CHATBOT PROJECT DOCUMENTATION

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CHAPTER 1:

INTRODUCTION

AIM:

- The purpose of a chatbot is to provide conversational interaction between a computer program and a human user.

- Chat bots use natural language processing (NLP) and artificial intelligence (AI) to understand and respond to user inputs in a conversational manner, simulating a real human conversation.

- Chatbot is used for friendly conversation with some information.

- For example, many of the questions or issues customers have are common and easily answered. That's why companies create FAQs and troubleshooting guides.

OBJECTIVES:

- A Chatbot can communicate with a real person behaving like a human.

Let's list down objectives and purpose of chat bots.

- You can create chat bots for any business the same as you recruit a person for any department of your company. Whether you are a:

  ➢ Wedding Planner

  ➢ Insurance Assistant

  ➢ Education Consultant

- A bot can help in doing all-in-one services.

Main goals of chatbot:

  ➢ To propose a framework for an automated query reply system suitable for an any organization.

  ➢ To develop an online interface for interaction with the system based on cloud services and natural language processing intelligence.

Creating Chatbot:

- IBM Cloud

  Enable you to develop chatbot once and deploy them anywhere

- Watson assistant:

  IBM Watson Assistant is a question-and-answer system that provides a dialog interaction between The conversation system and users.

- Dialog Creation:

  Enables bots to store user intents that came up during a conversation but were not acted upon immediately.

- Testing:

  Chatbot testing is important to ensure that users have a good experience and that the chatbot performs well.

Principles of chatbot:

➤ Don't pretend to be a human
➤ Keep it incredibly simple
➤ Respect the chat medium
➤ Optimize for the end user
➤ Use sparingly (in small amounts)

Design Thinking for Chatbots

- A chatbot personal assistant is a computer program that uses artificial intelligence (AI) to communicate with users. Chatbots can help customers, respond to inquiries, and start discussions.

- Examples of chatbot personal assistants.

- Apple's Siri.

- Amazon's Alexa.

- Google Assistant.

- Chatbots communicate with users through text-based interfaces on websites, social media platforms, and messaging apps.

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- Chatbots use natural language to understand users' text or speech inputs.

- Chatbots can generate responses that are conversational and fluent.
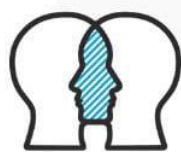
Empathize   Define   Ideate   Prototype   Test

- Design thinking is a human-centered method that aims to understand the user's problems and generate ideas to solve them.
- It can be used for digital products and services, but also chatbots. Follow our lesson, learn the fundamentals of design thinking, and find out how to apply it to build user-friendly chatbots .

Development Phases:

1. Create a IBM Cloud
2. Watson assistant
3. Facebook messenger
4. Slack

CHAPTER 2

Chatbot Definition :

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  A computer program designed to simulate conversation with human users, especially over the internet.

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  Chat bots often treat conversations like they're a game of tennis: talk, reply, talk, reply.

Uses of chatbot:

➢ Chat bots answer questions and inquiries.
➢ Book tickets to events/shows with chat bots.
➢ Chat bots to build remarkable customer experience.
➢ Chat bots can confirm orders and track shipping.
➢ It help you collect customer feedback efficiently.
➢ It also assign customer requests to support teams.

Benefits of chatbot:

➢ Chat bots are available 24 hours a day to help customers.

