

PROJECT TITLE: Chatbot Deployment with IBM Cloud Watson Assistant

Problem Definition:

The project involves creating a chatbot using IBM Cloud Watson Assistant. The goal is to develop a virtual guide that assists users on messaging platforms like Facebook Messenger and Slack. The chatbot should provide helpful information, answer frequently asked questions (FAQs), and offer a friendly conversational experience. The project includes designing the chatbot's persona, configuring responses, integrating with messaging platforms, and ensuring a seamless user experience.

IBM Assistant is an AI-powered virtual agent that provides customers with fast, consistent, and accurate answers across any messaging platform, application, device, or channel. Using AI and natural language processing, Watsonx Assistant learns from customer conversations, improving its ability to resolve issues the first time while removing the frustration of long wait times, tedious searches, and unhelpful chatbots.

Design Thinking:

1. Personal Design:

Name of the Chatbot: ChatMATE

Tone and Style of communication:

ChatMate provides live chat agents and support for user website visitors. It allows for quick answers to questions about products, payment methods, and delivery times to reduce cart abandonment. The software places a focus on lead conversion. It relies on chatbots for initial interactions, data collection for complex tasks, the conversation can be handed over to a human agent. A confirmation is sent to the user for each order ChatMate is able to close and the job can be added to a booking system if integrated, and the customer can be given a confirmation. The tool offers integrations with several e-commerce tools and CMSs. Some of the popular integrations include Wordpress, Wix, GoDaddy, Joomla, Squarespace, Magento, Zencart, WooCommerce, and Shopify. Monthly reports with data such as the number of chat sessions, their timing and outcomes, average handling times, wait times, and response times will be shared with the user.

2. User Scenarios:

Scenario1: Information Seeker

User Scenario: Users seeking general information about the product, services, organization.

FAQs:

- "Tell me about your company's history."
- "What products/services do you offer?"

Scenario2: FAQ Navigation

User Scenario: Users looking for answers to frequently asked questions.

FAQs:

- “How can I contact your customer support team?”
- “Where can I find Shipping information?”

Scenario3: Account Management

User Scenario: Users requiring help with account-related tasks.

FAQs:

- “How can I reset my password?”
- “Where can I change my email address?”

Scenario4: User Assistance and Guidance

User Scenario: Users needing assistance with various tasks.

FAQs:

- “How do I set up my device?”
- “What are the steps for returning a product?”

Scenario5: Feedback and Complaints

User Scenario: Users wanting to provide feedback, report issues, or make complaints.

FAQs:

- “How can I provide feedback about my experience?”
- “Is there a process for filing a complaint?”

3.Conversational Flow:

Greeting and Introduction:

- User: "Hello" / "Hi" / "Hey"

- ChatMATE: "Hello! I'm here to assist you with any questions or information you need. How can I help you today?"

Scenario 1: Information Seeker

- User: "Tell me about your company's history."

- ChatMATE: "Certainly! [Company Name] was founded in [year] with a mission to [mission statement]. Since then, we have been committed to [company values]. Is there anything specific you'd like to know?"

Scenario 2: FAQ Navigation

- User: "What is your return and refund policy?"

- ChatMATE: "Our return and refund policy is[policy details]. If you have a specific question about a return or refund, please let me know, and I'll provide more information."

Scenario 3: Account Management

- User: "How can I reset my password?"

- ChatMATE: "To reset your password, you can visit our website and go to the 'Forgot Password' page. Alternatively, I can guide you through the process here. What would you prefer?"

Scenario 4: User Assistance and Guidance

- User: "How do I set up my [product/device]?"

- ChatMATE: "Setting up your [product/device] is easy! Here are the steps: [Step-by-step instructions]. If you have any questions along the way, feel free to ask."

Scenario 5: Feedback and Complaints

- User: "How can I provide feedback about my experience?"

- ChatMATE: "We appreciate your feedback! You can provide feedback through our website or by emailing [feedback email]. Is there anything specific you'd like to share?"

Fallback Responses:

- User: "I don't understand."

- ChatMATE: "I apologize if my response was unclear. Could you please rephrase your question, or let me know how I can assist you better?"

Closing the Conversation:

- User: "Thank you" / "Goodbye"

- ChatMATE: "You're welcome! If you have any more questions in the future, don't hesitate to reach out. Have a great day!"

4.Response Configuration:

Intents: Define the user's intention or purpose in the conversation. Create intents for common user scenarios (e.g., Account Management, Technical Support) and provide training examples for each.

Entities: Define entities to extract specific information from user input (e.g., product names, order

numbers). Add synonyms and patterns for each entity to improve recognition.

Dialog Node: Set up dialog nodes to control the flow of the conversation. Create nodes for different intents and scenarios. In each node:

- Respond with appropriate answers or actions.
- Use context variables to store information.
- Set conditions for when the node should be triggered.

Context Variable: Store and manage information collected during the conversation in context variables for reference in subsequent responses.

Slots: Use slots to collect and confirm specific user information before proceeding with certain tasks.

Conditions and Context: Set conditions for dialog nodes based on user intents, entities, and context variables to ensure the chatbot's responses align with user interactions.

Integrating with Facebook Messenger:

- **Create a Facebook Page:** Establish a Facebook Page for the chatbot.
- **Set Up Facebook for Developers:** Create a developer account on Facebook for Developers.
- **Create a New App:** Inside the developer platform, create a new app to represent your chatbot.
- **4.Configure Messenger:** Set up the Messenger Platform within your app to handle incoming messages and events from Facebook Messenger.
- **5.Generate Access Tokens:** Obtain access tokens to authenticate your chatbot with Facebook Messenger.
- **6. Develop the Webhook:** Create a webhook on your server to handle messages from Facebook Messenger and authenticate using the access token.
- **7. Subscribe the App to a Page:** Associate your app with the Facebook Page, enabling it to receive messages sent to the Page.
- **8. Test and Deploy:** Thoroughly test your chatbot using the Facebook Messenger app, and deploy it to the Page for public use.

Integrating with Slack:

- ❖ **Create a Slack App:** Create a Slack app on the Slack API platform to represent your chatbot.
- ❖ **Configure Bot User:** Configure a Bot User within the app, specifying its name and profile.
- ❖ **Install the App to Your Workspace:** Install the app to your Slack workspace, granting it access to the workspace.
- ❖ **4.Configure Permissions and Scopes:** Define the permissions and scopes required for your app, including message handling and user interactions.

- ❖ Develop the Chatbot: Use the Slack API to build your chatbot, following the Bot User OAuth Access Token flow for authentication.
- ❖ Testing and Deployment: Test the chatbot within your Slack workspace and share it with other members. Optionally, publish it on the Slack App Directory.

6. User Experience:

- Use clear and friendly greetings and prompts.
- Train the chatbot for natural language understanding.
- Acknowledge and confirm user inputs.
- Provide informative responses and clear options.
- Utilize buttons and quick replies when available.
- Reveal information progressively to avoid overwhelming users.
- Handle errors gracefully and ask for clarification when needed.
- Maintain contextual understanding throughout the conversation.
- Offer useful links and resources when appropriate.
- Consider multilingual support for diverse user bases.
- Collect user feedback for continuous improvement.
- Conduct A/B testing to optimize conversational flows.
- Include a human handoff option when the chatbot can't assist further.
- Optimize for mobile devices.
- Ensure compliance with data privacy regulations and provide transparency regarding data usage.