

IBM NAAN MUDHALVAN - PHASE 5

Project Documentation

Project objective, design thinking process, and development phases.

Objective:

The objective of this project is to create a virtual chatbot guide using IBM Cloud Watson Assistant. The chatbot is designed to assist users on popular messaging platforms like Facebook Messenger and Slack, providing helpful information, answering frequently asked questions, and offering a friendly conversational experience. The project aims to empower users with quick access to information and create meaningful connections through the virtual guide.

Design Thinking:

User Scenarios:

- User asks for information about the company's products and services.
- User inquires about the company's operating hours.
- User seeks assistance with common troubleshooting issues.
- User asks for contact information to reach customer support.
- User requests general information about the company's history and mission.

Response Configuration:

- Use Watson Assistant's intents, entities, and dialog nodes to handle user queries effectively.
- Define intents like "product_inquiry," "operating_hours," "troubleshooting," and "general_information."
- Configure entities for products, services, and common issues.
- Create dialog nodes with responses for each intent and entity combination.

Platform Integration:

- Integrate InfoBot with Facebook Messenger and Slack using the respective APIs and SDKs.
- Ensure that InfoBot can receive and send messages on both platforms.
- Handle user authentication and data privacy in compliance with platform guidelines.

User Experience:

- Provide clear and concise prompts to guide users through interactions.
- Offer informative and relevant responses to user queries.

- Implement natural language processing to understand and respond to user inputs accurately.
- Include a "help" command for users to get assistance if they are unsure about how to proceed.
- Continuously monitor and improve the chatbot's performance based on user feedback and analytics.

Describe the chatbot's persona, conversation flow, and technical implementation using Watson Assistant:

Persona Design:

- Persona Name: "InfoBot"
- Tone: Friendly and informative
- Style of Communication: Conversational and approachable

Conversation Flow:

- Greeting: InfoBot welcomes the user and asks how it can assist.
- User Input: InfoBot identifies user queries and categorizes them into intents (e.g., product inquiries, operating hours, troubleshooting).
- Response Generation: InfoBot provides relevant information using dialog nodes, entities, and intents.
- Clarification: If the user's query is unclear, InfoBot asks for clarification.
- FAQs: InfoBot has predefined responses for common FAQs.
- Closing: InfoBot concludes the conversation by offering assistance for anything else the user might need.

Technical Implementation:

Intent and Entity Configuration in Watson Assistant:

Intent Creation:

- In Watson Assistant, create intents such as "product_inquiry," "operating_hours," "troubleshooting," and "general_information."
- Train the intents with examples to help Watson Assistant understand these user intentions.

Entity Configuration:

- Define entities for products, services, and common issues. For example, entities like "@product," "@service," and "@issue."
- Provide a list of values for each entity, so Watson Assistant can recognize them in user queries.

Dialog Nodes:

- Create dialog nodes for each intent and entity combination. For instance, if a user asks about product information, you can create a dialog node with the following structure:
- Condition: If intent is "product_inquiry."
- Response: InfoBot provides relevant product details based on the recognized entity.

Enhancements with NLU:

NLU Integration:

- Implement NLU capabilities for intent recognition to enhance accuracy.
- Configure the NLU service as a pre-processing step for user input.

Dynamic Intent Recognition:

- Modify dialog nodes to make use of dynamic intents recognized by NLU. This allows the chatbot to adapt to user inputs that may not have been predefined.

Dynamic Entity Recognition:

- With NLU, the chatbot can accurately recognize entities, even if they weren't predefined. This allows InfoBot to handle a wider range of queries.

Integration with Messaging Platforms:

a. Integration with Facebook Messenger:

To integrate the chatbot with Facebook Messenger, you need to create a Facebook App and set up a Facebook Page.

Configure a Webhook to receive messages from Facebook Messenger and integrate it with your Watson Assistant. Facebook provides a guide on setting up webhooks for your page.

