

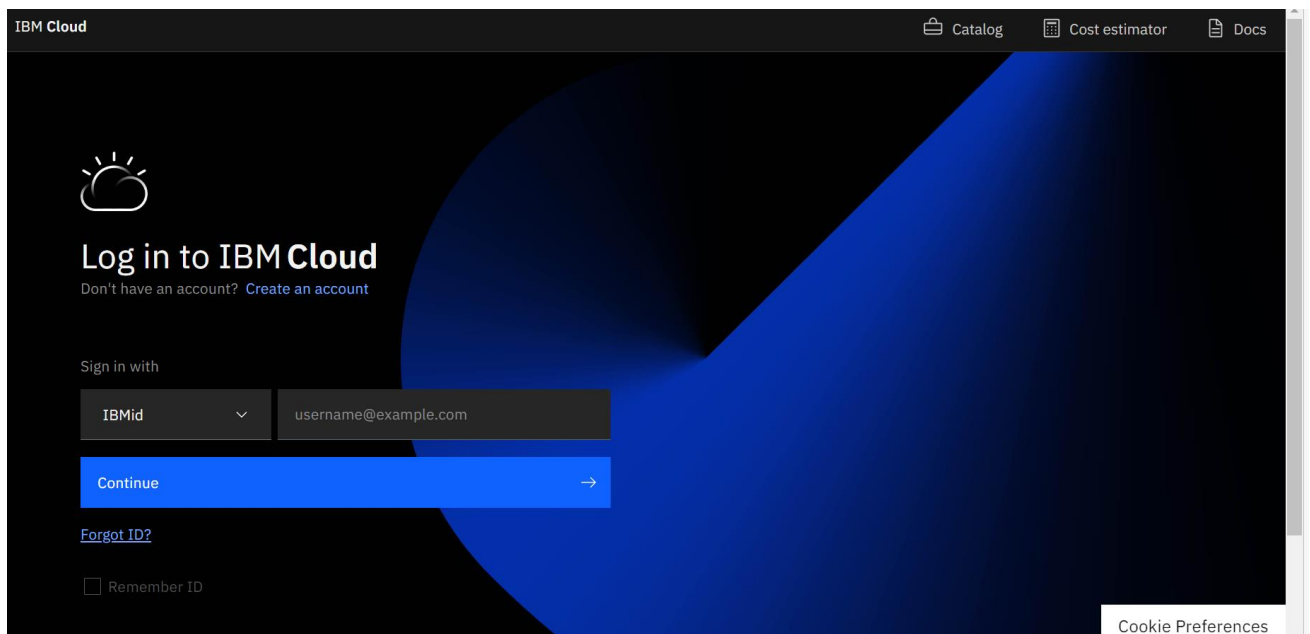
TEAM ID	PNT2022TMID30606
PROJECT NAME	Smart Waste Management System for Metropolitan Cities

## AIM:

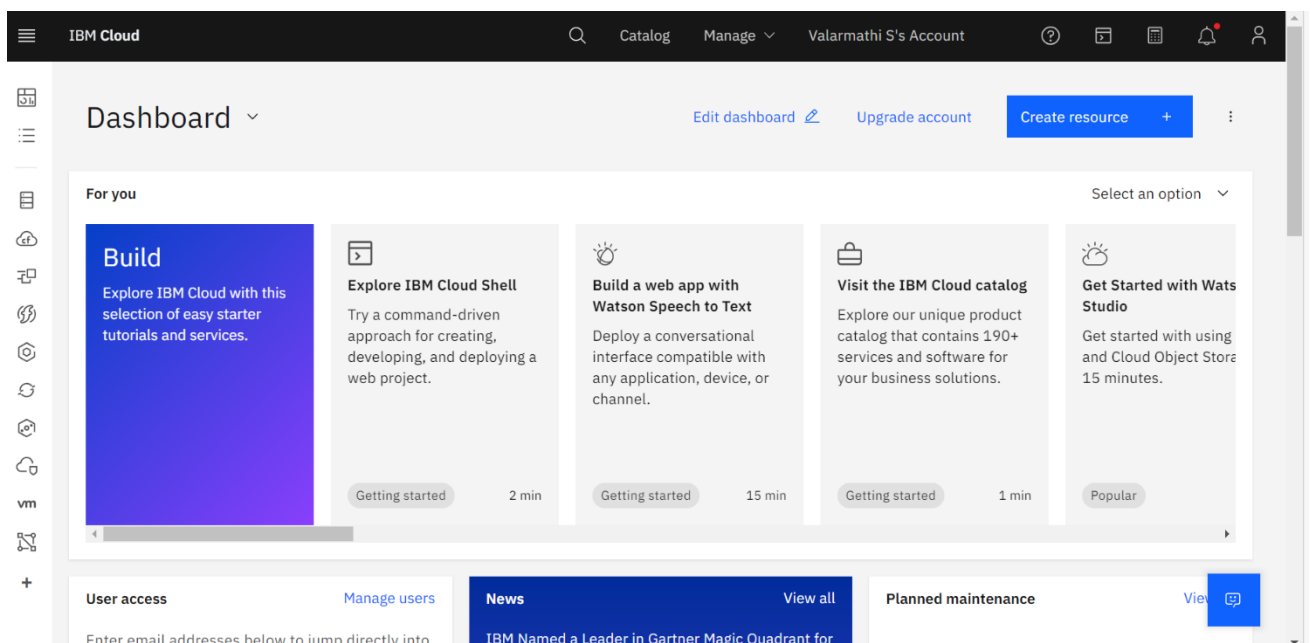
To create the IBM Watson IoT platform and device

## STEPS:

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



2. Home page of IBM cloud.



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

**IBM Cloud** Search resources and products...

Sell on IBM Cloud Catalog settings

## Catalog

Search the catalog...

