

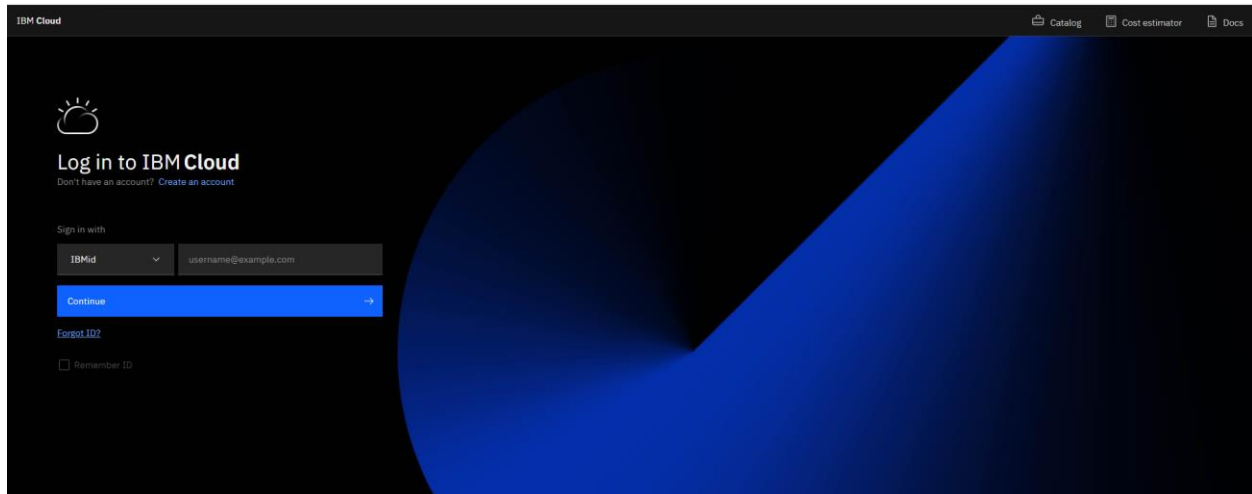
CREATE IBM WATSON IOT PLATFORM AND DEVICE

AIM:

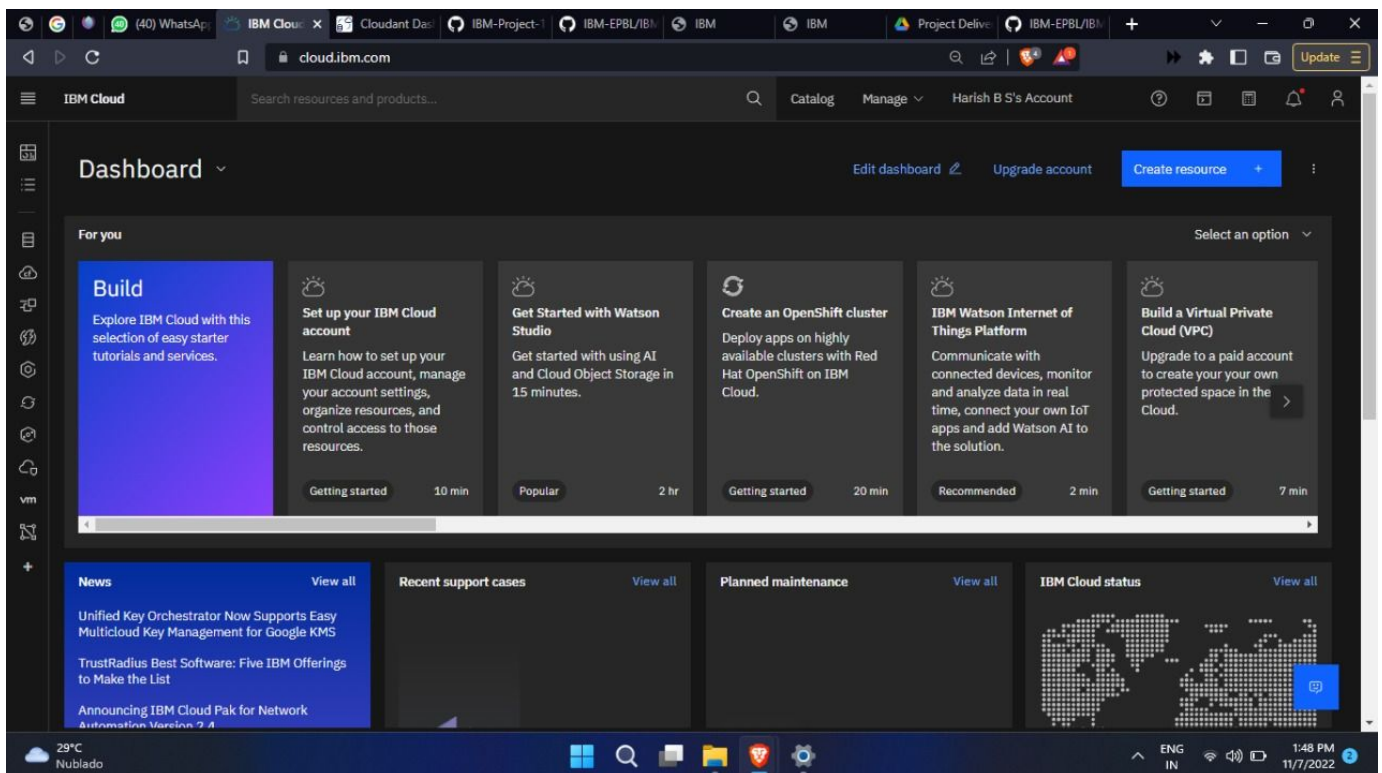
To create the IBM Watson IoT platform and device

STEPS:

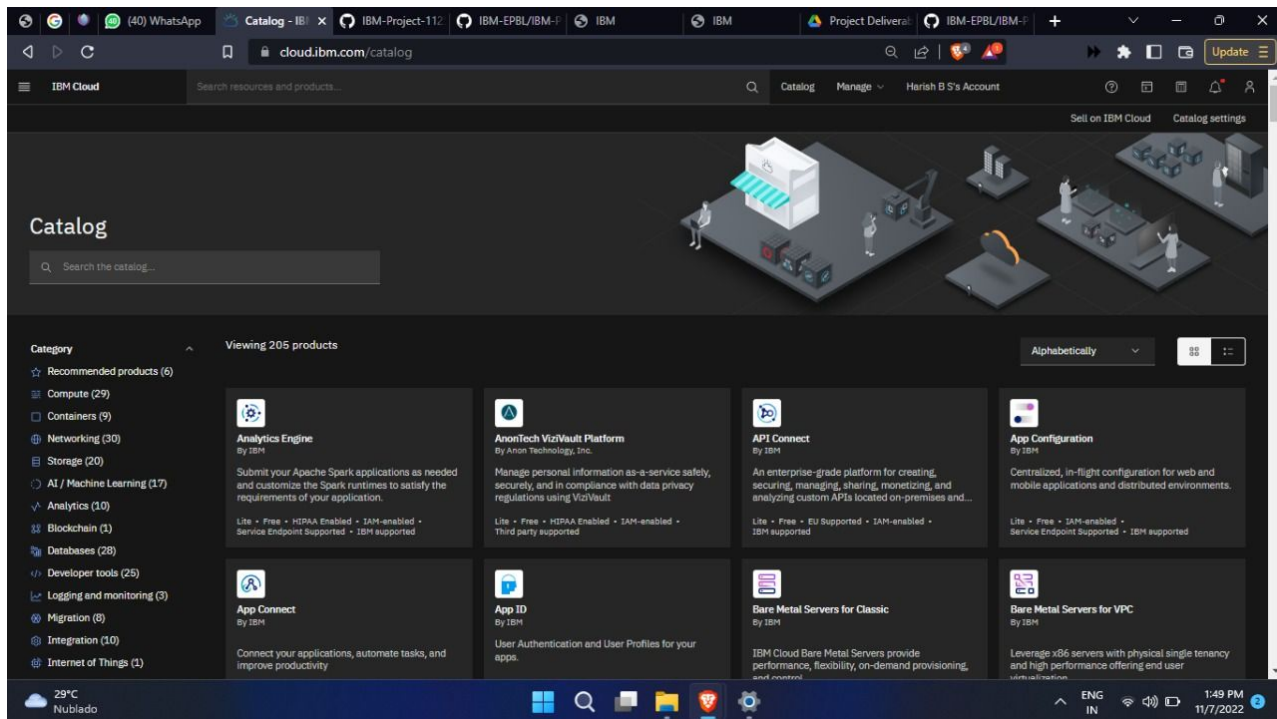
1. Firstly create an IBM cloud account with IBMid and password.



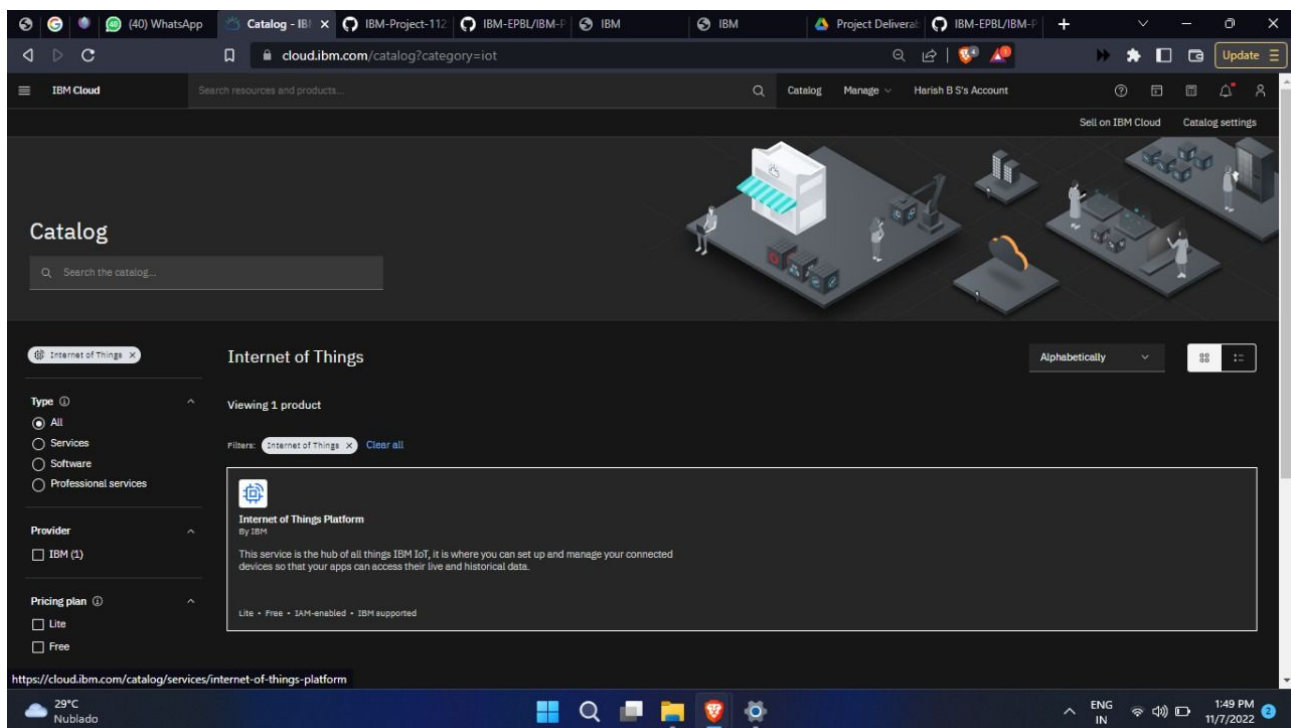
2. Home page of IBM cloud.



