Building a Terminal-to-Web Chat Interface with Flask and a Given Dataset

Introduction

In this document, we will guide you through the creation of a basic chat application that serves as both a terminal and a web interface. We will use Flask, a Python web framework, to build the web interface, and a provided dataset for chat messages. This project aims to demonstrate how to connect a command-line application with a web application for chat interactions.

Prerequisites

Before you begin, ensure you have the following:

- Python (3.x) installed on your system.
- Flask library installed.
- A provided dataset of chat messages.
- Basic knowledge of Python programming.
- Terminal or Command Prompt.

Implementation

Create Project Directory:

Start by creating a project directory for your application.

Create Python Script:

Create a Python script for the chat application. You can use your favorite code editor to create a file, e.g., chat_app.py.

Import Libraries:

Import the necessary libraries at the beginning of your Python script.

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

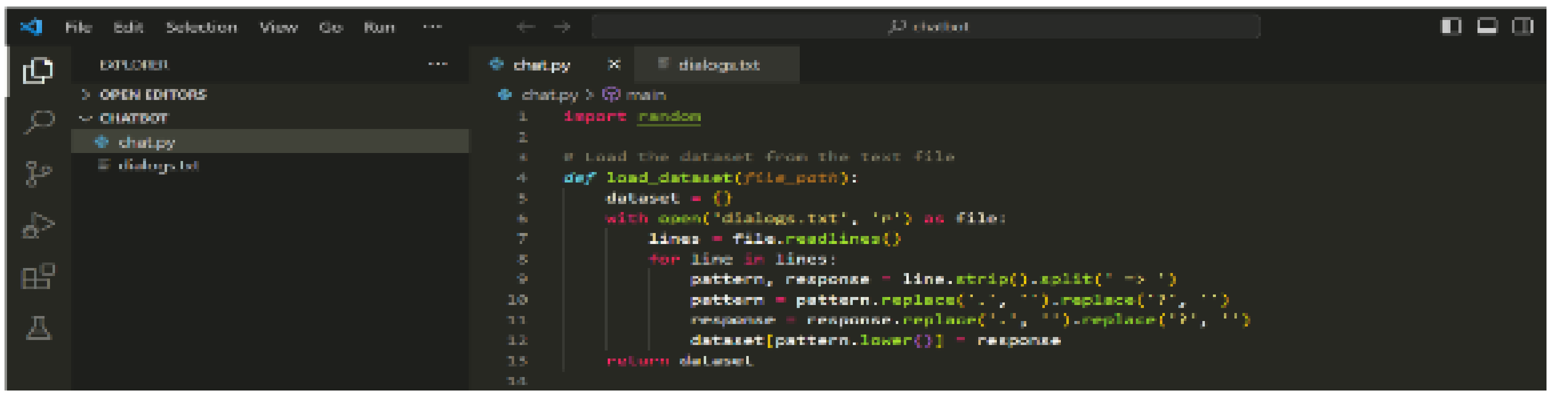
Set Up Flask App:

Initialize a Flask web application.

```
app = Flask(__name__)
```

Load the Dataset:

Load the provided dataset into your Python script, similar to the previous example.