Category ^ Viewing 206 products

Alphabetically

- Recommended products (6)
- Compute (30)
- Containers (9)
- Networking (29)
- Storage (19)
- AI / Machine Learning (17)
- Analytics (10)
- Blockchain (1)
- Databases (28)
- Developer tools (25)
- Logging and monitoring (3)

### 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

### 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

## 4. Click on IoT in the category mentioned.

The screenshot displays the IBM Cloud Catalog interface. At the top, a dark navigation bar includes the IBM Cloud logo, a search bar, and links for Catalog, Manage, and the user's account (Valarmathi S's Account). Below this, a secondary search bar and links for 'Sell on IBM Cloud' and 'Catalog settings' are visible. The main content area is titled 'Viewing 132 products'. On the left, a 'Category' sidebar lists various product categories, with 'Internet of Things (1)' highlighted. Below the categories, a 'Type' section shows 'All' and 'Services' options. The main product grid displays six items, each with an icon, name, provider, description, and supported features. The products shown are Analytics Engine, AnonTech VizIVault Platform, API Connect, App Configuration, App Connect, and App ID. A filter bar at the top of the grid shows 'Services' selected.

IBM Cloud Search resources and products... Catalog Manage Valarmathi S's Account

Search the catalog... Sell on IBM Cloud Catalog settings

Category ^ Viewing 132 products Alphabetically

Recommended products (6)

- Compute (19)
- Containers (5)
- Networking (24)
- Storage (13)
- AI / Machine Learning (16)
- Analytics (6)
- Blockchain (1)
- Databases (25)
- Developer tools (7)
- Logging and monitoring (3)
- Migration (4)
- Integration (7)
- Internet of Things (1)**
- Security (9)

Type ⓘ

- All
- Services**

Filters: Services X Clear all

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### 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

### App Connect

By IBM

Connect your applications, automate tasks, and improve productivity

Lite • Free • IBM supported

### 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

5.If already a lite is present delete it else you cannot create another.

The screenshot shows the IBM Cloud 'Create' page for the Internet of Things Platform. The sidebar on the left lists service details: Type (Service), Provider (IBM), Last updated (08/15/2022), Category (Internet of Things), Compliance (IAM-enabled), Location (Frankfurt, London, Dallas, Washington DC), and Related links (Docs, Terms). The main content area has two tabs: 'Create' (active) and 'About'. Under 'Create', there is a 'Select a location' dropdown set to 'Frankfurt (eu-de)' and a 'Select a pricing plan' section. The pricing plan table shows the 'Lite' plan as selected, which includes up to 500 registered devices and 200 MB of data per metric, at no cost. The right-hand summary panel displays the service name, location, and plan, along with a warning message: '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.'

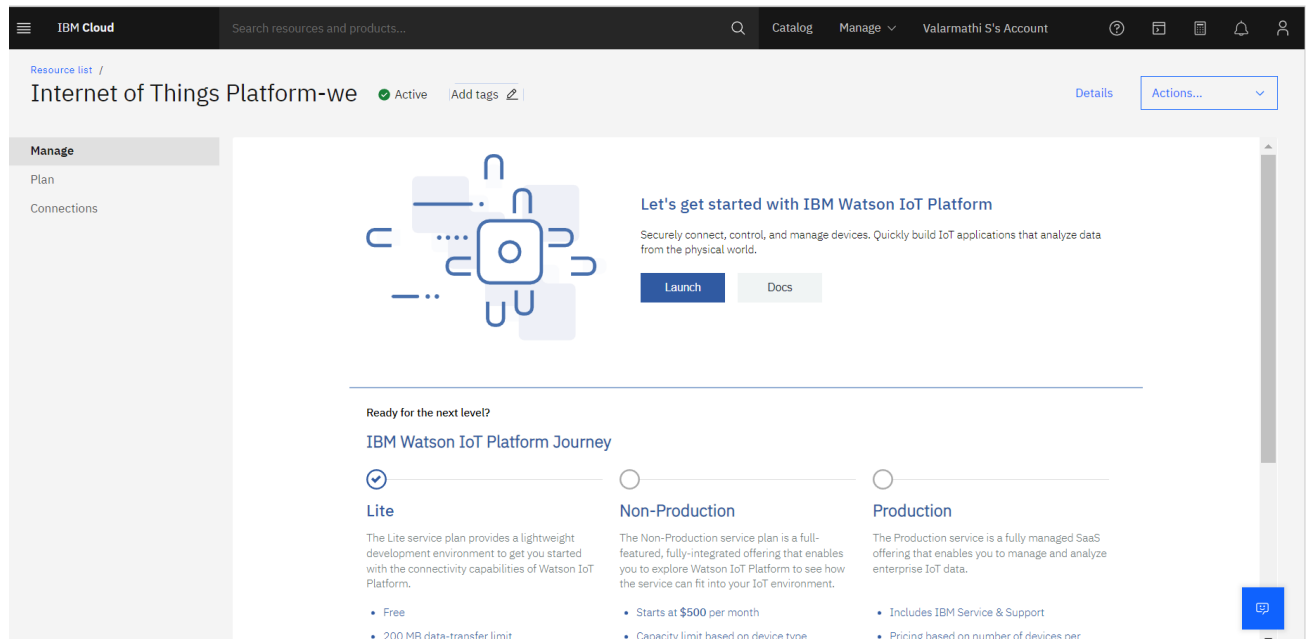
Plan	Features	Pricing
Lite	Includes up to 500 registered devices, and a maximum of 200 MB of each data metric Maximum of 500 registered devices Maximum of 500 application bindings Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed	Free

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.

