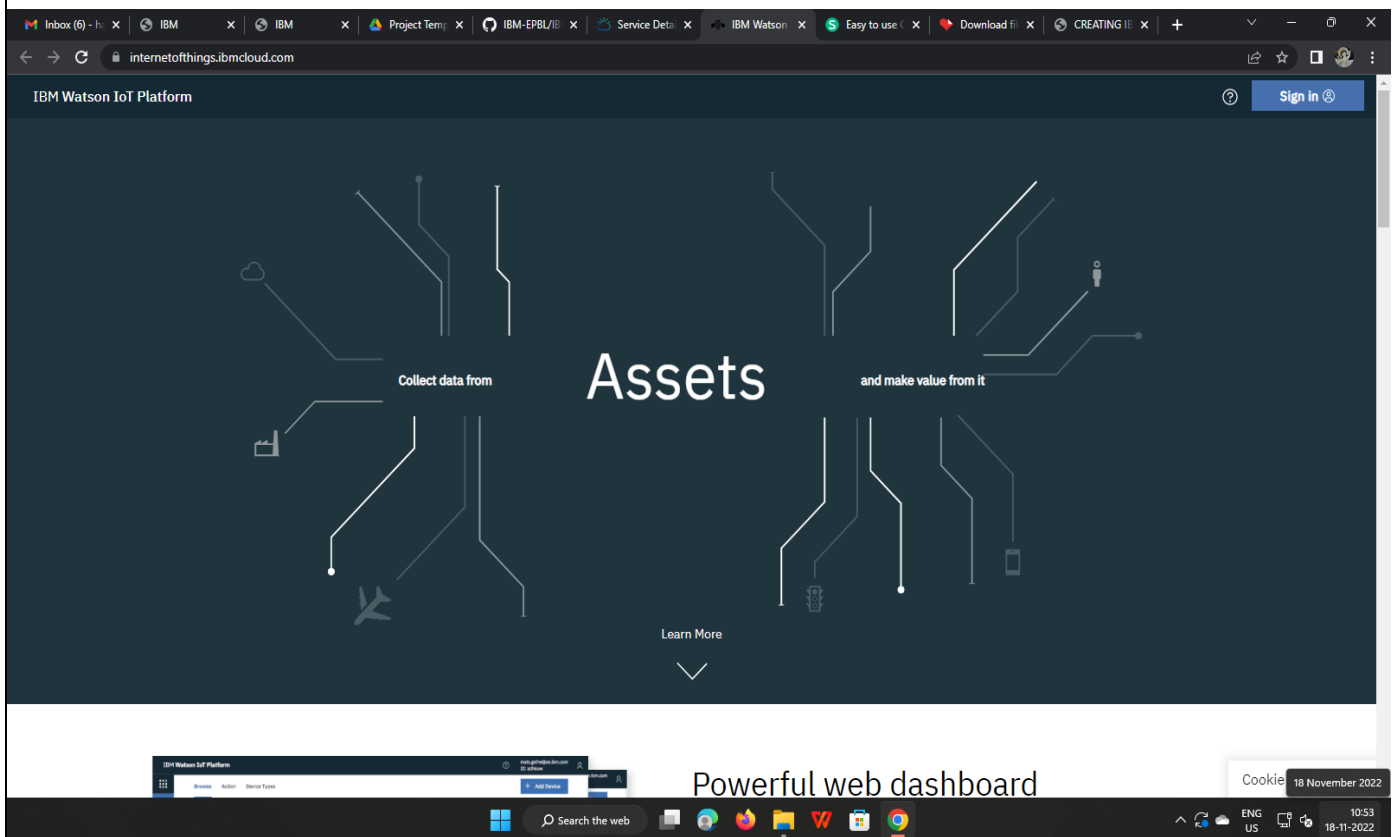
Create

Add to estimate

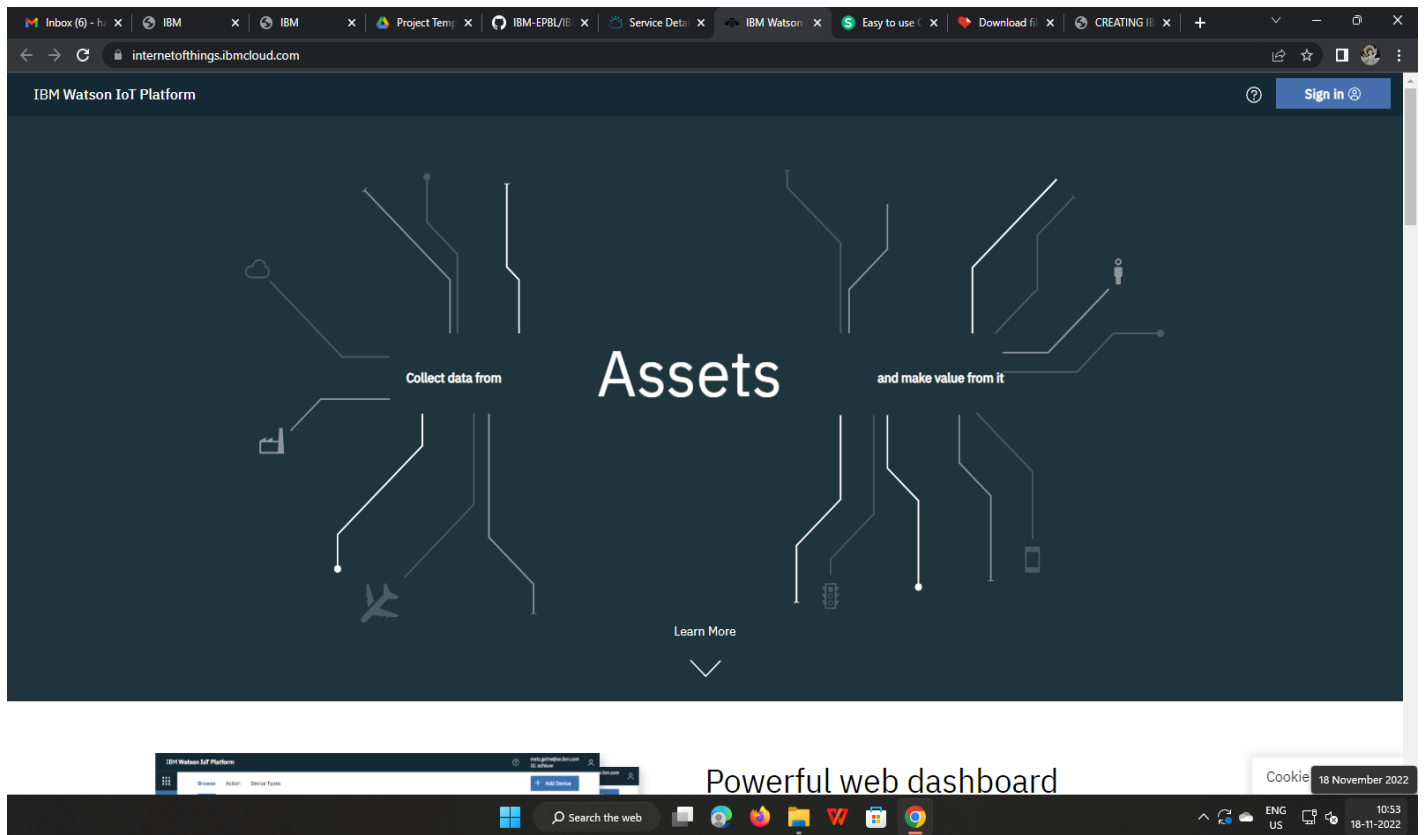
Step 8: Click on the launch button.



