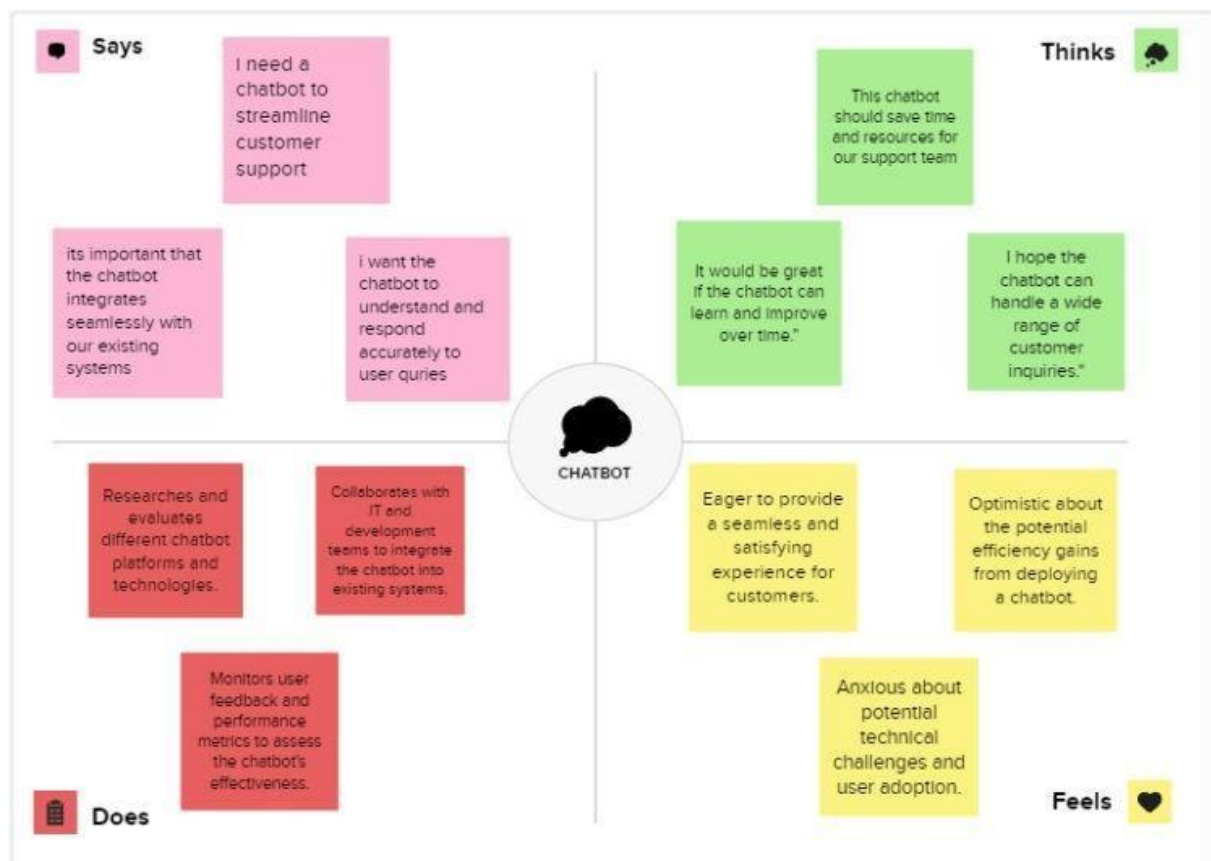


Ideation Phase Empathize & Discover

Date	30 September 2023
Team ID Name	NM2023TMID5559 A.Yuvashree
Project Name	Chatbot Deployment with IBM Cloud Watson Assistant



Ideation Phase

Define the Problem Statements

Date	30 September 2023
Team ID	NM2023TMI5559
Project Name	Chatbot Deployment with IBM cloud Watson assistant

Customer Problem Statement Template:

We, [Customer Name/Company Name], aim to enhance our customer support and engagement by implementing an intelligent chatbot solution using IBM Cloud Watson Assistant. Our organization faces several challenges that we believe can be effectively addressed through this chatbot deployment.

Says: Understand what specific queries or statements the customers are likely to make. This involves analyzing the language and phrases they use when interacting with the chatbot.

Feels: Determine the emotions or sentiments customers might have during their interactions. Are they frustrated, happy, confused, or satisfied? This information can help tailor the chatbot's responses and tone.

Thinks: Identify the thought process of customers. What information or answers are they seeking? What are their expectations when using the chatbot? Knowing this can help in crafting more relevant responses.

Does: Understand the actions customers take before and after interacting with the chatbot. This includes the actions they want to perform through the chatbot and any follow-up actions required.

Actionable insights for

I am	Describe customer with 3-4 key characteristics-Who are they?	Describe the customer and their attributes here.
I'm trying to	List their outcome or "job" they care about-What are they trying to achieve?	List the thing they are trying to achieve here.
But	Describe what problems or barriers stand in the way-what bothers them most?	Describe the problems or barriers That get in the way here.
because	Enter the "root cause" of why the problem or barrier exists-what needs to be solved?	Describe the reason the problems or barriers exist.
Which makes me feel	Describe the emotions from the customer's point of view-how does it impact them emotionally?	Describe the emotions the result from experiencing the problems or Barriers.

Reference: <https://miro.com/templates/customer-problem-statement/>

Example:

I am	I'm trying to	But	Because	Which makes me feel
a user	search my project details	it takes a long time	the website is not response	worried

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A user	Understand what specific queries or statements the customers are likely to make. This involves analyzing the language and phrases they use when interacting with the chatbot.	Identify the thought process of customers. What information or answers are they seeking? What are their expectations when using the chatbot? Knowing this can help in crafting more relevant responses.	Determine the emotions or sentiments customers might have during their interactions. Are they frustrated, happy, confused, or satisfied? This information can help tailor the chatbot's responses and tone	Understand the actions customers take before and after interacting with the chatbot. This includes the actions they want to perform through the chatbot and any follow-up actions required.
PS-2	a user pain points	Says: Understand what specific challenges or issues the customers are vocalizing. This could include phrases like "I can't find the information I need" or "It takes too long to get support	Dive into the thoughts and assumptions customers might have. For example, they might think that the support team is not responsive or that the information provided is outdated.	Explore the emotional aspect of the problem. For instance, customers might feel frustrated, confused, or overwhelmed when interacting with the current system.	Understand the actions or behaviors that result from these pain points. Customers might abandon the website or contact support frequently due to their issues.

Ideation phase brainstorming

Date	30 September 2023
Team ID	NM2023TMID5559
Project name	Chatbot deployment with IBM Cloud Watson Assistant

Defining problems statements and prioritizing ideas based on project. Organizations looking to increase sales or service productivity may Adopt chatbot for time savings and efficiency , as artificial intelligence chatbot can converse with users and answer recurring questions . It has various personality which is tone and style .CHATBOT is designed to stimulate conversation with human users, Especially over the internet.

Problem

How chatbot used in
Various field

Listing usage

She looking
for a
mystery
novel

Divya rosy

She need
details about
her last
online
purchase

lokeshwari

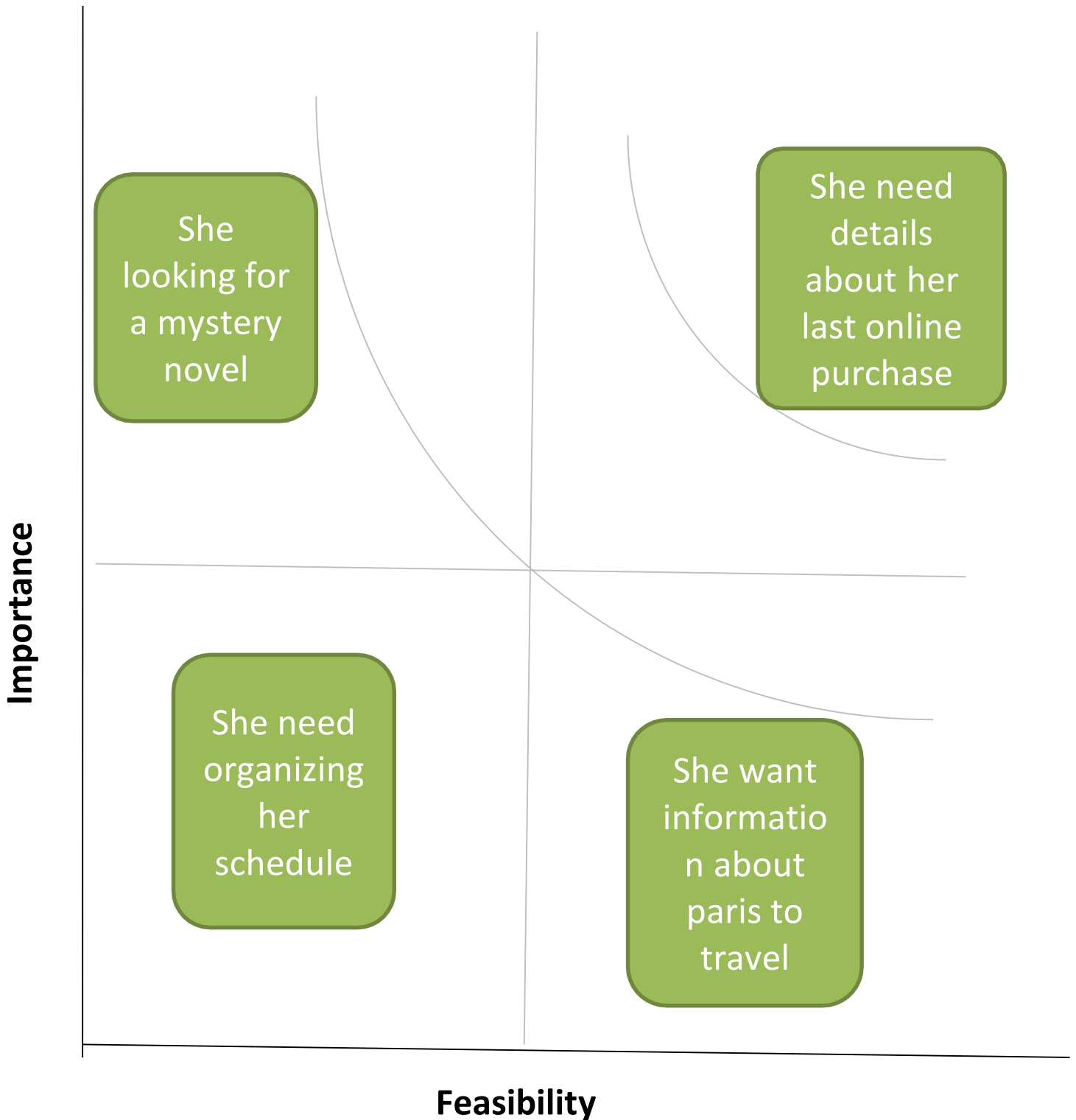
She want
information
about paris
to travel