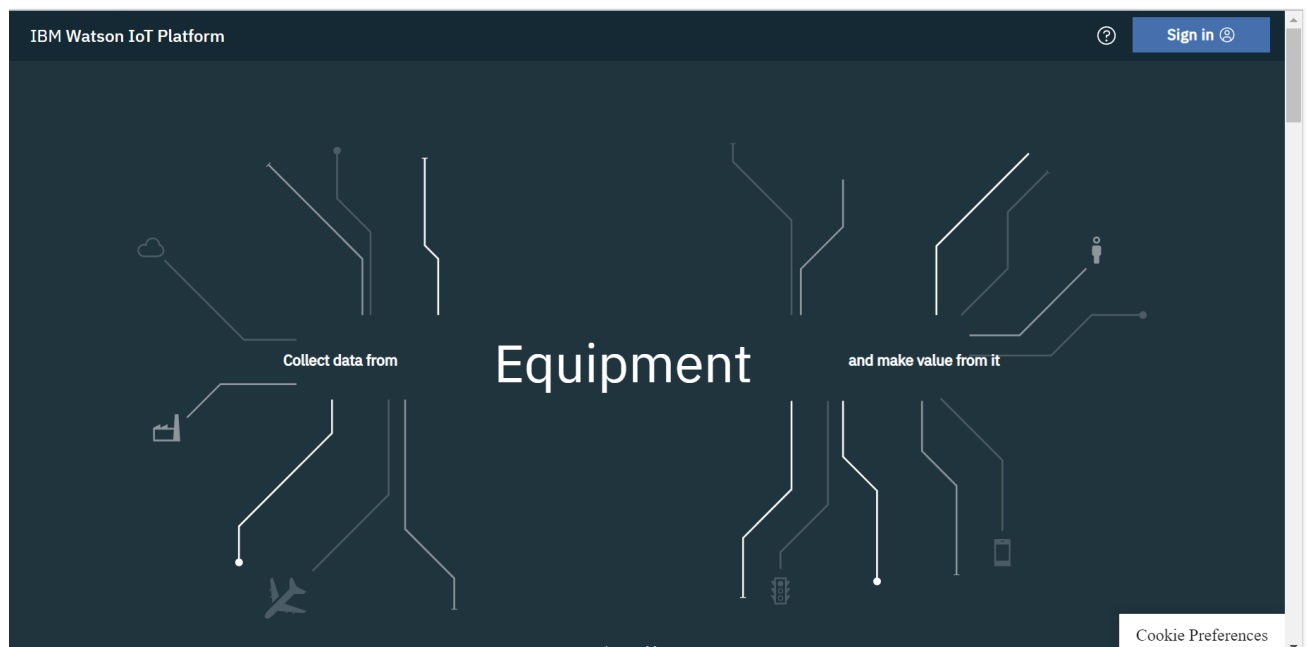
This screenshot is identical to the one above, showing the IBM Cloud 'Create' page for the Internet of Things Platform. It displays the same sidebar, main content area with location and pricing selection, and the right-hand summary panel with the warning message about the existing Lite plan instance.

7.Internet of Things Platform Child safety will be created, where there are

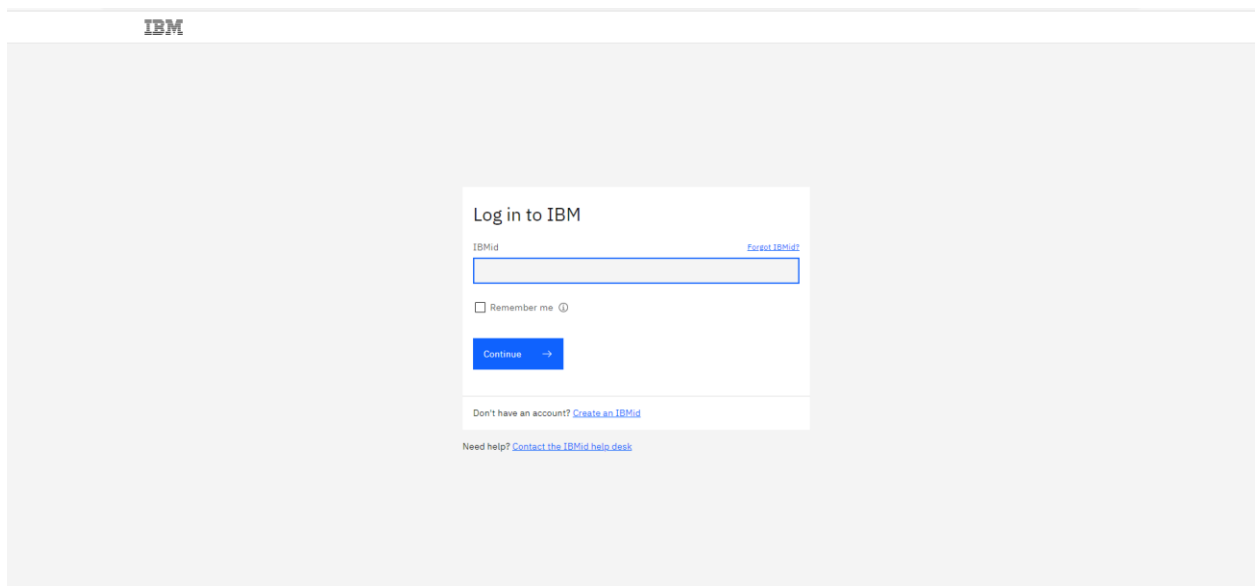
different options like manage, plan, and connection (manage is for launch, Plan gives us the idea about the payment package and its upgrades, and lastly the connection is for to connect IoT with other services)



