PROJECT REPORT

AI Powered Recruitment Bot

Team :
Rocket

Project By :
Jaskaran Singh
Ishika Garg
Shubham Srivastav
Ankit Srivastav

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1. INTRODUCTION

1.1. OVERVIEW:

We create recruiter assistant who take aptitude round test and interview round test then forward the application to the recruiter which makes an easy task for the recruiter to select students in some students as well as for students as they are prepared for recruitment or not.

1.2. PURPOSE:

To create a chat-bot that can filter students for recruitment and make it easy for the recruiter to select students from already filtered students.

2. LITERATURE SURVEY

2.1. EXISTING PROBLEM:

Students go to a particular place to give tests and interviews which is difficult for some students in particular situations like COVID-19 pandemic, etc. The recruiter also faces many problems as they have to select some students from a large number of students.

2.2. PROPOSED SOLUTION:

We have created a chat-bot that will filter students which will make it an easier task to recruit students from already filtered students. This chat-bot will also help students by telling them about their performance in the aptitude test and interview test. Also, students will get an idea about which questions are asked in the test and interview which gives some idea to students how they can prepare.

3. THEORITICAL ANALYSIS

3.1. BLOCK DIAGRAM:

1. The document is annotated using Watson Discovery SDU

2. The user interacts with the backend server via the app UI. The frontend app UI is a chatbot that engages the user in a conversation.

3. Dialog between the user and backend server is coordinated using a Watson Assistant dialog skill.

4. If the user asks a product operation question, a search query is passed to a predefined IBM Cloud Functions action.

5. The Cloud Functions action will query the Watson Discovery service and return the results.
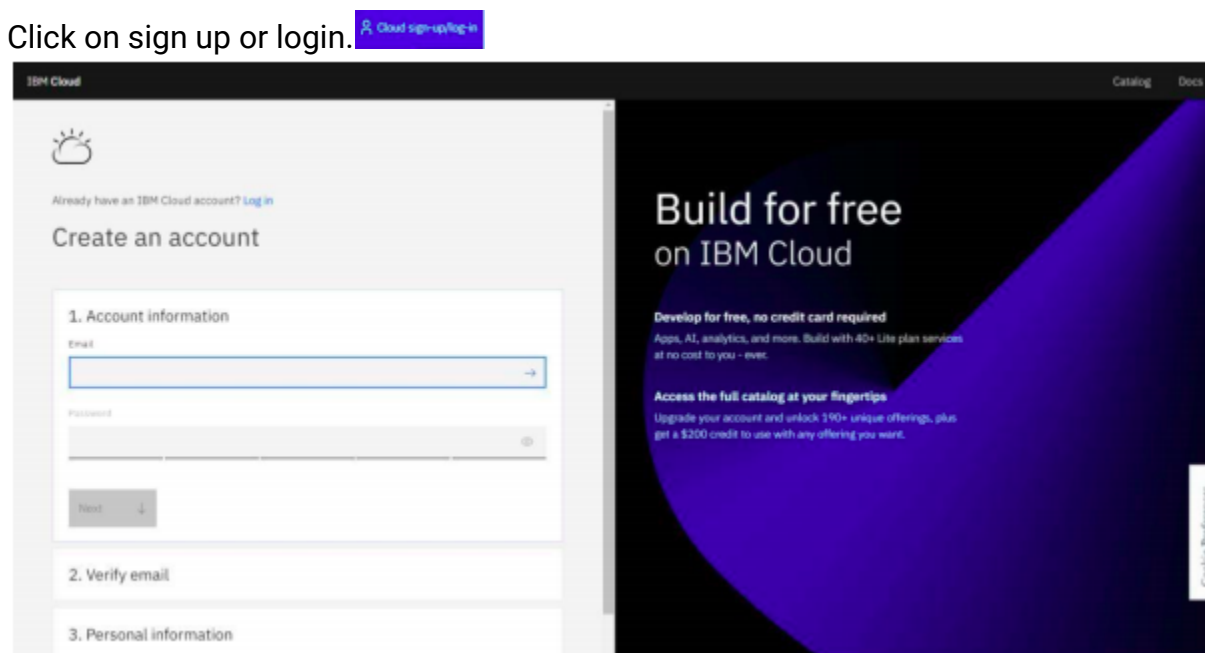
3.2. HARDWARE/SOFTWARE DESIGNING:

1. Create IBM Cloud services

2. Configure Watson Discovery

3. Create IBM Cloud Functions action

4. Configure Watson Assistant

5. Create flow and configure node 6. Deploy and run Node Red app.

4. EXPERIMENTAL INVESTIGATIONS

1.Create IBM Cloud Services To Create IBM Cloud, go to https://www.ibm.com/cloud
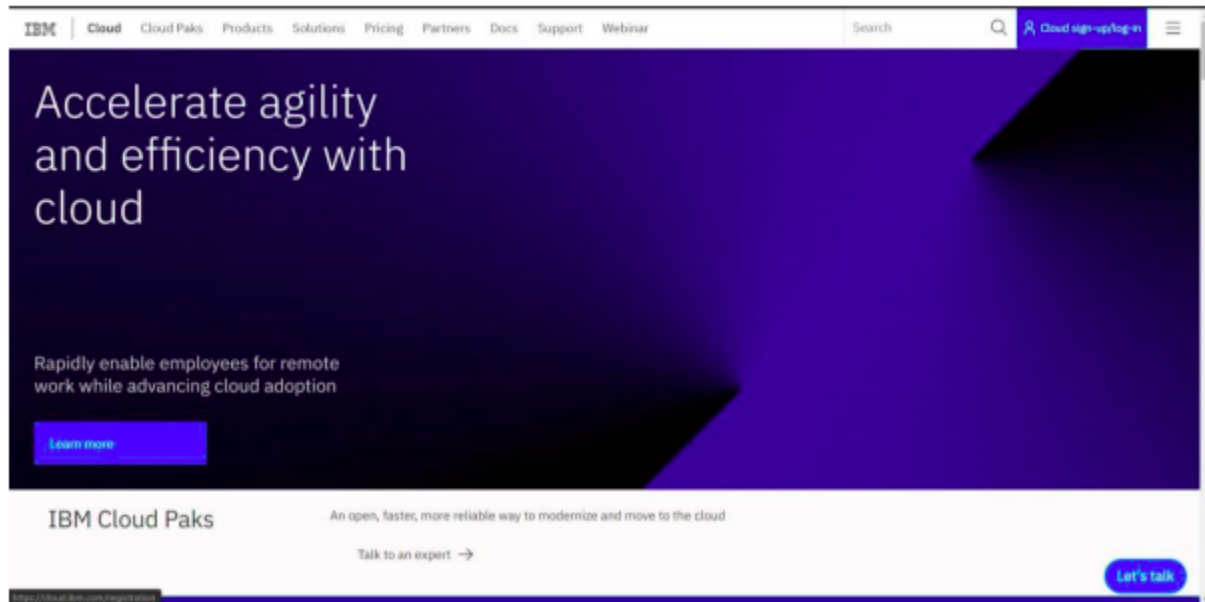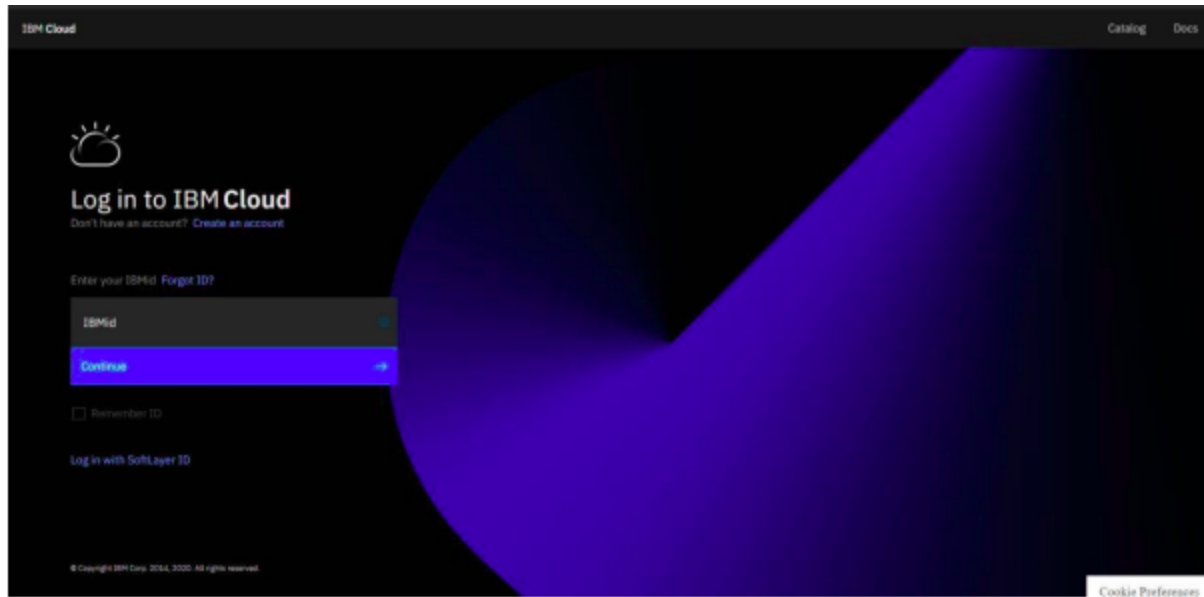
Click on sign up or login.
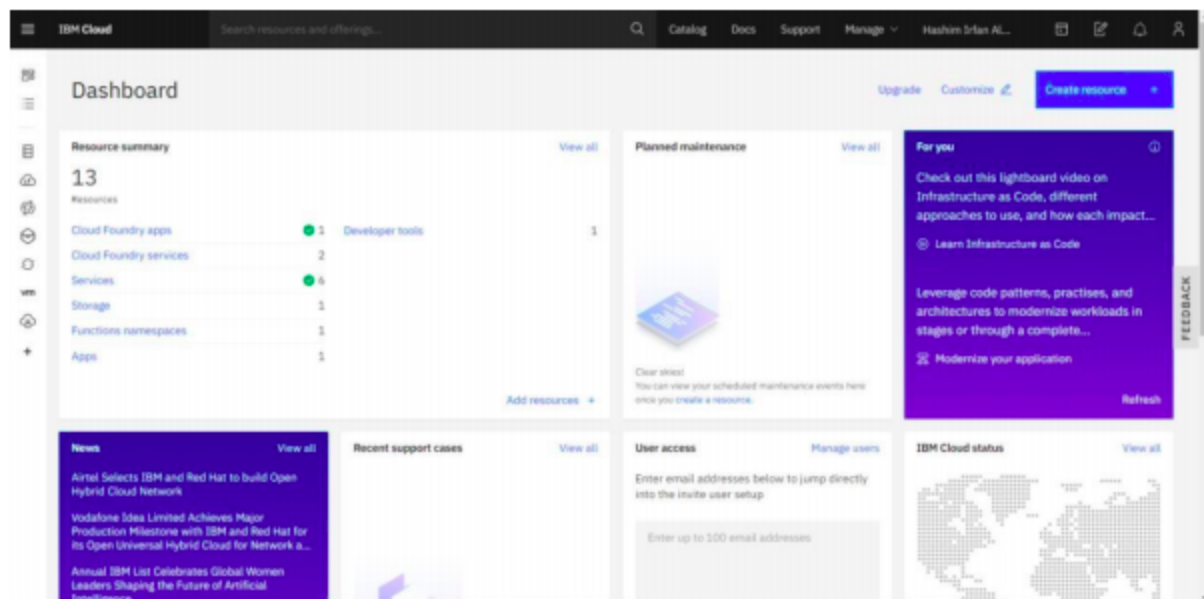

 For Cloud Sign-Up: Follow the steps on the screen and fill in all the required details to create a new cloud account.