yuvashree

She need
organizing
her
schedule

latha

Prioritize ideas



Project Design Phase-II

Chatbot deployment with IBM cloud Watson assistant

PHASE 2- INNOVATION

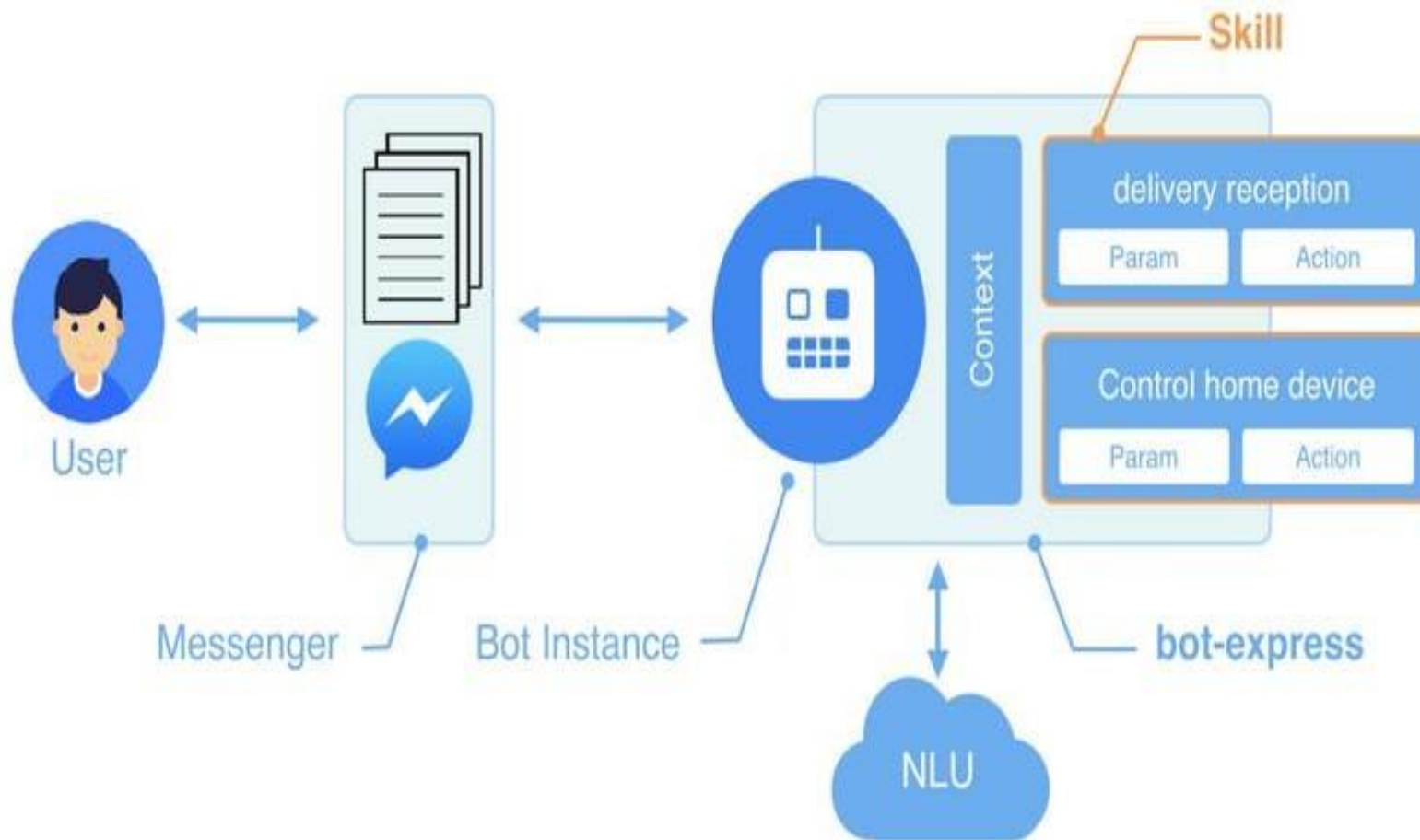
In this section you need to put your design into innovation to solve the problem. Create a document around it and share the same for assessment as per the instructions mentioned.

Consider implementing advanced features such as natural language understanding (NLU) for more accurate user intent recognition.

Chatbot deployment:

IBM Cloud Watson Assistant is a powerful chatbot platform that enables businesses to create and deploy virtual assistants for various applications. It leverages natural language processing to understand and respond to user queries, making it a versatile tool for customer support, information retrieval, and more. With Watson Assistant, you can design conversational interfaces, integrate with different channels, and analyze interactions to improve user experience.

Architecture of chatbot deployment(NLU) diagram:



Example Dataset:

You can create an example dataset in JSON format.

For instance:

```
json
{
  "intents": [
    {"intent": "greetings", "examples": ["Hello", "Hi", "Hey"]},
    {"intent": "goodbye", "examples": ["Goodbye", "See you", "Bye"]},
    {"intent": "help", "examples": ["Help me", "I need assistance", "Can you help?"]}
  ]
}
```

Step 1: Create a Watson Assistant Service on IBM Cloud

1. Log in to your IBM Cloud account and go to the catalog.
2. Search for "Watson Assistant" and select it.
3. Follow the prompts to create a new Watson Assistant instance.

Step 2: Create a Skill

1. Once your Watson Assistant service is created, open it.
2. Create a new skill or import an existing one. This is where you'll define the dialog flow and responses for your chatbot.

Step 3: Obtain Credentials

1. In your Watson Assistant instance, navigate to the "Manage" tab.
2. Under the "API Details" section, note down your API Key, Service URL, and Assistant ID. You'll need these to interact with the Watson Assistant service through code.

Step 4: Set up your Development Environment

You can use any code editor or IDE for this. Let's assume you're using Visual Studio Code (VS Code) for this example.

Step 5: Create a New Project

1. Create a new folder for your project. In this folder, you'll organize your code, configurations, and any other files related to your chatbot.
2. Inside the project folder, create subfolders for different components.

For example:

```
/my_chatbot_project
  /src      # Source code
    /intents # Intent recognition logic
    /actions # Actions taken based on user input
    /config  # Configuration files (credentials, etc.)
    /static  # Static files (images, etc.)
  /tests    # Test cases (if applicable)
```

Step 6: Set Up Code to Interact with Watson Assistant

1. In the `/src` folder, create a file for your chatbot logic (e.g., `chatbot.py` if you're using Python).
2. Use the Watson Assistant SDK or API to connect to your Watson Assistant service using the credentials you obtained earlier.

Step 7: Define Intent Recognition and Actions

1. In the `/src/intents` folder, create files for intent recognition logic. This can include code for natural language processing (NLP) or any other methods you're using to recognize user intents.
2. In the `/src/actions` folder, create files for handling actions based on user input. This could be sending responses, performing tasks, etc.

Step 8: Manage Configuration

1. In the `/src/config` folder, create files to store configuration settings. This could include your Watson Assistant credentials, environment variables, etc.

Step 9: Add Static Files (Optional)

If your chatbot uses images, CSS, or other static assets, place them in the ``/src/static`` folder.

Step 10: Testing (Optional)

If applicable, create a ``/tests`` folder and add unit tests for your chatbot's components.

Step 11: Deployment

To deploy your chatbot, you'll need to package the code, dependencies, and configurations. This could involve creating a Docker container, setting up a web server, or deploying it on a cloud platform.

NLU TECHNIQUE FOR IMPROVE THE CHATBOT DEPLOYMENT:

The steps to create a Chatbot deployment with IBM Cloud Watson Assistant using Natural Language Understanding (NLU) and provide you with a basic outline of the code. Please note that I'll be providing a simplified example, and you might need to customize it further based on your specific requirements.

Step 1: Set Up IBM Cloud Account

1. Sign up for an IBM Cloud account if you haven't already.
2. Navigate to the Watson Assistant service and create a new instance.

Step 2: Create Watson Assistant Workspace

1. Go to your Watson Assistant instance in IBM Cloud.
2. Create a new workspace.
3. Define intents, entities, and add sample user inputs for training.

Step 3: Set Up NLU Service

1. Go to the IBM Cloud catalog and create a new Natural Language Understanding (NLU) service.
2. Obtain the credentials for this service.