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

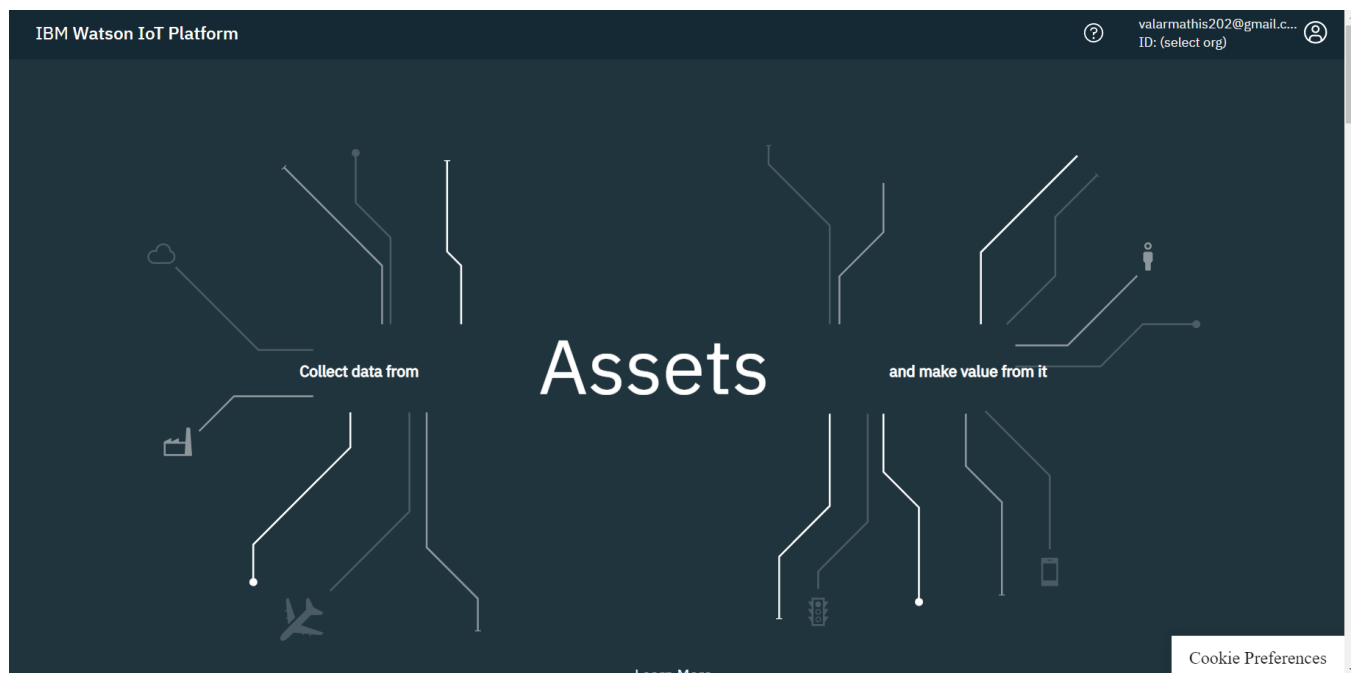


9. Enter the details to sign in to the Watson Cloud to create a device.

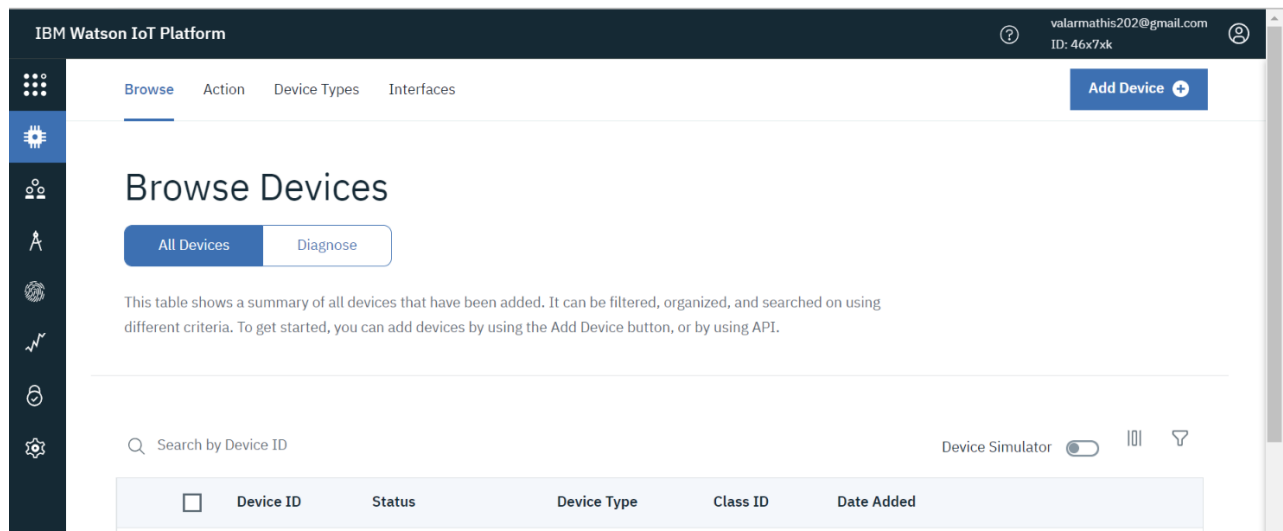


The image shows the IBM login page. At the top left is the IBM logo. The main content is a white box titled "Log in to IBM". Inside the box, there is a label "IBMid" followed by a text input field. To the right of the input field is a link "Forgot IBMid?". Below the input field is a checkbox labeled "Remember me" with a help icon. At the bottom of the box is a blue "Continue" button with a right arrow. Below the box, there is a link "Don't have an account? Create an IBMid" and a link "Need help? Contact the IBMid help desk".

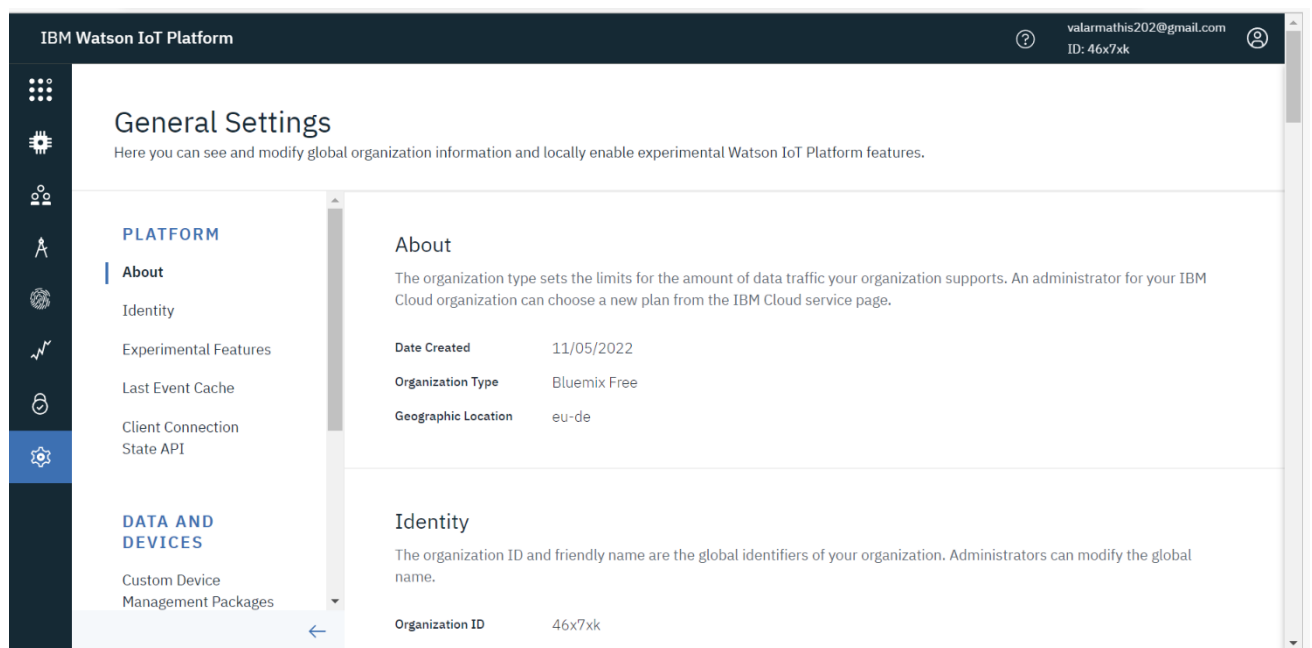
10. Once logged in the name will be displayed and it goes back to the first page.



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.