3. Click on the catalog on the top.



4. Click on IoT in the category mentioned.



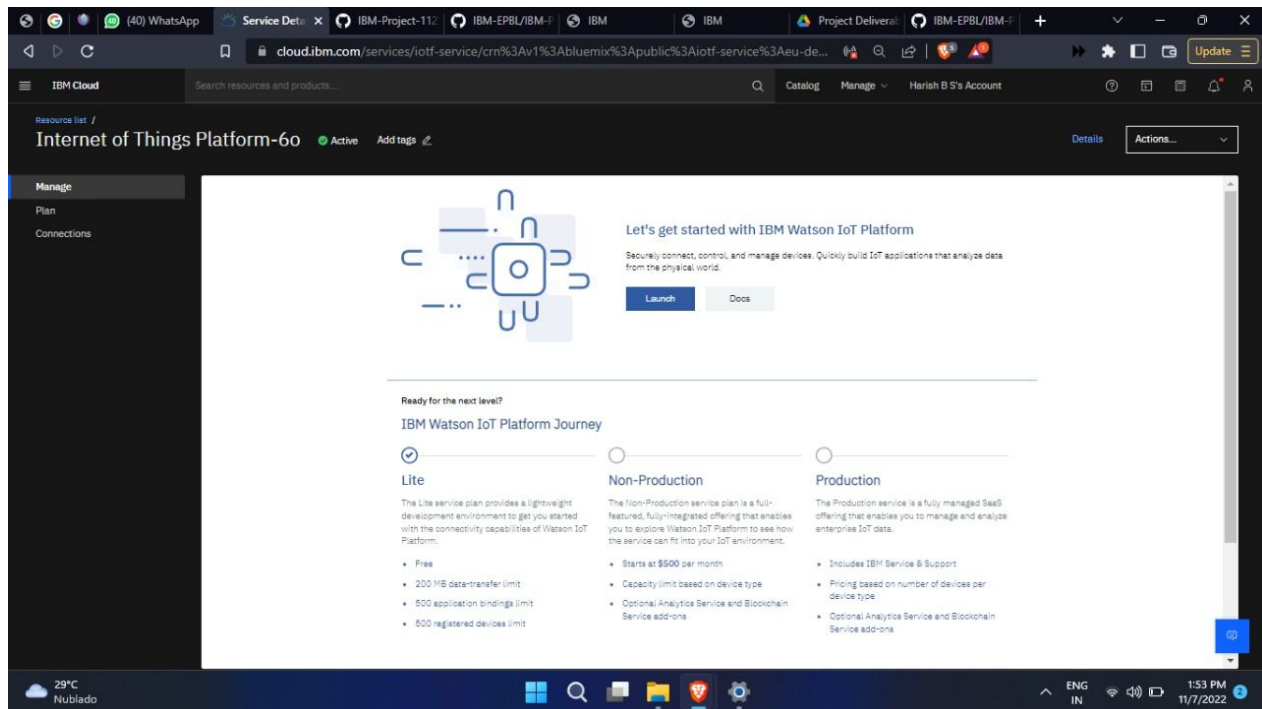
5. If already a lite is present delete it else u can't create another.

The screenshot shows the IBM Cloud 'Internet of Things Platform' creation page. The browser address bar shows 'cloud.ibm.com/catalog/services/internet-of-things-platform'. The page has a dark theme. On the left, there's a sidebar with '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 is titled 'Internet of Things Platform' and describes it as 'the hub of all things IBM IoT'. It has two tabs: 'Create' (active) and 'About'. Under 'Create', there are two sections: 'Select a location' with a dropdown menu set to 'Frankfurt (eu-de)', and 'Select a pricing plan'. The pricing plan section shows a table with columns 'Plan', 'Features', and 'Pricing'. The 'Lite' plan is selected, showing features like 'Includes up to 500 registered devices' and 'Maximum of 200 MB of each data metric', and a pricing of 'Free'. Below the table, there's a note: 'The Lite service plan for Internet of Things Platform includes up to 800 registered devices, and a maximum of 200 MB each of data exchanged, data analyzed, and edge data analyzed per month. Lite plan services are deleted after 30 days of inactivity.' On the right, there's a 'Summary' panel showing 'Internet of Things Platform', 'Free', 'Location: Frankfurt', 'Plan: Lite', 'Service name: Internet of Things Platform-60', and 'Resource group: Default'. At the bottom right, there's a checkbox for 'I have read and agree to the following license agreements:' with a 'Terms' link, and two buttons: 'Create' and 'Add to estimate'.

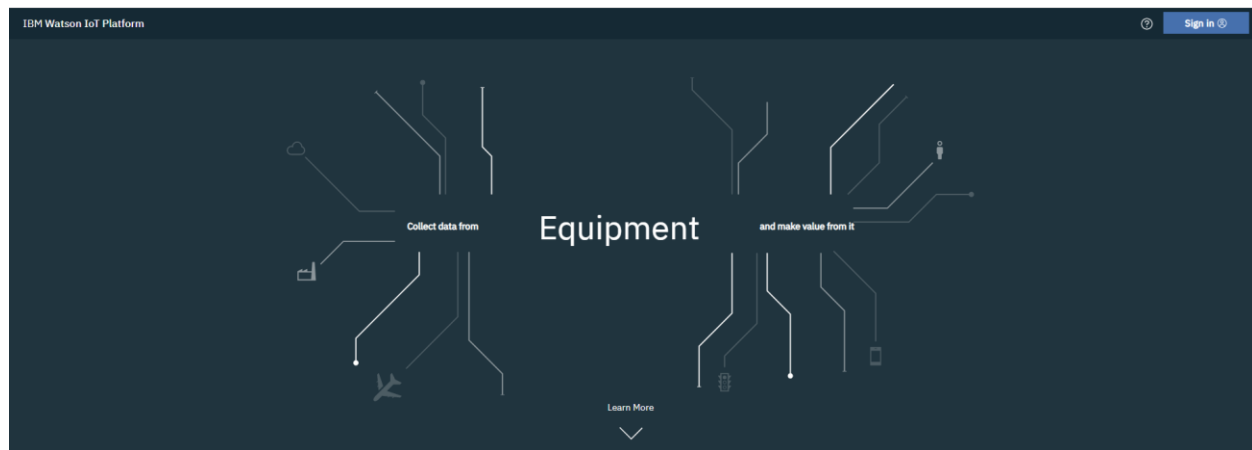
6. Enter the location and in the configure your resource type the service name and choose the plan, tick the agree with agreements and then click on create.

The screenshot shows the IBM Cloud 'Internet of Things Platform-60' resource page. The browser address bar shows 'cloud.ibm.com/services/iotf-service/crm%3A1%3Abluemix%3Apublic%3Aiotf-service%3Aeu-de...'. The page has a dark theme. On the left, there's a sidebar with 'Resource list / Internet of Things Platform-60', 'Active', 'Add tags', 'Details', and 'Actions...'. The main content area is titled 'Internet of Things Platform-60' and features a large blue icon of a network node. Below the icon, there's a section 'Let's get started with IBM Watson IoT Platform' with a 'Launch' button and a 'Docs' button. Below that, there's a section 'Ready for the next level?' titled 'IBM Watson IoT Platform Journey'. It shows three stages: 'Lite', 'Non-Production', and 'Production'. The 'Lite' stage is selected and shows details: 'The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.' and a list of features: 'Free', '200 MB data-transfer limit', '500 application bindings limit', and '500 registered devices limit'. The 'Non-Production' stage shows details: '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.' and a list of features: 'Starts at \$500 per month', 'Capacity limit based on device type', and 'Optional Analytics Service and Blockchain Service add-ons'. The 'Production' stage shows details: 'The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.' and a list of features: 'Includes IBM Service & Support', 'Pricing based on number of devices per device type', and 'Optional Analytics Service and Blockchain Service add-ons'.

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.



