

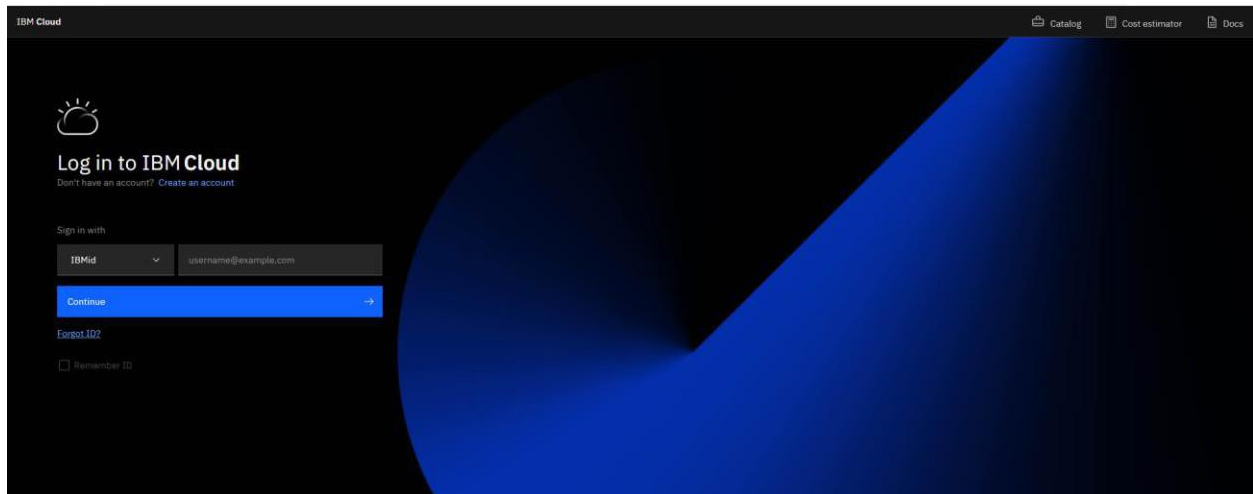
Project id: **PNT2022TMID05389**
CREATE IBM WATSON IOT PLATFORM AND DEVICE

AIM:

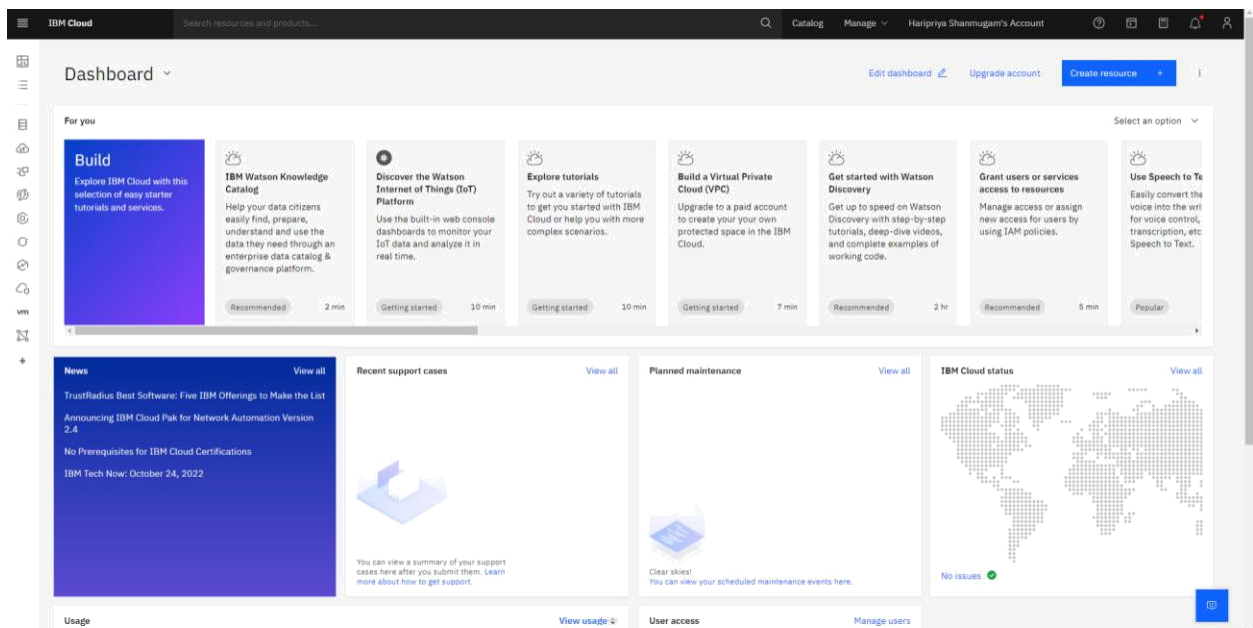
To create the IBM Watson IoT platform and device

STEPS:

1. Firstly create an IBM cloud account with IBMid and password.



2. Home page of IBM cloud.



3. Click on the catalog on the top.

The screenshot shows the IBM Cloud Catalog interface. At the top, there's a navigation bar with the IBM Cloud logo, a search bar, and links for Catalog, Manage, and the user's account. Below the navigation bar, the main header area includes the word "Catalog" and a search input field. A large isometric illustration of a modern office with people working at computers is positioned on the right side of the header.

On the left side, there's a "Category" sidebar with a list of product categories and their counts: 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), and Mobile (1). The "Internet of Things" category is currently selected and highlighted.

The main content area displays "Viewing 205 products" and a list of product cards. Each card includes a product icon, name, provider (By IBM), a brief description, and a list of supported features or compliance standards. The products shown include:

- Analytics Engine**: Submit your Apache Spark applications as needed and customize the Spark runtimes to satisfy the requirements of your...
- AnonTech Viz/Vault Platform**: Manage personal information as-a-service safely, securely, and in compliance with data privacy regulations using Viz/Vault.
- API Connect**: An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on...
- App Configuration**: Centralized, in-flight configuration for web and mobile applications and distributed environments.
- App Connect**: Connect your applications, automate tasks, and improve productivity.
- App ID**: User Authentication and User Profiles for your apps.
- Bare Metal Servers for Classic**: IBM Cloud Bare Metal Servers provide performance, flexibility, on-demand provisioning, and control.
- Bare Metal Servers for VPC**: Leverage x86 servers with physical single tenancy and high performance offering end user virtualization.
- Block Storage**: Persistent iSCSI based storage with high-powered performance and capacity up to 12TB.
- Block Storage for VPC**: Persistent storage for use as boot and data storage for Virtual Servers in a VPC network.