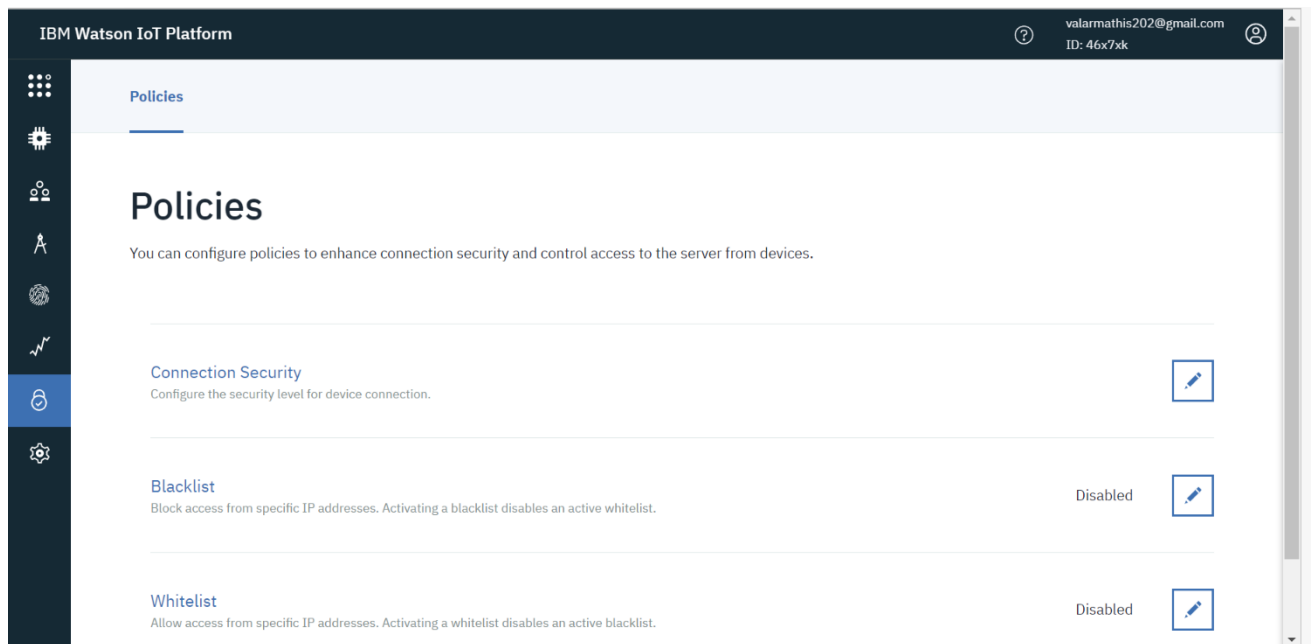


12. The setting tab is used to change the general setting if needed for the project.

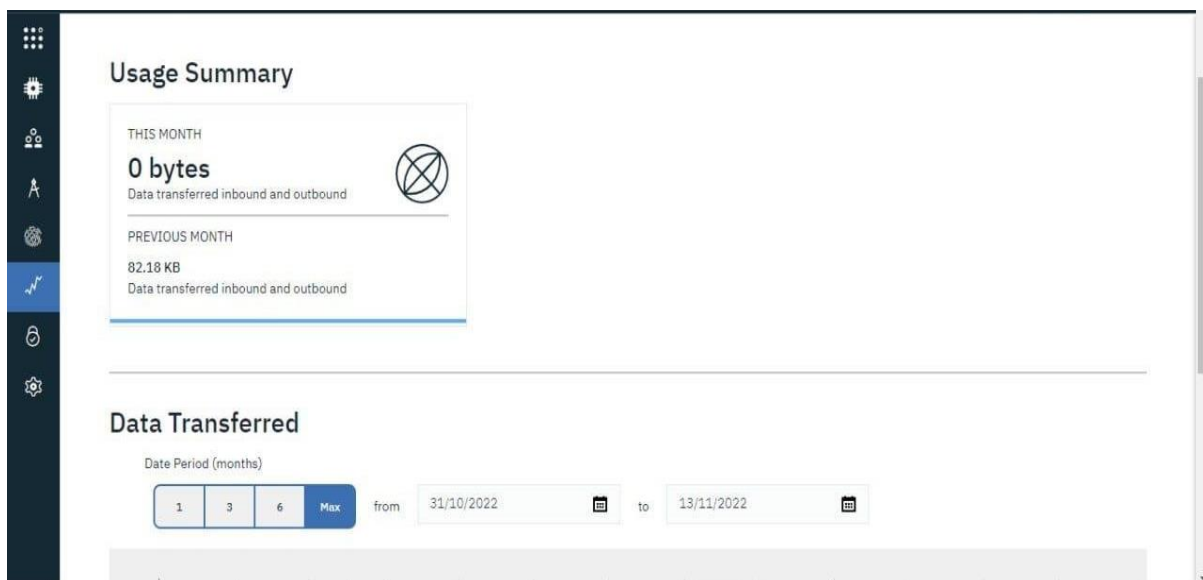


13. In the security tab we can choose the type of security connection and can

change according to specification.

