

CHATBOT DEPLOYMENT WITH IBM CLOUD WATSON ASSISTANT

INTRODUCTION

- **Define the Problem**
- **Set Objectives**
- **User Analysis**
- **Data Gathering**

- **Choose Watson Assistant**
- **Design Conversational Flow**
- **Create Intents and Entities**
- **Build Dialogs**
- **Integration**
- **Testing and Iteration**
- **User Training**
- **Deployment**
- **Monitoring and Analytics**
- **Continuous Improvement**

- **Compliance and Security**
- **Scale and Maintain**

REQUIREMENTS

- you can sign up for one on the IBM Cloud website.
- You'll need to create an instance of the IBM Watson Assistant service in your IBM Cloud account.
- you'll need access to that data.

- To create an effective chatbot, you'll need training data in the form of intents, entities, and dialog flows.

BENEFITS

- Watsonx Assistant provides large, complex and data-sensitive organizations with the chatbot security and scalability capabilities you need to safeguard against hackers and misuse of customer data, and support your virtual agent during peak times.

LANGUAGE AND VERSION

- The using languages html and css and the version of html(5.3) and Css(css3)

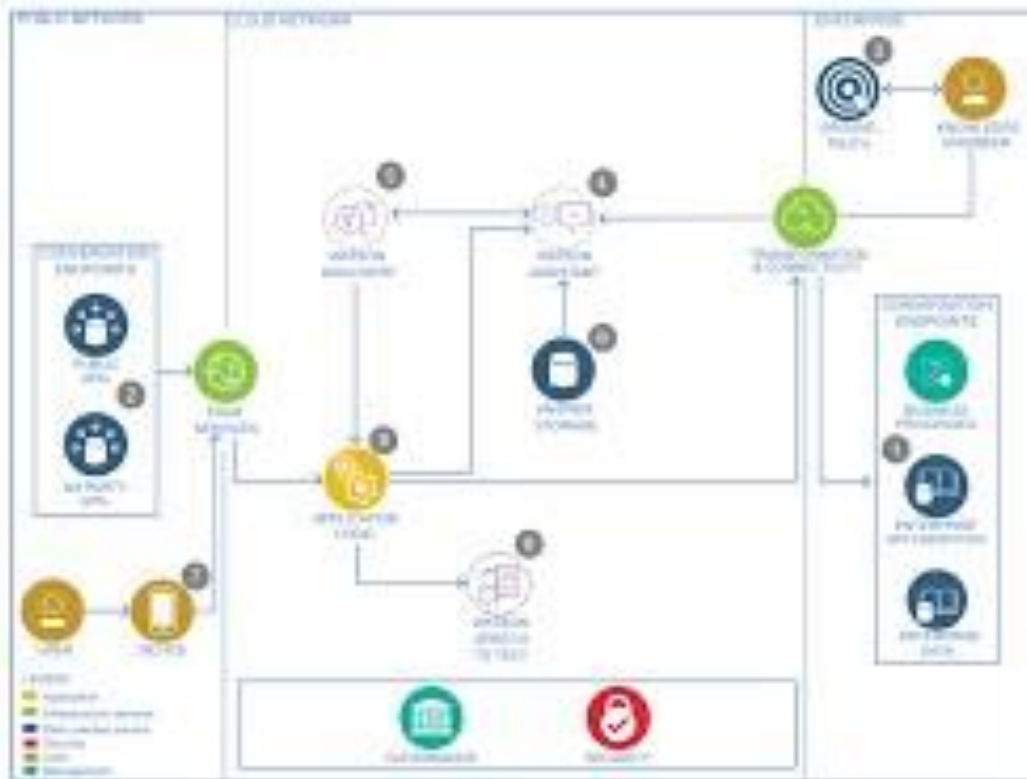
Build a chatbot project by using Watson Assistant

- define personas, create an empathy map, and build a system context diagram. Then, you extract the potential list of intents. Intents are the purposes or goals that are expressed in a user's input, such as answering a question or processing a payment.

Conversational for fast and friendly customer care IBM watsonx Assistant

- It is a market-leading, conversational artificial intelligence platform designed to help you overcome the friction of traditional support and deliver exceptional experiences to prospects, customers, and employees.
- Powered by large language models (LLMs) you can trust, and an intuitive user interface, watsonx Assistant empowers your teams to build AI-powered voice agents and chatbots that deliver automated self-service support across all channels and touch-points with seamless integration to the tools that power your business.