Step 4: Code the Chatbot

Here's a simplified Python example using the Flask framework to create a basic web application:

```
python
from flask import Flask, request, jsonify
from ibm_watson import AssistantV1, NaturalLanguageUnderstandingV1
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator

app = Flask(__name__)

# Set up Watson Assistant
authenticator = IAMAuthenticator('<ASSISTANT_API_KEY>')
assistant = AssistantV1(
    version='2018-09-20',
    authenticator=authenticator
)
assistant.set_service_url('<ASSISTANT_URL>')

# Set up NLU
nlu_authenticator = IAMAuthenticator('<NLU_API_KEY>')
nlu = NaturalLanguageUnderstandingV1(
    version='2018-09-21',
    authenticator=nlu_authenticator
)
nlu.set_service_url('<NLU_URL>')

@app.route('/chat', methods=['POST'])
def chat():
    input_text = request.json['text']

    # Use NLU to analyze user input
    response = nlu.analyze(text=input_text, features={'entities': {'model': 'YOUR_CUSTOM_MODEL_ID'}}).get_result()
    entities = response['entities']

    # Pass user input and entities to Watson Assistant
    response = assistant.message(
        workspace_id='<WORKSPACE_ID>',
        input={
            'text': input_text,
            'entities': entities
        }
    ).get_result()
```

```
return jsonify(response)
```

```
if __name__ == '__main__':  
    app.run(debug=True)
```

Step 5: Deploy on IBM Cloud

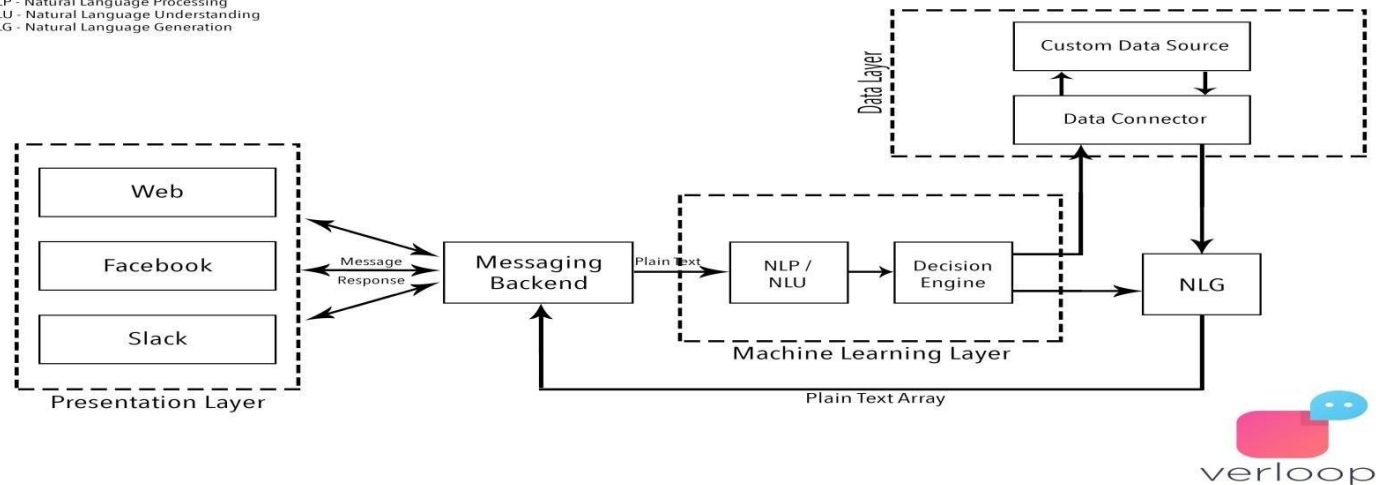
1. Create a `manifest.yml` file with necessary configurations.
2. Push your application to IBM Cloud using the `cf push` command.

Step 6: Test Your Chatbot

Access your deployed application's URL and interact with the chatbot.

Simple diagram for NLU technique in chatbot deployment

Key:-
NLP - Natural Language Processing
NLU - Natural Language Understanding
NLG - Natural Language Generation



Conclusion:

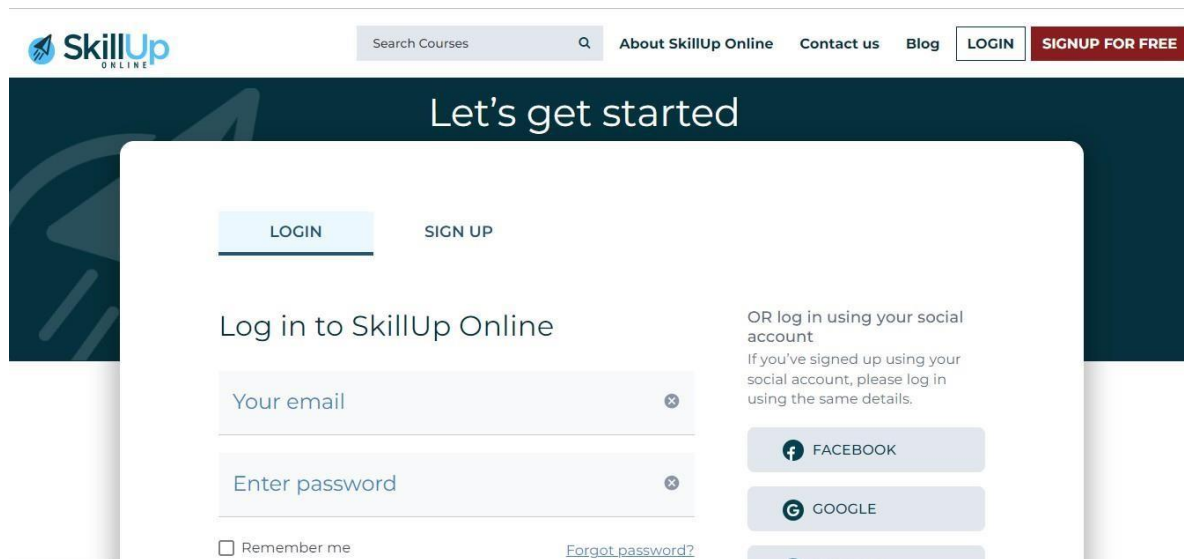
Integrating Watson Assistant with Natural Language Understanding can greatly enhance the capabilities of your chatbot by providing deeper insights into user intents and sentiments. This combination allows for more contextually aware responses. Remember to replace placeholders (e.g., YOUR_ASSISTANT_API_KEY, YOUR_NLU_API_KEY, etc.) with your actual credentials.

Project Design Phase – III


Initially we have to create IBM cloud Watson assistant service account (For free trial of 365 days if users had not created the account)

PROCEDURES GIVEN(step by step):

Step 1.Create an account or log-in in skillup portal.



The screenshot shows the SkillUp Online portal's login and sign-up interface. At the top, there is a navigation bar with the SkillUp Online logo, a search bar labeled 'Search Courses', and links for 'About SkillUp Online', 'Contact us', 'Blog', 'LOGIN', and 'SIGNUP FOR FREE'. Below the navigation bar is a dark blue banner with the text 'Let's get started'. The main content area features a white login/sign-up form. The form has two tabs: 'LOGIN' (selected) and 'SIGN UP'. Under the 'LOGIN' tab, the heading is 'Log in to SkillUp Online'. There are two input fields: 'Your email' and 'Enter password', both with clear (X) buttons. Below these fields is a 'Remember me' checkbox and a link for 'Forgot password?'. To the right of the input fields, there is a section for social login: 'OR log in using your social account. If you've signed up using your social account, please log in using the same details.' Below this text are buttons for 'FACEBOOK' and 'GOOGLE'.



Search Courses

About SkillUp Online Contact us Blog [LOGIN](#) [SIGNUP FOR FREE](#)

[LOGIN](#) [SIGN UP](#)

Create a new account

Full name

Enter your firstname and lastname. e.g John Smith

Your email

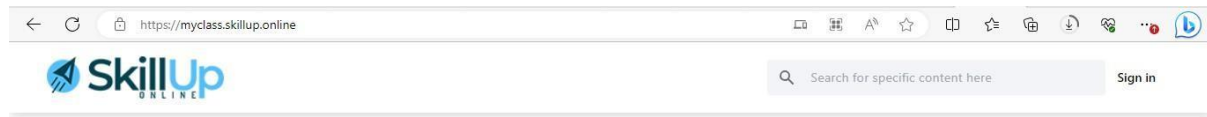
Set password

Min 6 chars | Include caps

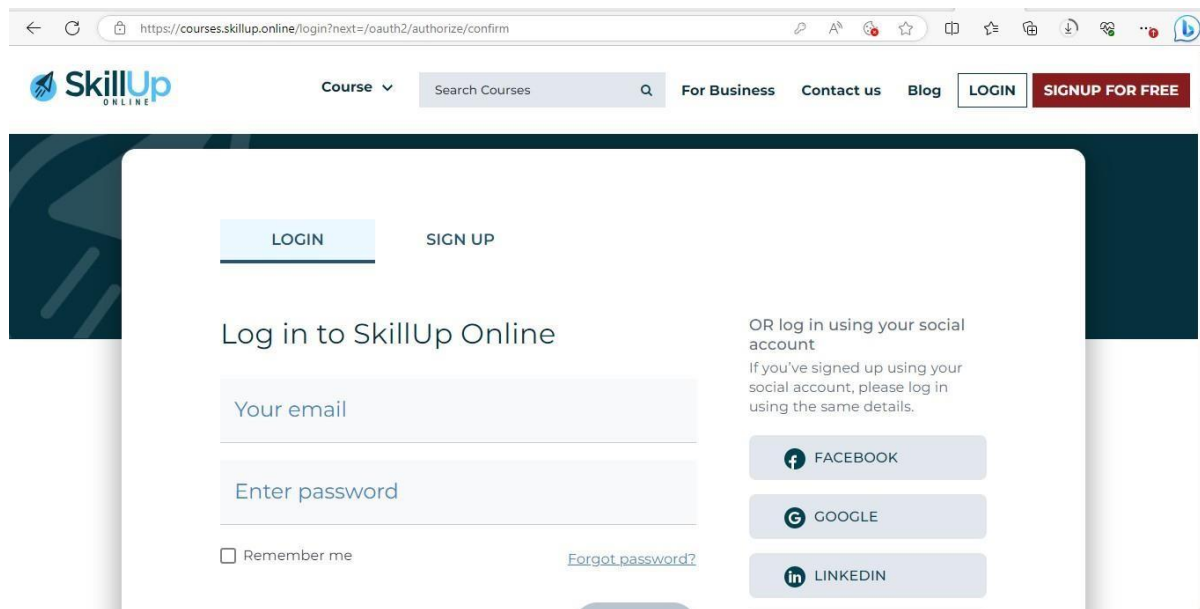
Sign up for free
to access a range of professional courses and upskill your market demand