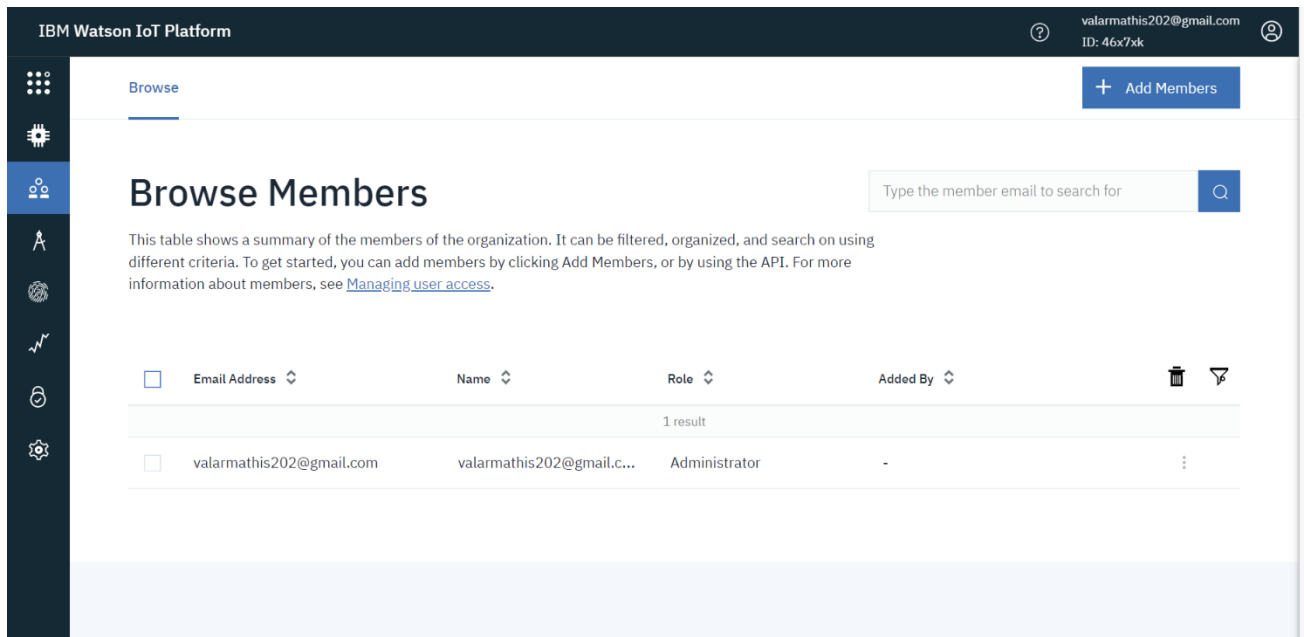


14. Usage gives the summary of how many bytes are used between the devices and the IBM cloud.

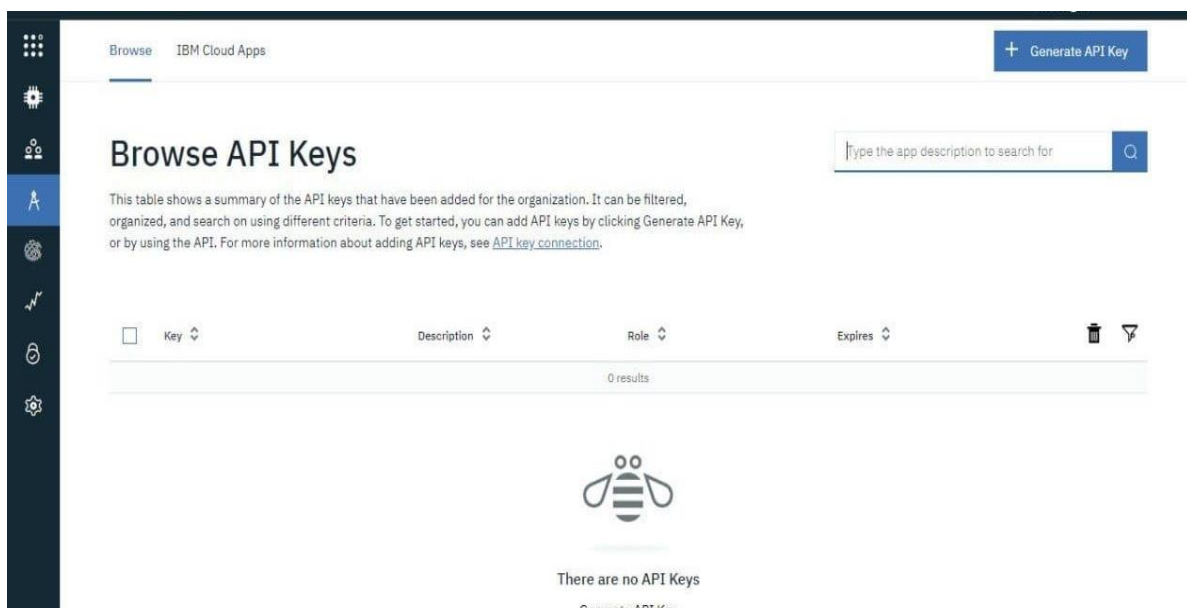


