CREATE A CHATBOT IN PYTHON

Our Team

Manoj Kumar

Jeevanantham

Vikhash

Siva Subramanian

Sasigaran

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Problem Statement

The goal of this project is to build an AI-powered chatbot that can interact with users, answer their queries, and provide relevant information or assistance. The chatbot will be integrated into a web application, enhancing user engagement, and providing a seamless user experience.

Designing Thinking Process

1. Functionality: The chatbot's scope includes answering common questions, providing guidance, and directing users to appropriate resources.

2. User Interface: The chatbot will be integrated into a web application, providing a user-friendly interface for interactions.

3. NLP Integration: NLP techniques, including text tokenization, entity recognition, and sentiment analysis, will be implemented to understand and process user input effectively.

4. Responses: The chatbot will offer accurate answers, suggestions, and assistance, ensuring a personalized and informative interaction with users.

5. Integration: The chatbot will seamlessly integrate into the web application, enabling smooth communication between the user and the chatbot.

6. Testing and Improvement: Continuous testing and refinement will be conducted to enhance the chatbot's performance based on user interactions and feedback.

Implementation using libraries and integration of NLP techniques

- Python was used as the primary programming language.
- Libraries such as transformers were employed for GPT-3 integration.
- Flask was used for developing the web application.
- NLP techniques such as text tokenization, entity recognition, and sentiment analysis were integrated using libraries like NLTK and spaCy.

Web application Implementation

The chatbot interacts with users through a user-friendly interface integrated into a web application. Users can input their queries or requests, and the chatbot processes the input using NLP techniques to provide relevant and helpful responses. The web application provides a seamless and intuitive platform for users to engage with the chatbot and obtain the information they need.

Innovative techniques

- Advanced NLP techniques were used to enhance the chatbot's understanding of user input and to generate contextually appropriate responses.
- The integration of GPT-3 facilitated the provision of more accurate and natural language-based interactions.
- Iterative testing and user feedback were utilized to continuously improve the chatbot's performance and user experience.

Programs

Dataset : https://www.kaggle.com/datasets/grafstor/simple-dialogs-for-chatbot

```
from flask import Flask, request, render_template
import openai

# Set your OpenAI API key
api_key = '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'
openai.api_key = api_key

app = Flask(__name__)

def chat_with_bot(user_input):
    # Use GPT-3 to generate a response
    response = openai.Completion.create(
        engine="gpt-3.5-turbo-instruct-0914",  # You can choose the
appropriate engine
        prompt=f"You: {user_input}\nBot:",
        max_tokens=50
    )
    return response.choices[0].text

@app.route('/')
def index():
    return render_template('index.html')

@app.route('/chat', methods=['POST'])
def chat():
    user_input = request.form['user_input']
    if user_input.lower() == 'bye':
        bot_response = "Goodbye!"
    else:
        bot_response = chat_with_bot(user_input)
    return bot_response

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

```
<!DOCTYPE html>
<html>
<head>
    <title>Chatbot</title>
    <style>
        @import
url('https://fonts.googleapis.com/css2?family=Poppins:wght@200;300;400;500;700
;800;900&display=swap');

        * {
            margin: 0;
            padding: 0;
            font-family: 'Poppins', sans-serif;
        }

        body {
            overflow: hidden; /* Disable page scroll */
        }

        .container {
            width: 100%;
            height: calc(100vh);
            background-color: #000;
            display: flex;
            flex-direction: column;
            align-items: center;
            color: #fff;
        }

        .title {
            padding: 20px;
            text-align: center;
        }

        #chat-container {
            width: 100%;
            border: 1px solid #ddd; /* Light border */
            flex: 1; /* Take up remaining space */
            display: flex;
            flex-direction: column;
            text-align: center;
            overflow-y: auto; /* Make chat container scrollable */
        }

        #chat-log {
            flex: 1; /* Expand the chat log */
            padding: 20px;
        }
```

```
        #user-input {
            width: 80%;
            padding: 10px;
            border: none;
            font-size: 16px;
            outline: none;
            background: #f2f2f2;
        }

        #submit-button {
            background-color: #212121;
            color: #fff;
            border: none;
            padding: 10px 20px;
            cursor: pointer;
            font-size: 16px;
        }

        .message {
            padding: 10px;
            border-radius: 5px;
            margin: 5px;
        }

        .user-message {
            background-color: #fcf6ee;
            color: #000;
            text-align: right;
        }

        .bot-message {
            background-color: #ffffff;
            color: #000;
            text-align: left;
        }
    </style>
</head>
<body>
    <div class="container">
        <div class="title">
            <h1>MadBot</h1>
            <p>The Chatbot</p>
        </div>
        <div id="chat-container">
            <div id="chat-log"></div>
            <form id="chat-form" method="POST" action="/chat">
```

```
                <input type="text" name "user_input" id="user-input"
placeholder="You: " autocomplete="off" required>
                <input type="submit" value="Submit" id="submit-button">
            </form>
        </div>
    </div>
    <script>
        const chatLog = document.getElementById('chat-log');
        const userInputElement = document.getElementById('user-input');
        const chatForm = document.getElementById('chat-form');

        chatForm.addEventListener('submit', async (e) => {
            e.preventDefault();
            const user_input = userInputElement.value;
            userInputElement.value = '';
            chatLog.innerHTML += `<div class="message user-message">You:
${user_input}</div>`;

            const response = await fetch('/chat', {
                method: 'POST',
                body: new URLSearchParams({ user_input }),
                headers: {
                    'Content-Type': 'application/x-www-form-urlencoded;
charset=UTF-8',
                },
            });

            const botResponse = await response.text();
            chatLog.innerHTML += `<div class="message bot-message">MadBot:
${botResponse}</div>`;

            if (botResponse.toLowerCase() === 'goodbye!') {
                userInputElement.disabled = true;
            }
        });
    </script>
</body>
</html>
```

Thank You !