- ✓ Learn from the industry experts
- ✓ Learn at your own pace

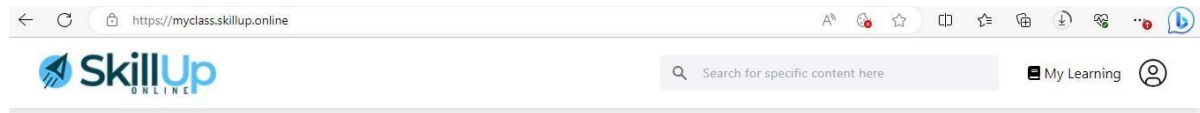
Step 2. Once you sign in skillup portal, Now open [Welcome \(skillup.online\)](#) (myclass.skillup.online) these link and sign in



Step- 3.After clicking on sign in, It will be redirected to these page , Put the credentials that you had used while creating the account



Step 4. Once you sign in , you can check in myclass.skillup.online , You would have been logged in your profile



[Privacy Notice](#)

[Terms of Service](#)

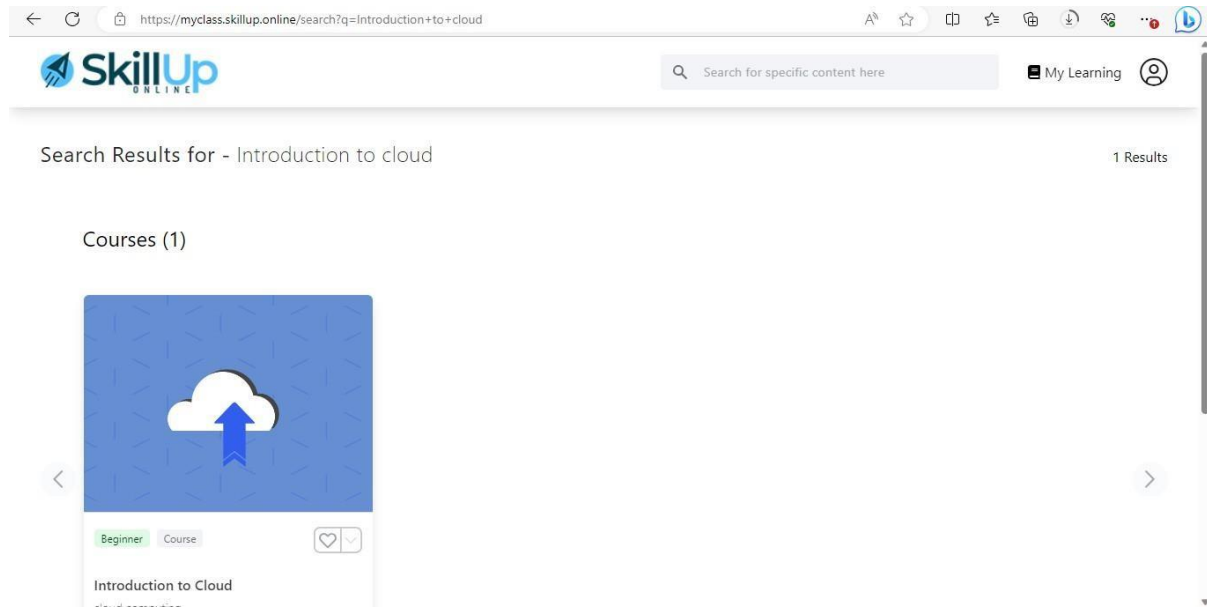
Step-5. In Search Bar, Search for Introduction to cloud .



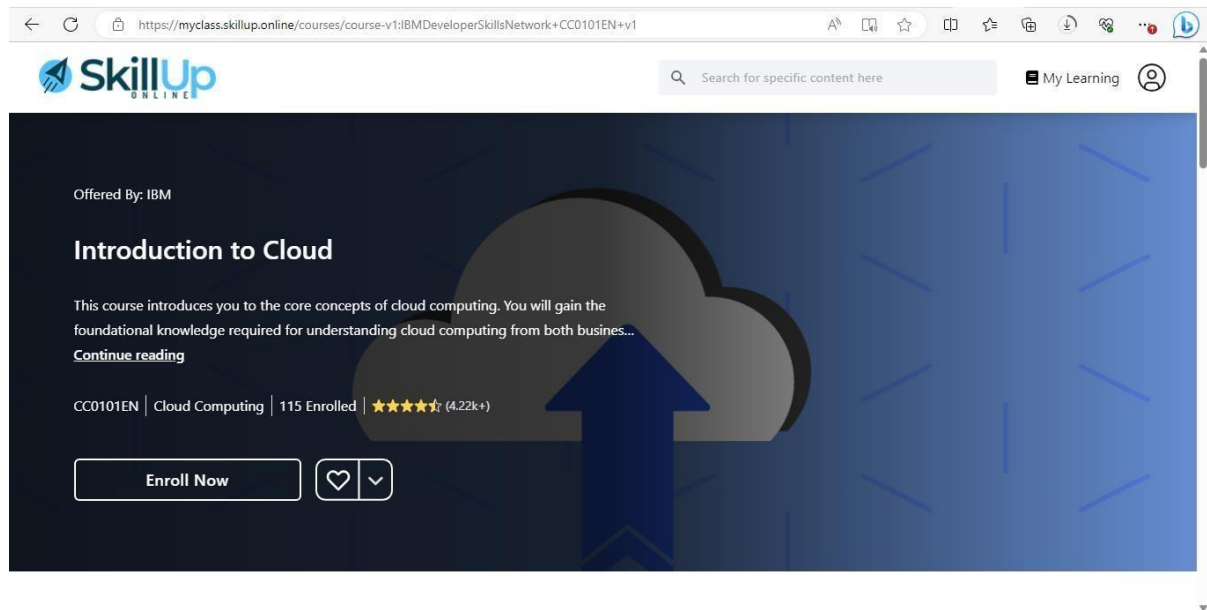
[Privacy Notice](#)

[Terms of Service](#)

Step-6. Click on the course , that has been came after searching




Step-7. After entering inside the course, click on the enroll now option.



Step-8. In the Course section , Scroll Down there you will get the module 1 option, Expand the module 1 option

← ↻ 🔒 https://courses.myclass.skillup.online/courses/course-v1:IBMDeveloperSkillsNetwork+CC0101EN+v1/course/ 🔍 ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵

 IBM: CC0101EN
Introduction to Cloud A ▾

Course Progress Dates Discussion

Introduction to Cloud Start Course



Welcome to this introductory course on Cloud Computing. This improved version of the course contains updated videos and labs and a Bonus Module that was not included in the beta. If you need help, please post in the course Discussion forum. Please use the 2-min survey at the end of the course for any suggestions to improve the course. We welcome your feedback. To get started click on the Course (or Courseware) tab above. Good luck! ✕

Expand All


▼ Welcome

- Video: Welcome to Introduction to Cloud (2:13)
- General Information
- Learning Objectives and Syllabus

Course Tools


-  Bookmarks
-  Updates

← ↻ 🔒 https://courses.myclass.skillup.online/courses/course-v1:IBMDeveloperSkillsNetwork+CC0101EN+v1/course/ 🔍 ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵ ⌵

 IBM: CC0101EN
Introduction to Cloud A ▾

Grading Scheme

▼ Module 1 - Overview of Cloud Computing

- Module Introduction and Objectives
- Video: Definition and Essential Characteristics of Cloud Computing (5:51)
- Video: History and Evolution of Cloud Computing (4:25)
- Video: Key Considerations for Cloud Computing (5:01)
- Video: Key Cloud Service Providers and Their Services (6:32)
- Obtain an IBM Cloud Feature Code
- Hands-on Lab: Create a Cloud Account (Lite)
- Reading: Module Summary
-  Graded Quiz (3 Questions)
- Graded Quiz

➤ Module 2 - Cloud Adoption and Emerging Technologies

Step-9 Expand Module-1 and click on Obtain an IBM Cloud Feature Code.

Introduction to Cloud

Start Course

Welcome to this introductory course on Cloud Computing. This improved version of the course contains updated videos and labs and a Bonus Module that was not included in the beta. If you need help, please post in the course Discussion forum. Please use the 2-min survey at the end of the course for any suggestions to improve the course. We welcome your feedback. To get started click on the Course (or Courseware) tab above. Good luck!