15. The member tab is adding the teams' members to work in the platform.



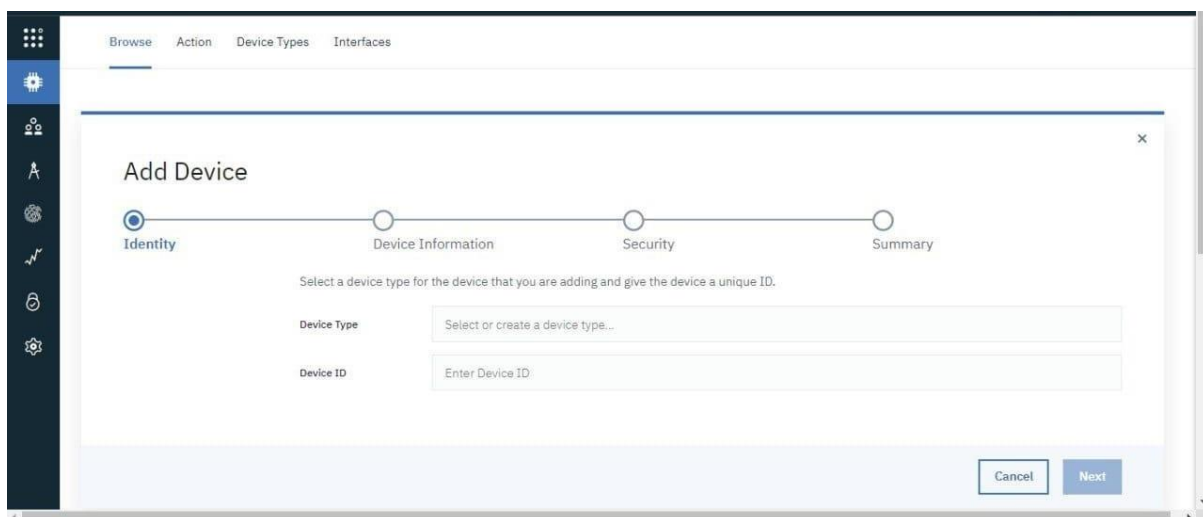
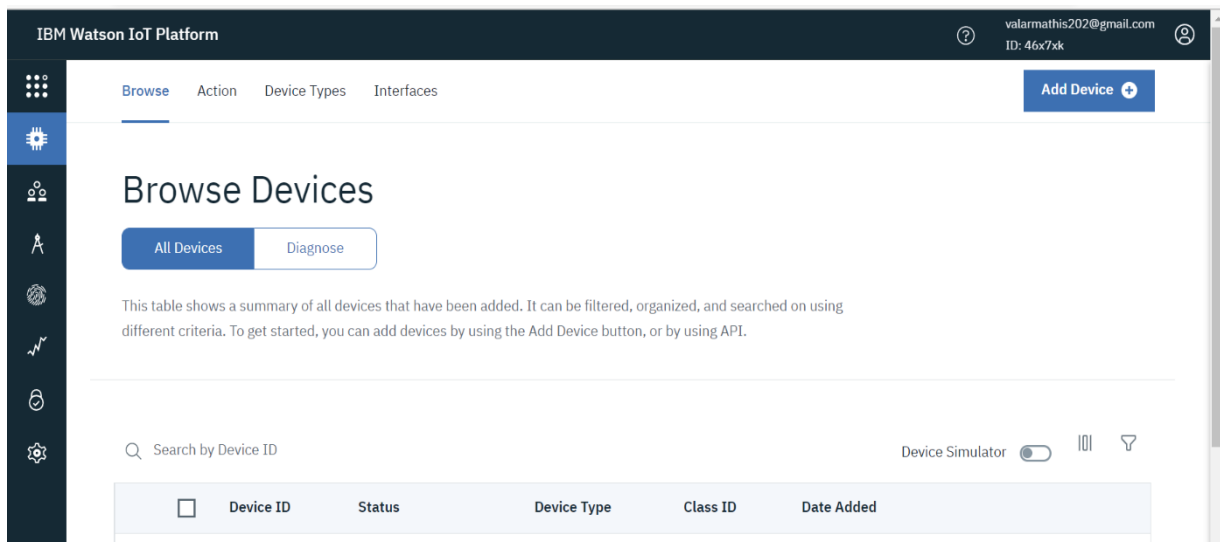