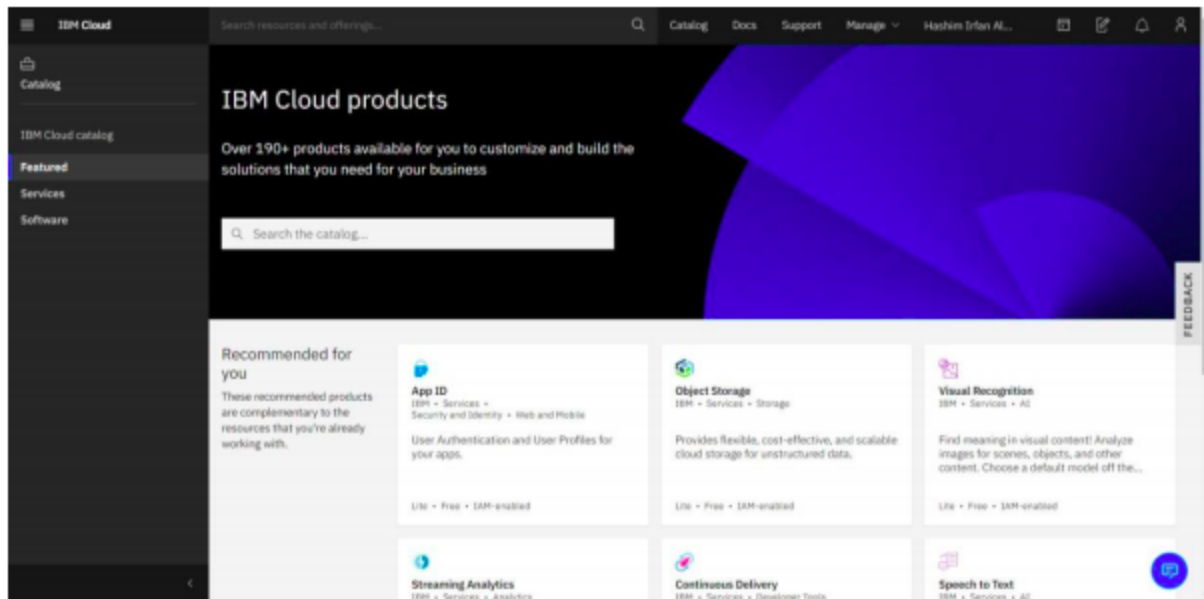For Cloud Log In: Click on and fill your credentials to Log in to your cloud account.
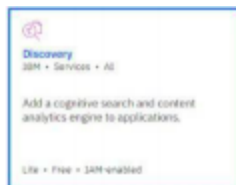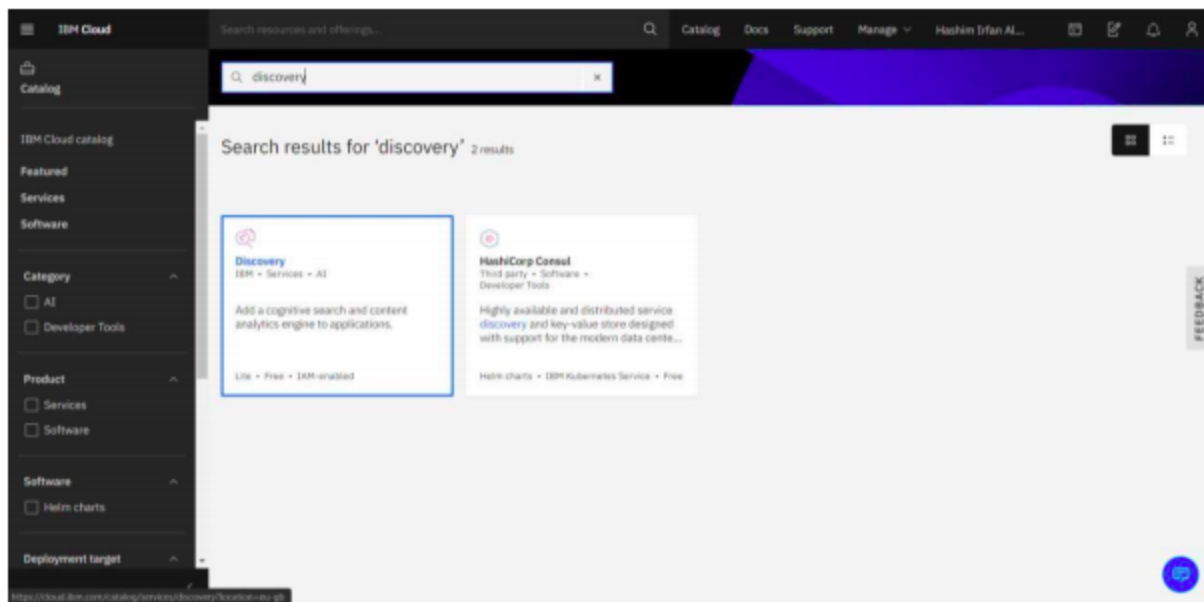
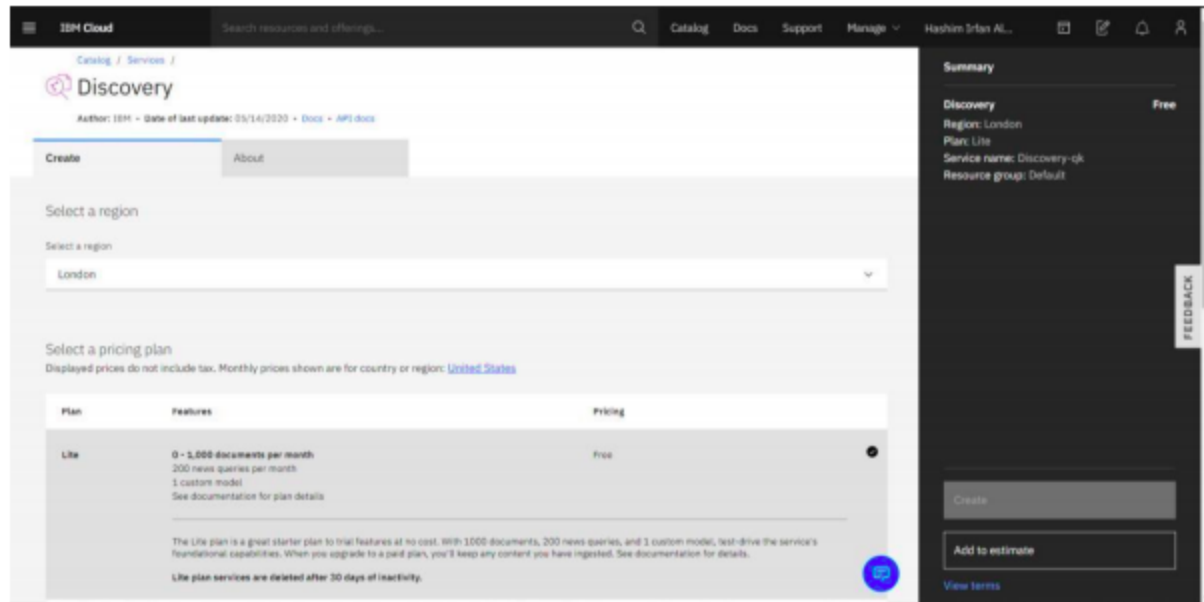After Logging in, you can see the IBM Cloud Dashboard.

To Create any Resource (Services/Apps/etc), click on

Using the search box, we can find the service we want. For this project, we need to Create the following services: 1. Watson Discovery 2. Watson Assistant 1.To create a Watson Discovery Service, search for Discovery in the search box.
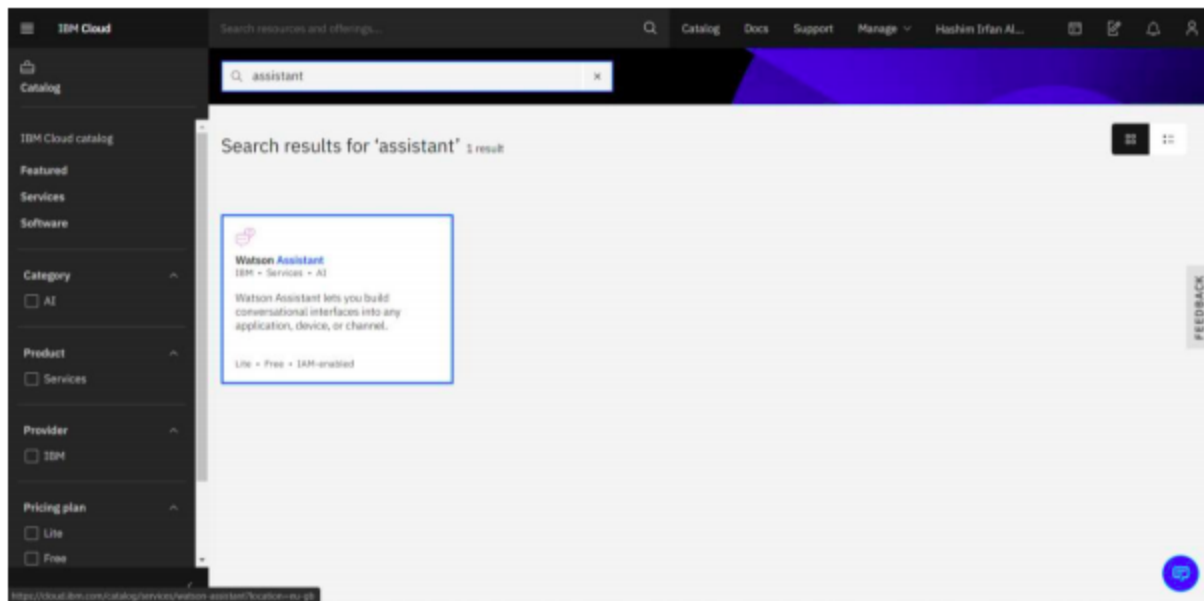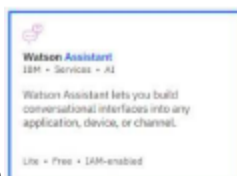

Click on

Select a region, select a plan, configure your service (Service name, etc) and click Create. Your Watson Discovery service is created successfully. (If you are on Lite Plan, you can have only one instance per service).

2.To create a Watson Assistant Service, search for Assistant in the search box

click on

 Select a region, select a plan, configure your service (Service name, etc) and click Create. Your Watson Assistant service is created successfully. (If you are on Lite Plan, you can have only one instance per service). To check whether you have correctly configured the services, go back to the IBM Dashboard and click on View All from the Resource Summary Tab.

All of your existing Resource list will be shown here, click on Services to unveil the list of services you have.

Here we can find that the status of Watson Discovery and Watson Assistant as Active which means we have configured the services correctly.