Expand All

> Welcome

▼ Module 1 - Overview of Cloud Computing 1

Module Introduction and Objectives

Video: Definition and Essential Characteristics of Cloud Computing (5:51)

Video: History and Evolution of Cloud Computing (4:25)

Video: Key Considerations for Cloud Computing (5:01)

Video: Key Cloud Service Providers and Their Services (6:32)

Obtain an IBM Cloud Feature Code 2

Hands-on Lab: Create a Cloud Account (Lite)

Course Tools

Bookmarks

Updates

Upcoming Dates

Apr 10, 2023

Course Starts

View all course dates

Step-10 Scroll down and click on the open tool to get the feature code for creating an IBM cloud account.

Please check the box and click on the Open tool button below to obtain a unique Feature Code and copy it. You will be able to apply it using the instructions that follow in a subsequent lab in the course.

NOTE: If you have already applied your IBM Cloud feature code in another course/lab to create an IBM Cloud account or extend its trial, please skip this item, as the code can only be used once.

LTI Consumer (External resource)

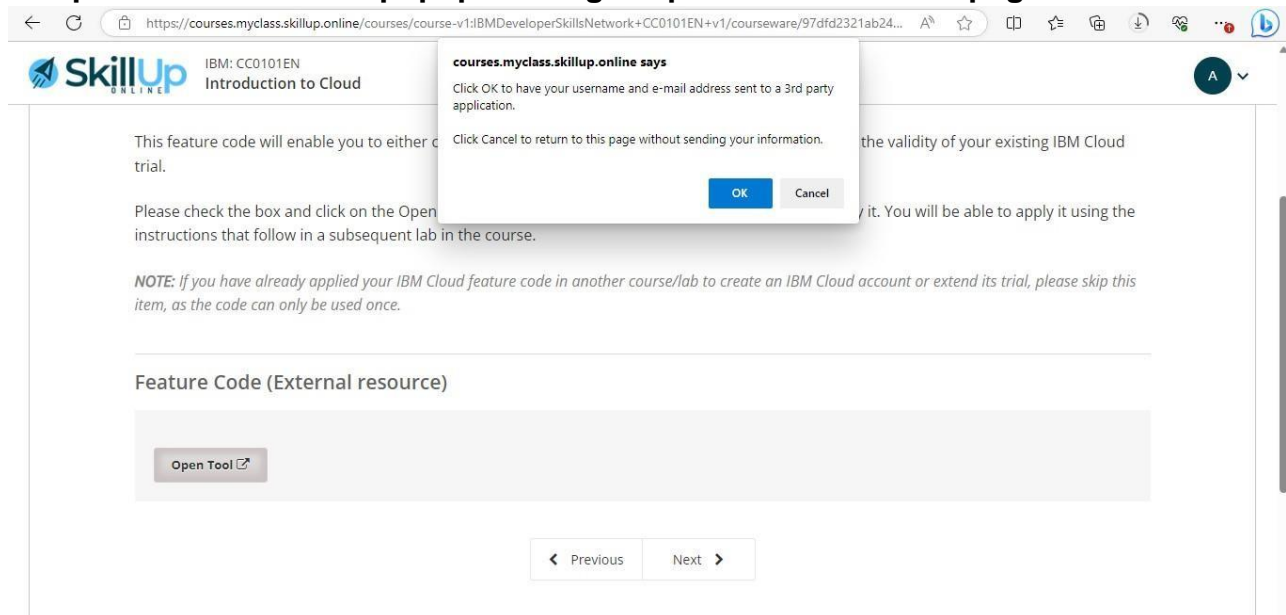
1

Open Tool

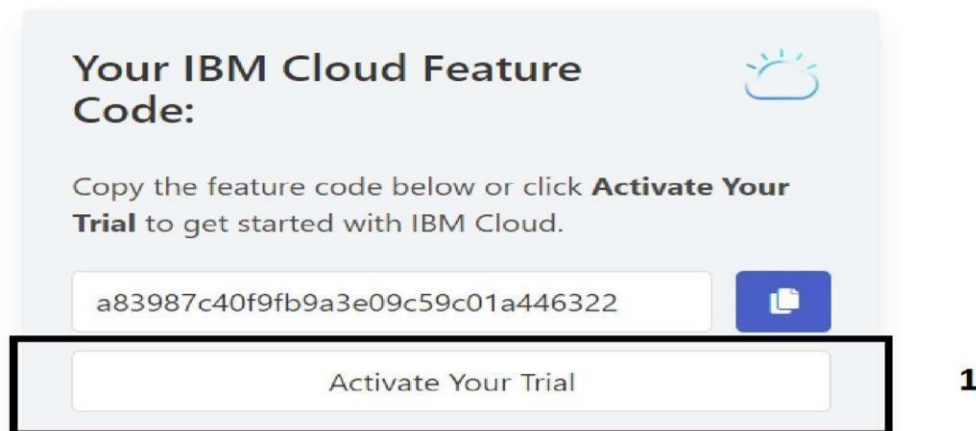
< Previous

Next >

Step-11 Click ok on the popup message to proceed to the next page.



Step-12 Click on activate your trial account for 365 Days with the feature code



Step-13 Provide the same credentials i.e email id/username & password used for creating the skillup account and click on next to get the verification code on the registered email id or if the ibm account is already created then click in log in

IBM Cloud

Catalog Cost estimator Docs

Create an IBM Cloud account

Already have an IBM Cloud account? [Log in](#)

Account information

Email

shivamtnibm@gmail.com

Password

.....

Next ↓

1

Verify email

Personal information

Account notice

Get started with a USD 200 credit
Receive a credit for your first USD 200 of apps and services on us.

Build your journey to public cloud
Build, deploy, and manage solutions in IBM's public cloud.

Step-14 Fill the received verification code on the registered email id and click onnext

IBM Cloud

Catalog Cost estimator Docs

Create an IBM Cloud account

Already have an IBM Cloud account? [Log in](#)

Account information

shivamtnibm@gmail.com

Edit

Verify email

We sent a 7-digit verification code to **shivamtnibm@gmail.com**. This code is valid for 30 minutes.

Verification code

4074768

Next ↓

Resend code

Personal information

Account notice

Get started with a USD 200 credit
Receive a credit for your first USD 200 of apps and services on us.

Build your journey to public cloud
Build, deploy, and manage solutions in IBM's public cloud.

Step-15 Provide personal information and click on next

IBM Cloud

Catalog Cost estimator Docs

Start your journey to public cloud
Build, deploy, and manage solutions in IBM's public cloud.

Verify email

Personal information

First name
Shivam

Last name
Shivhare 1

Country or region
India

Next ↓ 2

Account notice

Continue →

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Step-16 Accept the terms and conditions then click on continue

IBM Cloud

Catalog Cost estimator Docs

Start your journey to public cloud
Build, deploy, and manage solutions in IBM's public cloud.

Verify email

Personal information Edit ↗
Shivam Shivhare
India

Account notice

IBM may use my contact data to keep me informed of products, services and offerings:

☒ by email

You can withdraw your marketing consent at any time by submitting an [opt-out request](#). Also you may unsubscribe from receiving marketing emails by clicking the unsubscribe link in each email.

More information on our processing can be found in the [IBM Privacy Statement](#). By submitting this form, I acknowledge that I have read and understand the IBM Privacy Statement.

☒ I accept the product Terms and Conditions of this registration form. 1

Continue → 2

Step-17 Review account privacy notice mark the checkbox then click on continue

IBM CloudCatalogCost estimatorDocs

If your account was created as (or is connected to) an enterprise ID, your organization manages your account information. It is also the authenticating agency for your ID, meaning your access is controlled by your organization's login service.

[Last updated: 2021-10-18]

What data does IBM collect?

Why IBM needs your data

How your data is obtained

How IBM uses your data

How IBM protects your data

How long we keep your data

About your IBMid Account Privacy


☒ I acknowledge that I understand how IBM is using my Basic Personal Data and (if applicable) how my organization may become the authenticating agency for my IBMid account. I certify that my age is at least the age of consent for my country of residence.

Continue

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Step-18 Refer to Step-12 to copy the feature code or continue with the automatically filled feature code then click on create account

IBM CloudCatalogCost estimatorDocs



Verify identity

● Apply codeRegister without a code ⓘ

Enter the code that has been provided to you. You can apply the code to only one account, and it can't be removed.

Enter code

a83987c40f9fb9a3e09c59c01a446322

Account ID: 9d53b18aa3454d168a8c86389fc9a5cc ⓘ

Create account

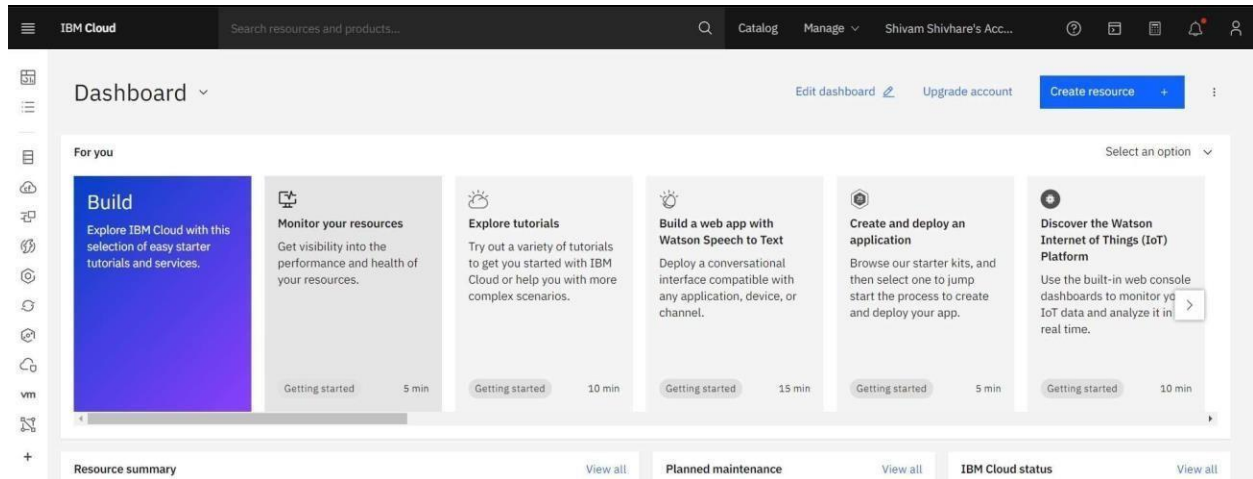
Secure your account

You're asked to verify your identity by entering credit card information.