16. This tab is used when you want to connect to some other platform and to integrate with other services.



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

device type and device id and click next.



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

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"/>

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

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.

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

Browse Action Device Types Interfaces

## Add Device

Identity Device Information Security Summary

Verify that the following information is correct then select Finish

Device Type  
abcd

Device ID  
asfd

[View Metadata](#)

Security Token  
To be generated

Back Finish

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

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

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.

Browse Action Device Types Interfaces

[Add Device](#)

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

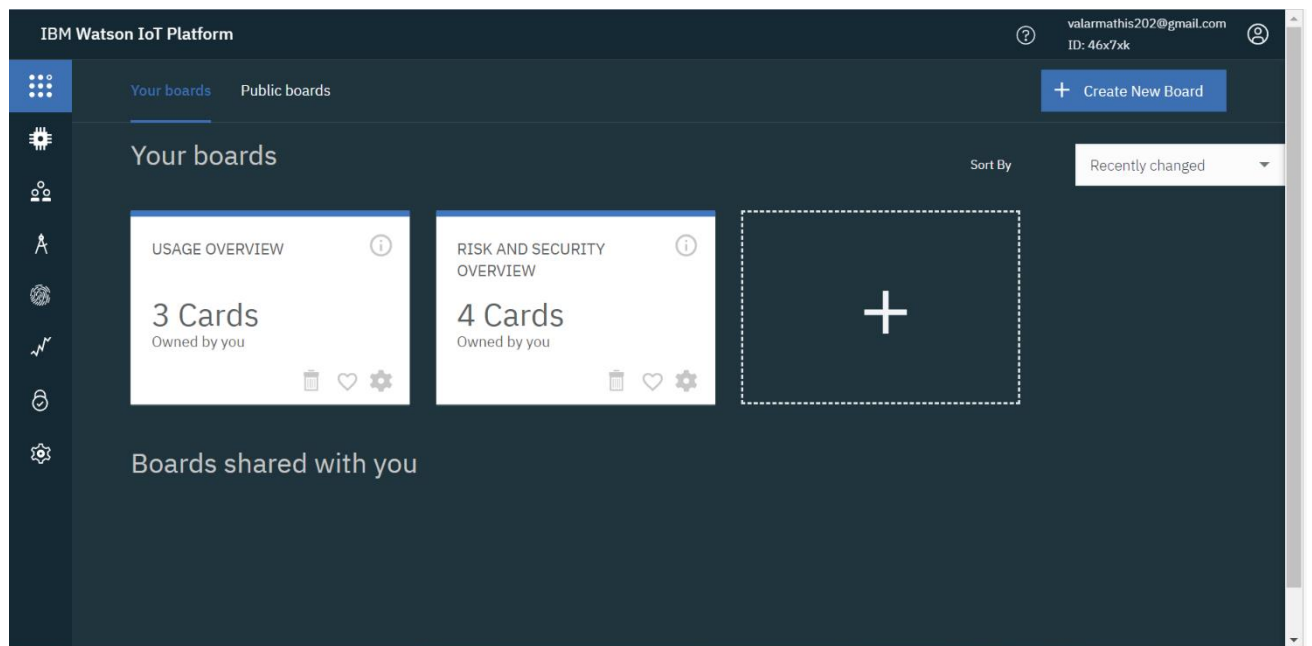
<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added
> <input type="checkbox"/>	12	Disconnected	abcd	Device	31 Oct 2022 20:27
> <input type="checkbox"/>	asfd	Disconnected	abcd	Device	13 Nov 2022 10:46

Items per page 50 | 1-2 of 2 items

1 of 1 page

In a similar way, we can create a 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:

A device and an IBM Watson cloud are developed.