3. Configure Watson Assistant - Go back to the IBM Dashboard from the resource list screen. click to open Watson Assistant service.
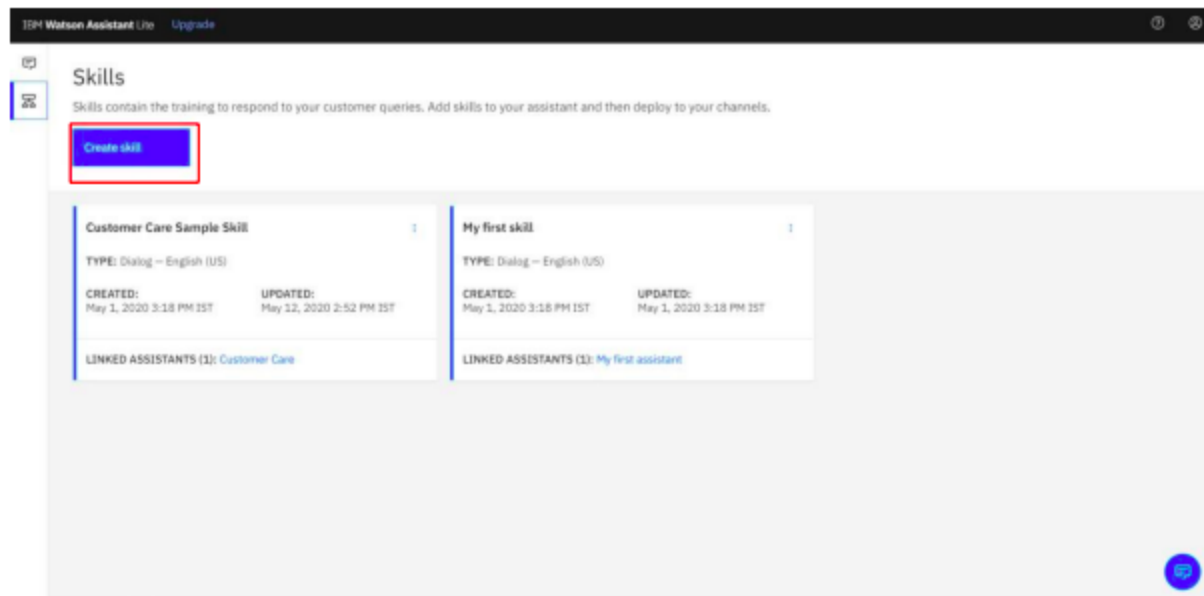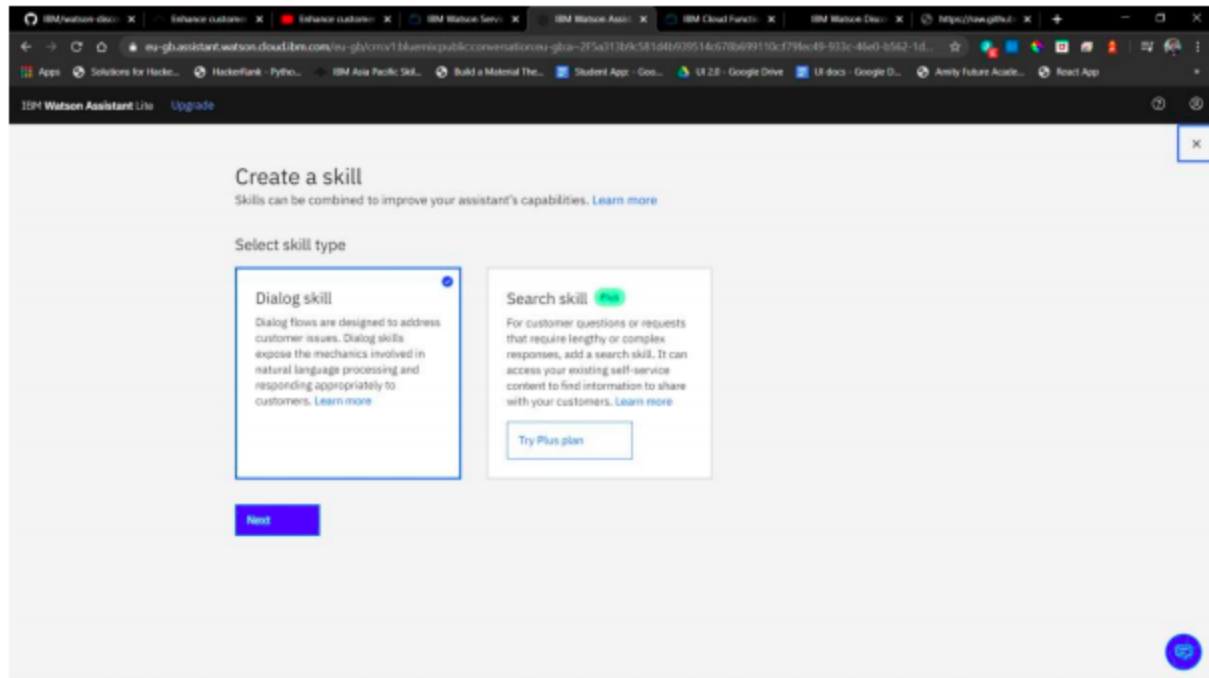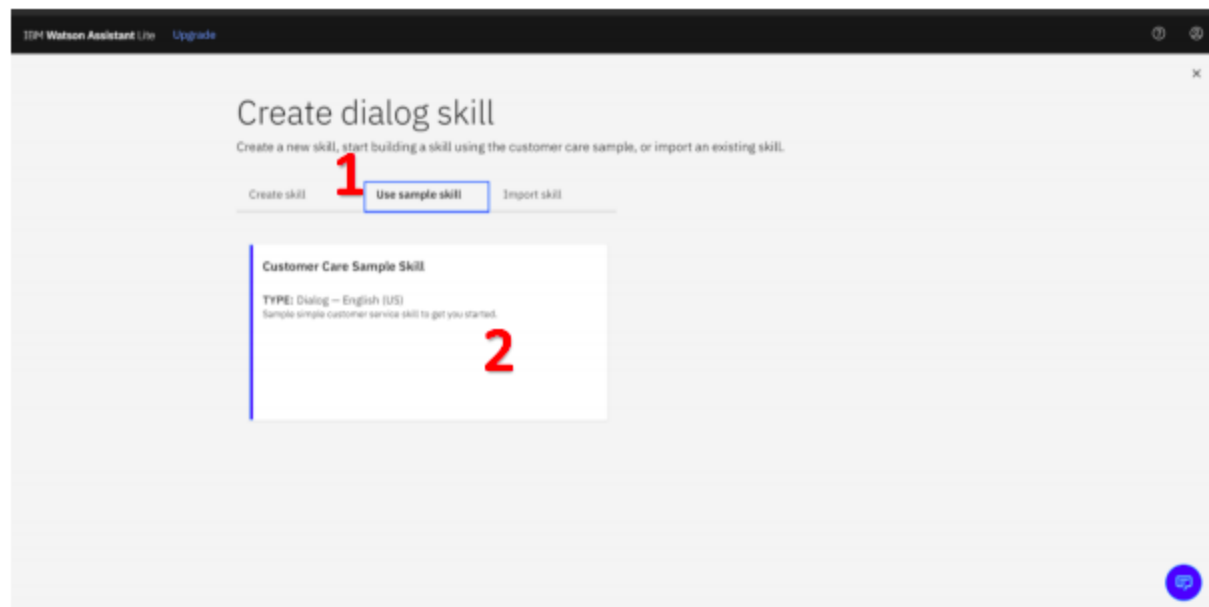

Click on **Launch Watson Assistant**
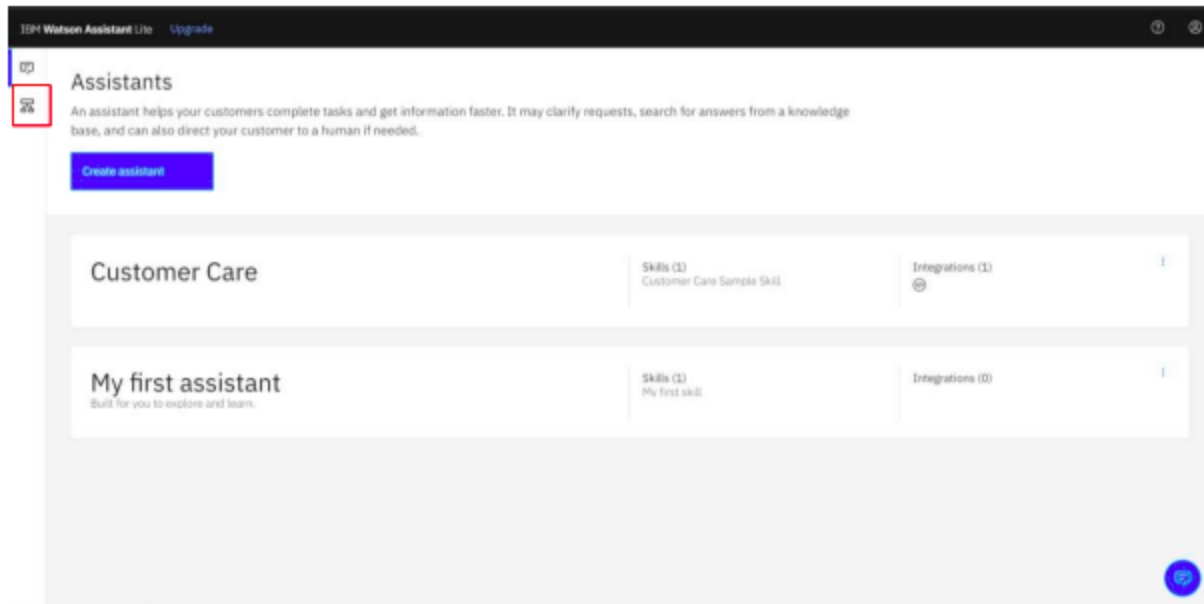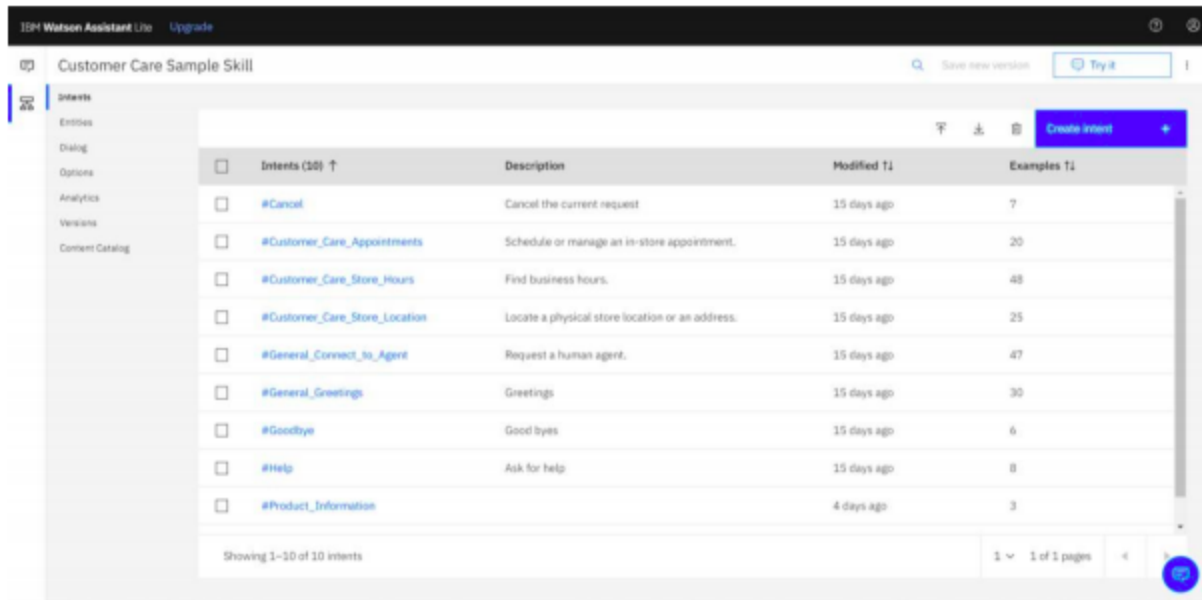
Click on the skills tab.