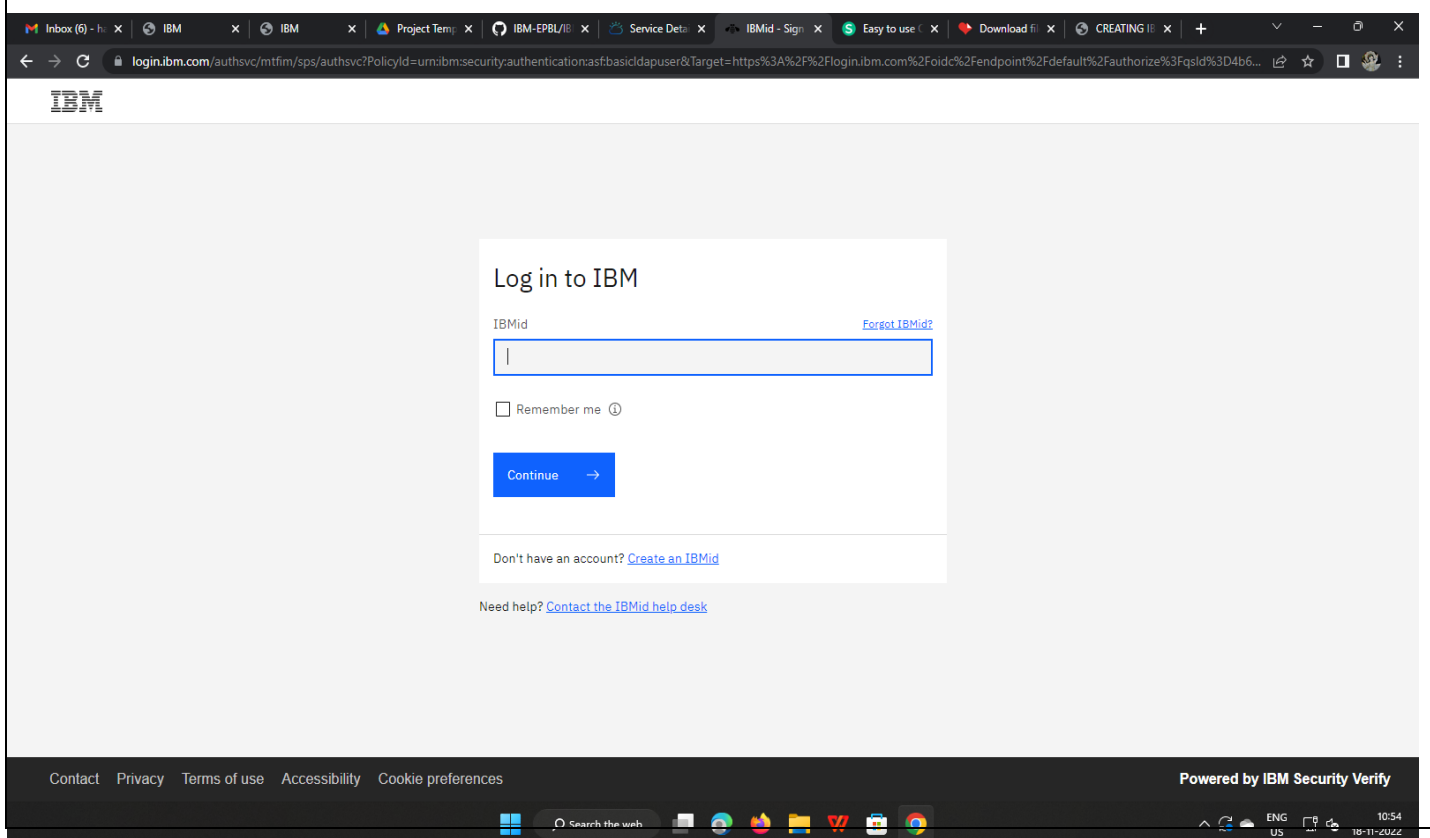
Step 9: After clicking on the launch button this tab will open.