➢ Chat bots can save time and money. They can handle repetitive tasks, deflect potential tickets, and offer self-service options.
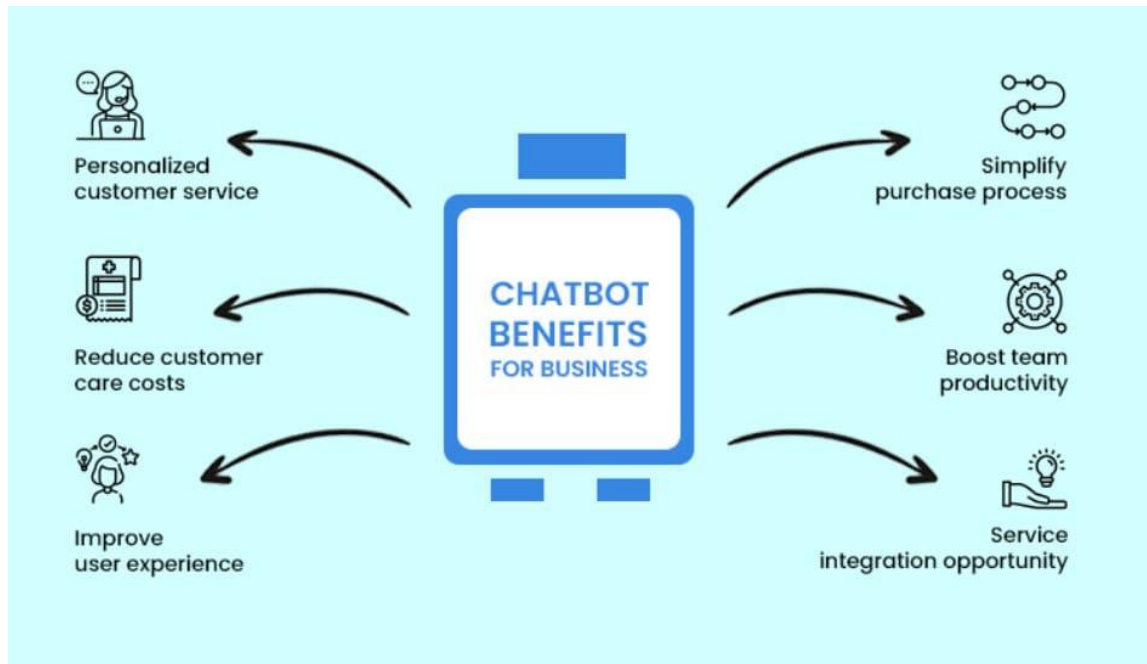
Educations:

➢ Help students get answers to their questions quickly and efficiently.

Healthcare:

➢ Patients can benefit from healthcare chatbots as they remind them to take their medications on time and track their adherence to the medication schedule.

Business:

➢ Chat bots help to reduce costs by enabling enterprises to service more customers without increasing their overheads.

Personalized customer service

Reduce customer care costs

Improve user experience

CHATBOT BENEFITS FOR BUSINESS

Simplify purchase process

Boost team productivity
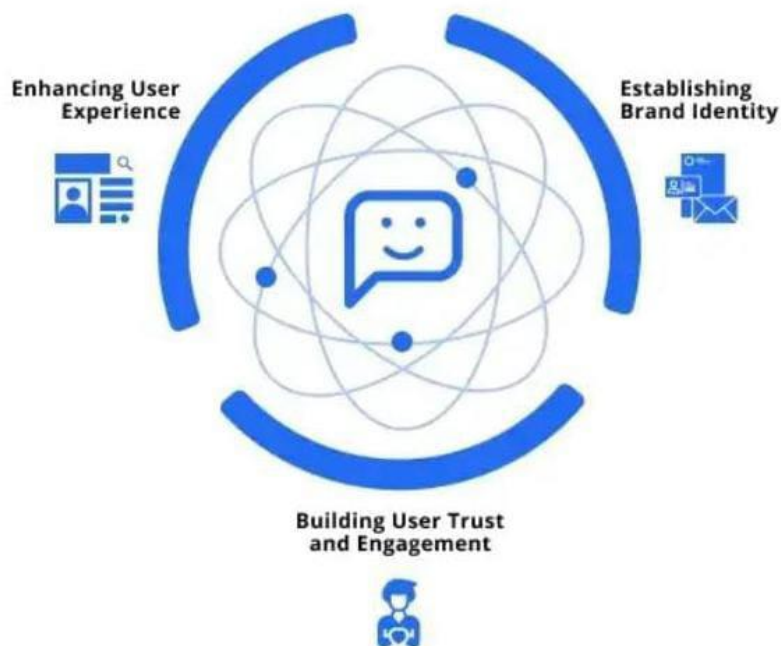
Service integration opportunity

CHAPTER 3

Chatbot persona:

A chatbot persona is like the soul of your chatbot, a carefully crafted character that embodies the tone, voice, and personality of your virtual assistant

➤ it's the secret sauce that turns a robotic interaction into a delightful and engaging conversation with a best friend.