Click Create Skill

Select Dialog Skill Card and Click next.

Select Use Sample Skill [1] and select Customer Care Sample Skill [2]. This dialog skill contains all of the nodes needed to have a typical call centre conversation with a user.

As the default customer care dialog does not have a way to deal with any questions involving outside resources, so we will need to add new intent. Create a new intent that can detect when the user is asking about operating the Ecobee thermostat. From the Customer Care Sample Skill panel, select the Intents tab. Click the Create intent button. Name the intent "#Product_Information", and at a minimum, enter the following example questions to be associated with it.
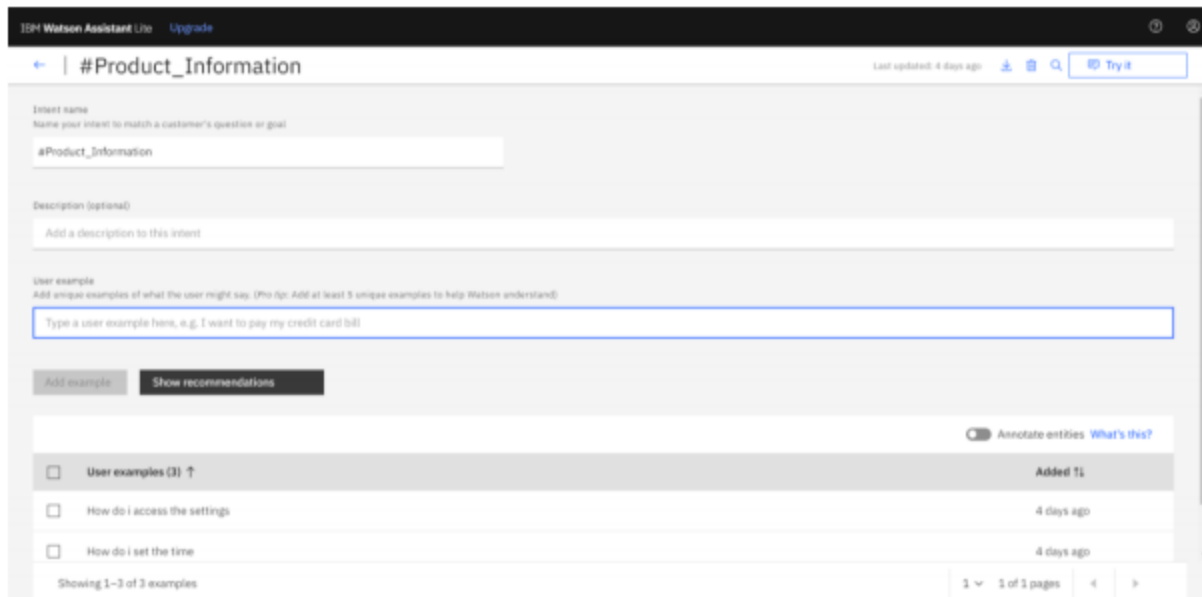

Go back to the previous page after doing this, then click on Dialog Tab and add a node below "What can I do node".
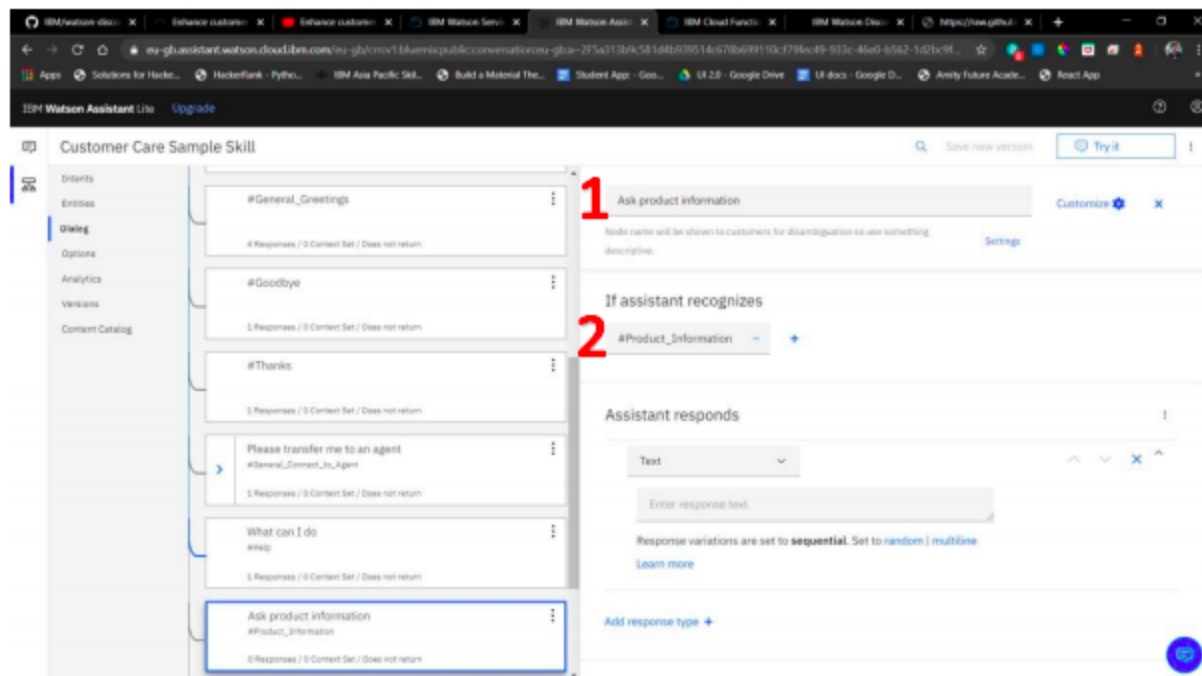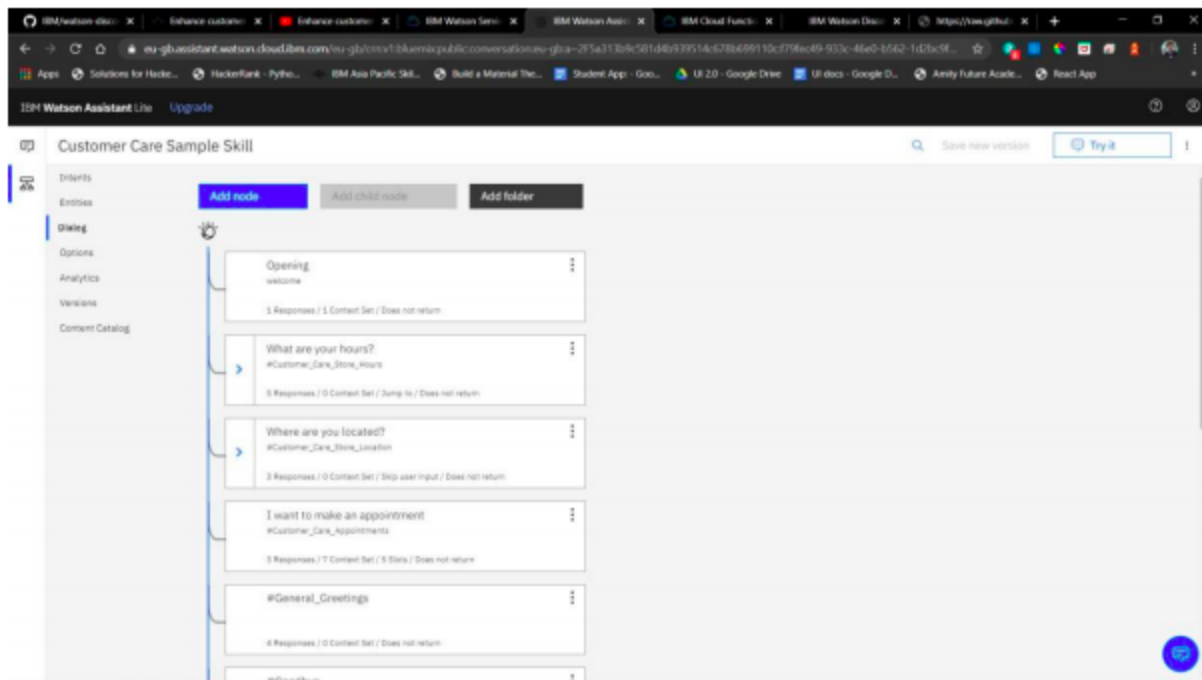
Name the node "Ask product information" [1] and assign it our new intent #Product_Information [2]. This means that if Watson Assistant recognizes a user input such as "how do I set the time?", it will direct the conversation to this node.