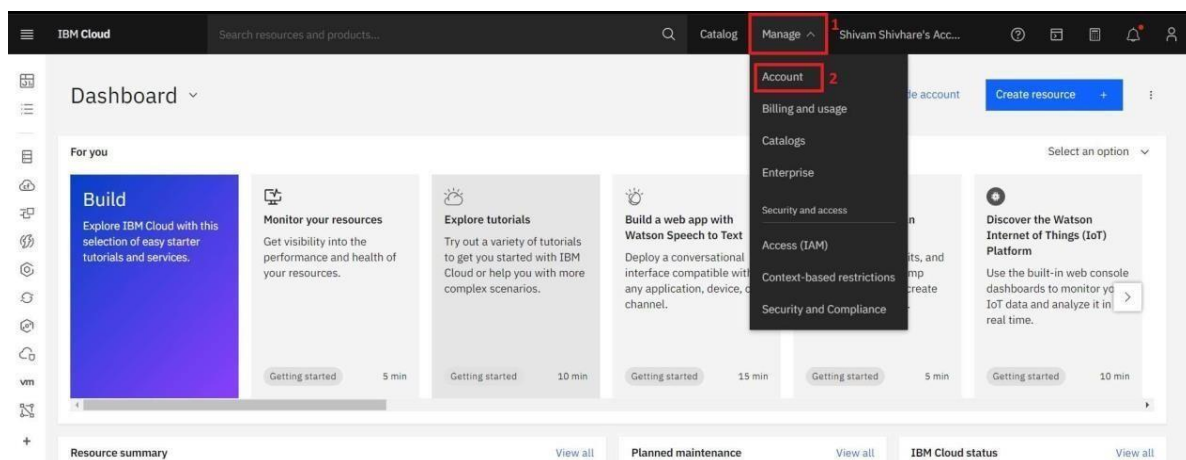
Create your account for free

Access over 40 always-free products. You won't be charged for any usage below the IBM cloud free tier limits.

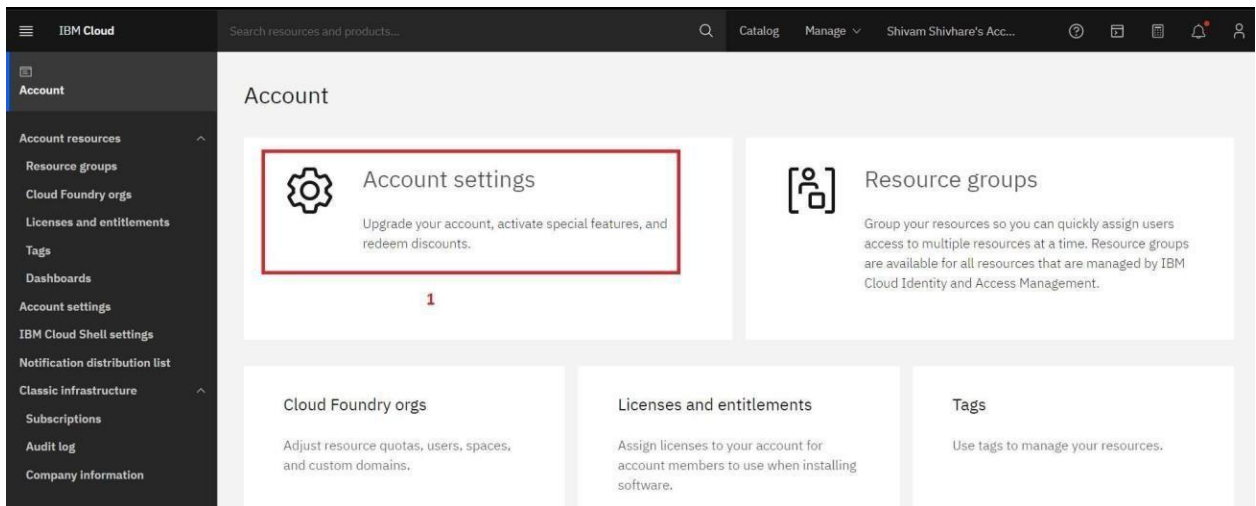
Step-19 After Successfully creating the account you are redirected to the dashboard page of the IBM Cloud account.



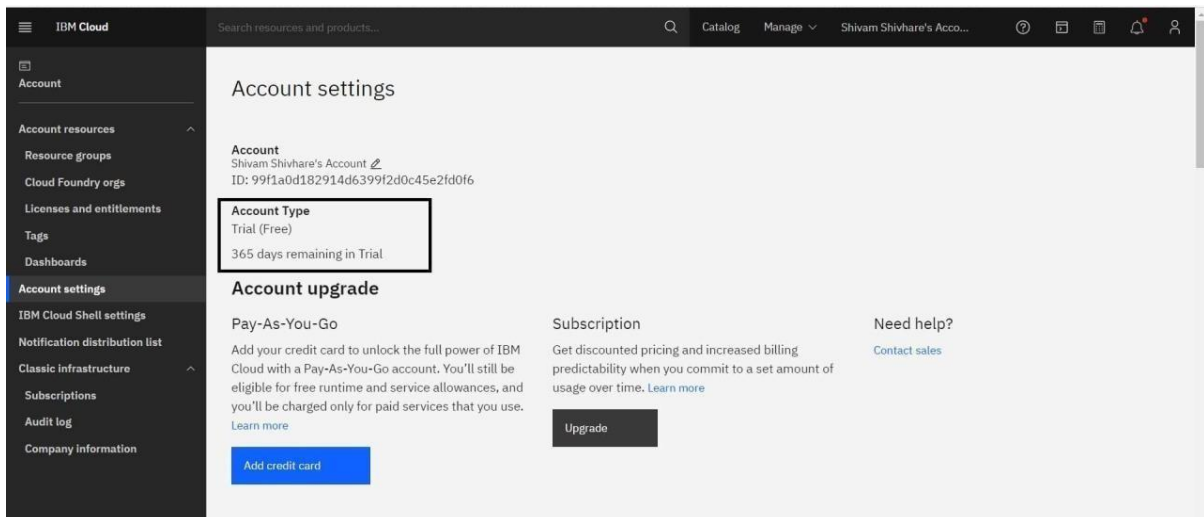
Step-20 To check the free trial details click on the manage dropdown from the top navigation bar and click on account.



Step-21 Go to Account settings to check Free trial details



Step-22 Good Job! You created 365 Days Free trial account



```
[ ]: # Defition of chatbot's persona:

#A chatbot's persona refers to the character, identity, or personality that a
    □ chatbot is designed to embody when interacting with users.
#It involves giving the chatbot human-like qualities and characteristics to
    □ make it more relatable and engaging.

#
# THE COVERSATION FLOW CONFIGURE

# 1.INTENTS
# 2.ENTITIES
# 3.DIALOG NODLES
```

```
[ ]: # Code implementation(procedures for creating watson assistant ):

from ibm_watson import AssistantV1
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator

# Set up the Assistant service
authenticator = IAMAuthenticator('YOUR_API_KEY') # Replace with your API key
assistant = AssistantV1(
    version='2019-02-28', # Adjust to your version
    authenticator=authenticator
)

assistant.set_service_url('YOUR_ASSISTANT_URL') # Replace with your Assistant_
    □ URL
```

```
[ ]: # Define the workspace ID (replace with your own)
```

```
[ ]: workspace_id = 'YOUR_WORKSPACE_ID'
```

```
[ ]: # Send a message to the assistant
```

```
[ ]: def send_message(message):
    response = assistant.message(
```

```

        workspace_id=workspace_id,
        input={
            'text': message
        }
    ).get_result()
    return response

```

```

[ ]: # Get intents, entities, and dialogue nodes
def get_intents_entities_nodes():
    intents = assistant.list_intents(workspace_id=workspace_id).get_result()
    entities = assistant.list_entities(workspace_id=workspace_id).get_result()
    nodes = assistant.list_dialog_nodes(workspace_id=workspace_id).get_result()
    return intents, entities, nodes

# Example usage
if __name__ == '__main__':
    message = 'Hello'
    response = send_message(message)
    print(response)

    intents, entities, nodes = get_intents_entities_nodes()
    print("Intents:", intents)
    print("Entities:", entities)
    print("Dialog Nodes:", nodes)

```

[]: Here's what you need to do:

1. Install the necessary packages using `pip install ibm-watson`.
2. Replace `'YOUR_API_KEY'` with your actual IBM Watson API key.
3. Replace `'YOUR_ASSISTANT_URL'` with the URL of your IBM Watson Assistant service.
4. Set the `workspace_id` variable with the ID of your Watson Assistant workspace.
5. You can call `send_message(message)` with a user's message to interact with the chatbot. The response will be stored in the `response` variable.
6. `get_intents_entities_nodes()` retrieves the intents, entities, and dialogue nodes.

Please remember to replace the placeholders with your actual values. If you're unsure about where to find certain values, refer to your IBM Cloud account or the IBM Watson Assistant documentation.

SARA, THE BOOKWORM

"I love to spend my time reading and learning about things."