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Architecture of watson assistant

CHATBOT DEPLOYMENT WITH IBM CLOUD WATSON ASSISTANT

- Deploying a chatbot using IBM Cloud Watson Assistant typically involves creating an integration with a website or application. Here's a step-by-step guide to deploying a Watson Assistant chatbot in a web application using HTML and JavaScript

HTML CODE

```
<!DOCTYPE html>
```



```
<html>
<head>
  <title>Watson Assistant Chatbot</title>
</head>
<body>
  <div id="chat-container">
    <div id="chat"></div>
    <input type="text" id="user-input" placeholder="Type your message here...">
    <button id="send">Send</button>
  </div>
  <script>
    // Your JavaScript code for interacting with Watson Assistant will go here
  </script>
</body>
</html>
```

JAVASCRIPT

```
document.addEventListener("DOMContentLoaded", function () {
  const chatDiv = document.getElementById("chat");
```

```
const userInput = document.getElementById("user-input");
const sendButton = document.getElementById("send");
const assistant = new ChatBotAssistant({
  apiKey: "YOUR_API_KEY",
  url: "YOUR_API_URL",
});

sendButton.addEventListener("click", function ()
{
  const userMessage = userInput.value;
  userInput.value = "";
  displayUserMessage(userMessage);
  assistant.sendMessage(userMessage).then(displayAssistantResponse)
;
});

function displayUserMessage(message) {
  // Display the user message in the chat interface
```

```
}  
  
function displayAssistantResponse(response) {  
    // Display the chatbot's response in the chat interface  
}  
});
```

Techniques

- In IBM Watson Assistant, which is a cloudbased conversational AI platform, entities, intents, and dialogs are key components used to build and train chatbots

or virtual assistants. Here's a brief explanation of each:

In

- **Entities:**
- In Watson Assistant, an entity represents a specific piece of information within user input. It is used to extract relevant data from user messages. Entities can be things like dates, numbers, product names, or any other data you want to capture. You define entities to help the assistant understand and process user queries more effectively
- **Intents:**

- An intent is the purpose or goal expressed in a user's message. It represents what the user is trying to achieve or communicate. Intents are essential for routing user requests to the appropriate responses or actions. You define intents to help the assistant recognize and categorize user input accurately
- **Dialogs:**
- Dialogs in Watson Assistant are used to structure the conversation flow between the user and the chatbot. You create dialog nodes to define how the assistant should respond to user input based on

detected intents and entities. Dialogs help in creating dynamic and context-aware interactions.

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Catalog

Category

Compute (30)

Containers (11)

Networking (29)

Storage (22)

Converged infrastructure (3)

Enterprise applications (3)

AI / Machine Learning (22)


Analytics (14)

Databases (22)

Developer tools (18)

Viewing 214 products

Relevance




Deployable architecture

Power Virtual Server with VPC landing zone

By IBM

Build a IBM Cloud® Power Virtual Servers (PowerVS) offering according to the best practices and requirements from the IBM Cloud.




Deployable architecture

DevSecOps Application Lifecycle Management

By IBM

DevSecOps provides a set of predefined continuous integration, continuous deployment and continuous compliance toolchain templates.



Deployable architecture

Power Virtual Server for SAP HANA

By IBM

Deploy SAP systems on Power infrastructure for deployable architectures.

35°C
Hare

Search

ENG
IN

14:11
16-10-2023

Step 2:

Change the default location and give the location as London(eu-gb) and select the plan as Lite

The screenshot shows the IBM Cloud Watson Assistant catalog page. The browser address bar displays `cloud.ibm.com/catalog/services/watson-assistant`. The page header includes the IBM Cloud logo, a search bar, and navigation links for Catalog, Manage, and the user profile (V S MONISH KUMAR's A...). The main content area is titled "Watson Assistant" and includes a "Create" button. Below the "Create" button, there are two tabs: "Create" and "About". The "Create" tab is active, showing a "Select a location" dropdown menu with "Sydney (au-syd)" selected. Below this, there is a "Select a pricing plan" section with a table of plans. The table has three columns: Plan, Features and capabilities, and Pricing. The "Lite" plan is selected, showing features like "Up to 1,000 unique monthly active users (MAUs) chatting with your assistant" and "Up to 10,000 messages per month". The pricing is listed as "Free". On the right side of the page, there is a "Summary" panel showing the service name, location, plan, and resource group. At the bottom of the page, there is a "Create" button and an "Add to estimate" button. The footer of the page shows the system tray with the date and time (14:12, 16-10-2023).