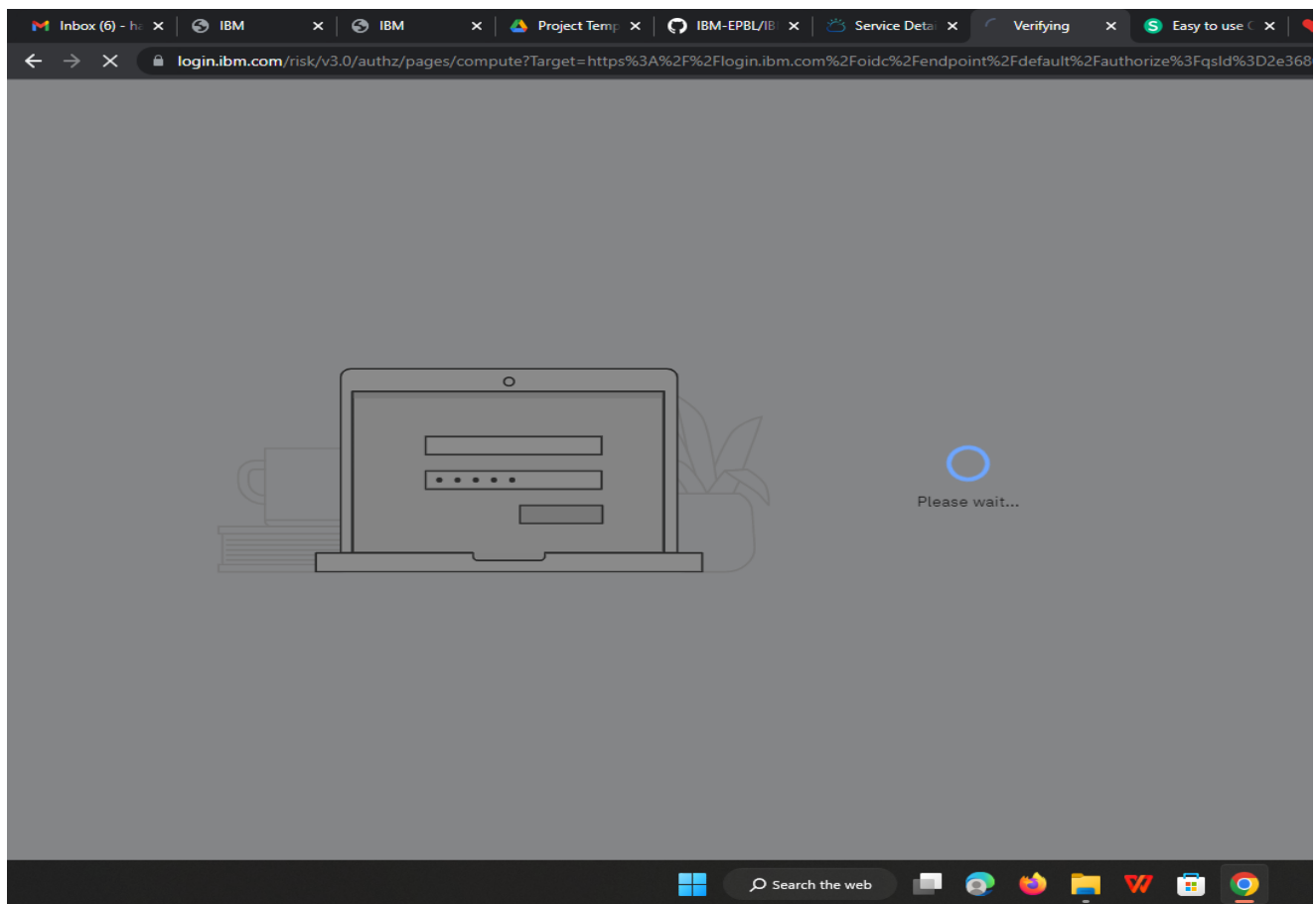
Step 10: Click on Sign in.



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 12: Sign in on progress.

The screenshot shows a web browser window with the URL `internetofthings.ibmcloud.com`. The page title is "IBM Watson IoT Platform". The main content area features a dark blue background with the word "Assets" in large white text. To the left of "Assets" is the text "Collect data from" with a small icon of a factory and a cloud. To the right is the text "and make value from it" with a small icon of a person and a cloud. Below "Assets" is a "Learn More" link with a downward arrow. On the right side, there is a user profile dropdown menu showing the email `dharshinir68@gmail.com` and the text "f18evw (ID: f18evw) Bluemix Free". Below this menu is a "Sign out" button. At the bottom of the page, there is a "Powerful web dashboard" text and a "Cookie Preferences" button. The browser's taskbar at the bottom shows various application icons and the system clock indicating 10:58 on 18-11-2022.



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	Added By
<p>You don't have any devices.</p> <p>Create a device.</p>							

Search the web

ENG US 10:59 18-11-2022

Step 15: Click on Add Device.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

## Browse Devices

All Devices Diagnose

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Device Simulator

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By
<p>You don't have any devices.</p> <p>Create a device.</p>							

Search the web

ENG US 10:59 18-11-2022

Step 16: Click on Device Type.

Step 17: Fill the details.

BrowseActionDevice TypesInterfaces

Add Type

Identity

Device Information

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.