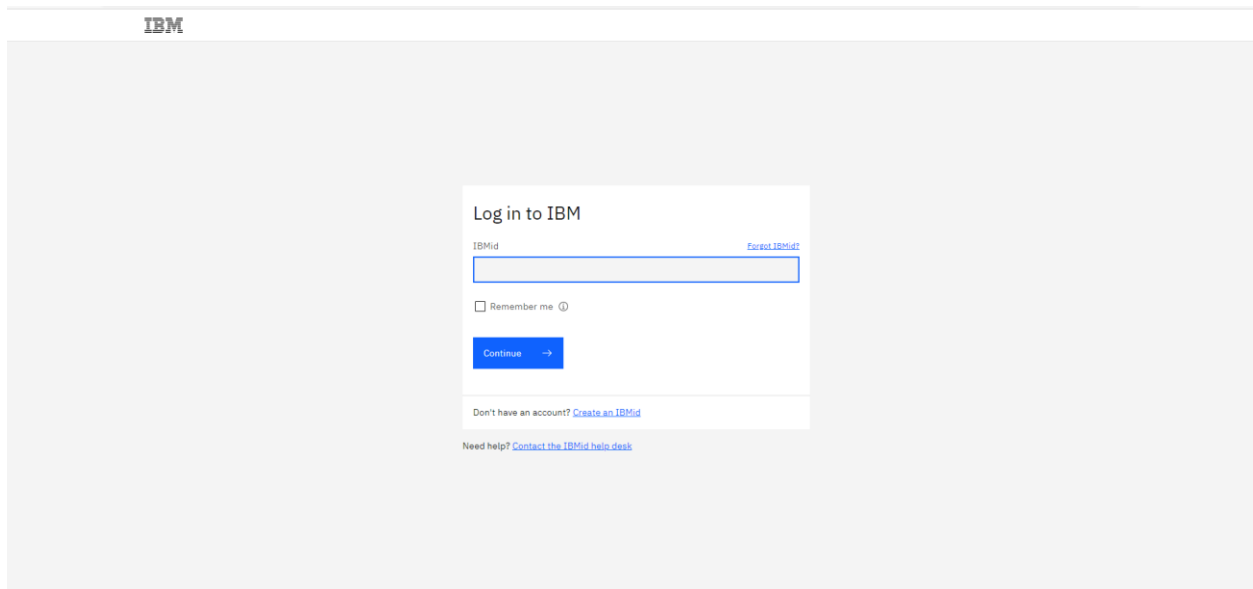
Powerful web dashboard

Flexible, scalable and easy to use

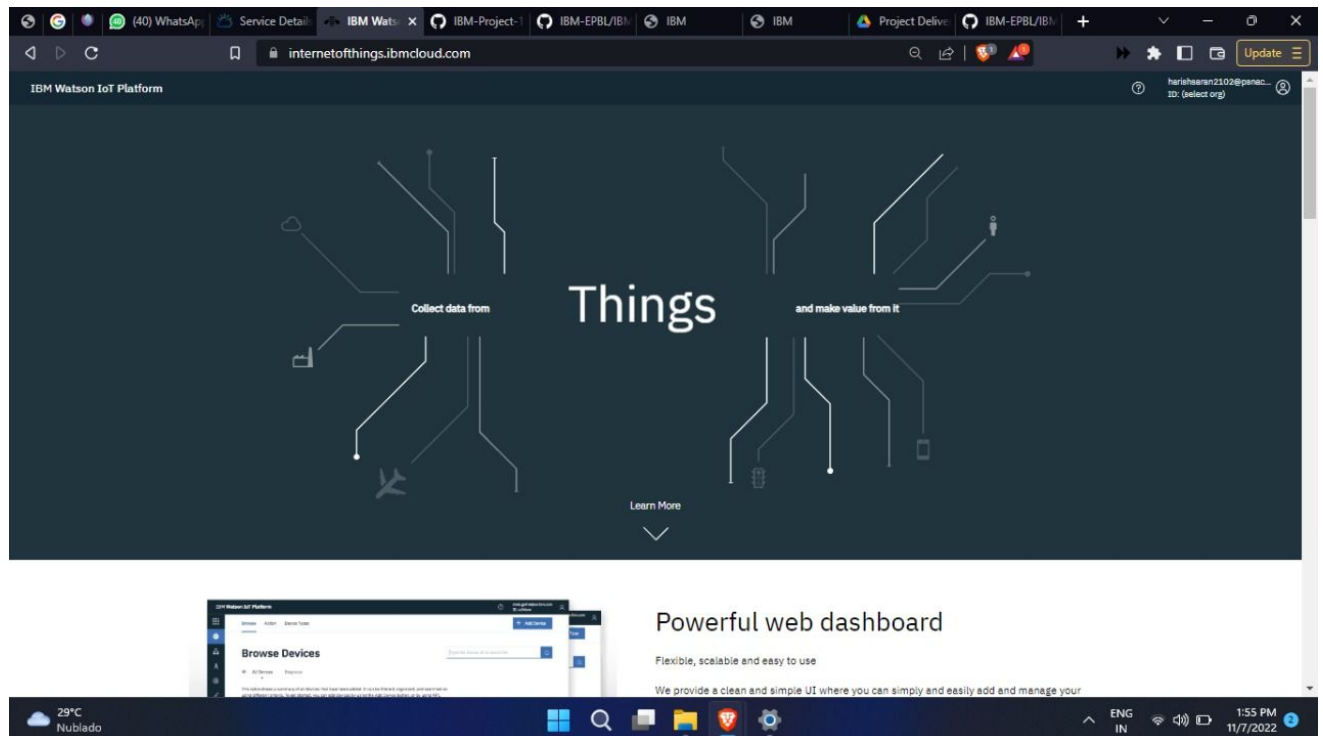
We provide a clean and simple UI where you can simply and easily add and manage your devices, control access to your IoT service, and monitor your usage. See at a glance the things you are interested in.