Conversation flow design:

➤ A chatbot flow is a structure that determines how a chatbot conversation will take place, taking into account the questions your chatbot would ask and the various replies that a user could provide.

➤ The faster people respond to one another during a conversation, the more likely they are to feel in sync.

➤ Conversation flow is the effortless progression of ideas and responses in a conversation.

➤ A natural exchange of invitation and inspiration to speak occurs making for a smooth and comfortable experience.

➤ A chatbot conversation flow represents a decision tree that guides a user
➤ through their journey when they land on a chatbot. Like any other conversation, a
➤ chatbot flow has certain logical elements, such as:

- Greeting
- Asking
- Informing
- Suggesting
- Checking
- Apologizing
- Error
- Goodbye

Set up Watson assistant:

Step1: The Dashboard of IBM cloud.

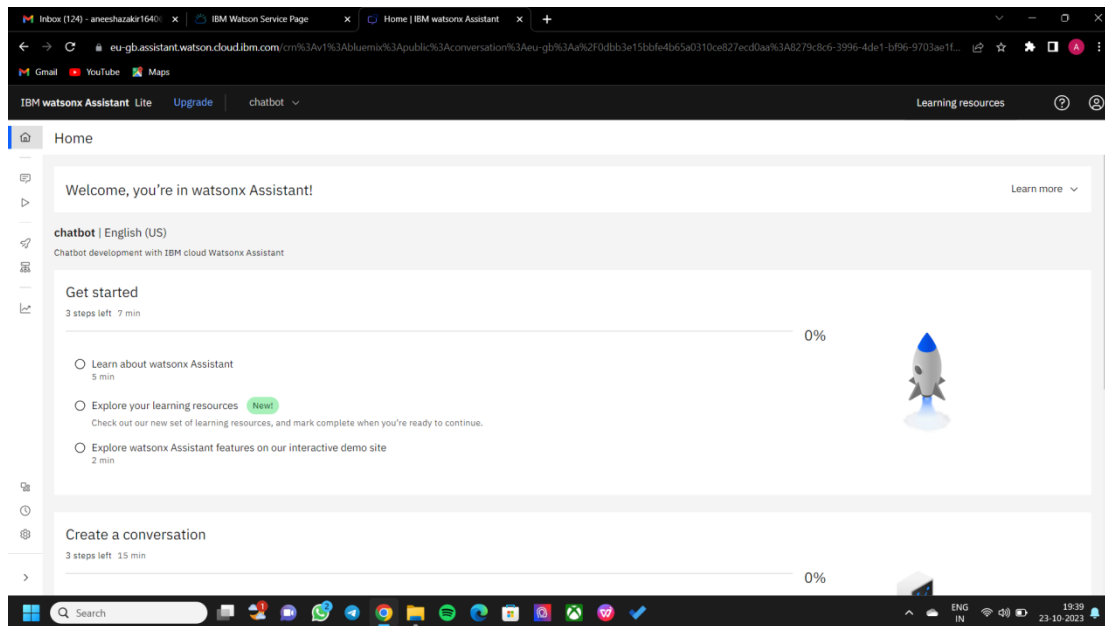Step 2: Search Watson assistant in the catalog.

Step 3: Setup and create a Watson Assistant.

Step 4: Launching the Watson Assistant Tool.

Step 5 : We can use the Watson Assistant by resource list in menu under AI/Machine Learning.

Step 6: Create a Assistant.