AGE 28
OCCUPATION Librarian
EDUCATION BS on Library Science
LOCATION Campo Grande, RJ

ATTRIBUTES

Bruna simply loves to read anything that pops in front of her. She prefers books, but since she doesn't live very near her working place, she always reads Wikipedia on her way home.

GOALS

- Knowing different cultures and ways of thinking
- Reading as much books as possible

PAIN POINTS

- Reading too much texts that are not useful for her final paper
- Sometimes she has to work extra hours on the internship
- Has limited time to do her research

PERSONALITY

Insightful

Hard working

Curious

MOST USED DEVICES



LIKES

- Reading novels, biographies, etc
- Social Media
- Going to the movies
- Having friends over

PHASE 4 (Chatbot Deployment with IBM Cloud WatsonAssistant)

Facebook Messenger Integration:

Create a Facebook App:

Go to the Facebook Developers portal, create an app, and set up a Messenger product for it.

Generate Page Access Token:

Link your app to a Facebook Page and generate a Page Access Token.

Set Up Webhooks:

Configure webhooks to receive messages and events from Messenger. You'll need a publicly accessible endpoint (e.g., a web server) to handle incoming requests.

Verify Callbacks:

Ensure that your server can verify the authenticity of incoming requests using the app secret.

Handle Messages:

Implement logic to process incoming messages, interpret user requests, and generate responses.

Slack Integration:

Create a Slack App:

Visit the Slack API site and create a new app. Configure it with the necessary permissions and settings.

Install Your App:

Install your app to your Slack workspace to obtain an OAuth access token.

Set Up Event Subscriptions:

Enable Event Subscriptions for your app and configure it to receive events from Slack.

Implement the OAuth 2.0 flow to obtain access tokens to interact with Slack's API on behalf of users.

Handle Events:

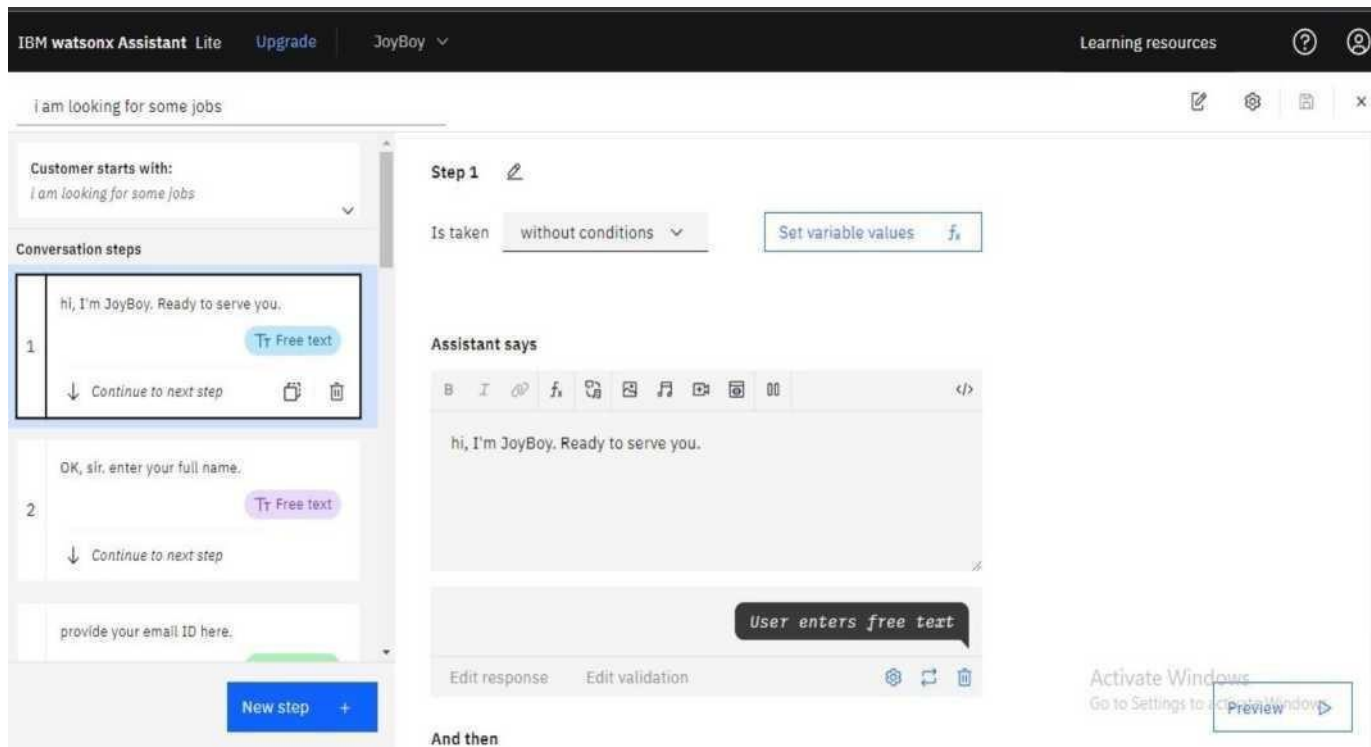
Write code to handle events and messages sent to your app in Slack, interpreting user inputs and generating appropriate responses.

Interactive Components:

If you want interactive elements (buttons, menus), you'll need to handle interactions using Slack's interactive components.

In my phase 3 project a basic chatbot has been created using IBM Cloud Watson Assistant. And it has only basic commands which have been integrated into it. But now in my Phase 4 project the chatbot has been developed a step ahead and integrated some Intents and Entities to it. At the first stage of the chatbot project (i.e phase 3), the command which have been integrated in the command and response page will be the only output from the chatbot but now with the help of the intents and entity the chatbot can understand the user input with the words that is given by the user and it will give the desired response.

Let's see it.



At first we were only able to make the chatbot function by actions. Which is very complicated since the user should give the whole user input then only the bot can understand the command.

The action functions and the user input and the bot responses both should be integrated.

IBM watsonx Assistant LiteUpgradeJoyBoy

Learning resources

i am looking for some jobs

5

Free text

Continue to next step

OK, sir for which designation you are applying?

6

Free text

Continue to next step

for that designation, there are some appointment timings. can you select your...

7

1:00pm2:30pm+ 2

Continue to next step

would you like to apply for this designation

New step +

Step 1

Is takenwithout conditions

Set variable values

Assistant says

hi, I'm JoyBoy. Ready to serve you.

User enters free text

Edit responseEdit validation

And then

Activate Windows
Go to Settings to activate Windows.
Preview

IBM watsonx Assistant LiteUpgradeJoyBoy

Learning resources

Actions

All items

Created by you

Set by assistant

Variables

Created by you

Set by assistant

Set by integration

Saved responses

Created by you /

Filter by name

New action +

	Name	Last edited	Examples count	Steps count	Status
<input type="checkbox"/>	i am looking for some jobs	5 days ago	2	12	✓
<input type="checkbox"/>	ticket booking	3 minutes ago	4	16	✓
<input type="checkbox"/>	hi	7 days ago	1	2	✓

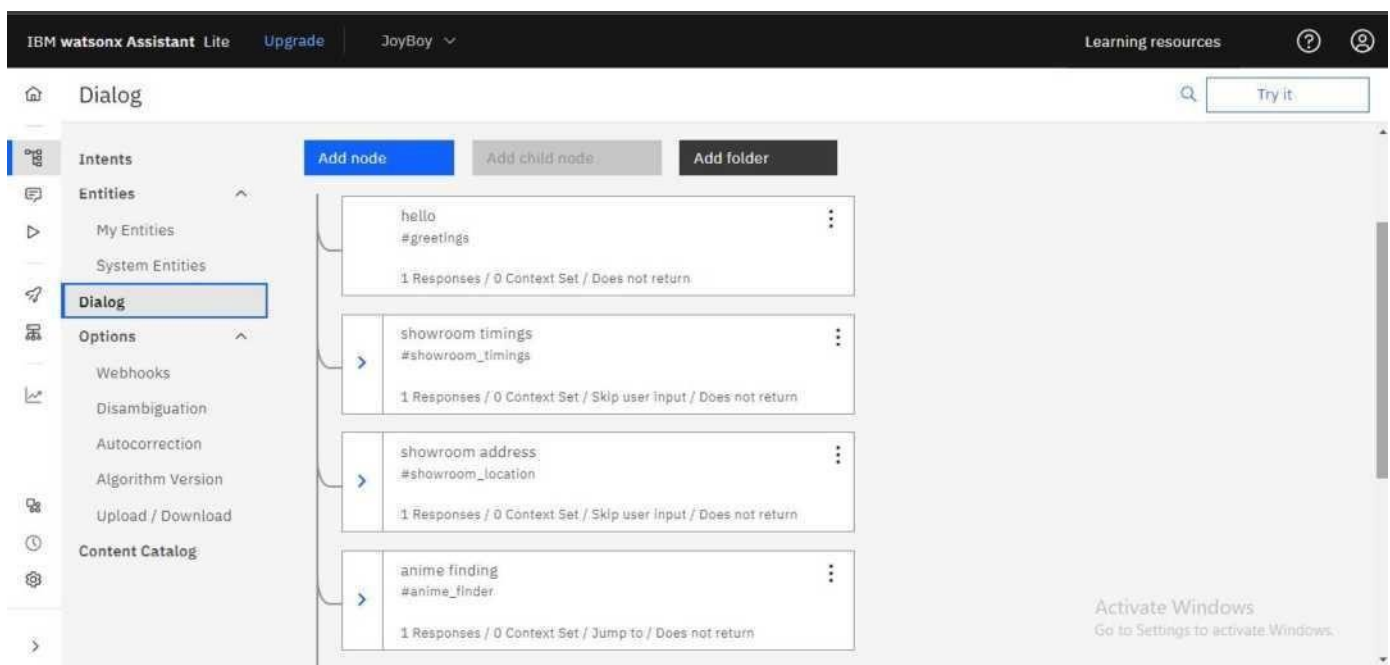
Items per page: 50Showing 1-3 of 3 items

11 of 1 pages

Activate Windows
Go to Settings to activate Windows.
Preview

And from phase 4, the chatbot can work faster by understanding the user input with the required words alone. With the Intents and Entities the chatbot do require a full sentence instead the chatbot requires only the required word which is already integrated in the entities and intent.