Type

DeviceOrGateway

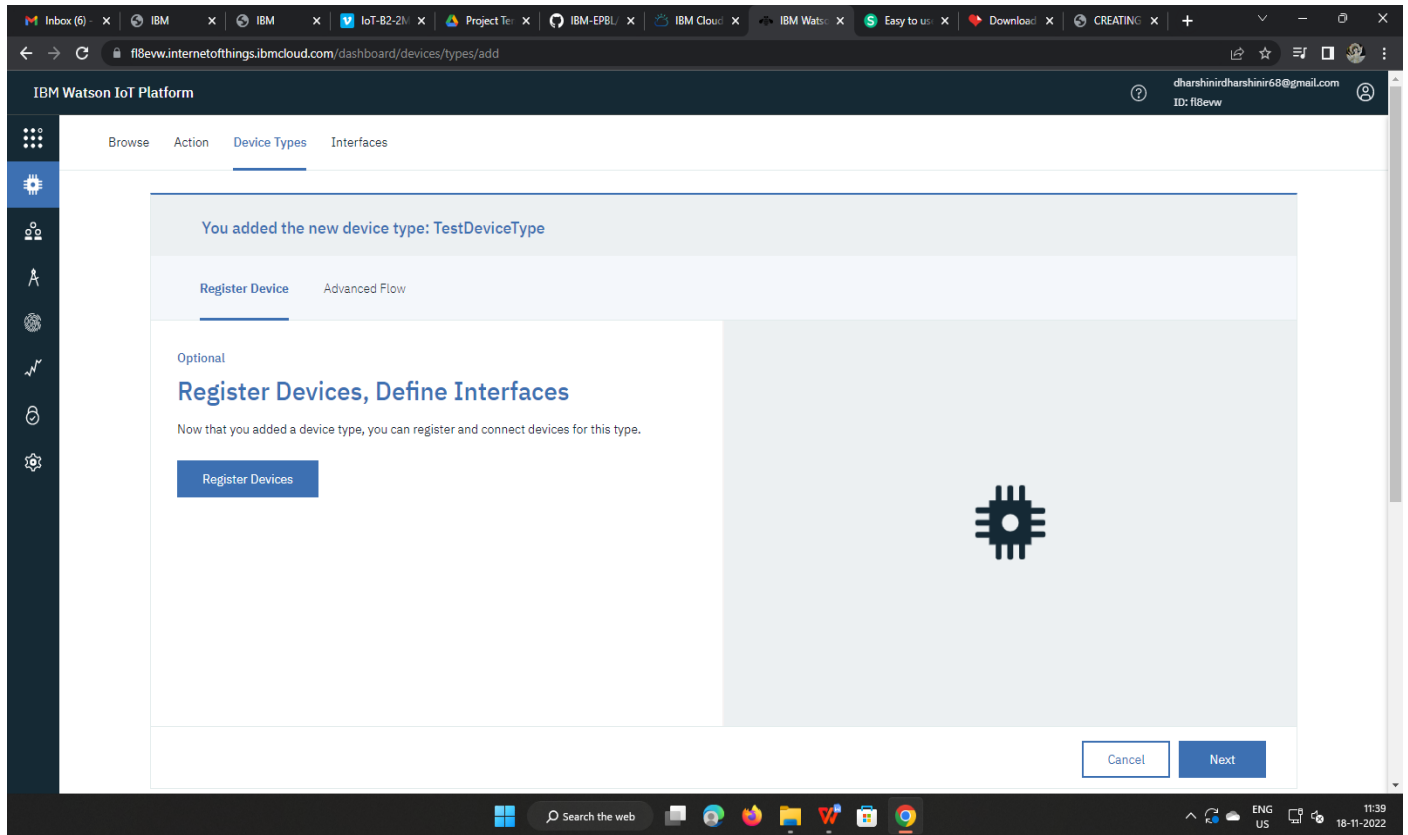
Name

TestDeviceType

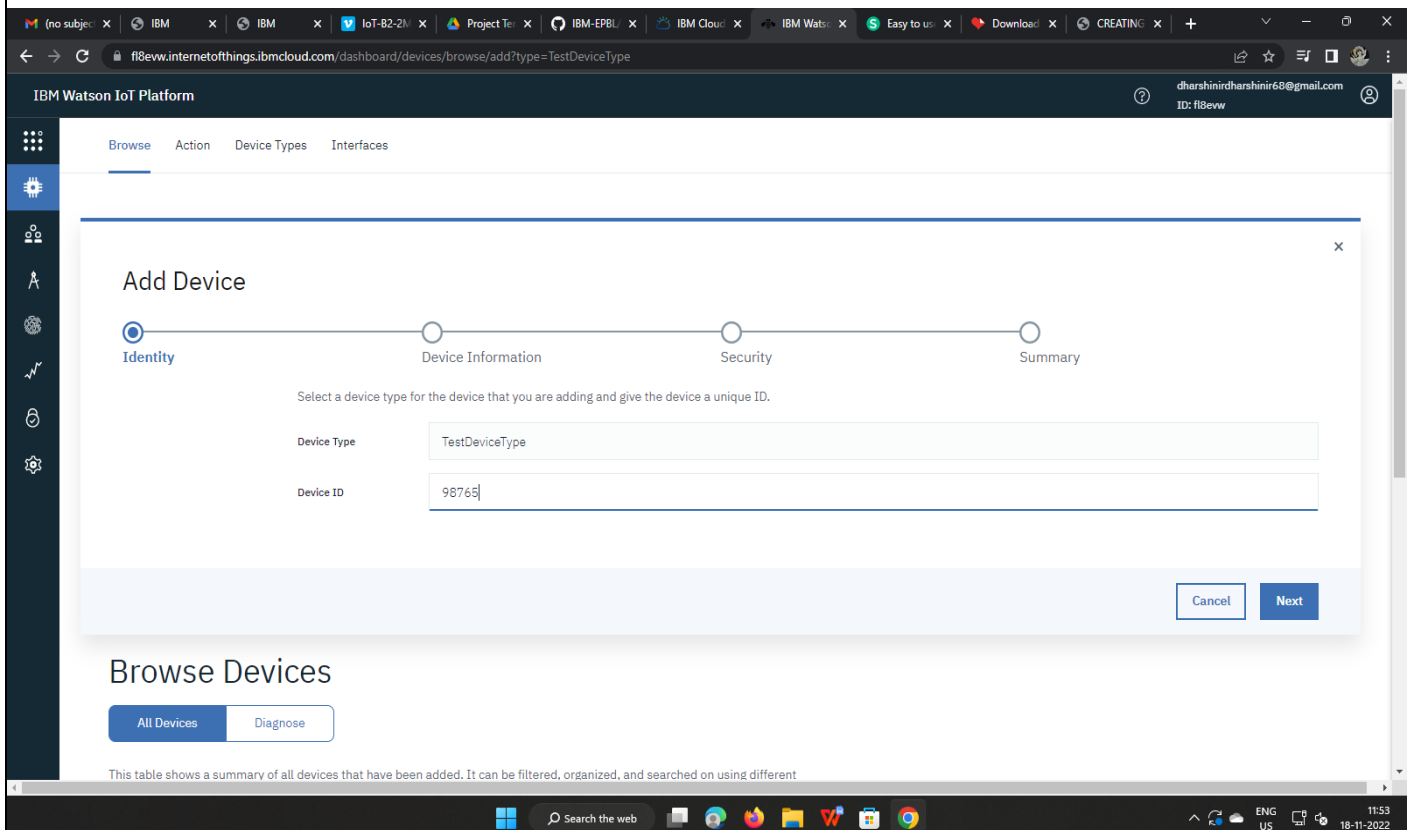
The device type name is used to identify the device type uniquely and uses a restricted set of characters to make it suitable for API use.

Description

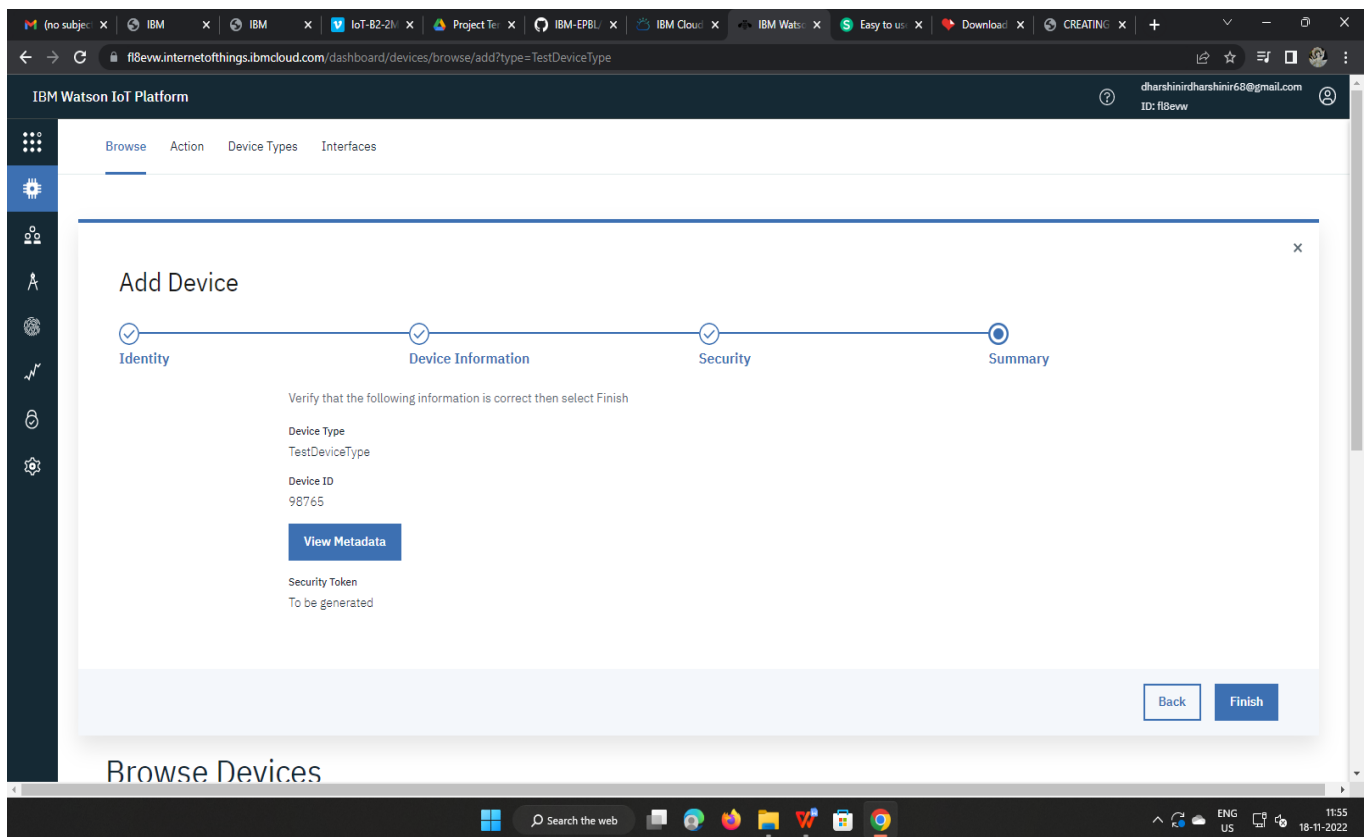
Step 18: Click on Register Devices.