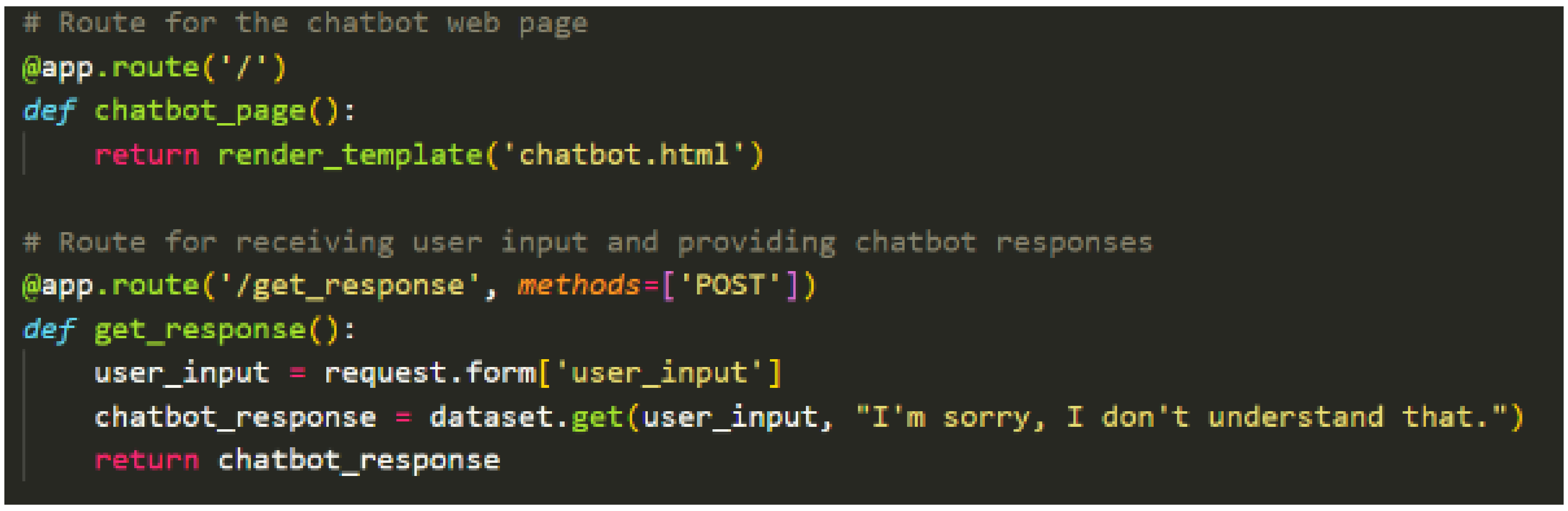


```python
import random

# Load the dataset from the text file
def load_dataset(file_path):
    dataset = {}
    with open('dialogs.txt', 'r') as file:
        lines = file.readlines()
        for line in lines:
            pattern, response = line.strip().split(' => ')
            pattern = pattern.replace('.', '').replace('?', '')
            response = response.replace('.', '').replace('?', '')
            dataset[pattern.lower()] = response
    return dataset
```

Create a Route for Chat Interface:

Define a route in your Flask app to render a web page for the chat interface

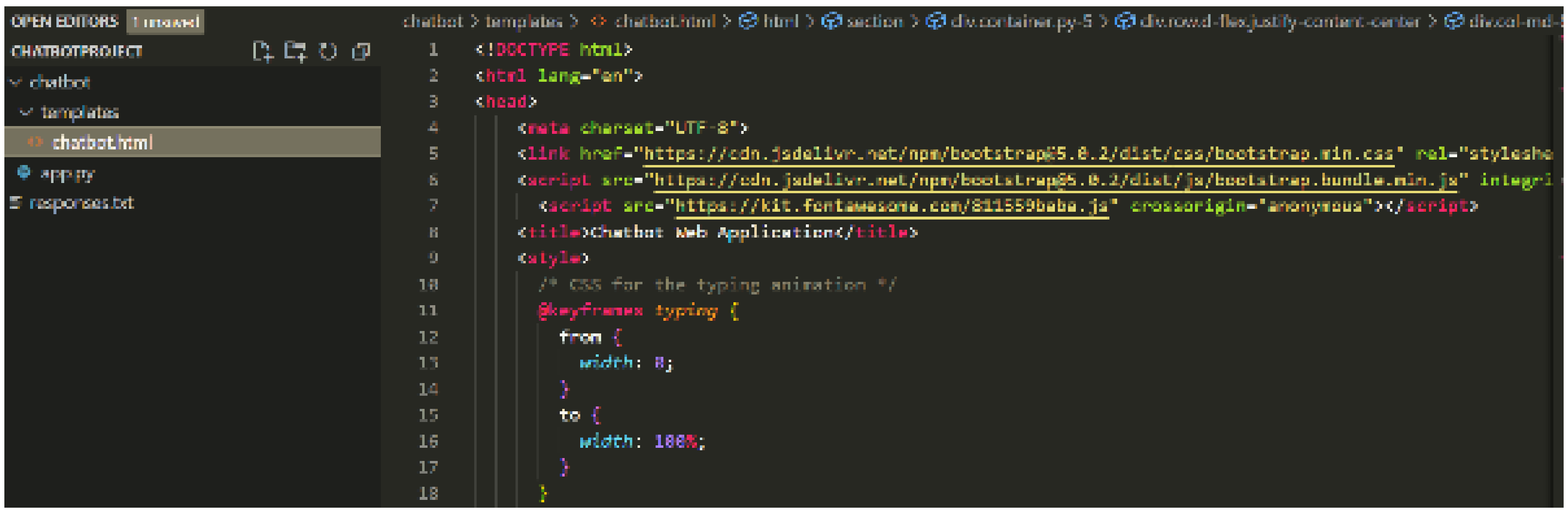


```python
# Route for the chatbot web page
@app.route('/')
def chatbot_page():
    return render_template('chatbot.html')

# Route for receiving user input and providing chatbot responses
@app.route('/get_response', methods=['POST'])
def get_response():
    user_input = request.form['user_input']
    chatbot_response = dataset.get(user_input, "I'm sorry, I don't understand that.")
    return chatbot_response
```