For upcoming steps, you will need to provide some credentials to access your assistant so to store credentials for future use follow these steps below. Go back to the skills tab,
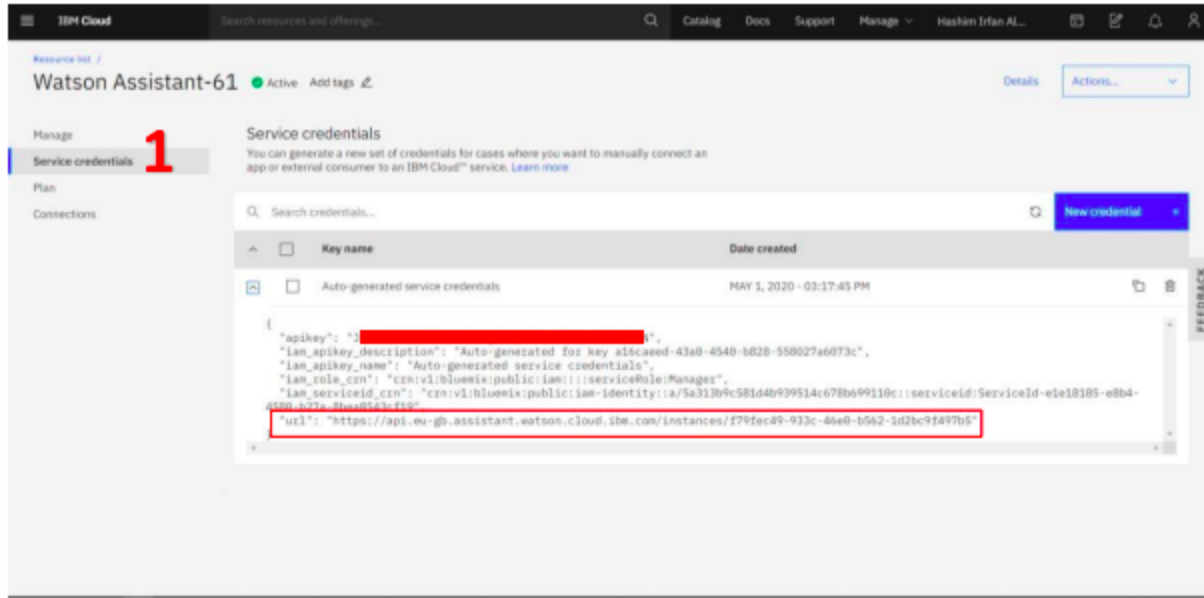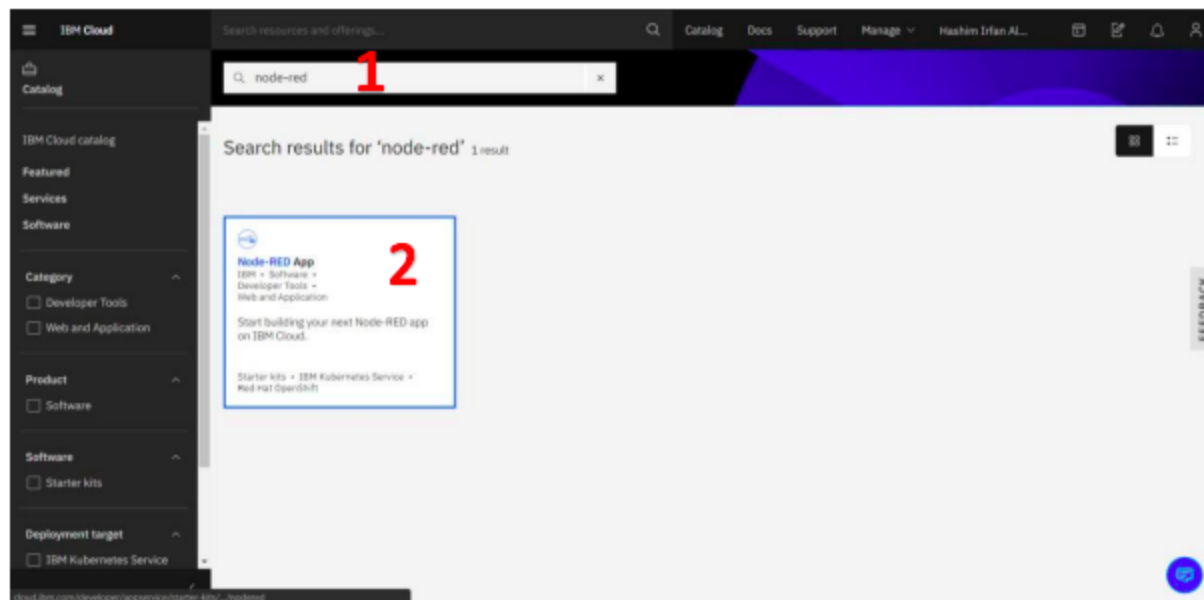
click [1] and then [2]
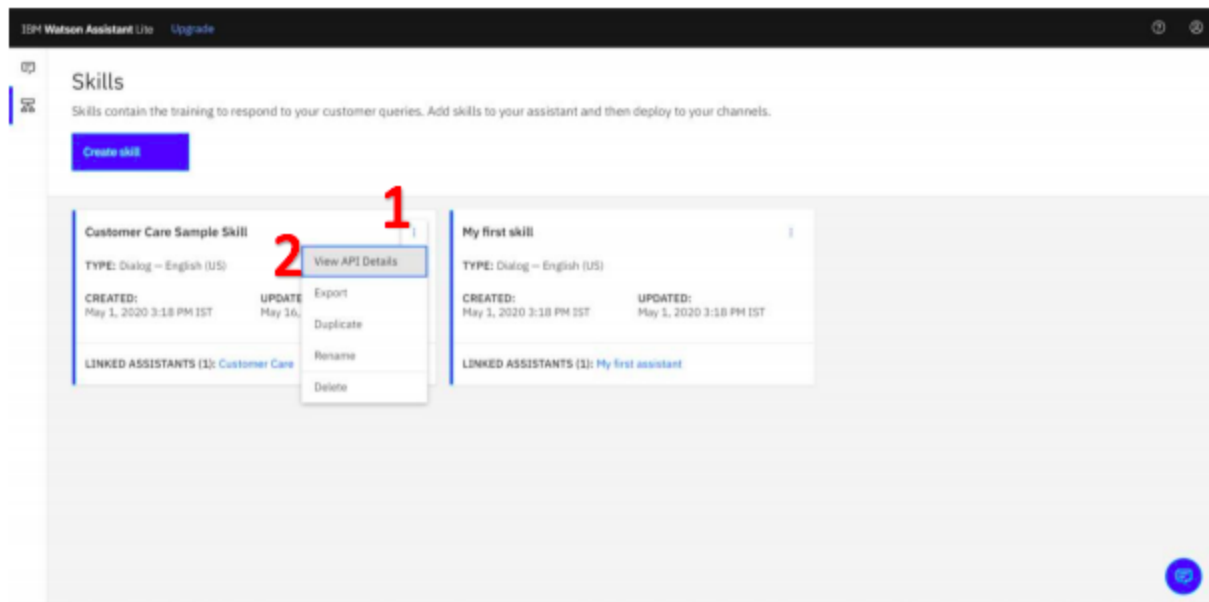

The Skill ID and API Key is to be noted.
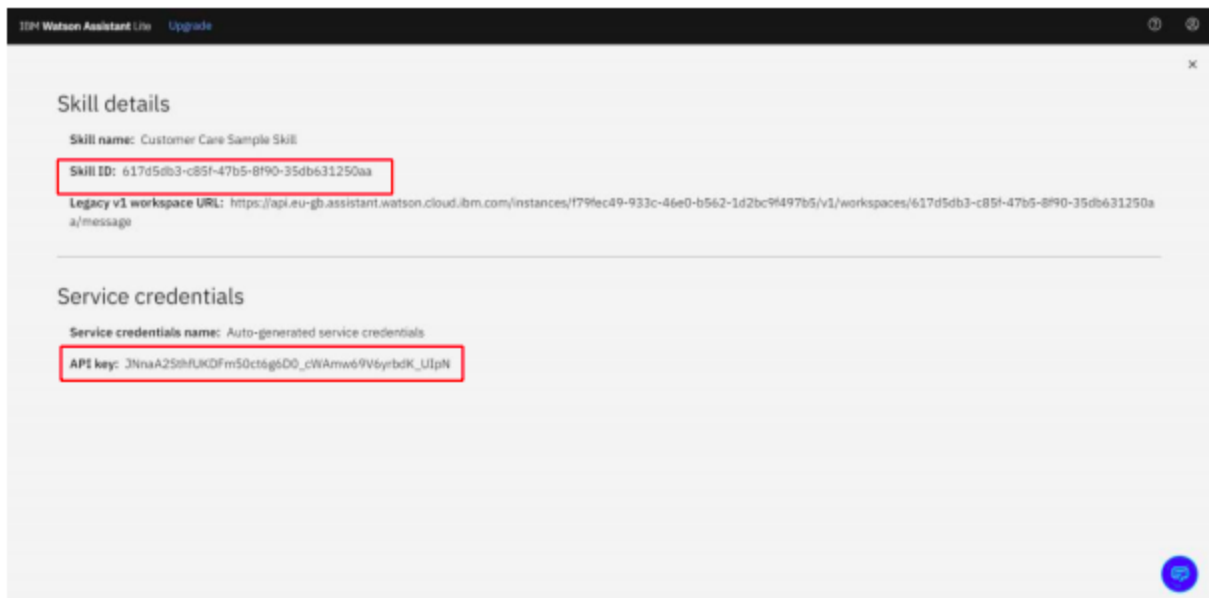
Go Back to the Watson Assistant Resource List, Select Service Credentials [1] and make note of the URL.APIKEY can be found here too.
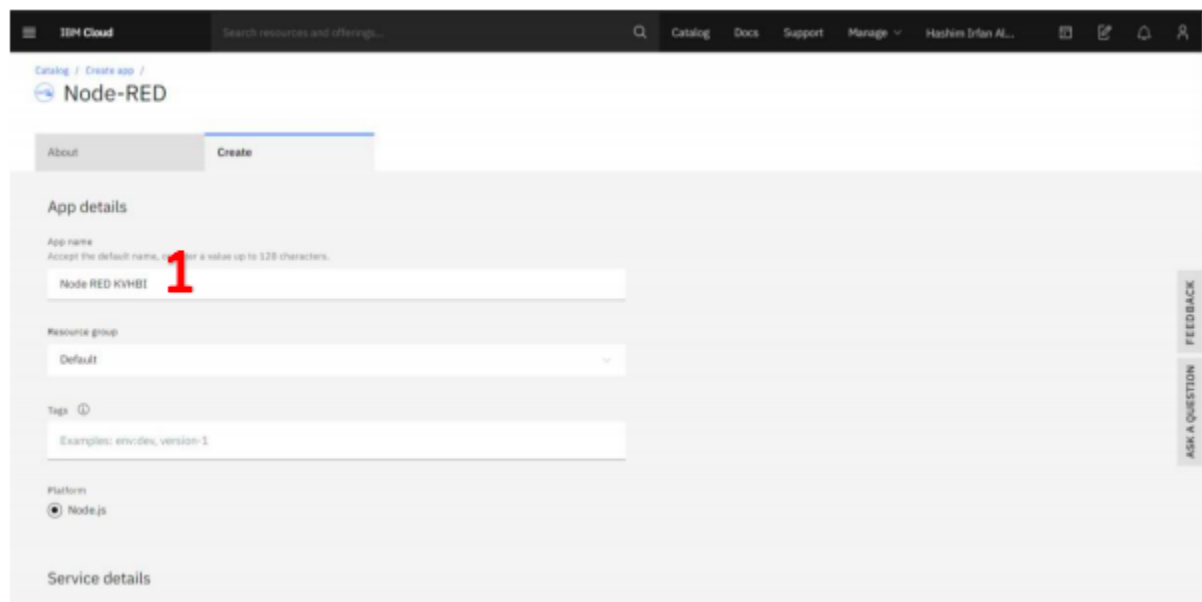
4. Build Node-RED Flow to Integrate All Services - Now it's time to create Node-Red, go to IBM Cloud Dashboard, click on Create Resource and search for node-red[1].

Click on the Node-RED App tile [2]. This will show you an overview of the Starter Kit and what it provides.
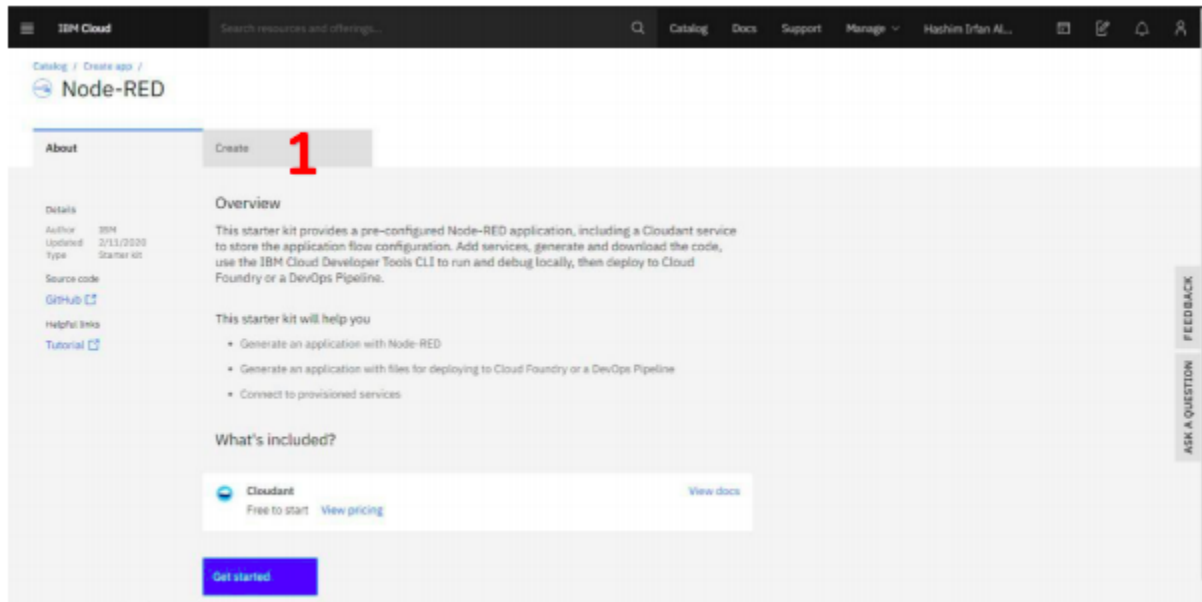
Click on Create [1].