Cookie Preferences

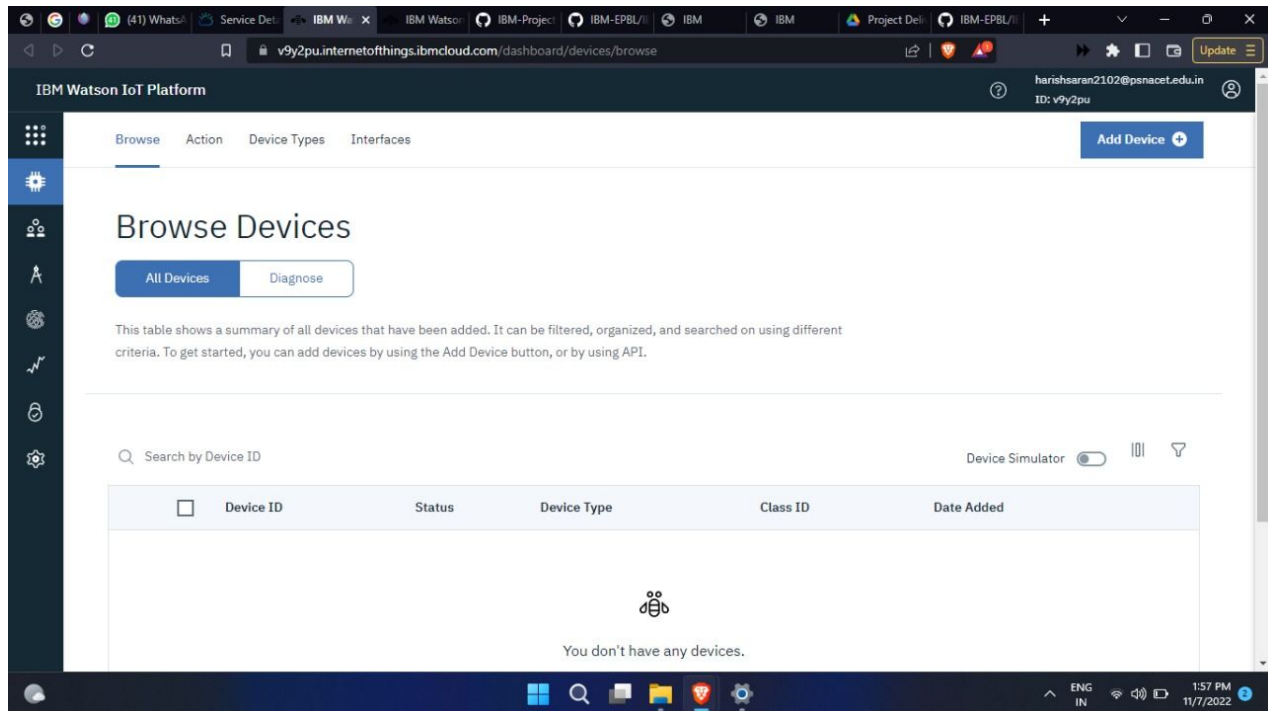
9. Enter the details to sign in to the Watson Cloud to create a device.



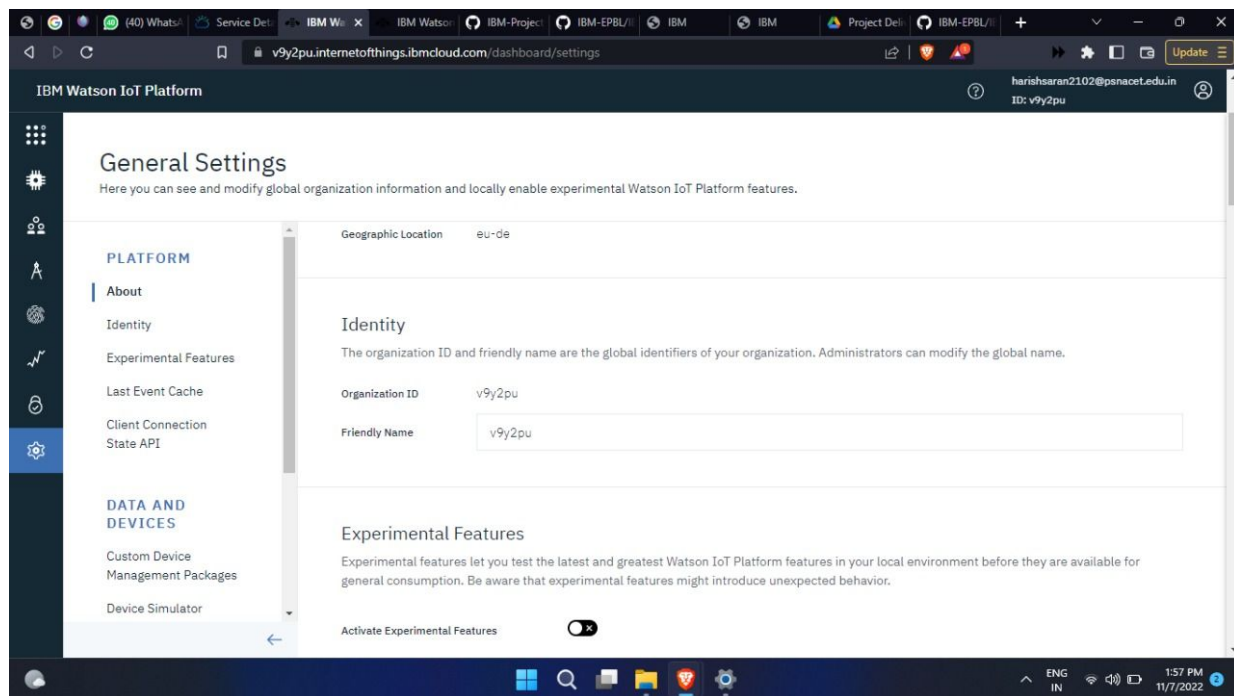
10. Once logged in the name will be displayed and it goes back to the first page.



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.

The screenshot shows the 'Policies' section of the IBM Watson IoT Platform. The page title is 'Policies' with a subtitle: 'You can configure policies to enhance connection security and control access to the server from devices.' There are three policy cards: 'Connection Security' (Configure the security level for device connection), 'Blacklist' (Block access from specific IP addresses. Activating a blacklist disables an active whitelist.), and 'Whitelist' (Allow access from specific IP addresses. Activating a whitelist disables an active blacklist.). Each card has a 'Disabled' status and an edit icon. The left sidebar contains navigation icons for various platform features. The top navigation bar shows the user's profile and the URL: v9y2pu.internetofthings.ibmcloud.com/dashboard/security. The bottom status bar shows the system time as 1:58 PM on 11/7/2022.

The screenshot shows the 'Usage Summary' section of the IBM Watson IoT Platform. The page title is 'Usage Summary'. It displays two data transfer metrics: 'THIS MONTH' and 'PREVIOUS MONTH', both showing '0 bytes' of data transferred inbound and outbound. Below this is a 'Data Transferred' section with a date range selector. The date range is set from '06/11/2022' to '07/11/2022'. The left sidebar contains navigation icons for various platform features. The top navigation bar shows the user's profile and the URL: v9y2pu.internetofthings.ibmcloud.com/dashboard/usage. The bottom status bar shows the system time as 1:58 PM on 11/7/2022.