Create a Chat HTML Template:

Create an HTML template for the chat interface. You can use the Jinja2 template engine to render chat messages on the web page.



```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="styleshe
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js" integri
      <script src="https://kit.fontawesome.com/811559baba.js" crossorigin="anonymous"></script>
    <title>Chatbot Web Application</title>
    <style>
      /* CSS for the typing animation */
      @keyframes typing {
        from {
          width: 0;
        }
        to {
          width: 100%;
        }
      }
```

Run the Flask App:

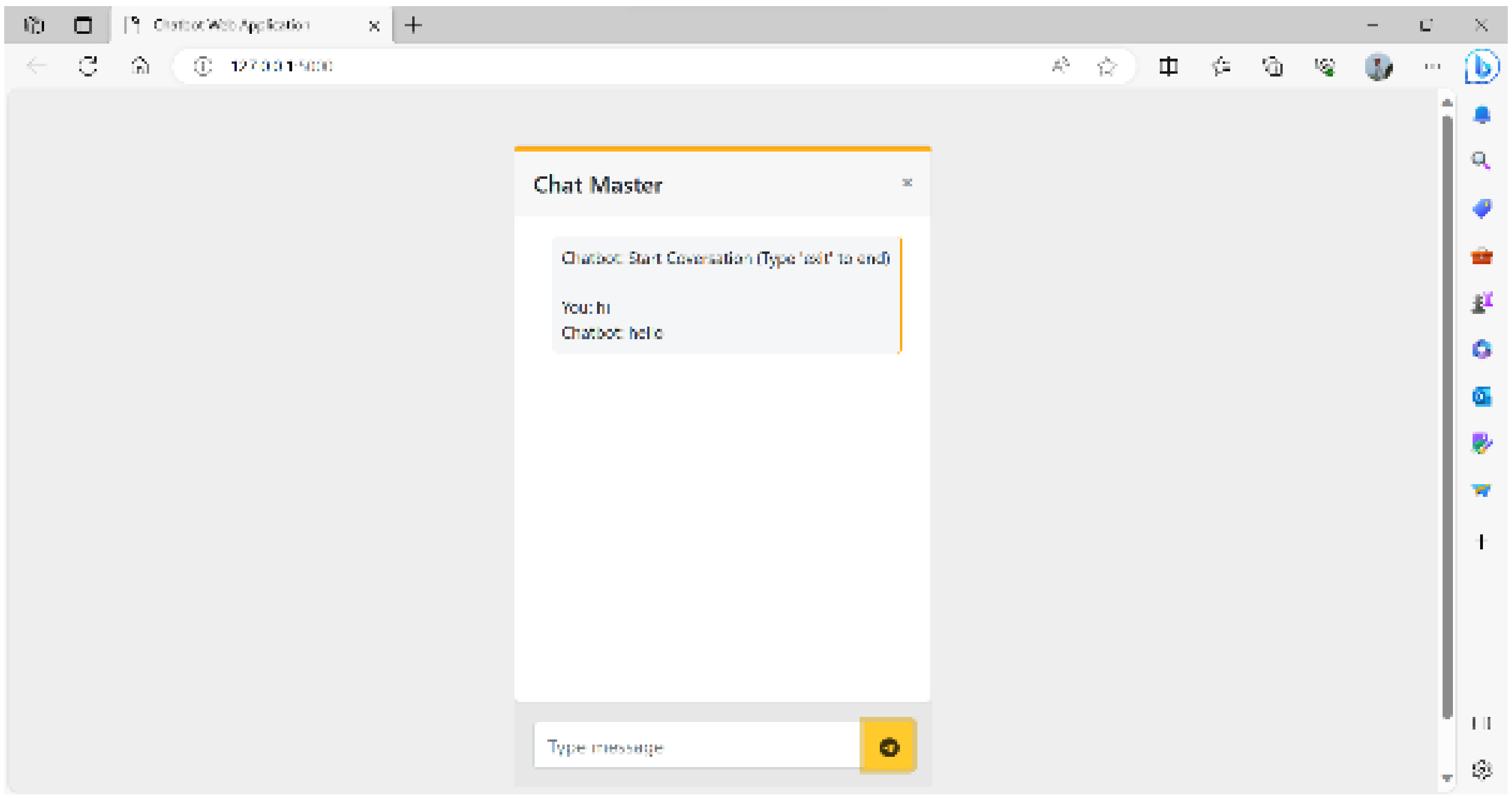
Run your Flask application.

```
# Route for receiving user input and providing chatbot responses
@app.route('/get_response', methods=['POST'])
def get_response():
    user_input = request.form['user_input']
    chatbot_response = dataset.get(user_input, "I'm sorry, I don't understand that.")
    return chatbot_response

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

Testing:

Open a web browser and navigate to **http://127.0.0.1:5000/** to access the chat interface. You should see the chat messages from the provided dataset displayed on the web page.


Chat Master

Chatbot: Start Coversation (Type 'exit' to end)

You: hi
Chatbot: hello

Improvements:

You can extend this application by allowing user input, interactive chat features, and real-time updates.

Sample code:

App.py