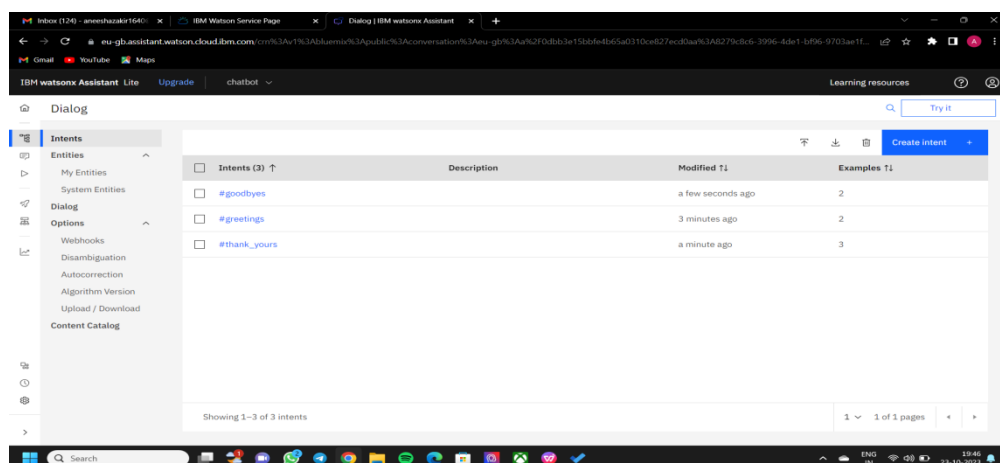Step 7: The Watson Assistant is created successfully.

Creation of intents:

Step 1: Create a Intents

Step 2: Create a #greetings intent with examples hello, hi.

Step 3: #greetings ,#goodbyes, #thank_yours Intent is created and it is tested using Try it which is shown in below image.
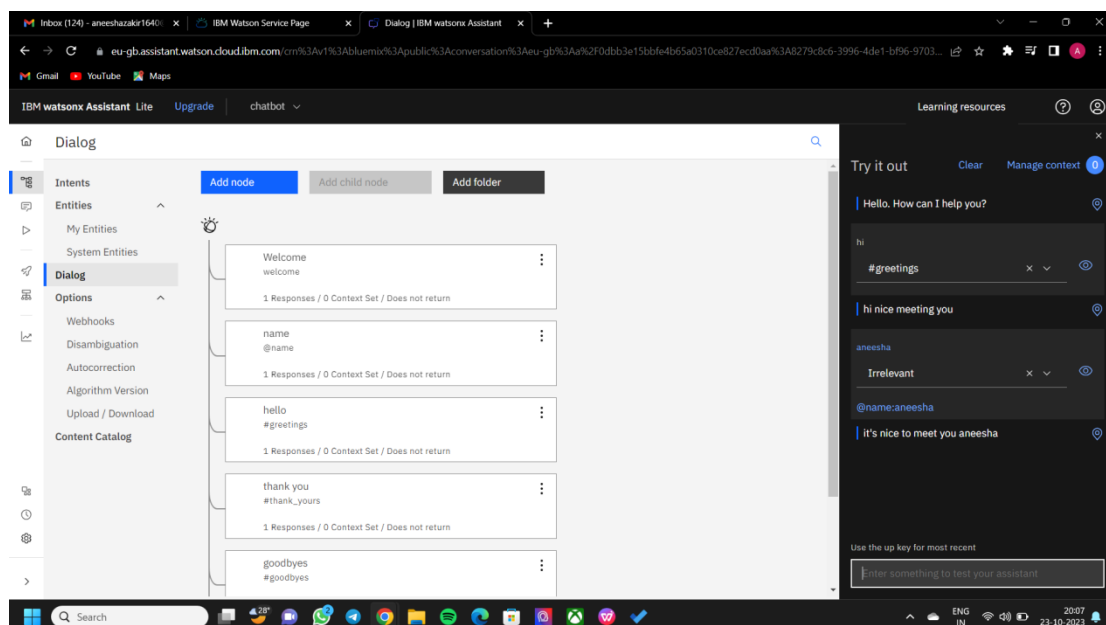
Creation of Entity:

Step 1: Create Entities.