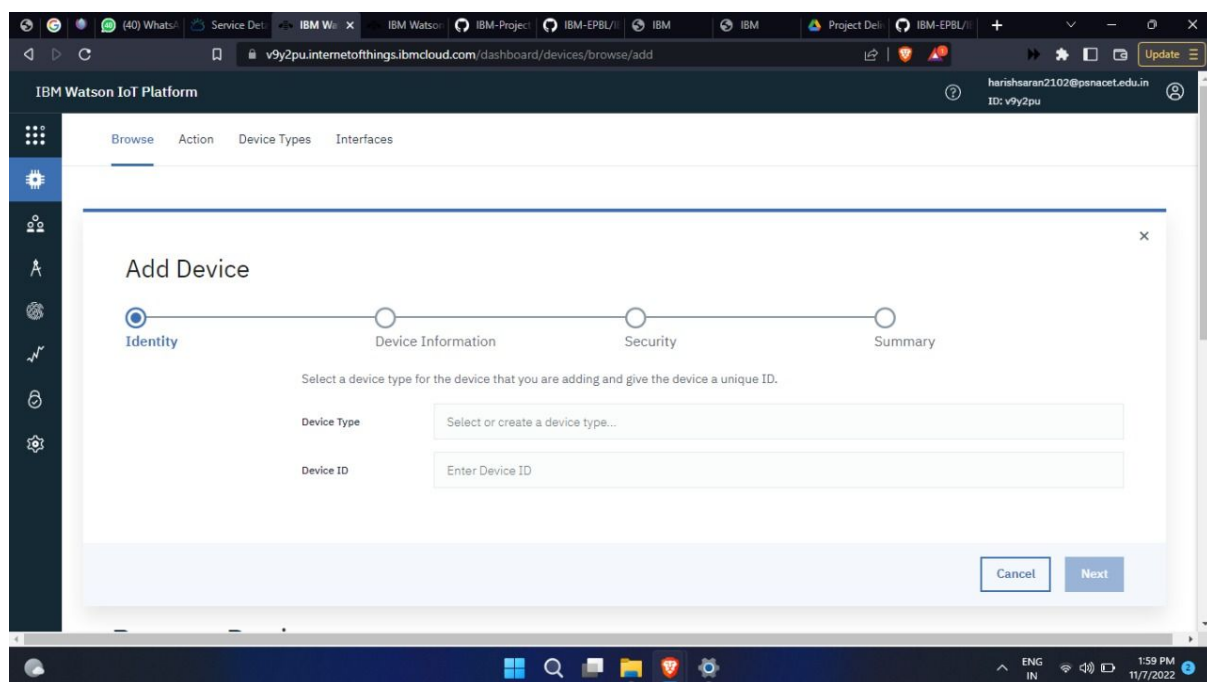
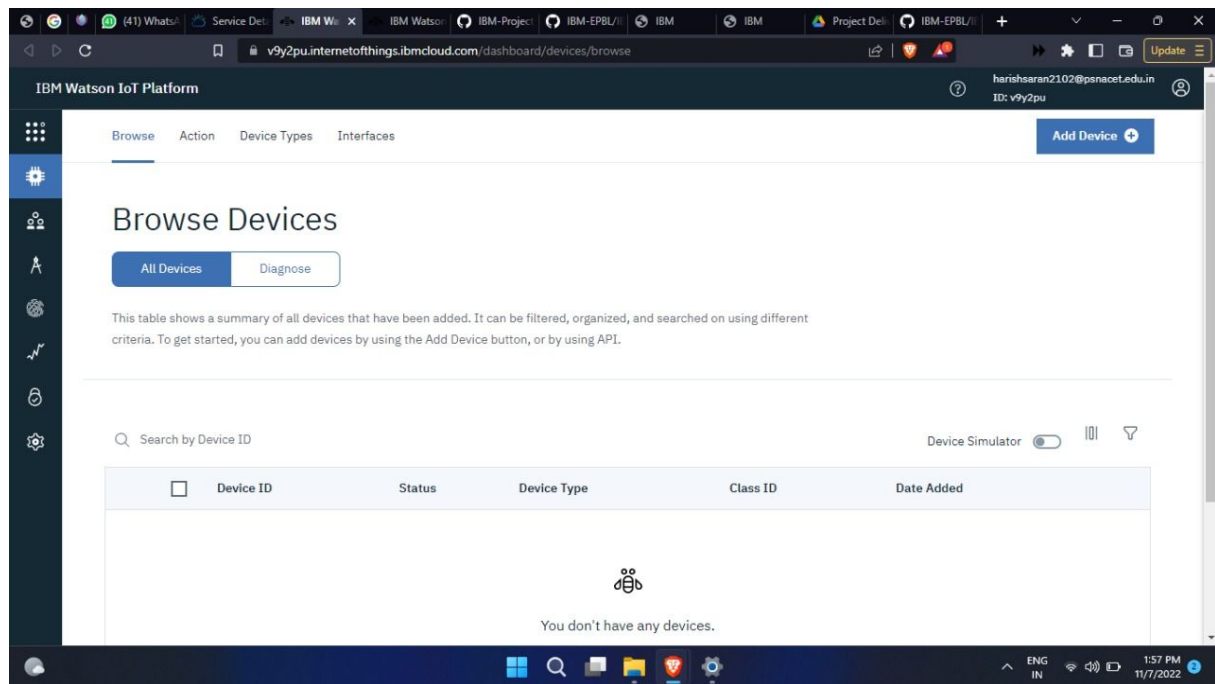
15. The member tab is add the teams members to work in the platform.