Now you need to configure the Node-RED Starter application. On the App details page, a randomly generated name will be suggested – Node RED KVHBI in the screenshot above. Either accept that default name or provide a unique name for your application [1]. This will become part of the application URL. Note: If the name is not unique, you will see an error message and you must enter a different name before you continue. The Node-RED Starter application requires an instance of the Cloudant database service to store your application flow configuration. To do this, Select the region [1] the service should be created in and what pricing plan it should use. You can only have one

Cloudant instance using the Lite plan and you can have more than one Node-RED Starter application using the same Cloudant service instance. If you have already got an instance, you will be able to select it from the Pricing plan select box [2]. Click the Create button [3] to continue. This will create your application, but it is not yet deployed to IBM Cloud.

At this point, you have created the application and the resources it requires, but you have not deployed it anywhere to run, so this step shows how to setup the Continuous Delivery feature that will deploy your application into the Cloud Foundry space of IBM Cloud. Click on Deploy your App[1].

You will need to create an IBM Cloud API key to allow the deployment process to access your resources. Click the New button (1) to create the key. A message dialog will appear. Read what it says and then confirm and close the dialog.
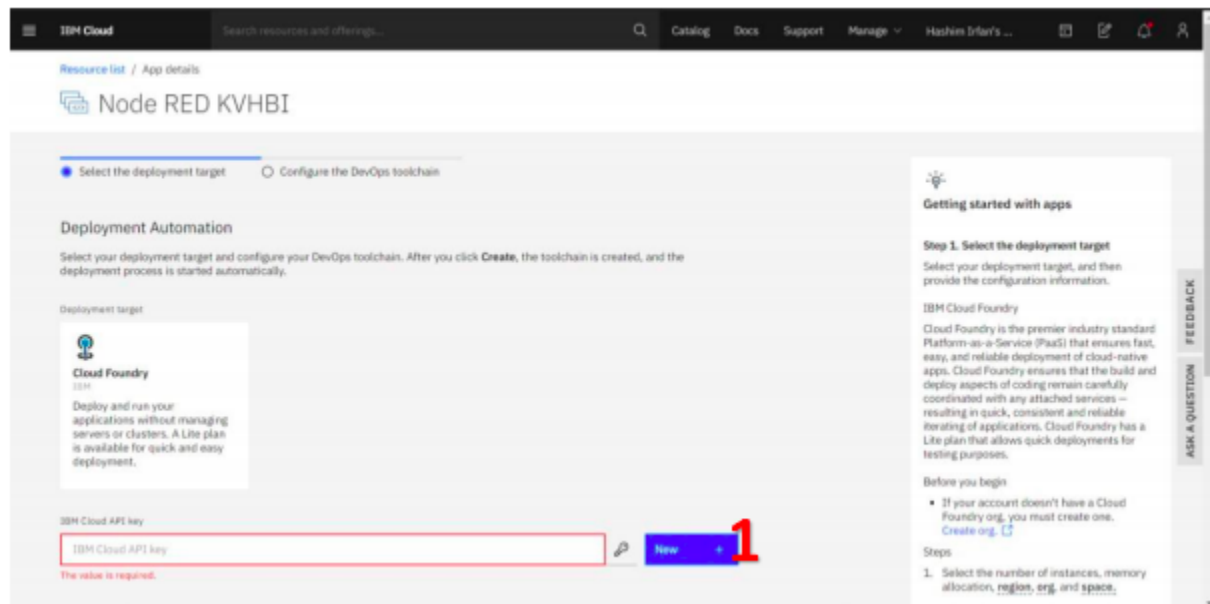
After creating the API Key, Increase the Memory allocation per instance slider [1] to 256MB. If you do not increase the memory allocation, your Node-RED application might not have sufficient memory to run successfully. The Node-RED Starter kit only supports deployment to the Cloud Foundry space of IBM Cloud. Select the region [2] to deploy your application to. This should match the region you created your Cloudant instance in.Click Next [3].
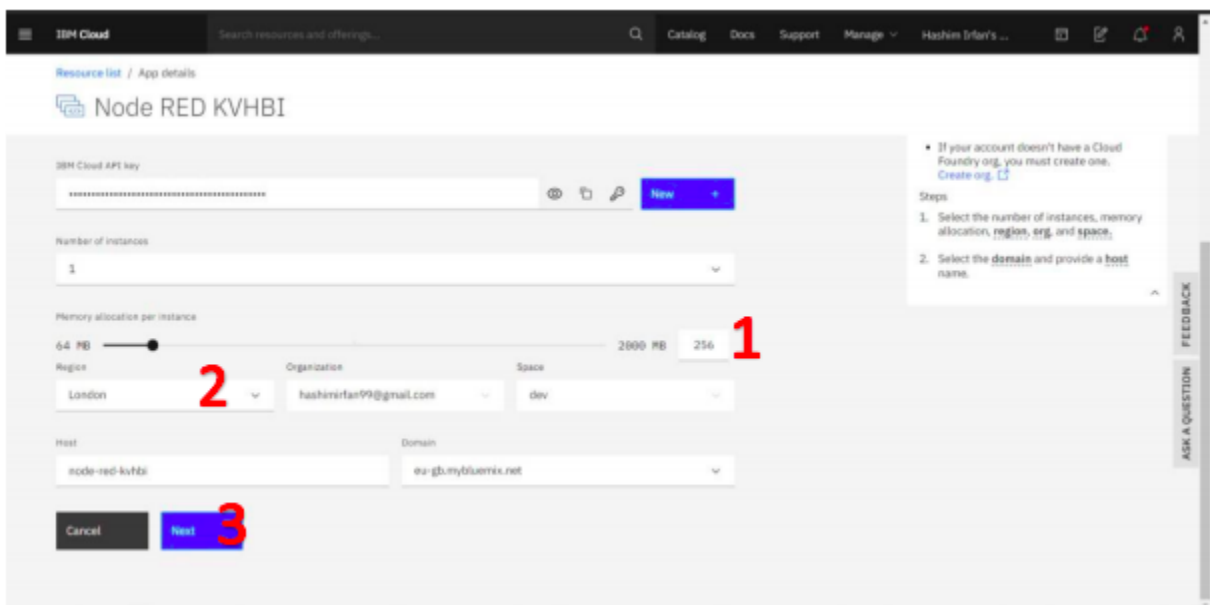
Now, select the region [1] to create the DevOps toolchain and then Click Create [2].

This will take you back to the application details page.