Use the Facebook Messenger API to send messages from your Watson Assistant to users on Facebook Messenger.

Ensure that you handle user authentication and data privacy in compliance with Facebook's guidelines and policies.

Thoroughly test the integration to ensure that the chatbot functions properly on Facebook Messenger.

b. Integration with Slack:

To integrate the chatbot with Slack, you'll need to create a Slack App within your Slack workspace.

Configure event subscriptions in your Slack App to receive messages and other events from users.

Use the Slack API to send and receive messages from your Watson Assistant within Slack.

Consider implementing interactive elements such as buttons or menus to enhance the user experience within the Slack interface.

Ensure that your integration complies with Slack's security and privacy requirements.

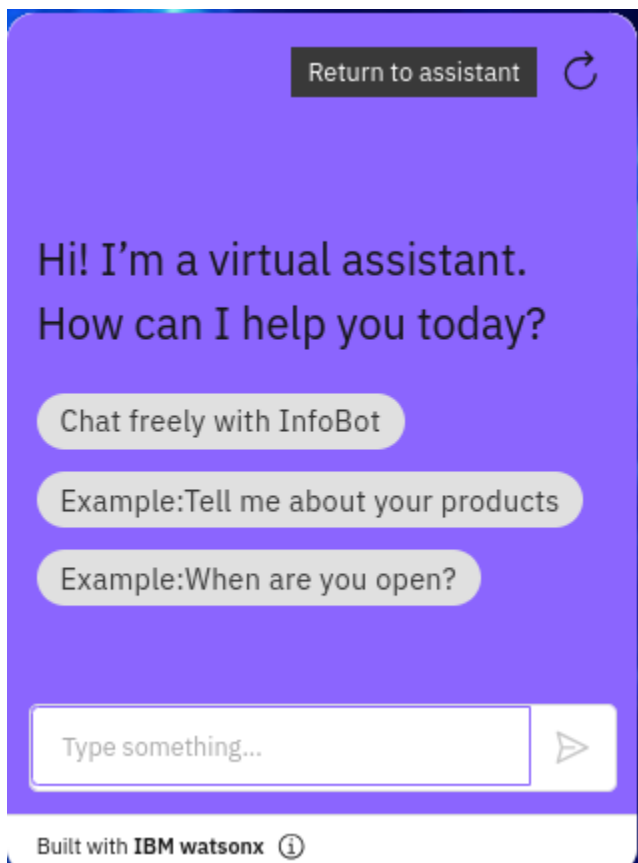
Test the integration extensively to verify that the chatbot works smoothly on the Slack platform.

Examples of user queries and the chatbot's responses.

Chat Bot Link:

<https://web-chat.global.assistant.watson.appdomain.cloud/preview.html?backgroundImageURL=http%3A%2F%2Fau-syd.assistant.watson.cloud.ibm.com%2Fpublic%2Fimages%2Fupx-7a001cfb-0c4b-48b4-ae6f-d41923bf8966%3A%3A1d2b8eab-bd80-42cf-bd75-1c058eb9ab26&integrationID=2dcb25b2-0a79-4d75-acbb-0595cddcb57e®ion=au-syd&serviceInstanceID=7a001cfb-0c4b-48b4-ae6f-d41923bf8966>

Chat Bot User Interface:

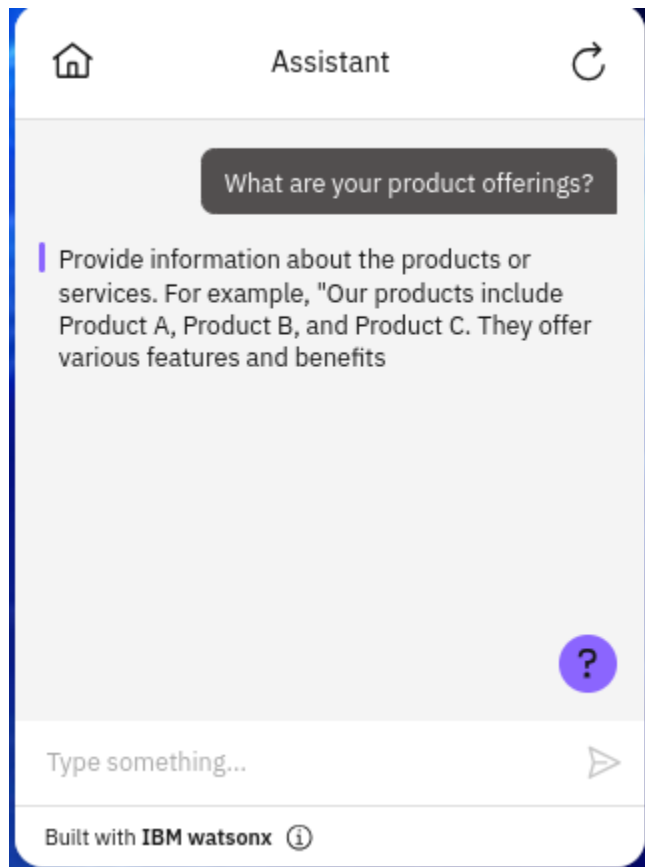


User Query 1:

User: "What are your product offerings?"

Chatbot Response 1:

Chatbot: " Provide information about the products or services. For example, "Our products include Product A, Product B, and Product C. They offer various features and benefits "

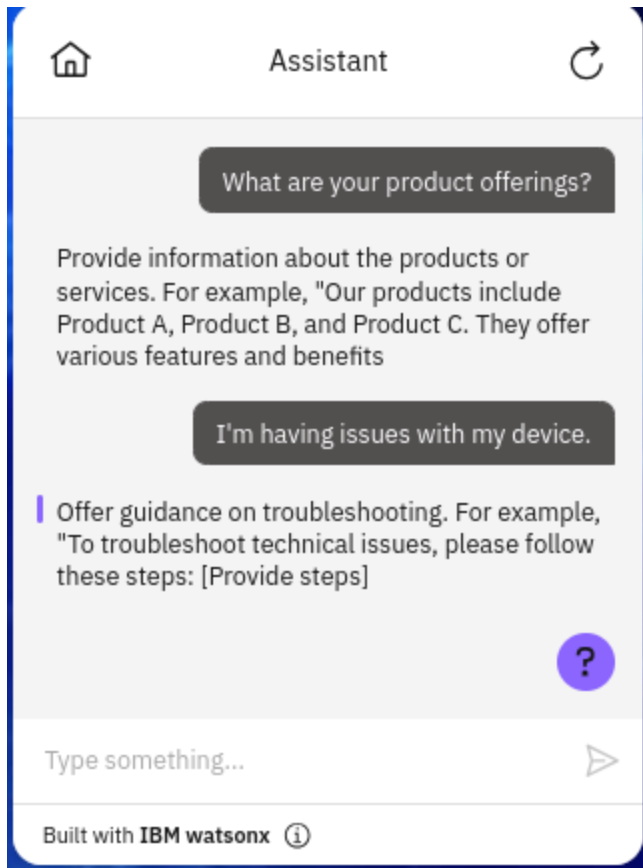


User Query 2:

User: " I'm having issues with my device. "

Chatbot Response 2:

Chatbot: " Offer guidance on troubleshooting. For example, "To troubleshoot technical issues, please follow these steps: [Provide steps] "



User Query 3:

User: " Tell me more about your company. "

Chatbot Response 3:

Chatbot: " Share general information about your company. For example, "We are a leading company in [industry] with a history of [years]. We specialize in [services/products. "



Assistant



various features and benefits

I'm having issues with my device.

Offer guidance on troubleshooting. For example, "To troubleshoot technical issues, please follow these steps: [Provide steps]"

Tell me more about your company.

| Share general information about your company. For example, "We are a leading company in [industry] with a history of [years]. We specialize in [services/products]."



Type something...



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