IBM Cloud

Search resources and products...

Watson Assistant

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

Create About

Type: Service

Provider: IBM

Last updated: 10/04/2023

Category: AI / Machine Learning

Compliance: EU Supported, HIPAA Enabled, IAM-enabled

Location: Sydney, Frankfurt, London, Tokyo, Washington DC, Dallas

Select a location

Sydney (au-syd)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features and capabilities	Pricing
Lite	Everything you need to get started, free for as long as you need it Up to 1,000 unique monthly active users (MAUs) chatting with your assistant Up to 10,000 messages per month --- Features --- - World-class conversational AI with Watson - Make your website assistant your own with Webchat - deploy Webchat in minutes, or use our fully extensible architecture - Bootstrap your assistant by using some of our prebuilt content - Connect to any application or database with a prebuilt integration, or build your own custom integration on top of API endpoints	Free

Summary

Watson Assistant Free

Location: Sydney

Plan: Lite

Service name: Watson Assistant-18

Resource group: Default

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

Create

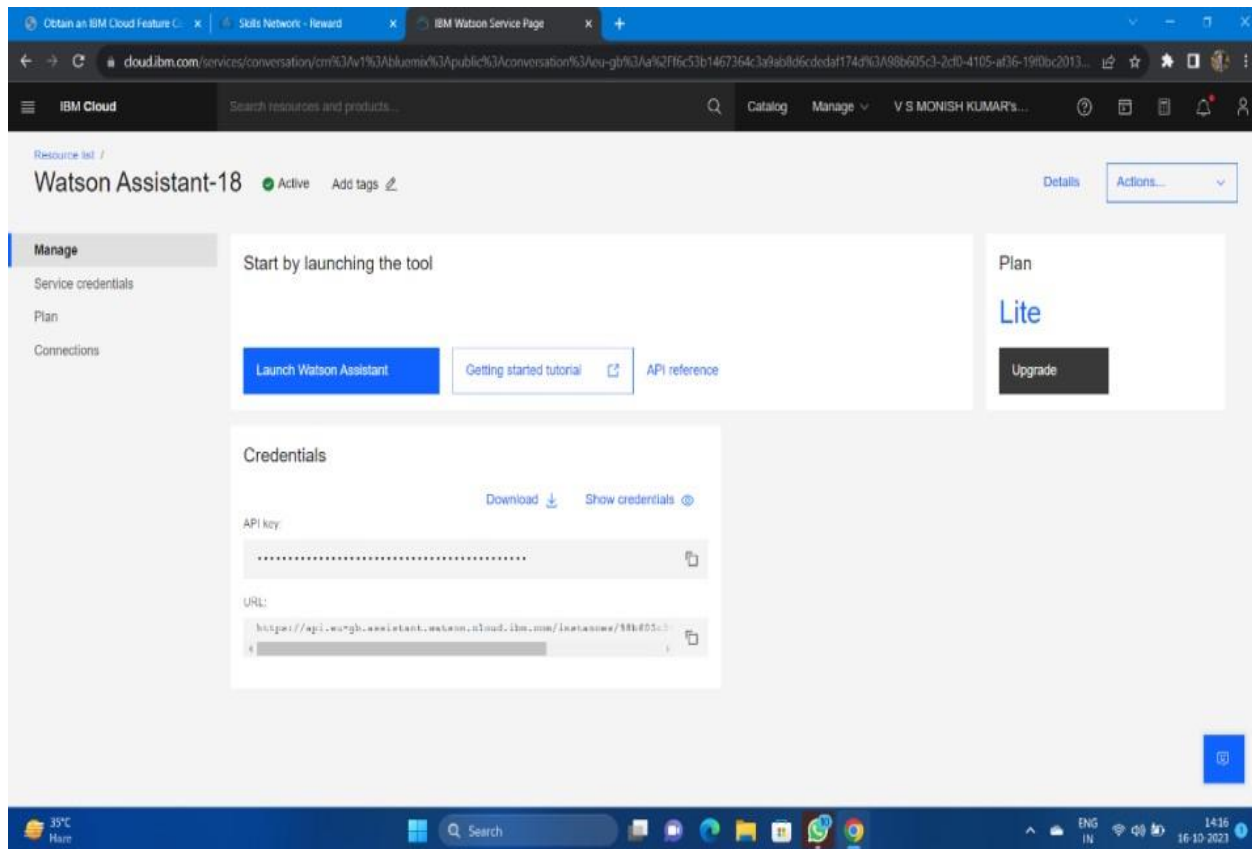
Add to estimate

35°C Haze

Search

ENG IN

14:12 16-10-2023



Step 3:

After creating an instance for Watson Assistant you need to launch the Watson Assistant by clicking the launch the assistant

Step 4:

It will give the access to create the assistant give the name for the Assistant and give the description for that assistant it's completely optional click on create and save it.

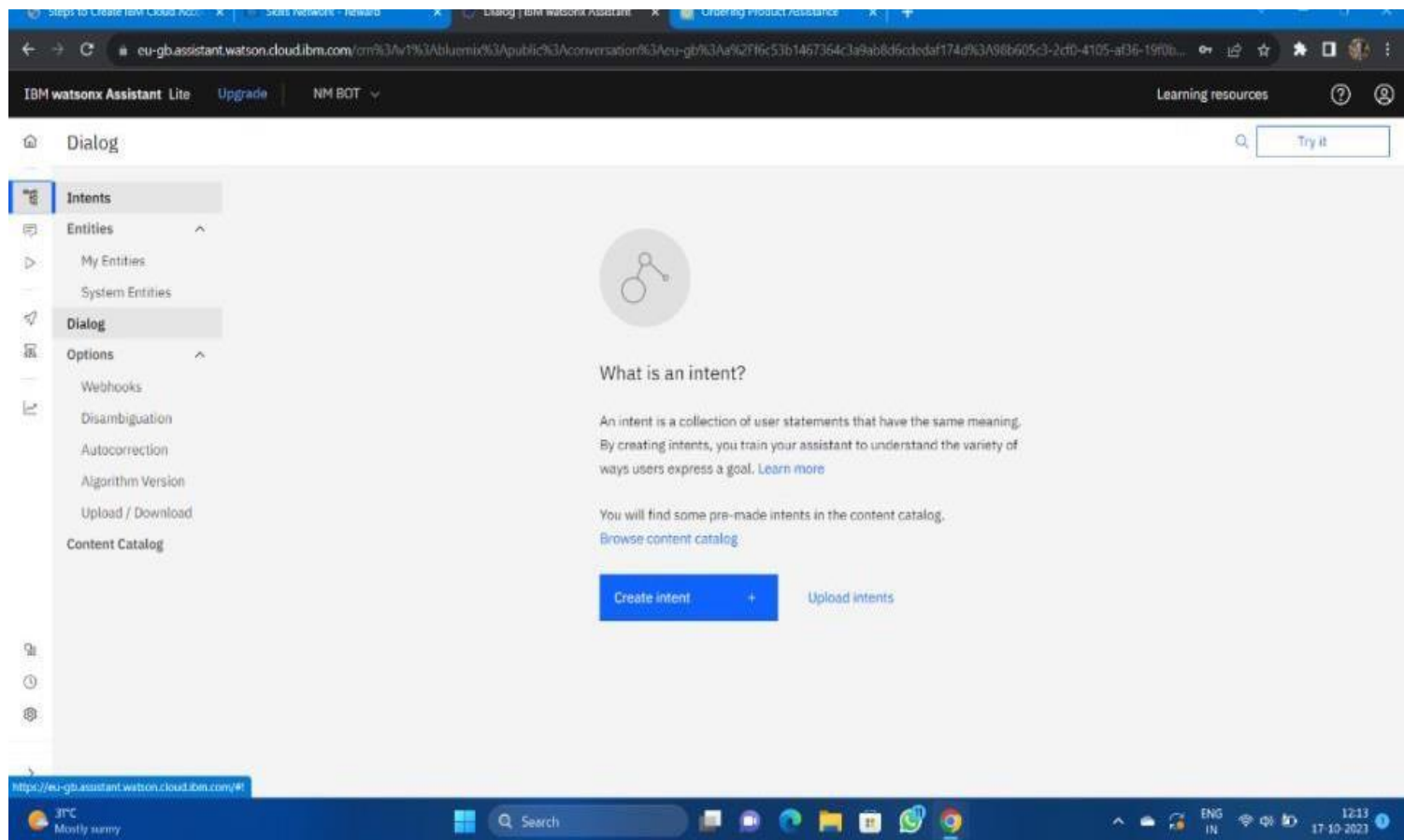
The screenshot shows the IBM watsonx Assistant Lite web interface. The browser address bar displays a URL starting with 'eu-gb.assistant.watson.cloud.ibm.com'. The page title is 'Assistant settings'. On the left, there is a sidebar with icons for 'Details', 'Intents', 'Entities', 'Dialog', 'Skills', and 'Environments'. The 'Details' section is currently selected and shows the following information:

- Assistant**
- Assistant language: English (US)
- Assistant name: NM BOT
- Description (optional): To create assistant bot for Facebook Messenger

Below the description field are 'Cancel' and 'Saved' buttons. The 'Assistant IDs and API details' section is partially visible below, with a 'View details' button.

Step 5:

After activating the Dialog, you will get the Intents, Entities, Dialog, and Content catalog like shown below



Step 6:

Create the Entities first and one variables for the entities you have been created. Here I have been created the Entity with the name Entertainment and added variables as channels and star with some variable value.

The screenshot shows the IBM Watson Assistant interface for configuring an entity named '@entertainment'. The entity name is entered in the 'Entity name' field. Below it, the instruction 'Name your entity to match the category of values that it will detect.' is displayed. The 'Value' field contains 'Type a value', and the 'Synonyms' field contains 'Type a synonym'. A 'Fuzzy matching' toggle is set to 'On'. Below the input fields, there is a table with two columns: 'Values (2) ↑' and 'Type'. The table lists two values: 'channels' and 'star', both with the type 'Synonyms'. The 'channels' value has synonyms 'pages, accounts, logins', and the 'star' value has synonyms 'vijay, maa, plus, cinema, sports, kids, music'. The interface also shows a 'Dictionary (2)' tab and an 'Annotation (0)' tab. The bottom of the screen displays a Windows taskbar with the date and time '17-10-2023 14:00'.

Values (2) ↑	Type
channels	Synonyms: pages, accounts, logins
star	Synonyms: vijay, maa, plus, cinema, sports, kids, music

Step 7:

Open the Intents and then create the Intents for Messages, Services, AboutMe give some example queries for them

Steps to Create IBM Cloud Account x Skills Network - Reward x Dialog | IBM watsonx Assistant x Ordering Product Assistance x

eu-gb-assistant.watson.cloud.ibm.com/cm%3A%3A%3Apublic%3Aconversation%3Aeu-gb%3Aa%2F6c53b1467364c3a9ab8d5cdeda174d%3A98b505c3-2cd0-4105-a36-19f0bc201...

IBM watsonx Assistant Lite Upgrade NM BOT v Learning resources

#Messages

Last updated: a few seconds ago

Try it

Intent name

#Messages

Name your intent to match a customer's question or goal

Description (optional)

Add a description to this intent

User example

Type a user example here

Add unique examples of what the user might say. (Pro tip: Add at least 5 unique examples to help Watson understand)

Add example

No examples yet.

Train your virtual assistant with this intent by adding unique examples of what your users would say.

31°C Mostly sunny

Search

ENG IN 12:25 17-10-2023

Steps to Create IBM Cloud Acc...Skills Network - RewardDialog | IBM watsonx AssistantNew Tab

eu-gb.assistant.watson.cloud.ibm.com/cm%3Av1%3Abluemix%3Apublic%3Aconversation%3Aeu-gb%3Aa%2F16c53b1467364c3a9ab8d6cde...IBM watsonx Assistant LiteUpgradeNM BOTLearning resources

#ServicesLast updated: a few seconds agoTry it

User example

Type a user example here

Add unique examples of what the user might say. (Pro tip: Add at least 5 unique examples to help Watson understand)

Add example

Annotate entitiesWhat's this?

User examples (5) ↑

Can you tell me about your latest promotions?

How do I contact customer support?

How do I reset my password?

What are your business hours?

What services do you offer?