Step 2: @name Entities is created with some values such as aneesha, amrin etc.

Step 3: The created Entities is tested using Try it option Shown in below image.
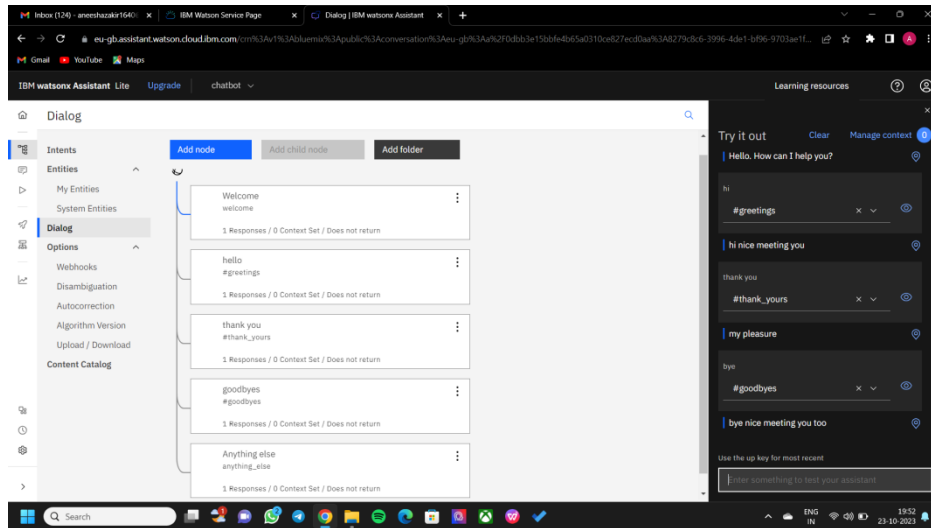

CREATION OF DIALOG NODES:

Step 1: Create a Dialog node.

Step 2: hello Dialog node which identifies the #greeting message and replies to it.

Step 3: hello, thank you(#thank_yours) and goodbyes(#goodbyes) Dialog node is created.

Step 4: Dialog nodes are tested using the Try it option which is shown in below image.

Chapter 4

INTEGRATING CHATBOT WITH FACEBOOK MESSANGER:

Step 1: Open the dashboard of IBM Watson assistant.

Step 2: In Menu select Integration's for Integrating Facebook messenger

Step 3: Select Facebook Messenger Add+.Step 4: Setup the Facebook messenger by given steps.

Step 5: Login to Meta work account.

Step 6: Create a Meta for Developers account.Step 7: Create a App.

Step 8: Select other option and Business with name chatbot.

Step 9: App is created.Step 10: Copy the App secret under App settings under Basic.

Step 11: Setup Messenger under Add Product

Step 12: Create a Facebook page.

Step 13: Facebook page is created.

Step 14: Under Settings Select Add or remove pages option under Access Tokens.

Step 15: Add the Chatbot page and click Save option.

Step 16: The Facebook page is added.

Step 17: Generate the token and copy it and paste it in Facebook messenger setup in IBM Watson Assistant.

Step 18: Copy the callback URL and past it in edit callback URL and past the verify token.

Step 19: Add Subscription messages and messaging_post backs.