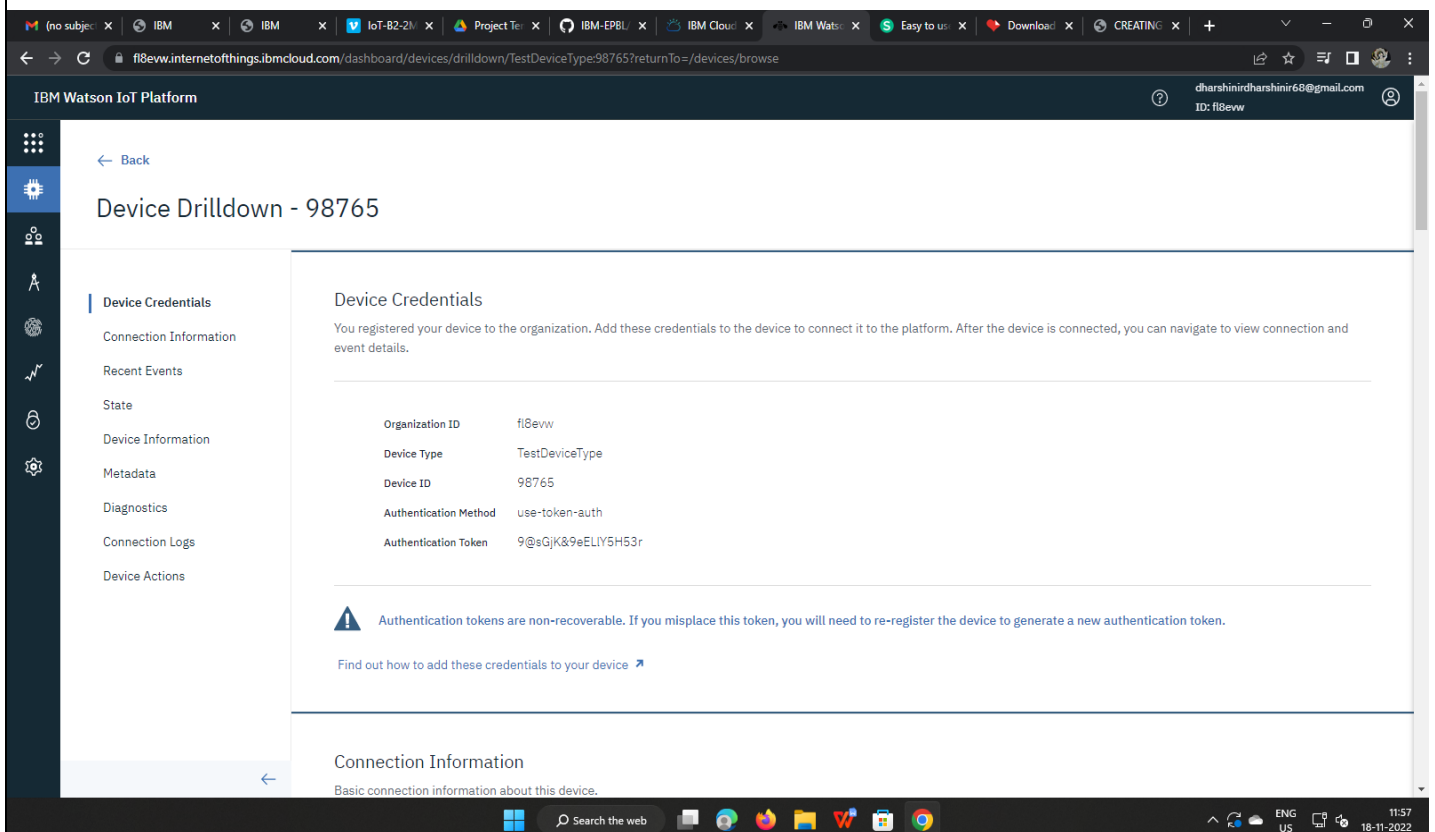
Step 19: Give the device name which you have created and give Device ID.



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.

- Identity
- Experimental Features
- Last Event Cache
- Client Connection State API
- DATA AND DEVICES**
  - Custom Device Management Packages
  - Device Simulator**
- SECURITY**
  - Connection Security
  - CA Certificates
  - Messaging Server Certificates
  - Group Access beta

### 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 certificates. You can enforce TLS client authentication by configuring the Risk Management [Connection Security policy](#)

[+ Add Certificate](#)

0 Simulations running

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

IBM Watson IoT Platform

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0 Simulations running

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

IBM Watson IoT Platform

## General Settings

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- Identity
- Experimental Features
- Last Event Cache
- Client Connection State API

### DATA AND DEVICES

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- Device Simulator**

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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.

- PLATFORM
- About
- Identity
- Experimental Features
- Last Event Cache
- Client Connection State API

### DATA AND DEVICES

- Custom Device Management Packages
- Device Simulator**

### SECURITY

- Connection Security
- CA Certificates

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[+ Add Certificate](#)

#### 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 dashboard at the URL `fi8eww.internetofthings.ibmcloud.com/dashboard/settings`. The left sidebar contains navigation links for PLATFORM, DATA AND DEVICES, and SECURITY. The main content area is titled "General Settings" and includes sections for Device Simulator, Connection Security, and CA Certificates. A "Simulations" modal is open on the right, 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 the steps is a text input field labeled "Select or create a device type...".