4. Click on IoT in the category mentioned.

This screenshot shows the IBM Cloud Catalog page after filtering for the "Internet of Things" category. The "Internet of Things" category is selected in the left sidebar, and the main content area now displays "Viewing 1 product".

The product card shown is the **Internet of Things Platform** by IBM. The description states: "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 pricing plan is listed as "Lite • Free • IAM-enabled • IBM supported".

On the left, the "Type" filter is set to "All", and the "Provider" filter is set to "IBM (1)". The "Pricing plan" filter is set to "Lite", and the "Compliance" filter is set to "IAM-enabled".

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

IBM Cloud

Search resources and products...

Catalog Manage Haripriya Shanmugam's Account

Catalog /

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, Terms

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	<p>Includes up to 500 registered devices, and a maximum of 200 MB of each data metric</p> <ul style="list-style-type: none">Maximum of 500 registered devicesMaximum of 500 application bindingsMaximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed <p>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.</p> <p>Lite plan services are deleted after 30 days of inactivity.</p>	Free

Configure your resource

Service name: Internet of Things Platform-ua

Select a resource group: Default

Summary

Internet of Things Platform Free

Location: Frankfurt

Plan: Lite

Service name: Internet of Things Platform-ua

Resource group: Default

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

Create

Add to estimate

6. Enter the location and in the configure your resource type the service name and choose the plan, tick the agree with agreements and then click on create.

IBM Cloud

Search resources and products...

Catalog Manage Haripriya Shanmugam's Account

Catalog /

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

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Location: Frankfurt, London, Dallas, Washington DC