Step 20: Assistant for Facebook messenger is connected

Step 21: Assistant is reviewed for Facebook Messenger.
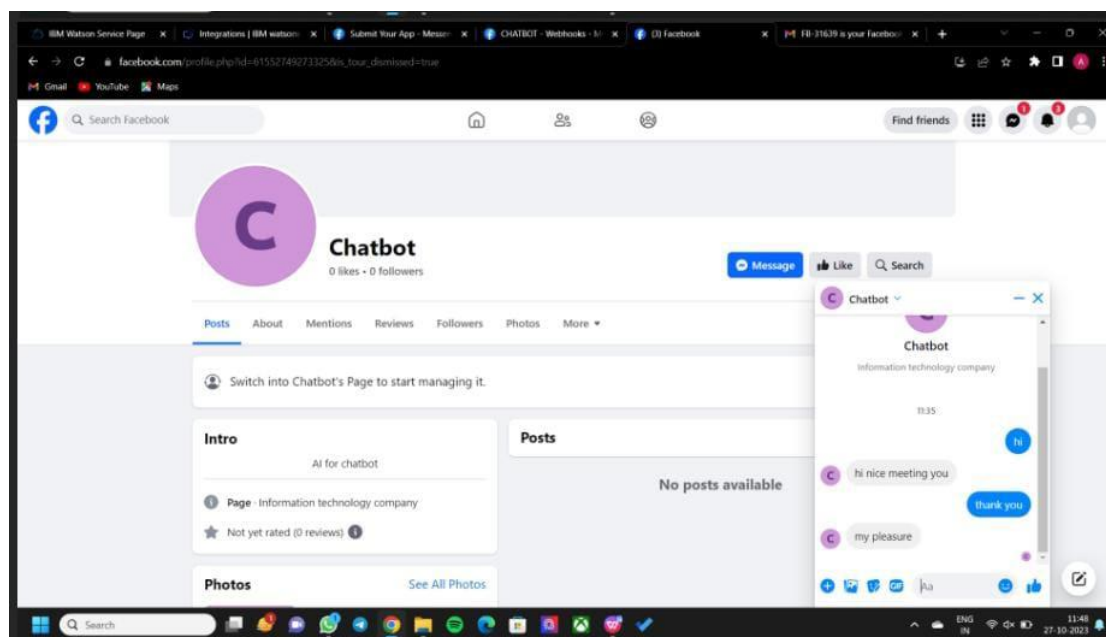
INTEGRATING CHATBOT WITH SLACK:

Step 1: Select Slack Add+

Step 2: Start the Setup for Integrating slack to IBM Watson Assistant.

Step 3: Create a Slack app and open your apps page.

Step 4: Create a app and add the chatbot in the workspace.

Step 5: On the Slack app settings page, go to the Basic Information tab and find the App Credentials section. Copy your verification token from that section to the field below.

Step 6: Go to the OAuth & Permissions tab. In the Bot Token Scopes section click Add an OAuth Scope, and then select the following scopes:
- app_mentions:read
- chat:write
- im:history
- im:read
- im:write

Step 7: On the Oath & Permissions tab. Click Install App to Workspace, and then click Allow. You should be redirected back to the Oath &

Permissions page. Copy and paste your Bot user OAuth access token to the following field.

Step 8: On the Slack app settings page, go to the Event Subscriptions tab. Switch the Enable Events toggle to the On position. In the provided text entry field, paste your request URL.

Step 9: On the Event Subscriptions tab, find the Subscribe to Bot Events section. Click Add Bot User Event, and then select the event types you want to subscribe to. You must select at least one of the following types:

1.message.im: Listens for message events that are posted in a direct message channel.

2.app_mention: Listens for only message events that mention your app or bot.

Step 10: On the App Home tab, click Edit and enter a display name and default username for your virtual assistant and then click Save. Enable the Always Show My Bot as Online toggle.

Step 11: On the App Home tab, them the Show Tabs section. Enable the Messages Tab toggle and check the Allow users to send Slash

commands and messages from the messages tab checkbox

Step 12: To add support for showing buttons, menus, and disambiguation options in the Slack app, go to the Interactivity & Shortcuts tab and enable the feature. Paste your request URL in the provided text entry field, and then click Save Changes.