Showing 1–5 of 5 examples1 of 1 pages

Try it outClearManage context0

Hello This is a NM BOT... Nice To meet You..!How can I help you?

hey

#AboutMe

I didn't understand. You can try rephrasing.

dhg

Irrelevant

Can you reword your statement? I'm not understanding.

jubilho

#Welcome

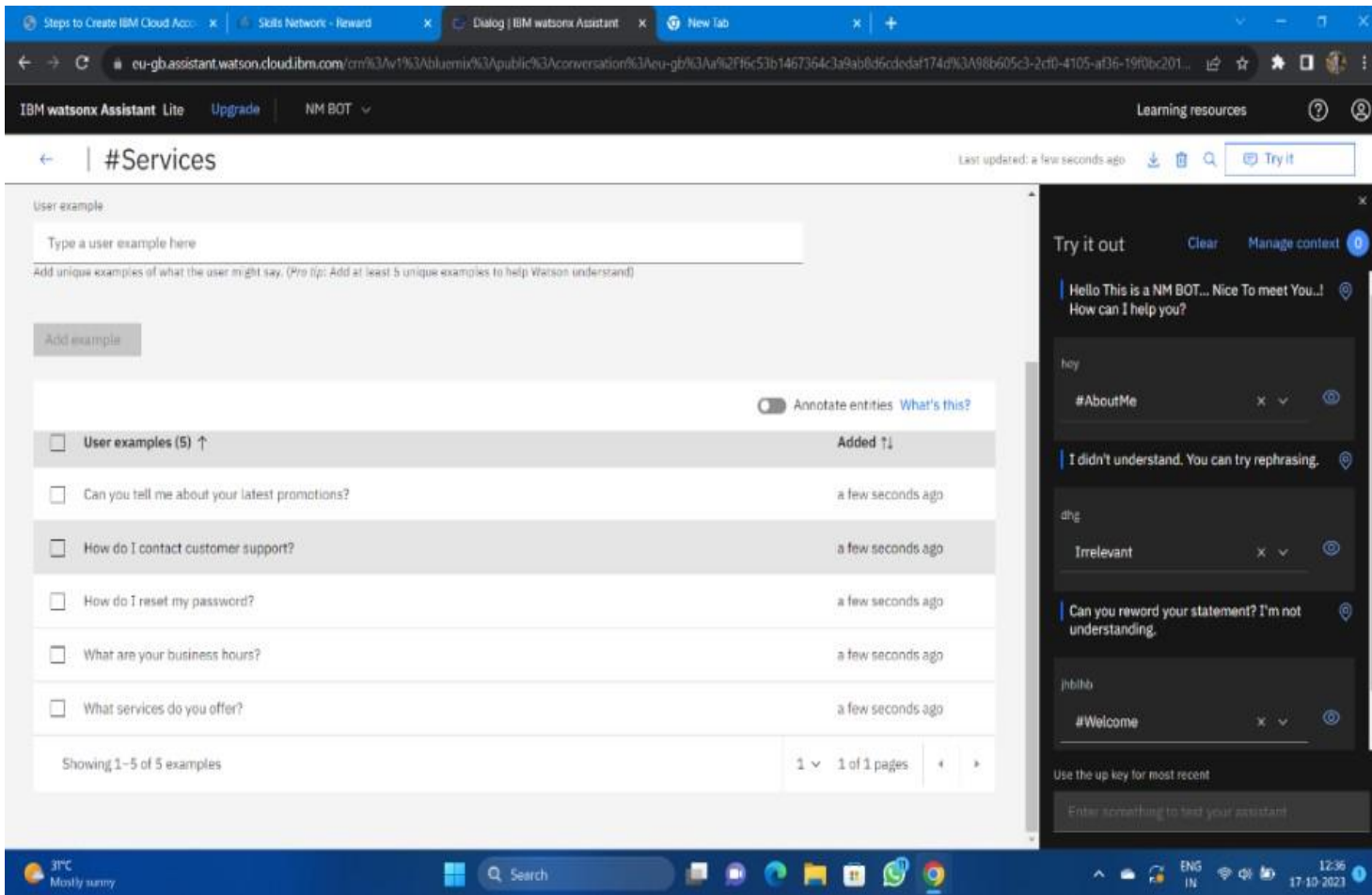
Use the up key for most recent

Enter something to test your assistant

31°C Mostly sunny

Search

12:36 17-10-2023



← → ↻ eu-gb.assistant.watson.cloud.ibm.com/cmf%3A%3Abluemix%3Apublic%3Aconversation%3Aeu-gb%3Aa%2Ff6c53b1467364c3a9ab8d6cd0da174d%3A98b605c3-2d0-4105-a036-19f0bc201... IBM watsonx Assistant Lite Upgrade NM BOT Learning resources ?