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

**PLATFORM**

- About
- Identity
- Experimental Features
- Last Event Cache
- Client Connection State API

**DATA AND DEVICES**

- Custom Device Management Packages
- Device Simulator**

**SECURITY**

- Connection Security
- CA Certificates

**Device Simulator**

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Activate Device Simulator ☒

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You can use the Connection Security Policy to configure the security level for device connections. For more information, see [Connection Security policy](#).

[Open Connection Security Policy](#)

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[+ Add Certificate](#)

**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.

## Step 27: Type the code.

The screenshot shows the IBM Watson IoT Platform dashboard with the "General Settings" page. The left sidebar is visible, and the main content area shows the "Custom Device Management Packages" section. A modal titled "Events" is open on the right, allowing the user to configure a new event type. The modal includes fields for "Event type name" (set to "event\_1"), "Schedule" (set to "20 Every Minute"), and "Payload" (a JSON object with "temperature" and "humidity" fields). The "Payload" field is highlighted, and the "Send" button is visible.

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

**Identity**

- Experimental Features
- Last Event Cache
- Client Connection State API

**DATA AND DEVICES**

- Custom Device Management Packages
- Device Simulator

**Custom Device Management Packages**

package: `documentation`

[+ Add Package](#)

**Events** [New event type](#)

Event type name:  [Send](#)

**Schedule**

**Payload**

Specify the event payload in the editor window or by uploading a [CSV file](#).

```
0 {
1   "temperature": random(10,50),
2   "humidity": random(0,100)
3 }
4
```

[Upload a CSV file](#)

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 PLATFORM (About, Identity, Experimental Features, Last Event Cache, Client Connection, State API) and DATA AND DEVICES (Custom Device, Management Packages, Device Simulator). The main content area has sections for 'Experimental Features' (with a toggle for 'Activate Experimental Features'), 'Last Event Cache' (with a toggle for 'Activate Last Event Cache'), and 'Custom Cards'. An overlay window titled 'Simulations' is open on the right, showing '0/50 Simulations Running' and a '+ New Simulation' button. Below this, it lists 'Device Type' as 'TestDeviceType' with '1 Event' and a toggle. At the bottom of the overlay are buttons for '1 x Create Simulated Device' and 'Use Registered Device'. The status bar at the bottom indicates '0 event sent' and '0 bytes sent'.

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

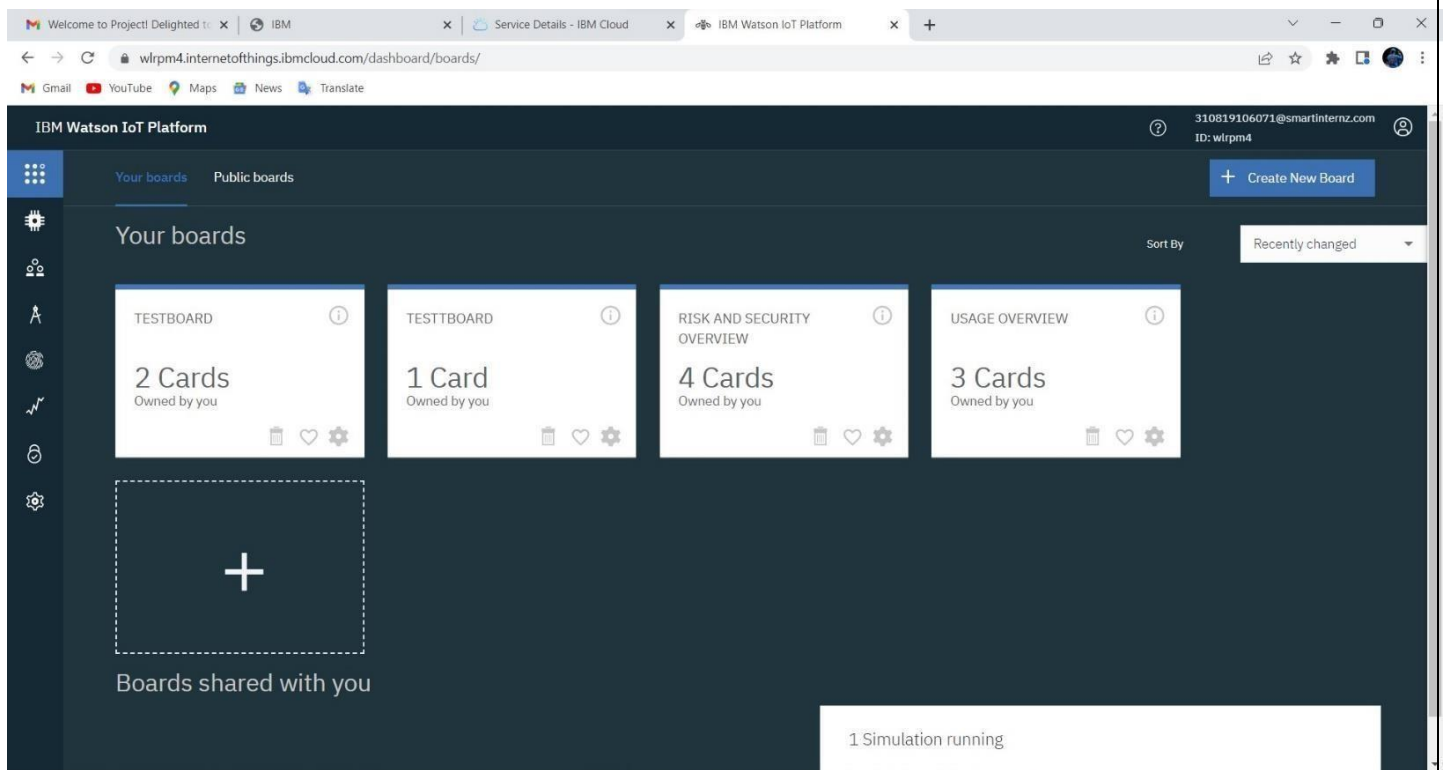
The screenshot shows the IBM Watson IoT Platform 'Devices' page. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present. Below the navigation, there's a table of devices. One device is selected, and its details are shown in a modal. The modal has tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, showing 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":88,"humidity":8}	json	a few seconds ago
event_1	{"temperature":68,"humidity":41}	json	a few seconds ago
event_1	{"temperature":61,"humidity":8}	json	a few seconds ago
event_1	{"temperature":85,"humidity":62}	json	a few seconds ago
event_1	{"temperature":86,"humidity":41}	json	a few seconds ago