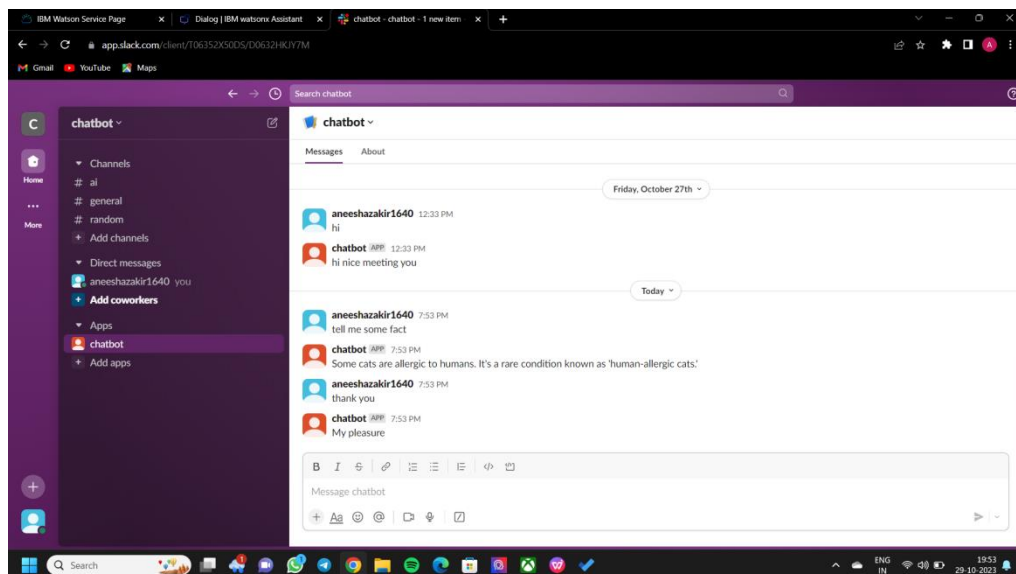Step 13: Create a channel and review the chatbot.
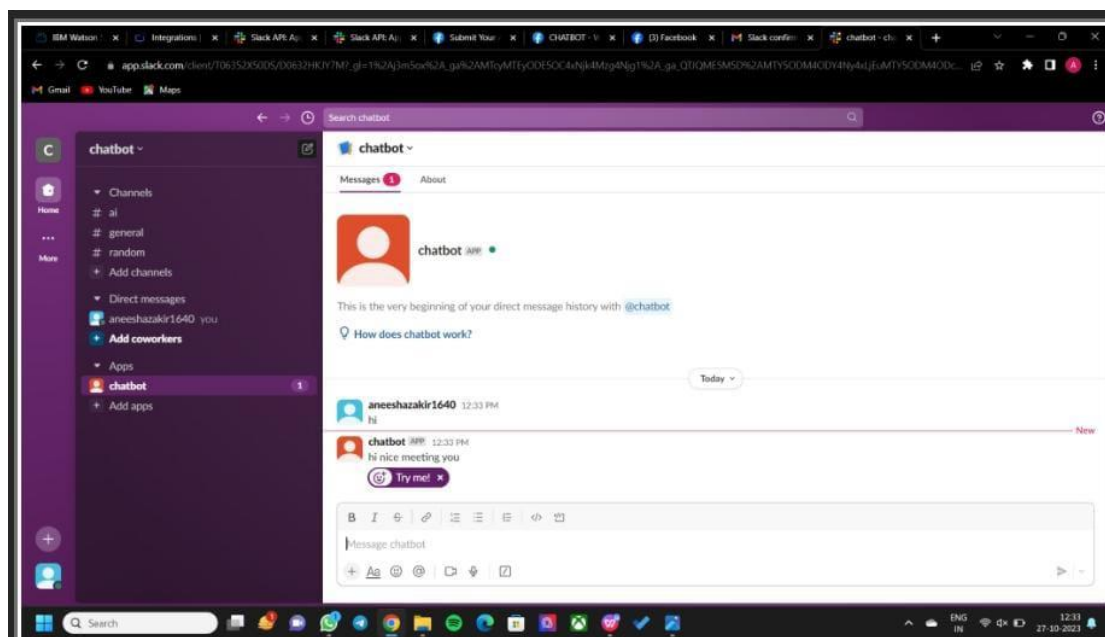
CHATBOT CONVERSATION FLOW IN FACEBOOK MESSANGER AND SLACK:

FACEBOOK ASSISTANT CONVERSATION
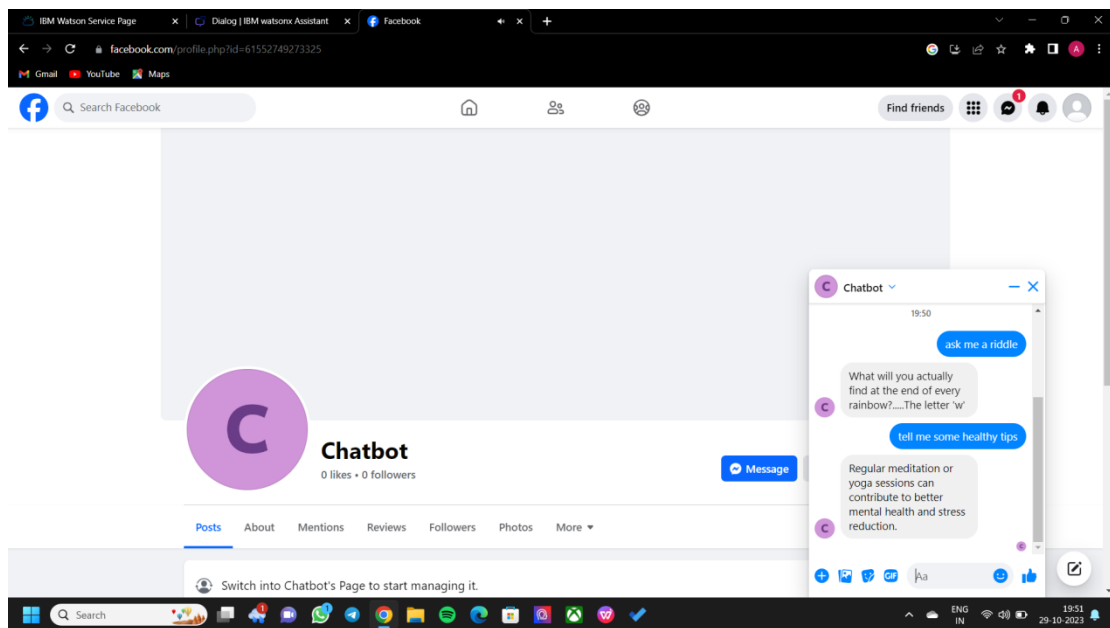
SLACK CONVERSATION

CHAPTER 5

Characteristics:

➢ Learning: Chat bots can learn so they don't need to be repeated over and over.
➢ Failing usefully: Chat bots can realize when a request exceeds their abilities.
➢ Personalized: Chat bots can make every conversation personal and intentional.
➢ Accessible: Chat bots are accessible.
➢ Secure: Chat bots are secure.
➢ Explainable: Chatbots are explainable.

Other characteristics of chatbots include:
➢ Easy customization
➢ Quick chatbot training
➢ Multilingual capabilities

Chatbots can resolve customer queries around 70% of the time.

They can also collect valuable data on customer interactions, preferences and behaviors.

Pros:

➢ Faster customer service: Chat bots can answer questions instantly, 24/7.
➢ They can also handle multiple customers at the same time.
➢ Increased customer satisfaction: Chat bots can provide instant support and solutions to customers.
➢ Lower labor costs: Chat bots can help businesses reduce their operational costs.
➢ Variety of uses: Chat bots can be used in education, customer service, and e-commerce

Cons:

➢ Limited responses: Chat bots can only provide responses from a limited database.
Customer frustration: Chat bots can't improvise, so they may not provide the answers customers are looking for.
Complex chat bots can be expensive: AI chat bots can be expensive to build.

➢ Not all businesses can use chat bots: Some
   businesses may not be able to use chat bots.
Decreased customer satisfaction: Customers
may feel they are not receiving personalized
attention.
➢ Increased chance of miscommunication:
   Chat bots can have an increased chance of
   miscommunication.

CONCLUSION:

   Integrate the chatbot with Facebook
Messenger and Slack using respective API.
Ensure that the conversation flows naturally
and that the chat bot's responses are
informative and accurate. has been
done successfully.