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Configure your resource

Service name: Internet of Things Platform-ua

Select a resource group: Default

Summary

Internet of Things Platform Free

Location: Frankfurt

Plan: Lite

Service name: Internet of Things Platform-ua

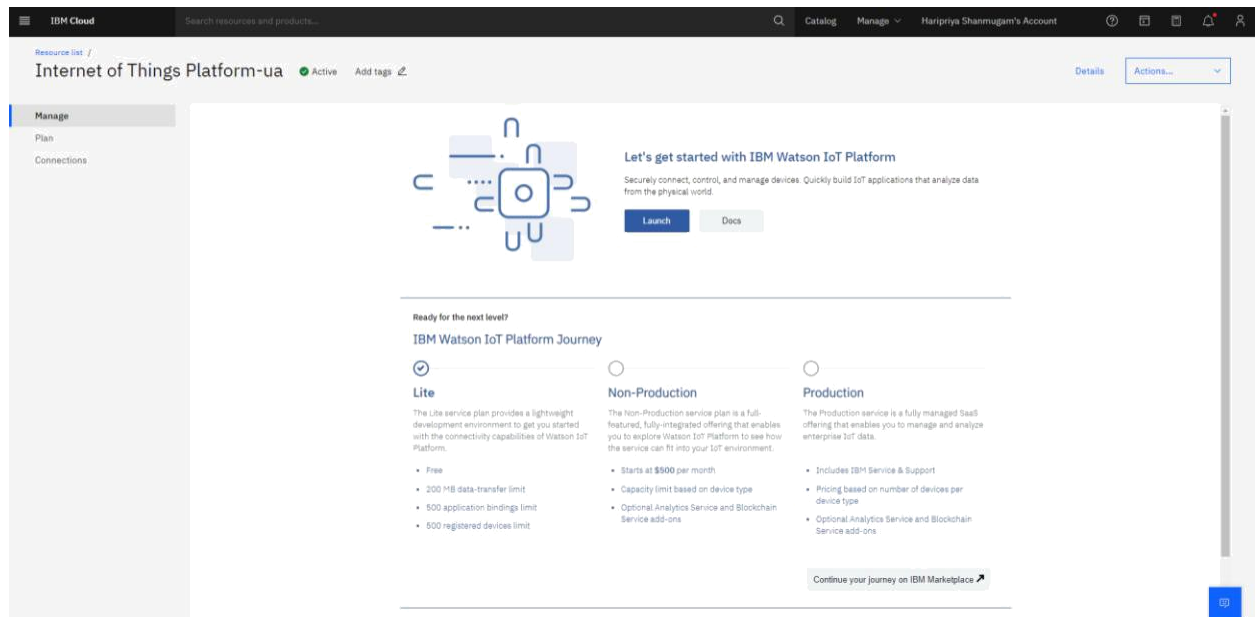
Resource group: Default

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

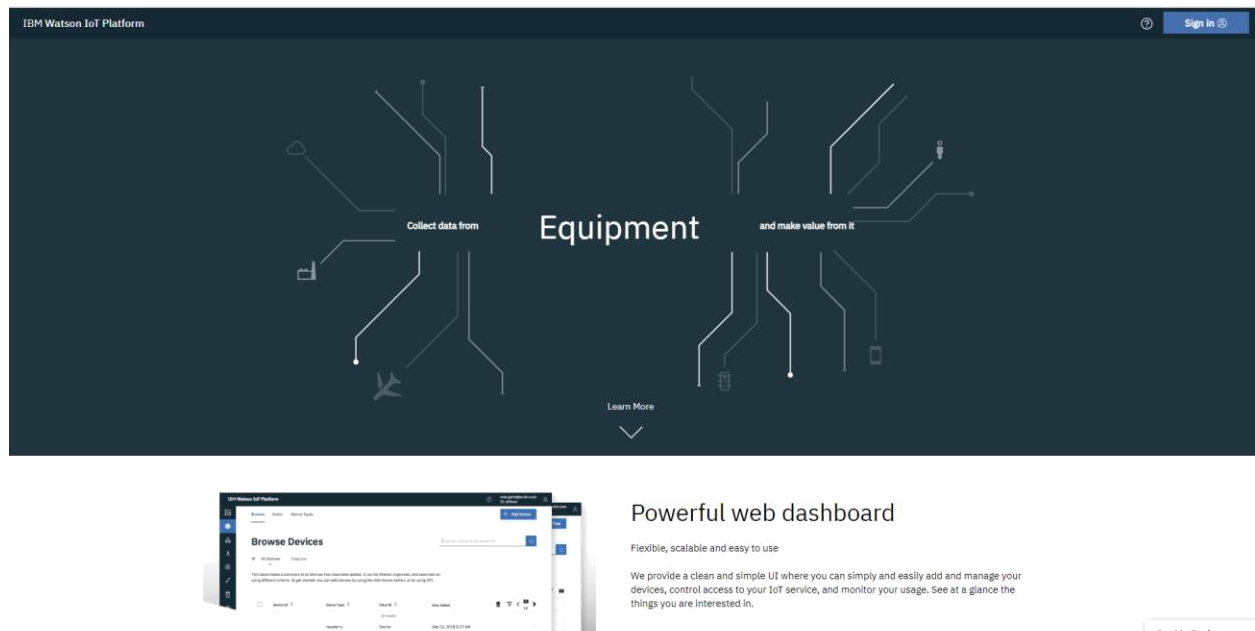
Create

Add to estimate

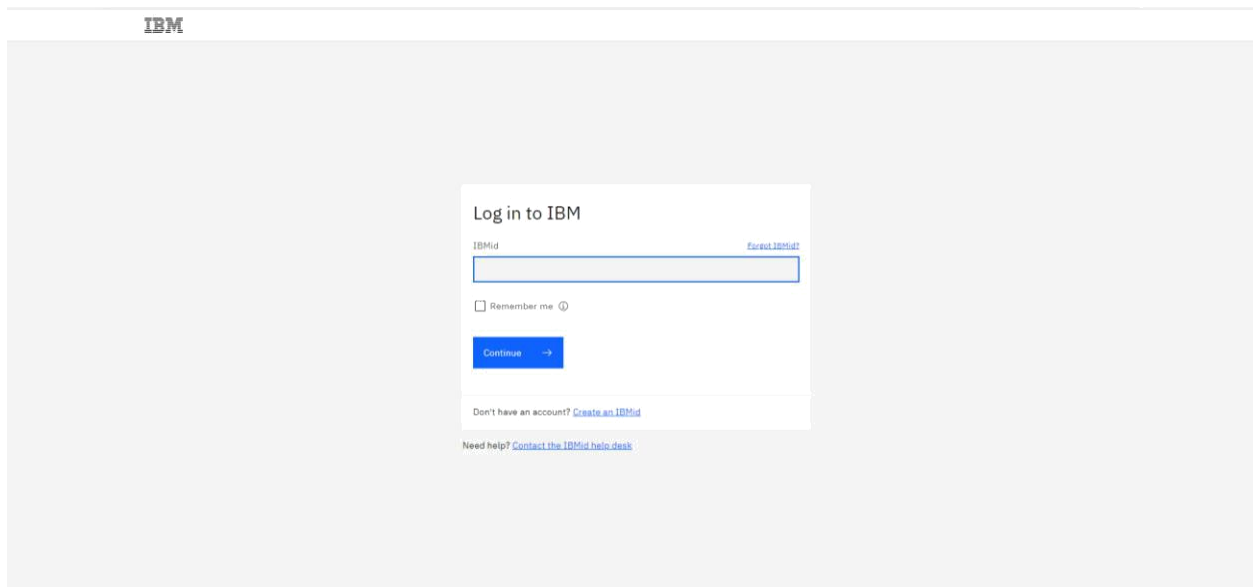
7. Internet of Things Platform Child_safety will be created, where there are different options like manage, plan, and connection (manage is for launch, Plan gives us the idea about the payment package and its upgrades, and lastly the connection is for to connect IoT with other services)