And from the dialog every intent and entity has been integrated with the help of nodes. The work of the node is to integrate the Intent and the Entity.



The Dialog page containing nodes

The screenshot shows the IBM Watson Assistant interface. The top navigation bar includes 'IBM watsonx Assistant Life', 'Upgrade', 'JoyBoy', and 'Learning resources'. The left sidebar has a 'Dialog' section with sub-items: 'Entities', 'My Entities', 'System Entities', 'Dialog', 'Options', 'Webhooks', 'Disambiguation', 'Autocorrection', 'Algorithm Version', 'Upload / Download', and 'Content Catalog'. The main area is titled 'Dialog' and contains a 'Create Intent' button. Below this is a table of intents.

<input type="checkbox"/> Intents (6) ↑	Description	Modified ↑↓	Examples ↑↓
<input type="checkbox"/> #anime_finder	I can give you any anime you ask	2 hours ago	11
<input type="checkbox"/> #goodbyes		3 days ago	6
<input type="checkbox"/> #greetings		3 days ago	6
<input type="checkbox"/> #showroom_location		6 hours ago	11
<input type="checkbox"/> #showroom_timings		6 hours ago	10
<input type="checkbox"/> #thank_you		3 days ago	5

Showing 1–6 of 6 intents

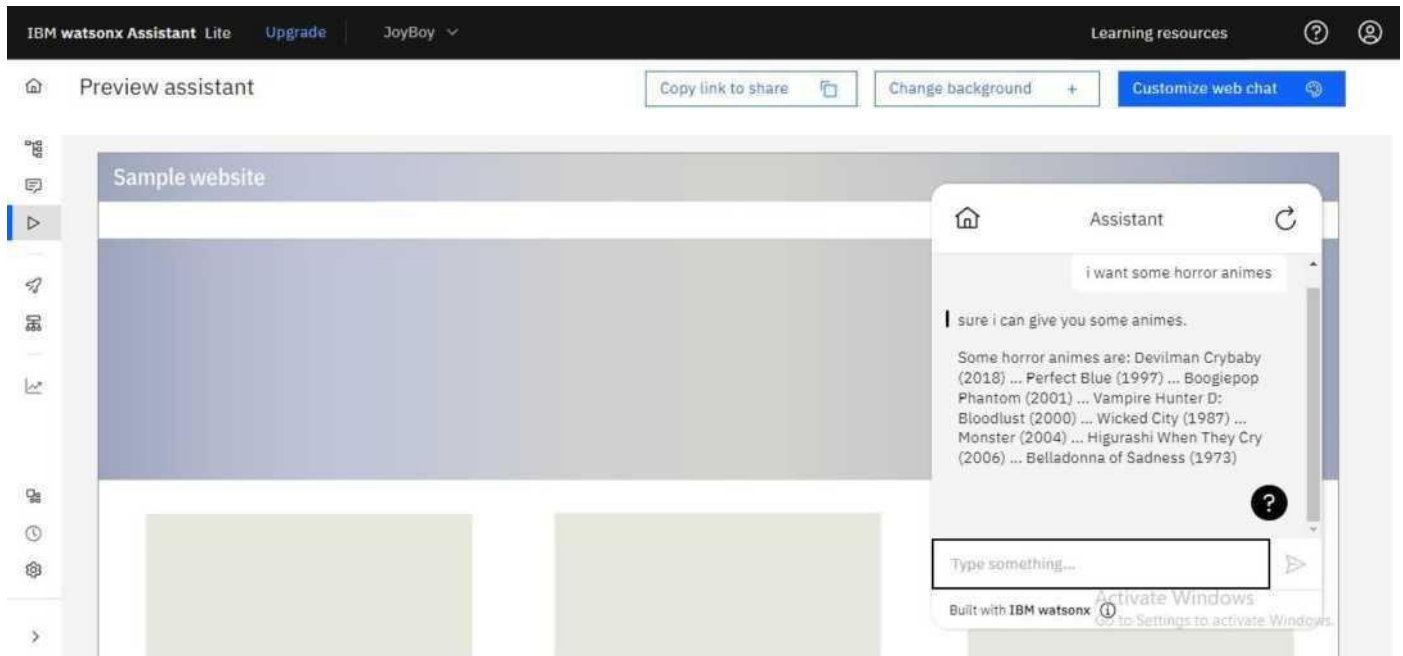
The Intent page containing Intent:

The screenshot shows the IBM Watson Assistant interface. The top navigation bar includes 'IBM watsonx Assistant Life', 'Upgrade', 'JoyBoy', and 'Learning resources'. The left sidebar has a 'Dialog' section with sub-items: 'Entities', 'My Entities', 'System Entities', 'Dialog', 'Options', 'Webhooks', 'Disambiguation', 'Autocorrection', 'Algorithm Version', 'Upload / Download', and 'Content Catalog'. The main area is titled 'Intent' and contains a 'Create entity' button. Below this is a table of entities.

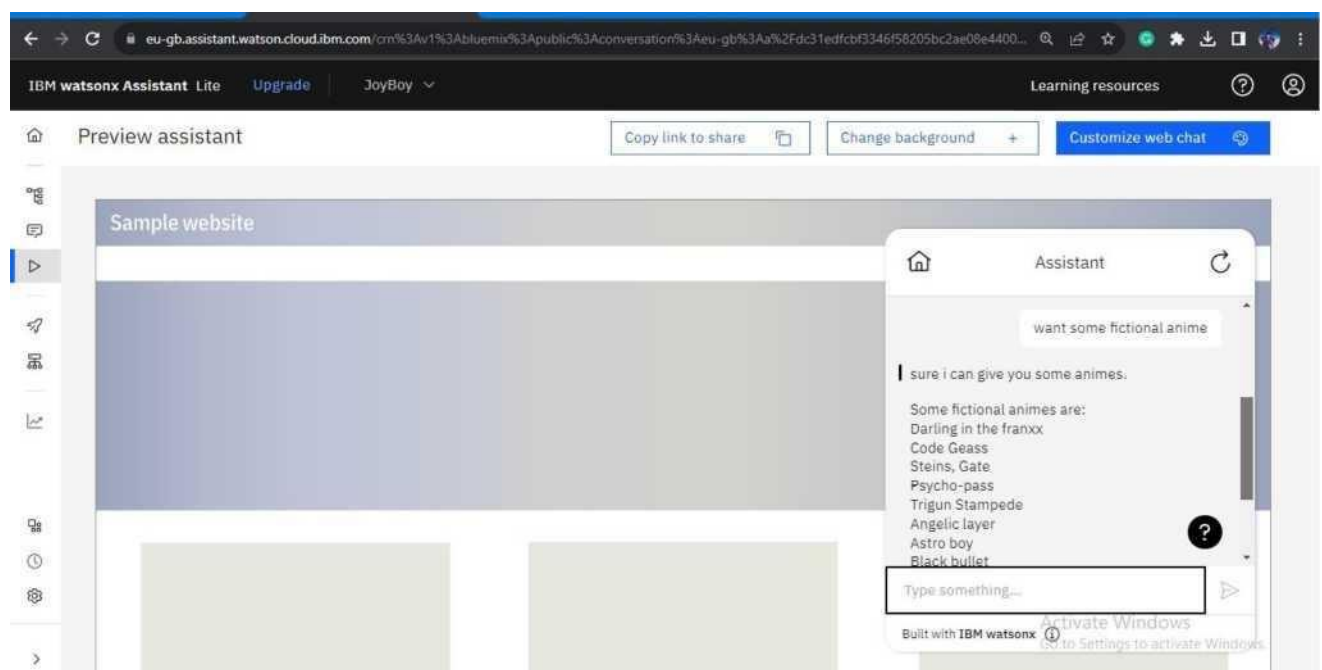
<input type="checkbox"/> Entity (3) ↑	Values	Modified ↑↓
<input type="checkbox"/> @anime_genre	comedy, mystery, romantic, horror, fictional, thriller, non-fictional, fantas...	2 hours ago
<input type="checkbox"/> @occasions	Valentines day, Anzac day, Australia day, Diwali, Holi, Kings day, Bastille ...	6 hours ago
<input type="checkbox"/> @show_room_location	india, america, japan, australia, europe	6 hours ago

Showing 1–3 of 3 entities

The Entity page containing Entities



The preview page of the Chatbot:



With these images we can see the chatbot responses which are obtained from the Intent and Entity. Therefore the chatbot has been developed ahead.

Chatbot link:

<https://web-chat.global.assistant.watson.appdomain.cloud/preview.html?backgroundImageURL=https%3A%2F%2Feu-gb.assistant.watson.cloud.ibm.com%2Fpublic%2Fimages%2Fupx-be804cb6-e8e8-4d11-95a9-f0280aad783e%3A%3A5a767323-aa5f-436a-a3ec-cb9ba57d9c69&integrationID=0e28d050-204c-4473-8664-6b9011cd9660®ion=eu-gb&serviceInstanceID=be804cb6-e8e8-4d11-95a9-f0280aad783e>