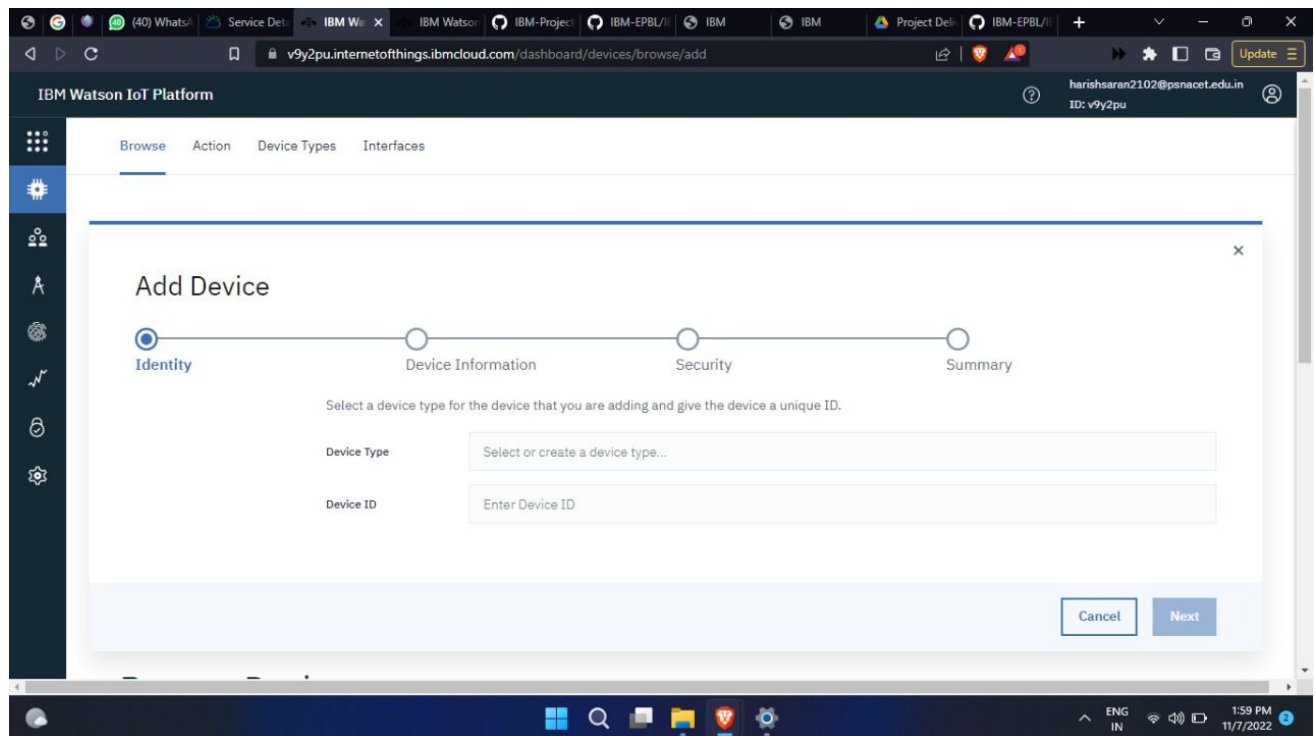
The screenshot displays the 'Browse Members' interface in the IBM Watson IoT Platform. The page title is 'Browse Members'. Below the title, there is a search bar with the placeholder text 'Type the member email to search for'. A table lists the members of the organization. The table has columns for 'Email Address', 'Name', 'Role', 'Added By', and 'Expires'. There is one member listed: harishsaran2102@psnacet.edu.in, harishsaran2102@psn..., Administrator, -, -. The page also features a sidebar with various icons and a top navigation bar with the IBM Watson IoT Platform logo and user information.

Email Address	Name	Role	Added By	Expires
harishsaran2102@psnacet.edu.in	harishsaran2102@psn...	Administrator	-	-

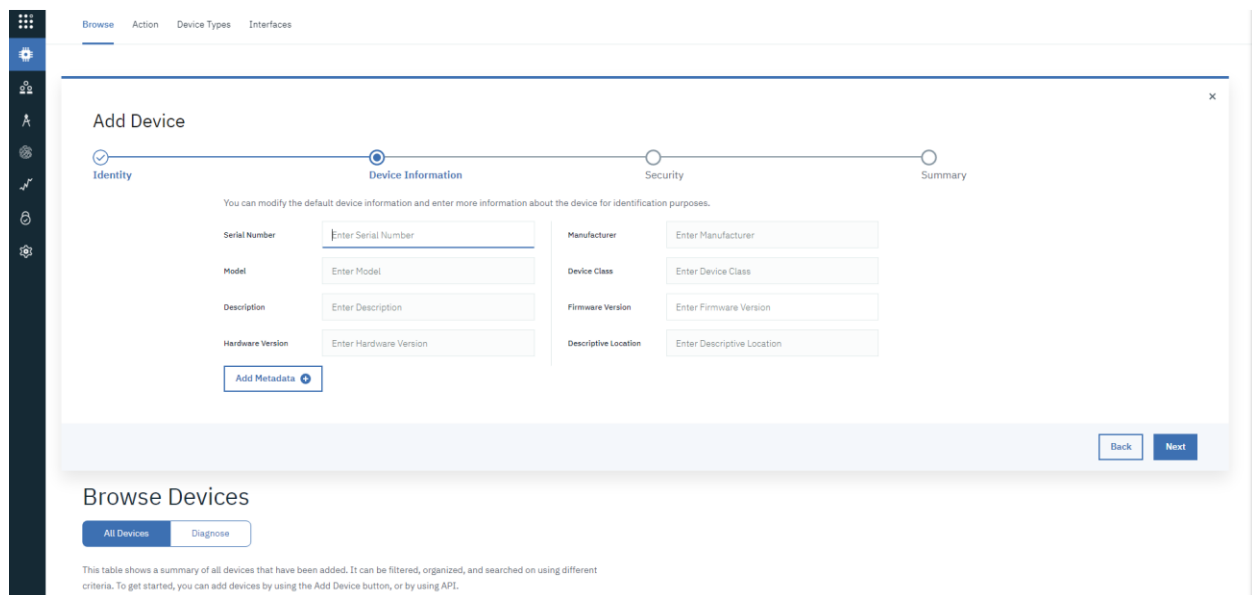
16. This tab is used when you want to connect to some other platform and to integrate with other services.

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.



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 also marked with a checkmark, suggesting it has been completed. The 'Device Information' and 'Summary' steps are marked with circles, indicating they are yet to be completed.

Add Device

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

Enter an optional token

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

Authentication tokens are encrypted before we store them.

Back **Next**

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, now at the 'Summary' step. The 'Security' step is also marked with a checkmark, indicating it has been completed. The 'Device Information' step is marked with a checkmark, and the 'Identity' step is marked with a checkmark. The 'Summary' step is currently active, indicated by a blue circle.

Add Device

Verify that the following information is correct then select Finish

Device Type
NodeMCU

Device ID
200221

View Metadata

Security Token
To be generated

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

The screenshot shows the IBM Watson IoT Platform interface. The browser address bar displays the URL: `v9y2pu.internetofthings.ibmcloud.com/dashboard/devices/drilldown/Nodemcu:200221?returnTo=/devices...`. The page title is "Device Drilldown - 200221". On the left, a sidebar menu lists various options: "Device Credentials" (selected), "Connection Information", "Recent Events", "State", "Device Information", "Metadata", "Diagnostics", "Connection Logs", and "Device Actions". The main content area, titled "Device Credentials", contains a table with the following details:

Organization ID	v9y2pu
Device Type	Nodemcu
Device ID	200221
Authentication Method	use-token-auth
Authentication Token	AXUxHwj6nNVk4qo53I

Below the table, a warning icon and text state: "Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token." A link at the bottom says "Find out how to add these credentials to your device". The user profile in the top right corner is "harishsaran2102@psnacet.edu.in" with ID "v9y2pu". The system clock shows 2:05 PM on 11/7/2022.