8. Clicking on the launch button in the manage tab, it will open to this.

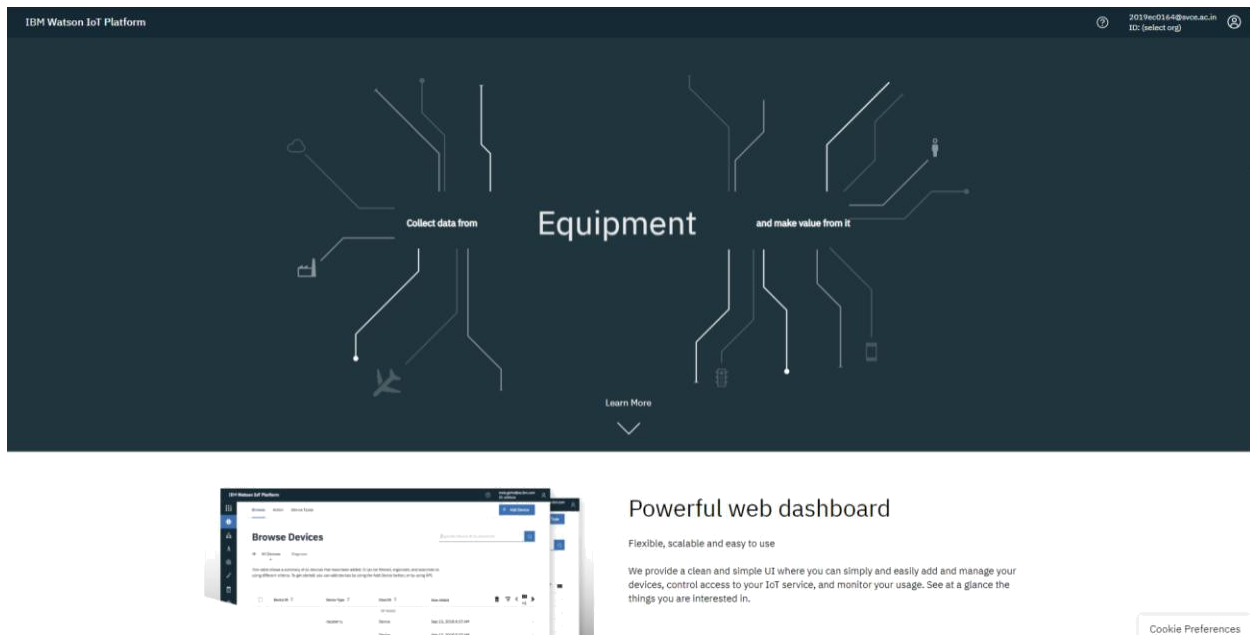


9. Enter the details to sign in to the Watson Cloud to create a device.

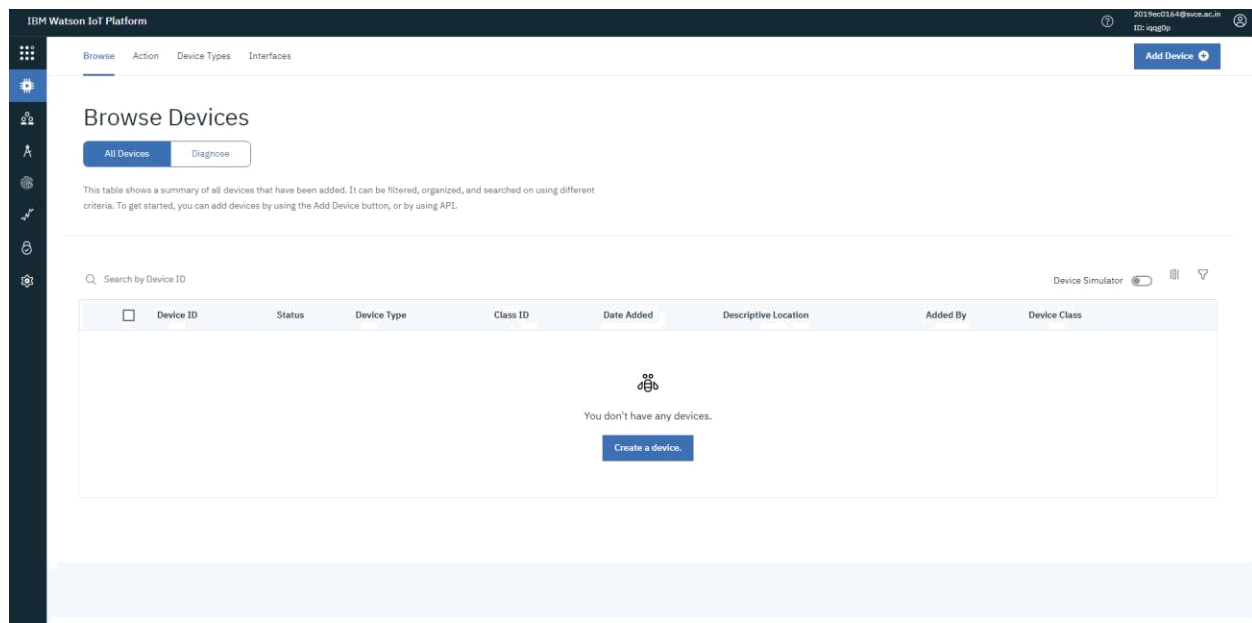


The image shows the IBM Watson IoT Platform login page. At the top left is the IBM logo. The main heading is "Log in to IBM". Below it is a text input field for the IBMid, with a link "Forgot IBMid?" to its right. Under the input field is a checkbox labeled "Remember me" with an information icon. Below the checkbox is a blue "Continue" button with a right-pointing arrow. At the bottom of the login box, there is a link "Don't have an account? Create an IBMid". Below the login box, there is a link "Need help? Contact the IBMid help desk".

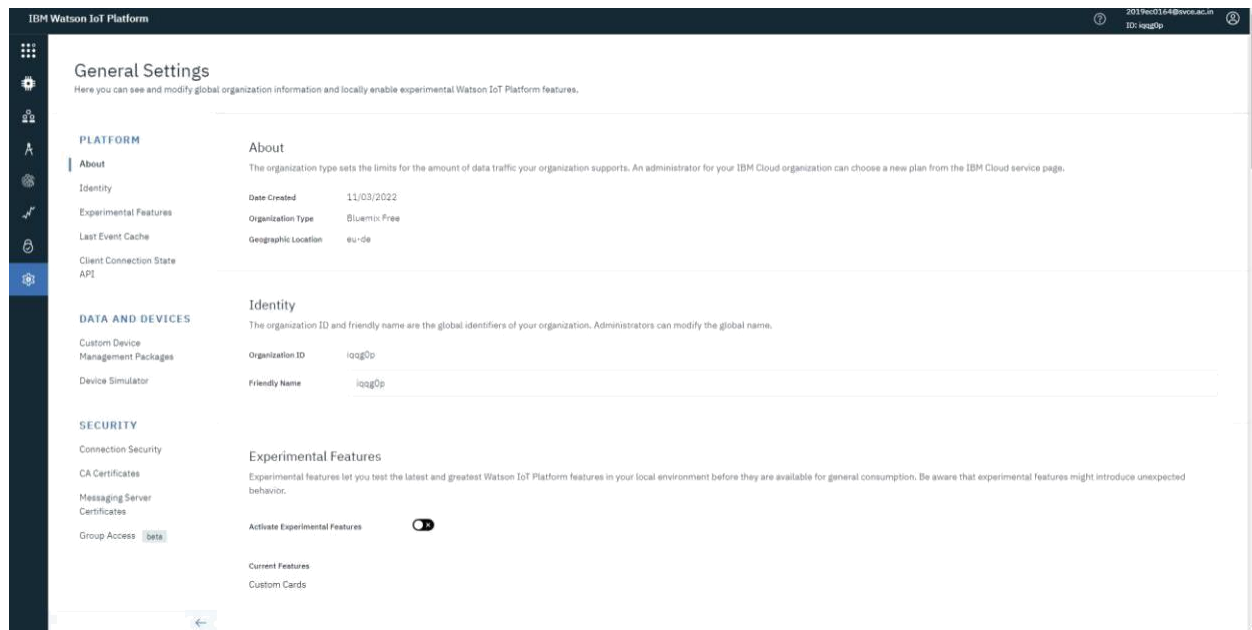
10. Once logged in the name will be displayed and it goes back to the first page.