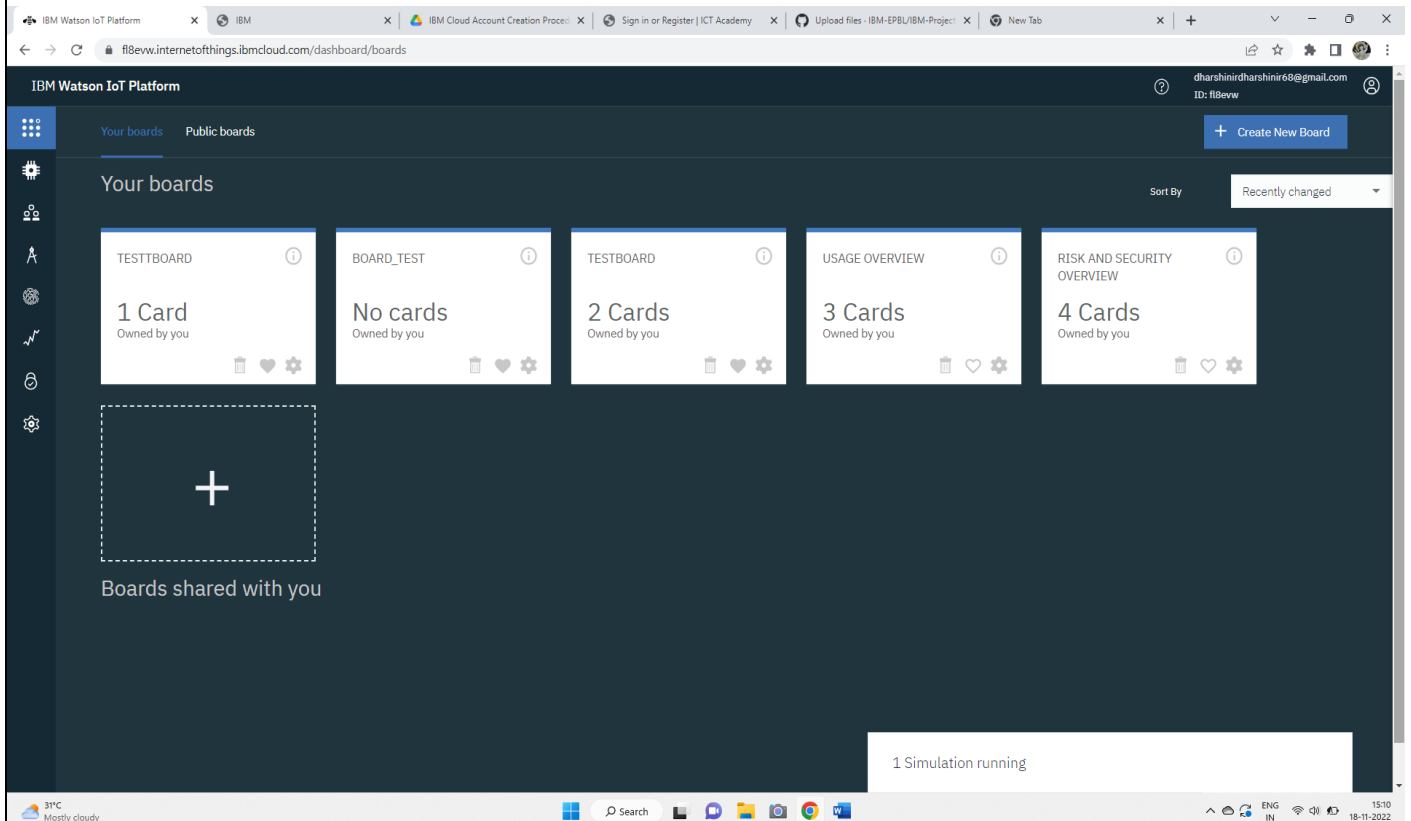
The modal also shows '11 events sent' and '416 bytes sent'. The status bar at the bottom indicates '14:45 18-11-2022'.



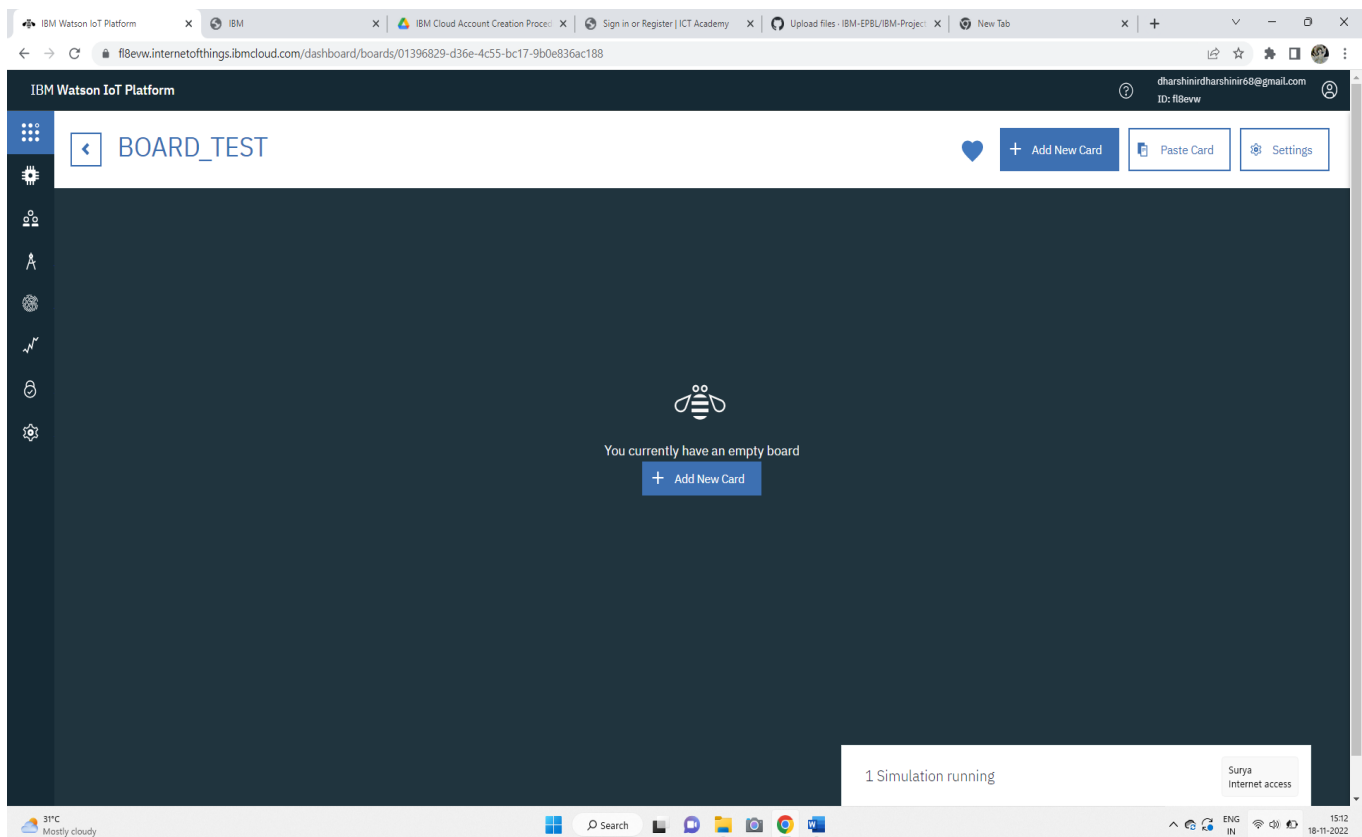
Step 30: Go to Board and click on + Create New Board, fill the details and create a board.