The Continuous Delivery section will refresh with the details of your newly created Toolchain. The Status field of the Delivery Pipeline will show "In progress". That means your application is still being built and deployed.
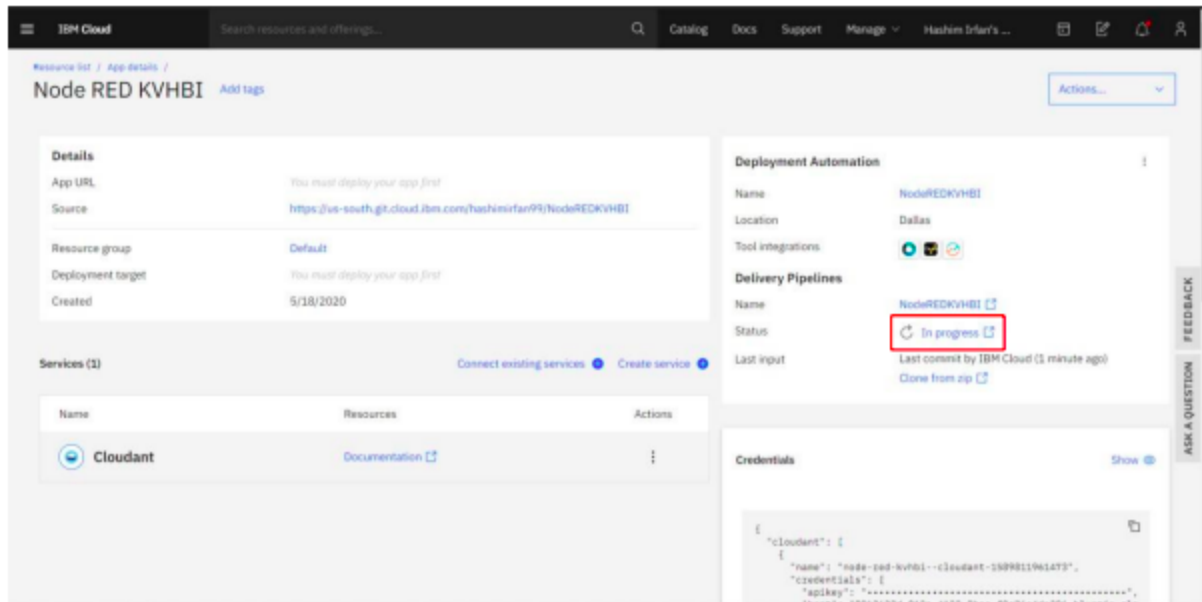
The Deploy stage will take a few minutes to complete. Eventually the Deploy stage will go green to show it has passed. This means your Node-RED Starter application is now running.
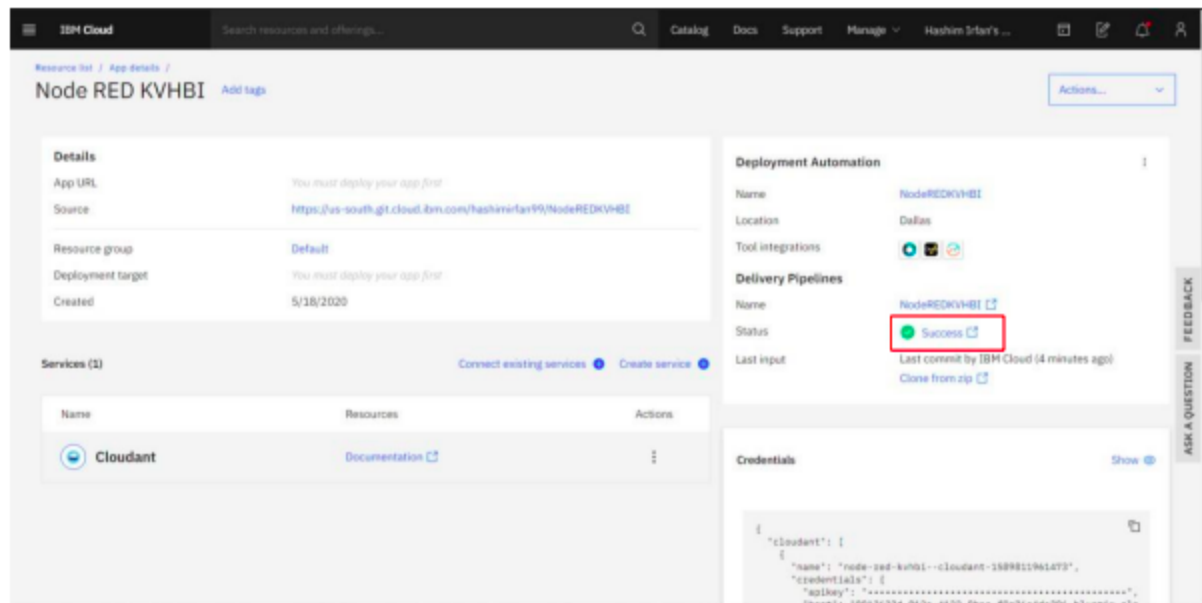
Now that you've deployed your Node-RED application, let's open it up! Open your IBM Cloud Resource list. You will see your newly created Node-RED Application listed under the Apps section [1]. You will also see a corresponding entry under the Cloud Foundry apps section [2].
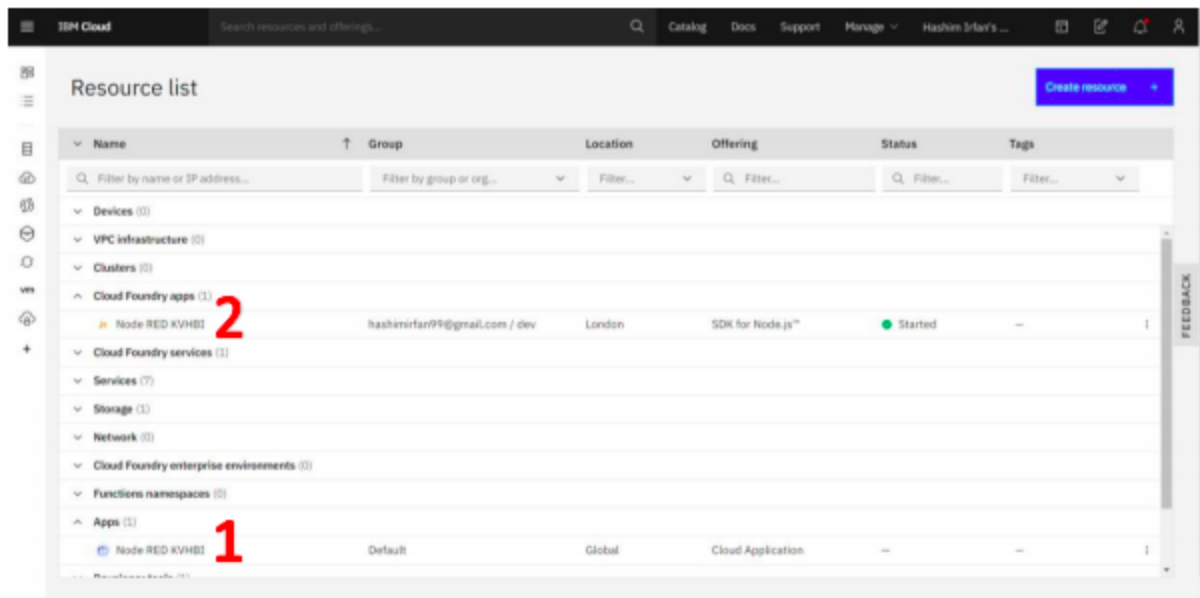
Click on this Cloud Foundry app entry to go to your deployed application's details page
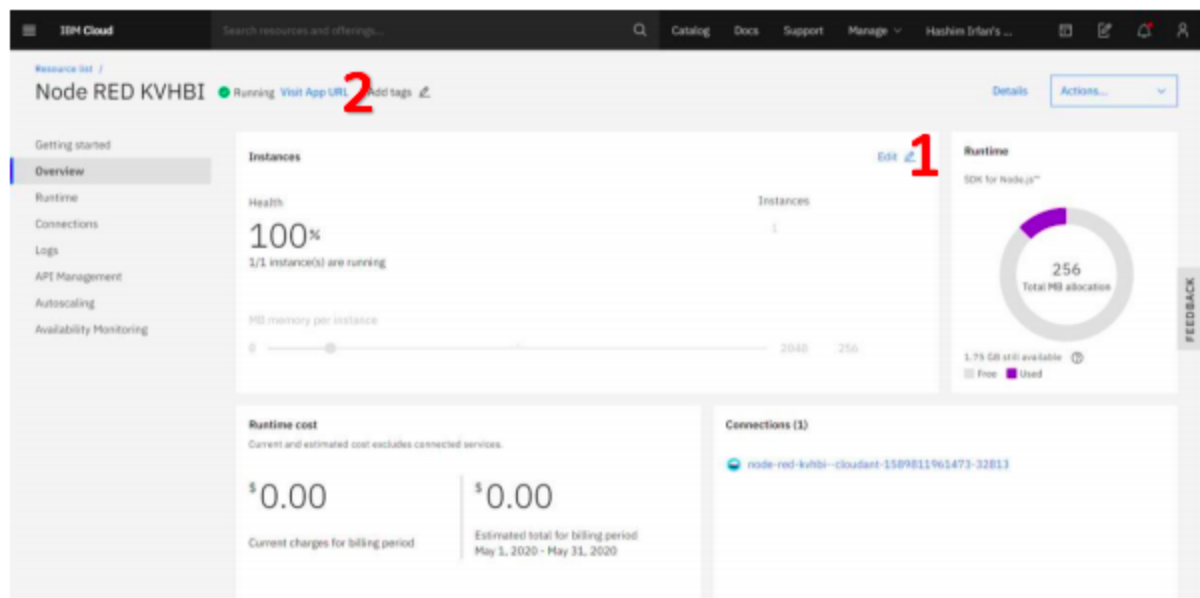
Special Cases: If your Runtime Instance is running full (0MB Free), Click on Edit[1] and reduce memory per instance to 128mb. If you have Free space on your runtime skip the previous step[1] and Click on Visit App URL[2].

Click on Next button.

You can choose to secure your Node-RED editor by providing a username and password. I am selecting the other option which is Allow anyone to access the editor and make changes.
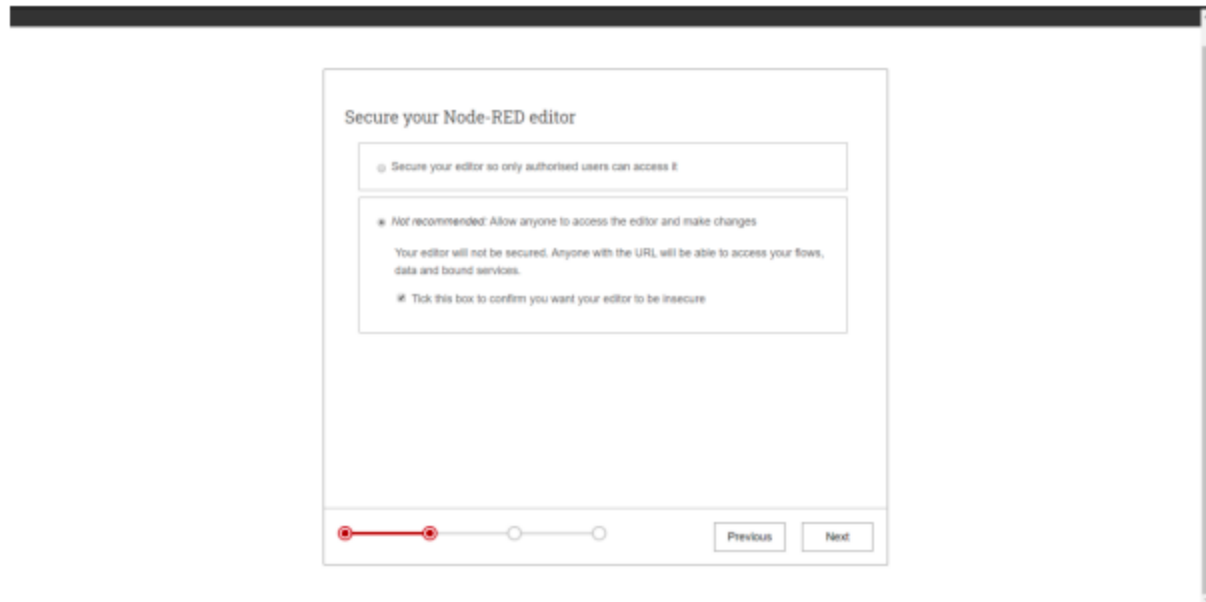
Tick the box, and click Next.
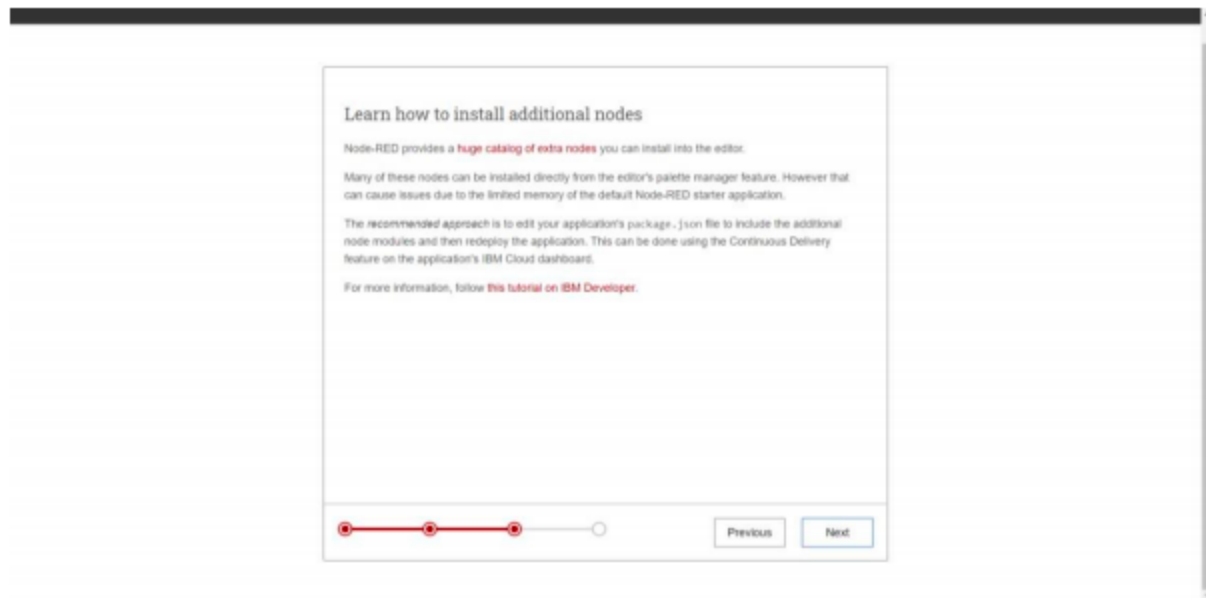
Click Next.