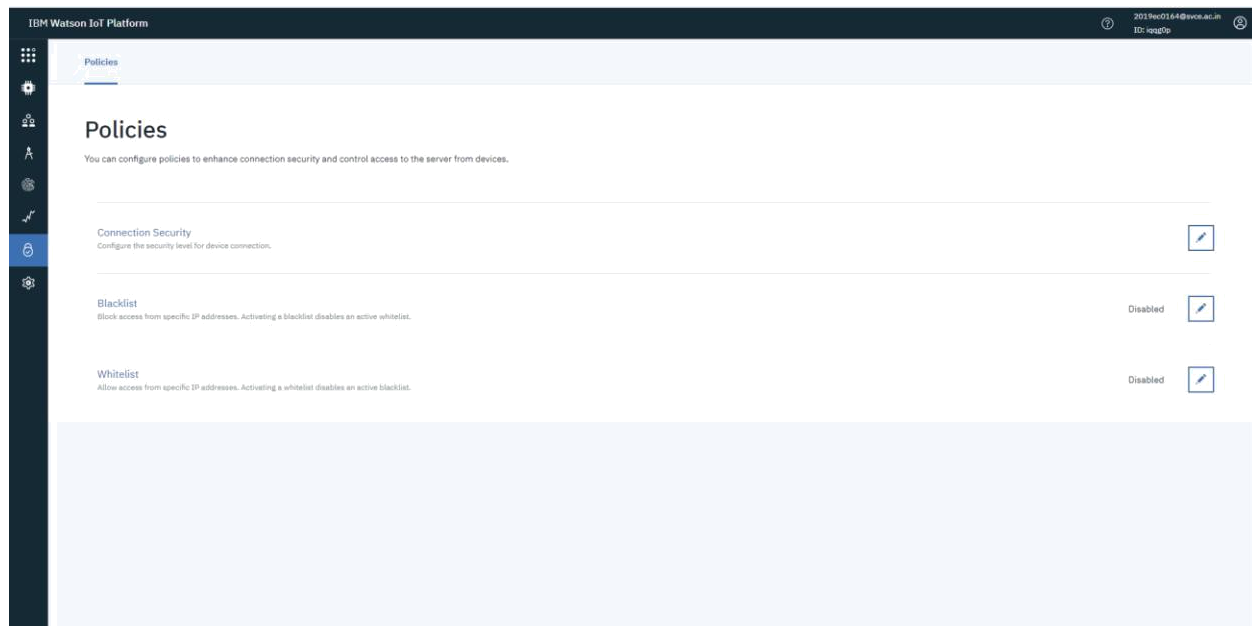
11. And again clicking on the launch button will open this tab, the device will help in the creation of the devices, the addition of devices, and the display of details of the devices.



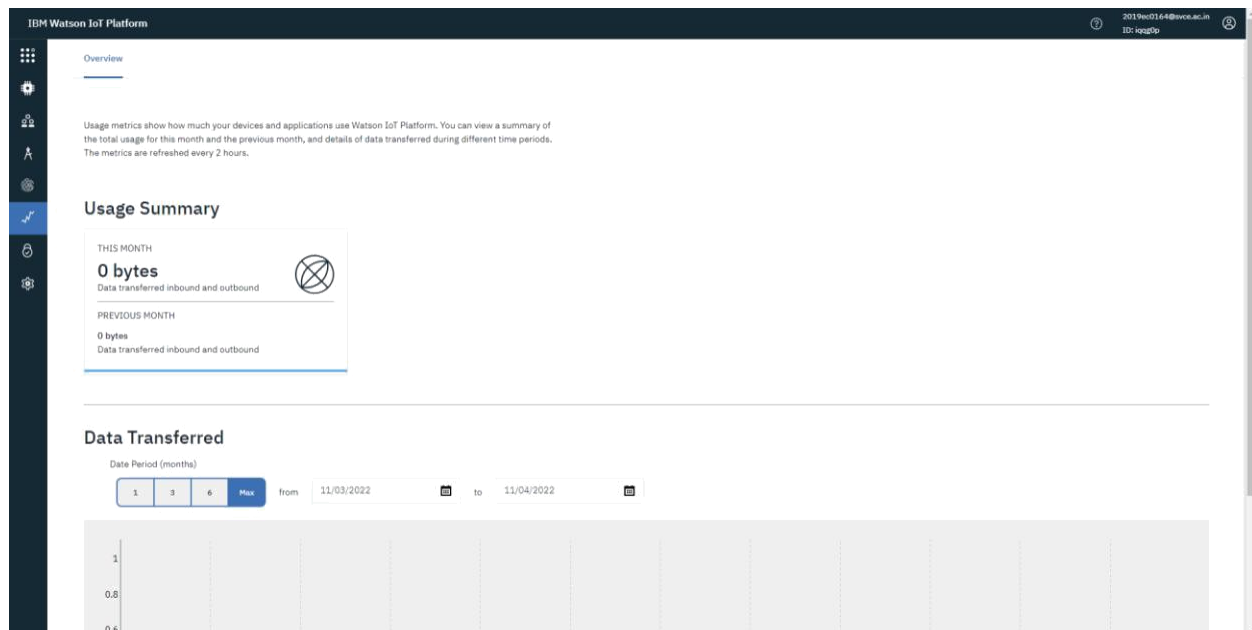
12. The setting tab is used to change the general setting if needed for the project.



13. In the security tab we can choose the type of security connection and can change according to specification.



14. Usage gives the summary of how many bytes are used between the devices and the IBM cloud.



15. The member tab is add the teams members to work in the platform.

The screenshot shows the 'Browse Members' page in the IBM Watson IoT Platform. The page has a dark blue header with the platform name and a user profile. A sidebar on the left contains navigation icons. The main content area has a 'Browse' tab selected and an 'Add Members' button. Below the header, there is a search bar and a table with columns: Email Address, Name, Role, Added By, and Expires. The table shows one result for the user '2019ec0164@svce.ac.in' with the role 'Administrator'. A large light blue area is at the bottom of the page.