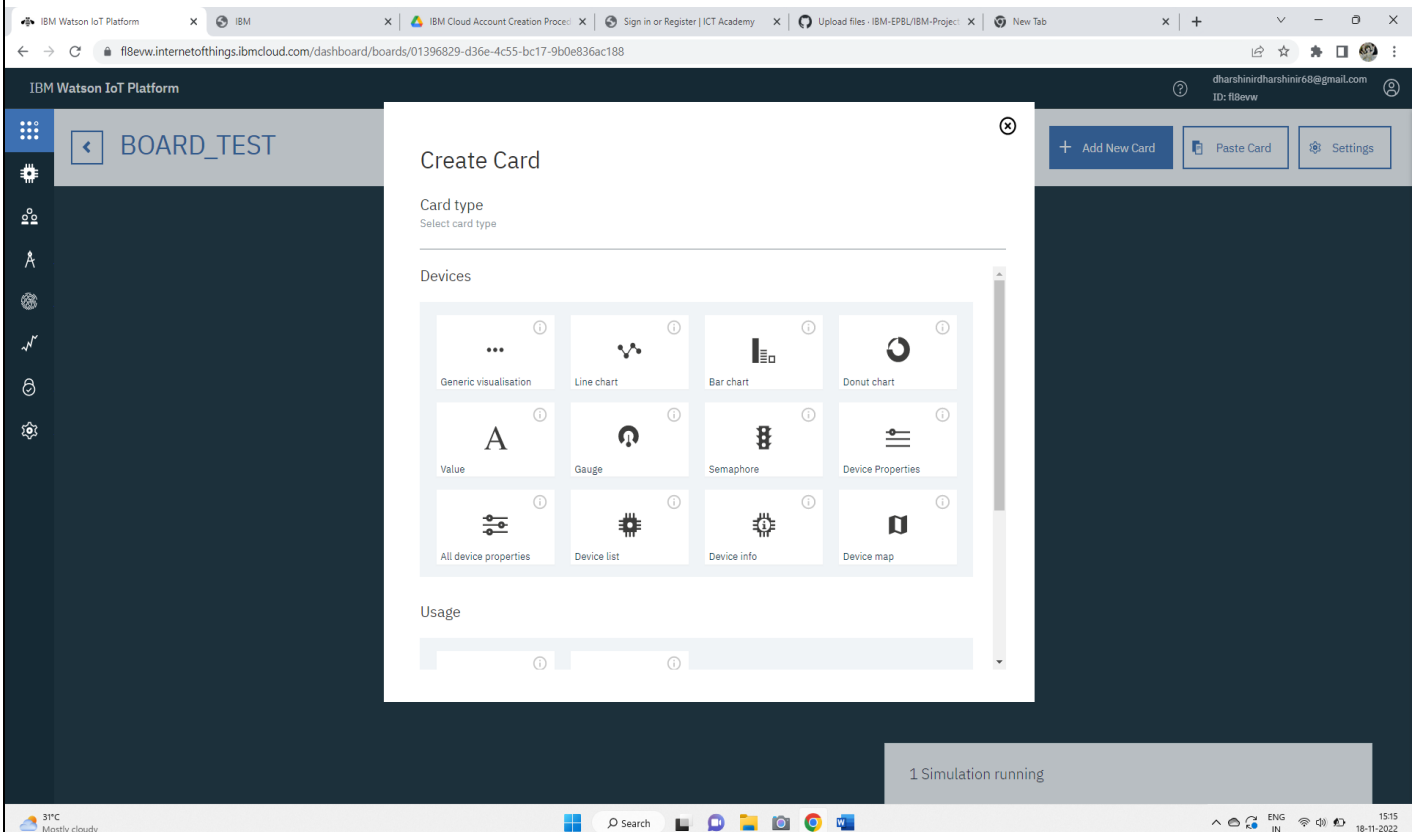
Step 31: Click on the board which is created.



## Step 32: Go Add New Card.



## Step 33: Choose the Card Type.



## Step 34: Choose the device.

The screenshot shows the IBM Watson IoT Platform dashboard. The left sidebar contains navigation icons. The main area displays a 'BOARD\_TEST' board. A modal dialog titled 'Create Line chart Card' is open, showing the 'Devices' tab. The dialog prompts the user to 'Specify the data source for the card' and provides a search bar. Below the search bar, a table lists available devices:

Device ID	Device Type
98765	TestDeviceType

The 'Next' button is visible at the bottom right of the dialog. The background dashboard shows a '1 Simulation running' status at the bottom right.

## Step 35: Click on Connect new data set.

The screenshot shows the IBM Watson IoT Platform dashboard with the 'Create Line chart Card' dialog box open. The 'Connect data set' section is visible, and the 'Connect new data set' option is highlighted. The dialog also includes 'Back' and 'Next' buttons at the bottom. The background dashboard shows a '1 Simulation running' status at the bottom right.

## Step 36: Fill the details to get Temperature graph.

IBM Watson IoT Platform

BOARD\_TEST

Card source data

98765

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

1 Simulation running

## Step 37: Choose the Colour.

IBM Watson IoT Platform

BOARD\_TEST

Card source data

98765

Card preview

Card information

### 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

1 Simulation running

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

The screenshot shows the IBM Watson IoT Platform dashboard with a 'BOARD\_TEST' board. A 'Line chart' card is visible on the left, displaying temperature data. A 'Create Gauge Card' modal is open in the center, showing the configuration for a new gauge card. The modal includes fields for 'event\_1', 'Property' (humidity), 'Name' (humidity), 'Type' (Number), 'Unit' (%), 'Min' (0), and 'Max' (100). A 'Connect new data set' button is at the bottom left of the modal, and 'Back' and 'Next' buttons are at the bottom right. The dashboard also shows a '1 Simulation running' status at the bottom right.

Step 39: Here is the Final graph.

The screenshot shows the final configuration of the 'BOARD\_TEST' board. The 'Line chart' card displays temperature data over time, with a 'now' button at the bottom right. The 'Gauge' card displays a large circular gauge showing a value of 98.0%. The dashboard also shows a '1 Simulation running' status at the bottom right.

**Result:**

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