← | #AboutMe Last updated: 17 minutes ago ⬇️ ⬆️ 🔍 Try it

Intent name

AboutMe

Name your intent to match a customer's question or goal

Description (optional)

Add a description to this intent

User example

Type a user example here

Add unique examples of what the user might say. (Pro tip: Add at least 5 unique examples to help Watson understand)

Add example

Annotate entities What's this?

<input type="checkbox"/> User examples (3) ↑	Added ↑
<input type="checkbox"/> hey	32 minutes ago
<input type="checkbox"/> What is your name?	19 minutes ago
<input type="checkbox"/> Who are you?	19 minutes ago

31°C Mostly sunny

Search

ENG IN

12:49 17-10-2023

eu-gb.assistant.watson.cloud.ibm.com/om%3A%3Abluemix%3Apublic%3Aconversation%3Aeu-gb%3Aa%2F16c53b1467364c3a9ab8d6cdeda174d9%3A98b605c3-2cd0-4105-a936-19f0bc201...

IBM watsonx Assistant Lite Upgrade NM BOT

Learning resources

Dialog

Intents

Entities

Dialog

Options

Webhooks

Disambiguation

Autocorrection

Algorithm Version

Upload / Download

Content Catalog

Create intent

Intents (3) ↑	Description	Modified ↑↓	Examples ↑↓
#AboutMe		5 minutes ago	3
#Services		a minute ago	5
#Welcome	Welcome Intent	5 minutes ago	8

Showing 1-3 of 3 intents

1 1 of 1 pages

Try it out

Clear Manage context

Hello This is a NM BOT... Nice To meet You...! How can I help you?

hey

#AboutMe

I didn't understand. You can try rephrasing.

dhg

Irrelevant

Can you reword your statement? I'm not understanding.

jnbibb

#Welcome

I didn't get your meaning.