Email Address	Name	Role	Added By	Expires
2019ec0164@svce.ac.in	2019ec0164@svce.ac.in	Administrator	-	-

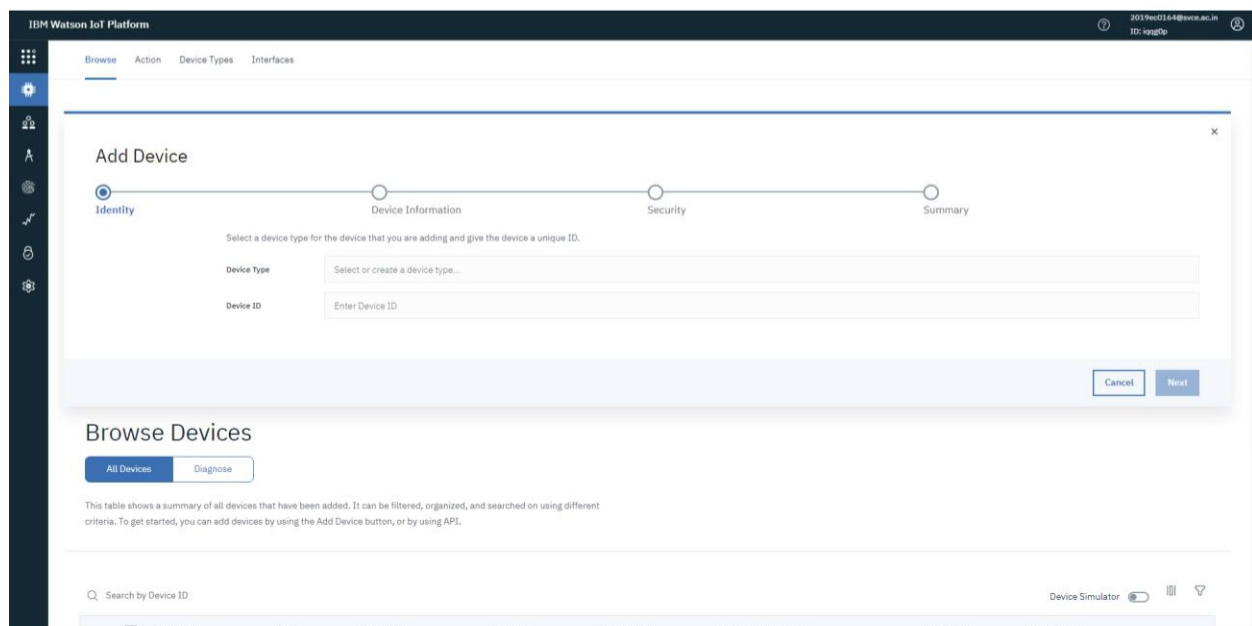
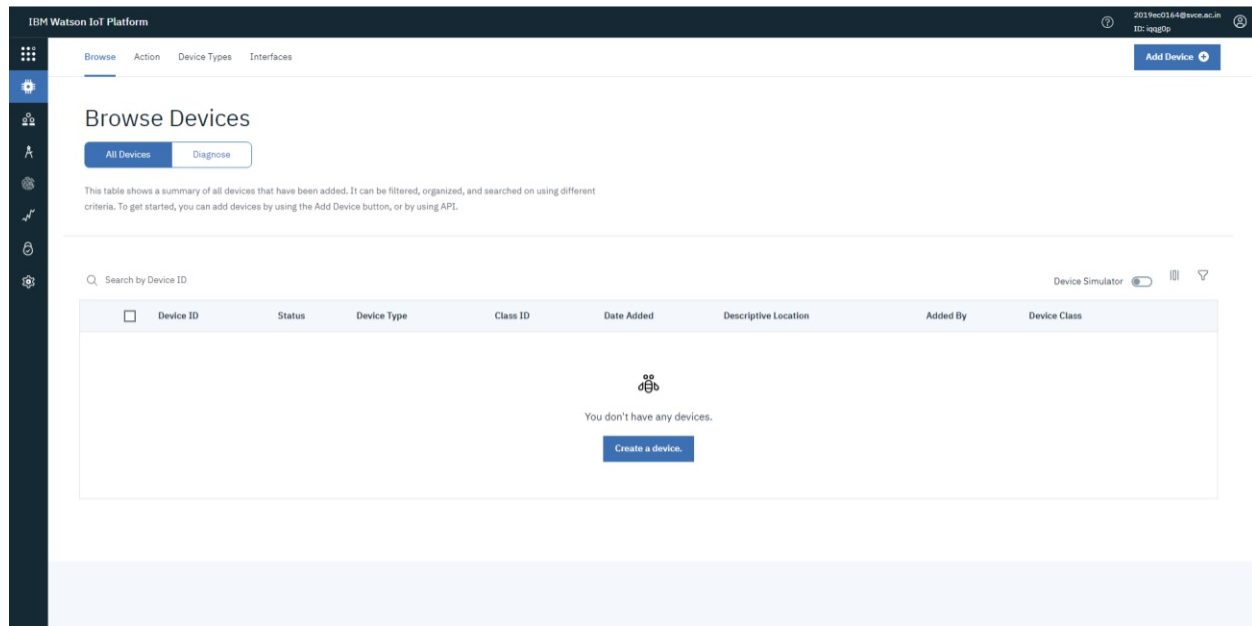
16. This tab is used when you want to connect to some other platform and to integrate with other services.

The screenshot shows the 'Browse API Keys' page in the IBM Watson IoT Platform. The page has a dark blue header with the platform name and a user profile. A sidebar on the left contains navigation icons. The main content area has a 'Browse' tab selected and a 'Generate API Key' button. Below the header, there is a search bar and a table with columns: Key, Description, Role, and Expires. The table shows 0 results. Below the table, there is a bee icon and the text 'There are no API Keys' with a 'Generate API Key' link. A large light blue area is at the bottom of the page.