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 is identical to the one above, showing the same IBM Watson IoT Platform interface. It displays the "Device Credentials" for device 200221, including the Organization ID (v9y2pu), Device Type (Nodemcu), Device ID (200221), Authentication Method (use-token-auth), and Authentication Token (AXUxHwj6nNVk4qo53I). The warning about non-recoverable tokens is also present. The browser URL, sidebar menu, and user profile information are consistent with the previous image.

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.

IBM Watson IoT Platform

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

Device ID	Status	Device Type	Class ID	Date Added
200221	Disconnected	Nodemcu	Device	7 Nov 2022 14:05

Items per page 50 | 1-1 of 1 item

1 of 1 page

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Add Device

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added
200221	Disconnected	Nodemcu	Device	7 Nov 2022 14:05

Identity Device Information Recent Events State Logs

Device ID: 200221

Device Type: Nodemcu

Date Added: 7 Nov 2022 14:05

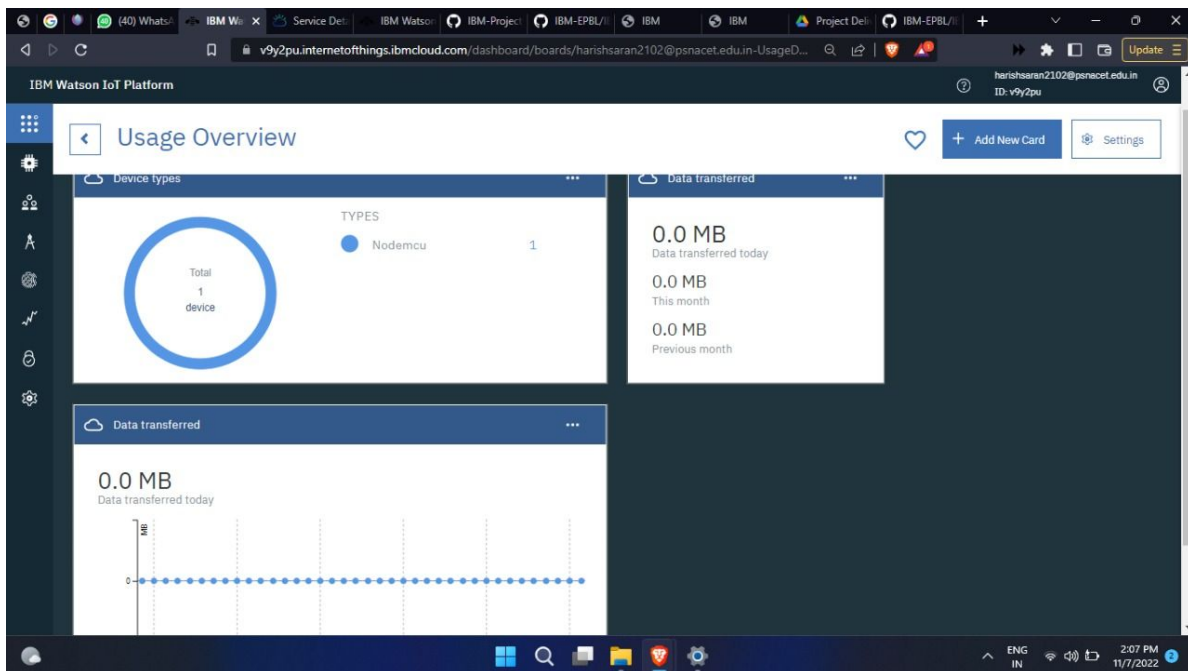
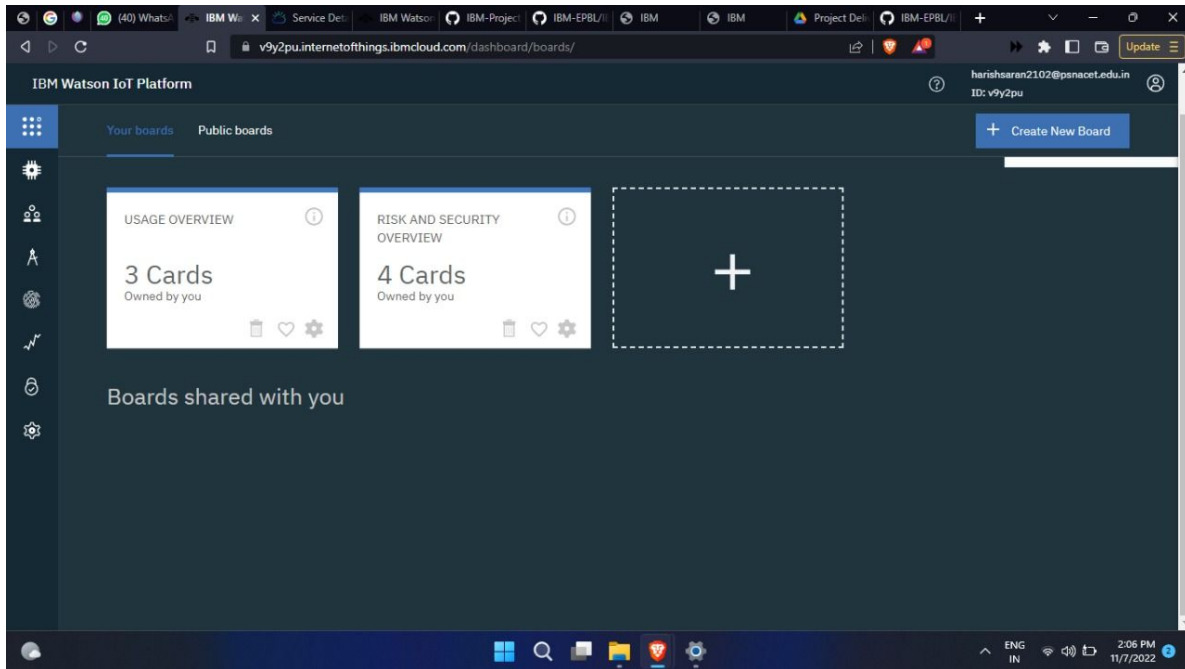
Added By: harishsaran2102@psnacet.edu.in

Connection Status: Disconnected

Items per page 50 | 1-1 of 1 item

1 of 1 page

24. The Boards will display card for the project.



RESULT:

An IBM Watson cloud for IoT and a device is create