Use the up key for most recent

Enter something to test your assistant

31°C Mostly sunny

Search

ENG IN

12:36 17-10-2023

31°C
Mostly sunny



Search



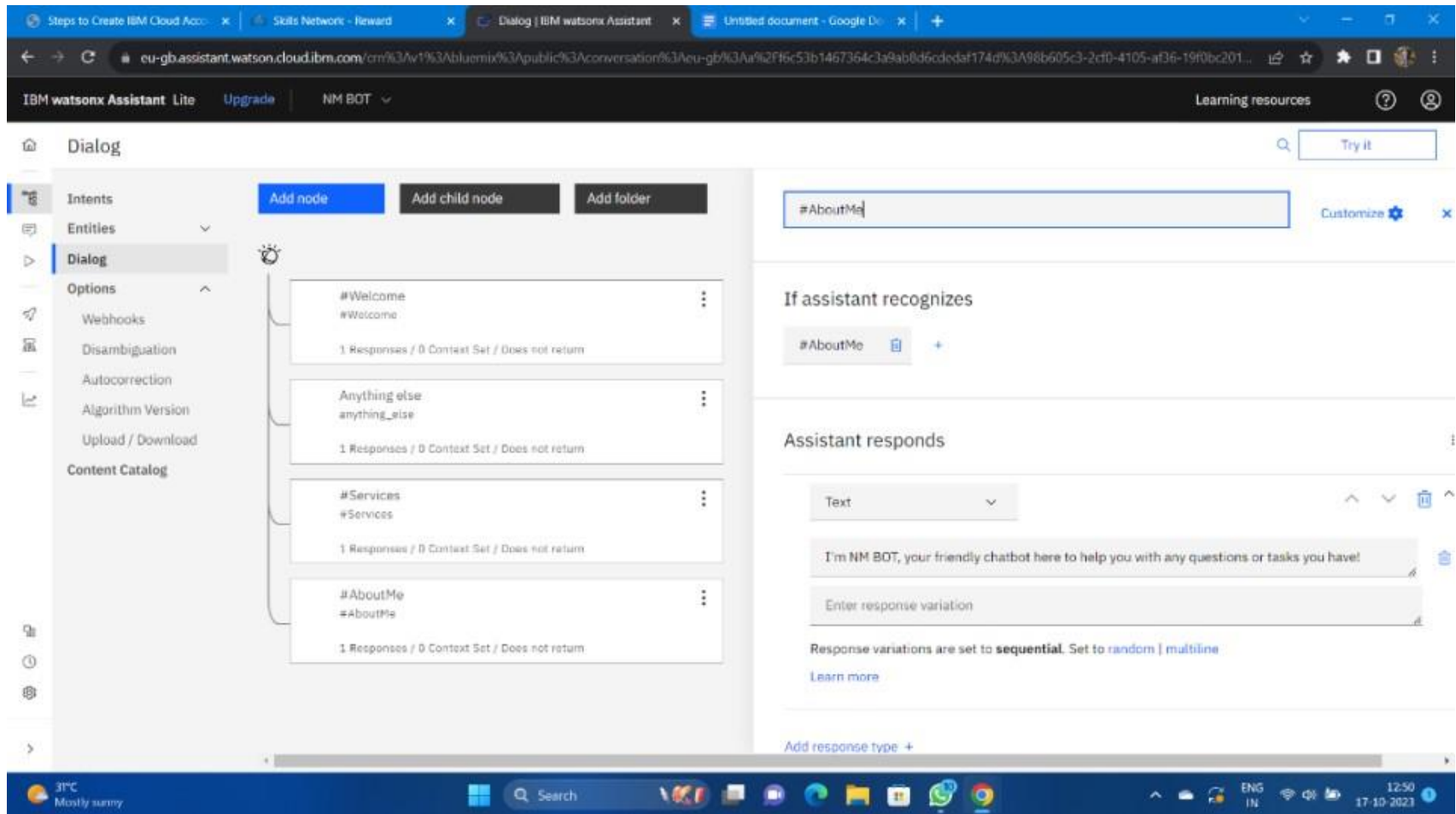
ENG
IN

12:36

17-10-2023

Step 8:

Next open the Dialog and then add nodes for all the Intents you have created where we need to give the responses for the selected queries.



Whereby default we will have Anything else node.

Step 9:

Check the chat bot by clicking the try it before connecting the Facebook Messenger

The screenshot displays the IBM Watson Assistant Lite web interface. The main area is titled 'Dialog' and shows a configuration tree on the left with sections for Intents, Entities, My Entities, System Entities, Dialog (selected), Options, Webhooks, Disambiguation, Autocorrection, Algorithm Version, Upload / Download, and Content Catalog. The Dialog section contains four nodes: #Welcome, Anything else, #Services, and #AboutMe. Each node has a status of '1 Responses / 0 Context Set / Does not return'. The right pane shows the configuration for the selected '#Services' node, including a list of intents and a preview of the assistant's responses. A 'Try it out' chat window is open on the right, showing a conversation history with the assistant. The chat window includes a 'Clear' button, a 'Manage context' button, and a text input field at the bottom. The bottom of the screen shows a Windows taskbar with the date and time as 17-10-2023 14:02.

IBM watsonx Assistant Lite Upgrade NM BOT Learning resources

Dialog

Intents

Entities

My Entities

System Entities

Dialog

Options

Webhooks

Disambiguation

Autocorrection

Algorithm Version

Upload / Download

Content Catalog

Add node Add child node Add folder

#Welcome
#Welcome
1 Responses / 0 Context Set / Does not return

Anything else
anything_else
1 Responses / 0 Context Set / Does not return

#Services
#Services
1 Responses / 0 Context Set / Does not return

#AboutMe
#AboutMe
1 Responses / 0 Context Set / Does not return

#Services

If assistant recognizes

#Services

Assistant responds

Text

I can provide information on Service, answer orders, and more. How can I assist you today?

To reach our customer support team, please You can also type 'customer support' for more

You can reset your password by visiting our If you need step-by-step instructions, I can

Try it out Clear Manage context 0

I didn't understand. You can try rephrasing.

hai

#Welcome

hii I am Doing Good How abt you...! How Can I Help You.....?

how are you?

#AboutMe

Hey there How can I assist You

how di i reset my password

#Services

Can you reword your statement? I'm not understanding.

Use the up key for most recent

Enter something to test your assistant

31°C Sunny Search 17-10-2023 14:02