Key	Description	Role	Expires
0 results			

There are no API Keys
Generate API Key

17. Click on the device tab and click on the add device button, then give the device type and device id and click next.



IBM Watson IoT Platform

2019ec0144@wvcs.ac.in
IoT-ecsp@v

Browse Action Device Types Interfaces

Add Device

Identity Device Information Security Summary

Select a device type for the device that you are adding and give the device a unique ID.

Device Type:

Device ID:

Browse Devices

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 ☐

18. This page to enter extra details and of the hardware.

IBM Watson IoT Platform

2019ec0144@wvcs.ac.in
IoT-ecsp@v

Browse Action Device Types Interfaces

Add Device

Identity Device Information Security Summary

You can modify the default device information and enter more information about the device for identification purposes.

Serial Number	<input type="text" value="Enter Serial Number"/>	Manufacturer	<input type="text" value="Enter Manufacturer"/>
Model	<input type="text" value="Enter Model"/>	Device Class	<input type="text" value="Enter Device Class"/>
Description	<input type="text" value="Enter Description"/>	Firmware Version	<input type="text" value="Enter Firmware Version"/>
Hardware Version	<input type="text" value="Enter Hardware Version"/>	Descriptive Location	<input type="text" value="Enter Descriptive Location"/>

Browse Devices

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.

19. Clicking next it goes to the security where we do authentication token id.

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform. The wizard has four steps: Identity, Device Information, Security, and Summary. The 'Security' step is currently active, indicated by a blue circle. The 'Identity' step is marked with a checkmark, and the 'Device Information' step is marked with a checkmark. The 'Summary' step is marked with a circle. The 'Security' step contains two options for selecting a device authentication token: 'Auto-generated authentication token (default)' and 'Self-provided authentication token'. The 'Auto-generated authentication token' option is selected. Below the options, there is a text input field labeled 'Authentication Token' with the placeholder text 'Enter an optional token'. Below the input field, there is a note: 'Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored.' and a sub-note: 'Authentication token are encrypted before we store them.' At the bottom right of the wizard, there are 'Back' and 'Next' buttons. Below the wizard, there is a 'Browse Devices' section with a table of devices.

IBM Watson IoT Platform

2019ec0164@ovce.ac.in
ID: rpgg9p

Browse Action Device Types Interfaces

Add Device

Identity Device Information Security Summary

There are two options for selecting a device authentication token.

Auto-generated authentication token (default)

Allow the service to generate an authentication token for you. Tokens are 18 characters and contain a mix of alphanumeric characters and symbols. The token is returned to you at the end of the device registration process.

Self-provided authentication token

Provide your own authentication token for this device. The token must be between 8 and 36 characters and contain a mix of lowercase and uppercase letters, numbers, and symbols, which can include hyphens, underscores, and periods. Do not use repeated characters, dictionary words, user names, or other predefined sequences.

Authentication Token

Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored.

Authentication token are encrypted before we store them.

Back Next

Browse Devices

20. Clicking on next it goes to the summary of the device then click finish.

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform. The wizard has four steps: Identity, Device Information, Security, and Summary. The 'Summary' step is currently active, indicated by a blue circle. The 'Identity' step is marked with a checkmark, the 'Device Information' step is marked with a checkmark, and the 'Security' step is marked with a checkmark. The 'Summary' step contains a summary of the device information: 'Device Type: NodeMCU', 'Device ID: 199795', and 'Security Token: To be generated'. Below the summary, there is a 'View Metadata' button. At the bottom right of the wizard, there are 'Back' and 'Finish' buttons. Below the wizard, there is a 'Browse Devices' section with a table of devices.

IBM Watson IoT Platform

2019ec0164@ovce.ac.in
ID: rpgg9p

Browse Action Device Types Interfaces

Add Device

Identity Device Information Security Summary

Verify that the following information is correct then select Finish

Device Type
NodeMCU

Device ID
199795

[View Metadata](#)

Security Token
To be generated

Back Finish

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.

21. The device credentials will be displayed with all the details.

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes the IBM logo and the text "IBM Watson IoT Platform". The left sidebar contains a list of icons for navigation. The main content area is titled "Device Drilldown - 199795". It features a left-hand menu with options: "Device Credentials", "Connection Information", "Recent Events", "State", "Device Information", "Metadata", "Diagnostics", "Connection Logs", and "Device Actions". The "Device Credentials" section is active, displaying a table of credentials for device 199795. Below this table, a warning message states: "Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token." The "Connection Information" section is also visible, showing details about the device's connection.

Device Credentials	
Organization ID	lqgg0p
Device Type	Nodemcu
Device ID	199795
Authentication Method	use-token-auth
Authentication Token	6-gf-Rmrv@g3qSGGX

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

Find out how to add these credentials to your device

Connection Information	
Device ID	199795
Device Type	Nodemcu
Date Added	Nov 3, 2022 10:46 PM
Added By	2019ec0164@svce.ac.in
Connection Status	Disconnected

22. Save the details of the device as the authentication tokens are non recoverable and if misplaced then we have to create a new one.

This screenshot shows the same IBM Watson IoT Platform interface as the previous one, but with a Notepad window open in the foreground. The Notepad window, titled "Untitled - Notepad", contains the following text:

```
File Edit Format View Help
Organization ID lqgg0p
Device Type Nodemcu
Device ID 199795
Authentication Method use-token-auth
Authentication Token 6-gf-Rmrv@g3qSGGX
```

The Notepad window is positioned over the "Device Credentials" section of the IBM Watson IoT Platform page, which is still visible in the background.

23. Clicking on the device tab we can now see the added device. Clicking on it will display the other details. It has different tabs like Identity, Device Information, State and login.

The screenshot shows the 'Browse Devices' page in the IBM Watson IoT Platform. The page has a sidebar with navigation icons and a top navigation bar with 'Browse', 'Action', 'Device Types', and 'Interfaces'. A 'Add Device' button is in the top right. Below the navigation bar, there's a 'Browse Devices' section with 'All Devices' and 'Diagnose' tabs. A text block explains that the table shows a summary of all devices and can be filtered, organized, and searched. Below this is a search bar 'Search by Device ID' and a 'Device Simulator' toggle. The main table has columns: Device ID, Status, Device Type, Class ID, Date Added, Descriptive Location, Added By, and Device Class. It contains one row for device ID 199795, which is 'Disconnected' and of type 'Nodemcu'. The page footer shows 'Items per page 50' and '1 of 1 page'.