The final screen summarizes the options you've made and highlights the environment variables you can use to change the options in the future. Click Finish to proceed. Node-RED will save your changes and then load the main application. From here you can click the Go to your Node-RED flow editor button to open the editor.
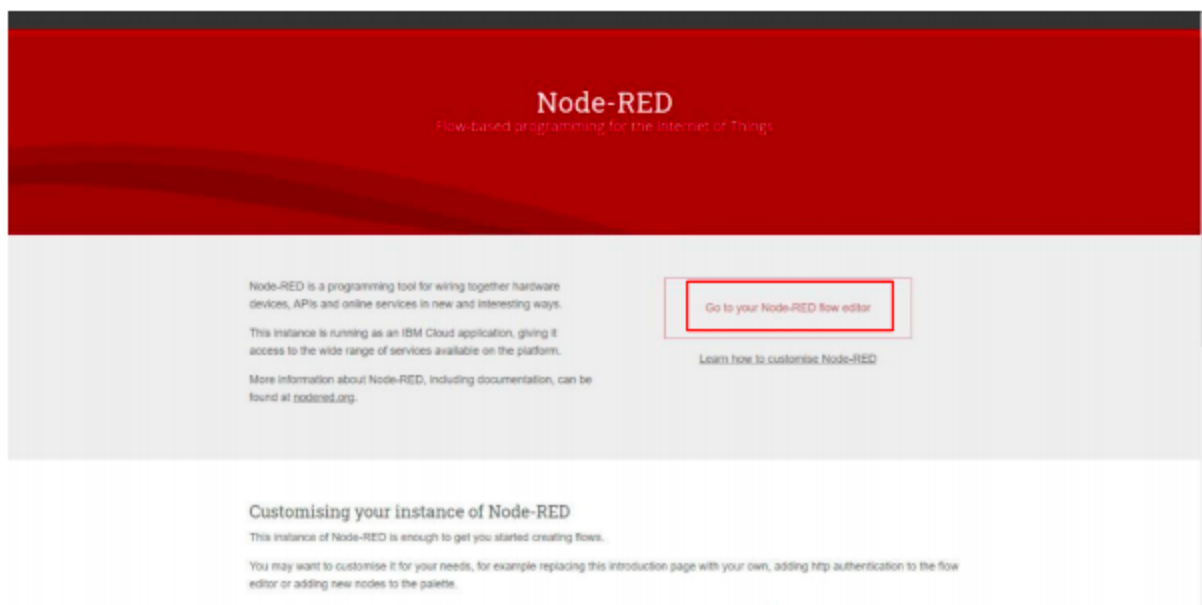
The Node-RED editor opens showing the default flow.

5.Configure the nodes and Build A Web Dashboard in Node-RED - To add Nodes to integrate Assistant, click [1] and then select Manage Palette [2].
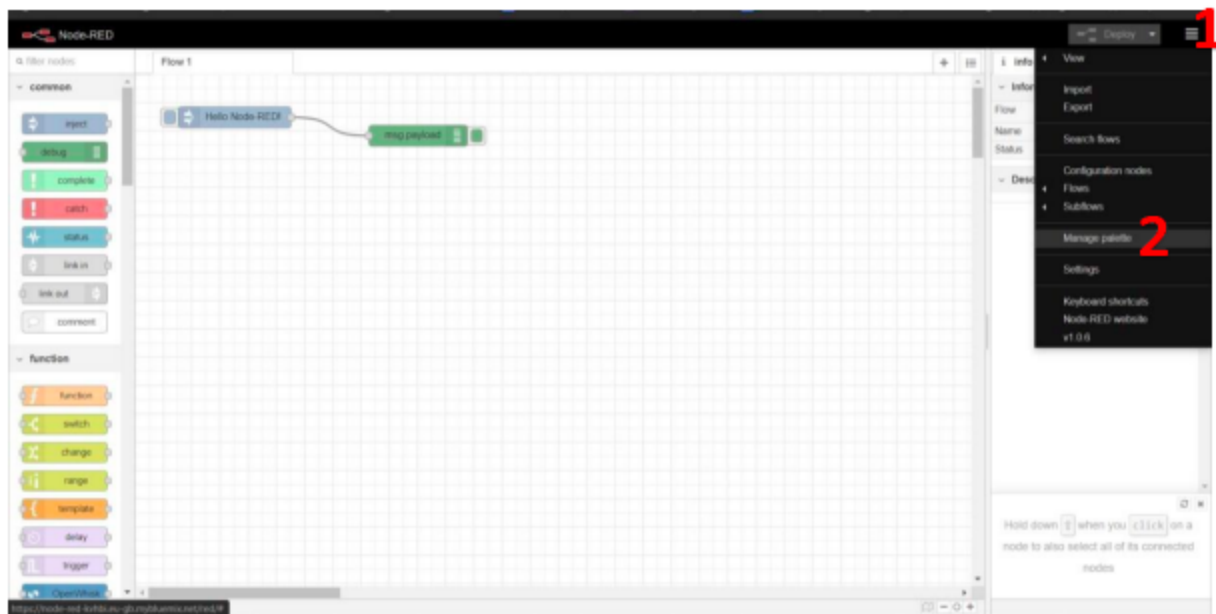
Go to Install Tab [1] and search for node-red-dashboard and Install [2] it.
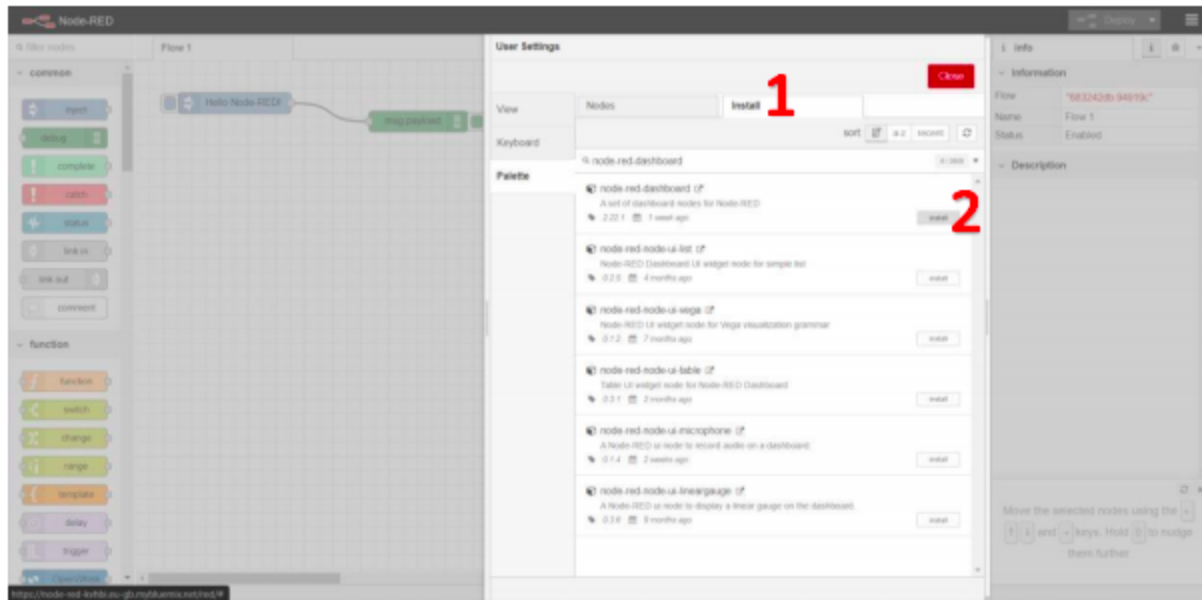
5. FLOWCHART

Create flow and configurenode:

At first go to manage pallete and install node-red-dashboard. Now,Create the flow with the help of following node:

● Inject

● Assistant

● Debug

● Function

● Ui_Form

● Ui_Text
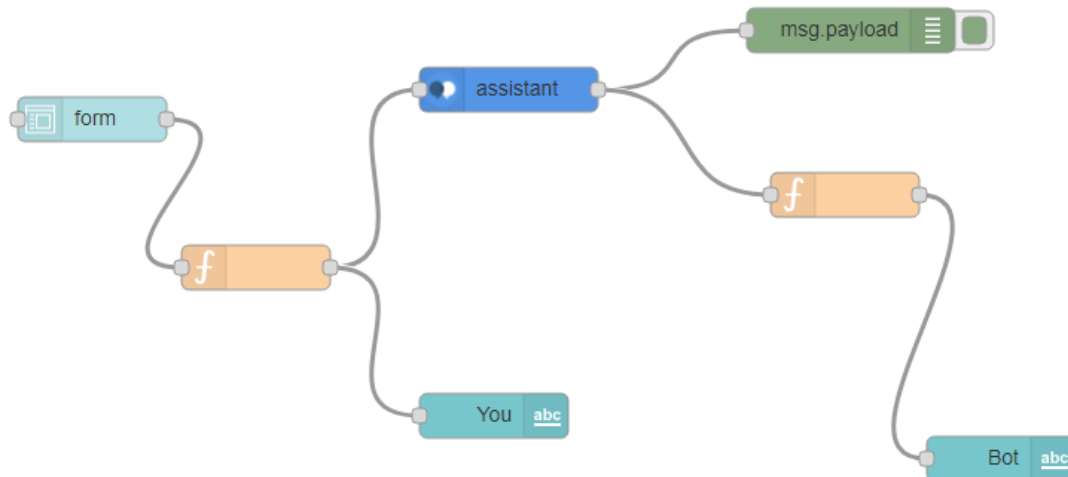
6. RESULT

Finally our Node-RED dash board integrates all the components and displayed in the Dashboard UI by typing URL - https://node-red-nextlevelresume.mybluemix.net/ui/#!/0?socketid=Z7A-2tv_oZqCxLJ4AAAd

Introduction of user -

Is student ready or not -

ChatBot

Question

Enter the input
ready

SUBMIT   CANCEL

You
ready

Bot
Great to see you ready for the Interview process. Select the Round you want to take up first: * r1 - Round 1(Aptitude Round) * r2 - Round 2(Technical Round)

round 1 -

ChatBot

Question

Enter the input
r1

SUBMIT   CANCEL

You
r1

Bot
Question: An escalator moves towards the top level at the rate of 11 ft.sec and its length is 140 feet. If a person walks on the moving escalator at the rate of 3 feet per second towards the top level, how much time does he take to cover the entire length.

If answer of student is correct -

ChatBot

Question

Enter the input
10 sec

SUBMIT	CANCEL

You
r1

Bot
You have successfully completed one Round proceed to the next round. All the best

If answer of student is incorrect -

ChatBot

Question

Enter the input
14 sec

SUBMIT	CANCEL

You
incorrect

Bot
Oh you missed next. No worries you have many more to go with. Your score is 0. Concentrate on next

Result of round 1 and round 2 -

If student qualify the test

ChatBot

Question

Enter the input
Object

SUBMIT   CANCEL

You
Object

Bot
Congratulations.. You qualified the test. Further details will be sent through an email. A warm WELCOME to you to be as a part of our family.

If student do not qualify the test

ChatBot

Question

Enter the input
remove()

SUBMIT   CANCEL

You
remove()

Bot
Not Qualified. This is not the end. You are best best but this is not the right time. Hope to see you again with lot more energy.

7. ADVANTAGES & DISADVANTAGES

Advantages:

● Easy for recruiter to select students from already filtered students.

● Student can get idea about his/her performance.

● Reduces man power.

● Cost efficient.

● 24-7 availability.

● Multiple students can give test from different places.

Disadvantages:

● Any other student can give a test for someone else.

● Student can check answer from google.

● Maintenance.

8. APPLICATIONS

 ● It will be very helpful for recruitment purpose.

● Student can improve themselves by sitting at home.

9. CONCLUSION

By doing the above procedure and all we successfully created AI Powered Recruitment Bot using Watson assistant and Node-RED.

10. FUTURE SCOPE

We can advice students how they can improve themselves. This is one of the future scope of this project.

11. BIBILOGRAPHY

A. Reference

1.https://developer.ibm.com/patterns/enhance-customer-help-desk-with-smart-docume nt- understanding/

2.https://github.com/IBM/watson-discovery-sdu-with-assistant

3.https://www.youtube.com/watcht?v=-yniuX-Poyw&feature=youtu.be

4.https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/
THE END