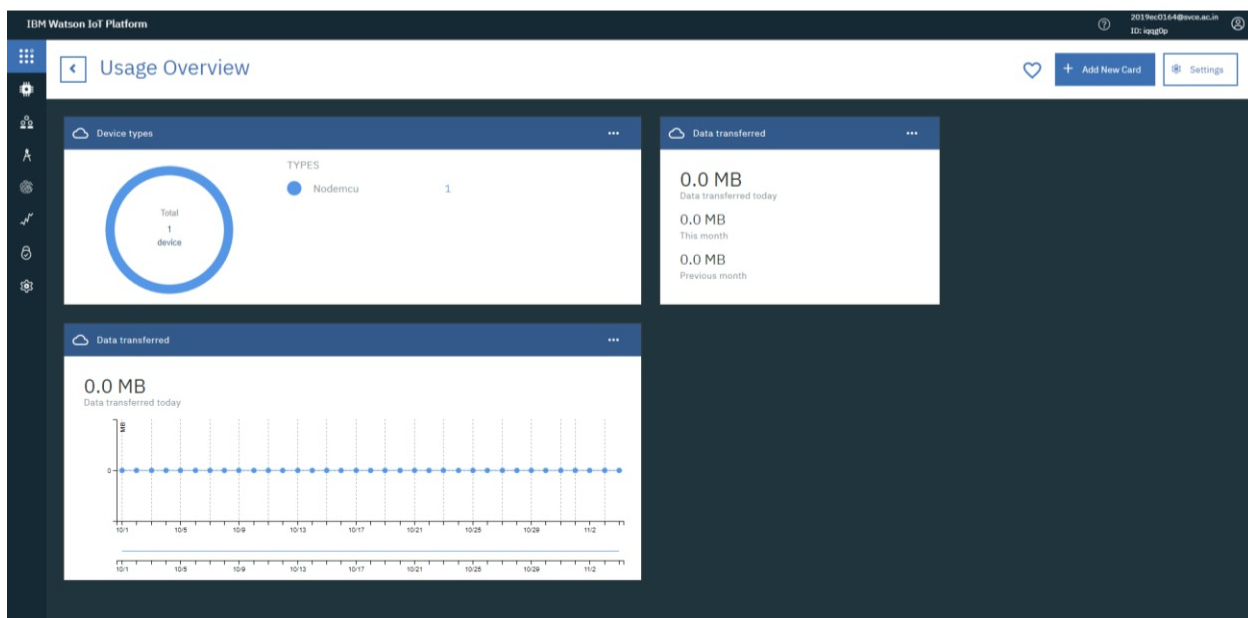
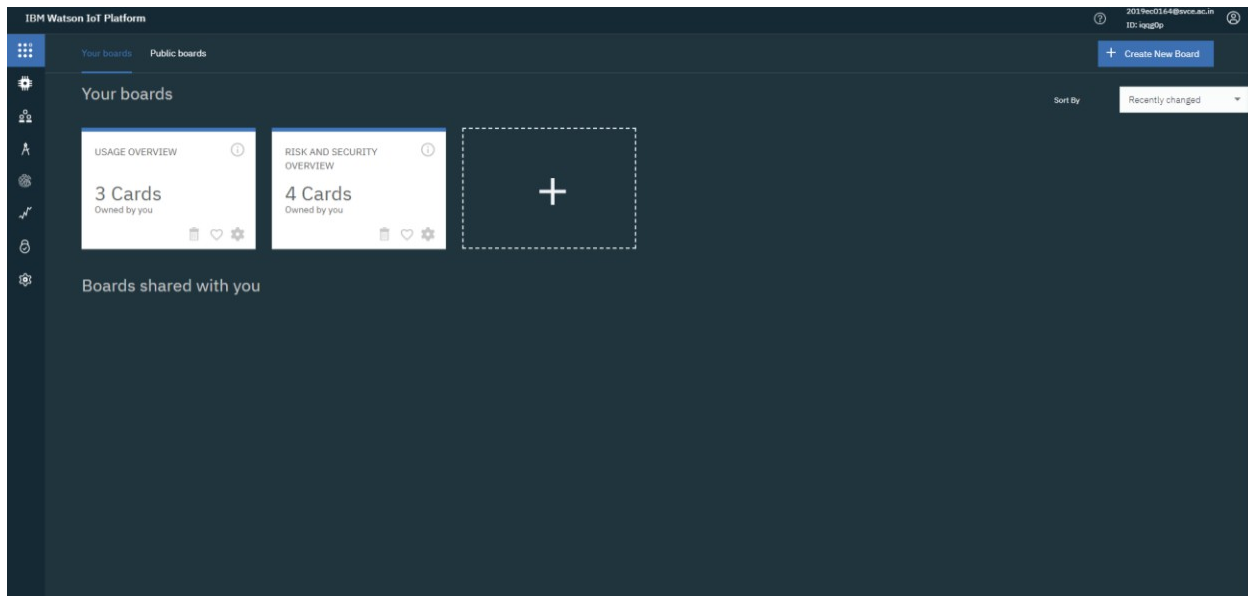
Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	Device Class
199795	Disconnected	Nodemcu	Device	Nov 3, 2022 10:46 PM		2019ec0164@evco.ac.in	

This screenshot shows the 'Browse Devices' page with the 'Identity' tab selected for the device with ID 199795. The 'Identity' tab displays the following details:

Device ID	Device Information
Device ID	199795
Device Type	Nodemcu
Date Added	Nov 3, 2022 10:46 PM
Added By	2019ec0164@evco.ac.in
Connection Status	Disconnected

In a similar way, we can create n number of devices with a 50 per page limit as per the requirement of our project.

24. The Boards will display card for the project.



RESULT:

An IBM Watson cloud for IoT and a device is create