```
from flask import Flask, render_template, request

app = Flask(__name__)

# Load responses from the text file
def load_responses():
    dataset = {}
    with open('responses.txt', 'r') as file:
        lines = file.readlines()
        for line in lines:
            pattern, response = line.strip().split(' => ')
            pattern = pattern.replace('.', '').replace('?', '')
            response = response.replace('.', '').replace('?', '')
            dataset[pattern.lower()] = response
    return dataset

dataset = load_responses()

# Route for the chatbot web page
@app.route('/')
def chatbot_page():
    return render_template('chatbot.html')

# Route for receiving user input and providing chatbot responses
@app.route('/get_response', methods=['POST'])
def get_response():
    user_input = request.form['user_input']
    chatbot_response = dataset.get(user_input, "I'm sorry, I don't understand that.")
    return chatbot_response

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

Chatbot Html File

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384-EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"
integrity="sha384-MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNSfAP+JcXn/tWtIaxVXM"
crossorigin="anonymous"></script>
      <script src="https://kit.fontawesome.com/811559baba.js" crossorigin="anonymous"></script>
    <title>Chatbot Web Application</title>
    <style>
     /* CSS for the typing animation */
     @keyframes typing {
       from {
         width: 0;
       }
       to {
         width: 100%;
       }
     }

     .typing-animation {
       display: inline-block;
       overflow: hidden;
       white-space: nowrap;
       border-right: 2px solid #ffa900; /* Blinking cursor */
       padding-right: 3px; /* Spacing for cursor */
```

```html
        animation: typing 3s steps(30, end);
      }
    </style>
</head>
<section style="background-color: #eee; height: 600px;">
    <div class="container py-5">

      <div class="row d-flex justify-content-center">
        <div class="col-md-8 col-lg-6 col-xl-4">

          <div class="card">
            <div class="card-header d-flex justify-content-between align-items-center p-3"
              style="border-top: 4px solid #ffa900;">
              <h5 class="mb-0">Chat Master</h5>
              <div class="d-flex flex-row align-items-center">
                <i class="fas fa-times text-muted fa-xs"></i>
              </div>
            </div>
            <div class="card-body" data-mdb-perfect-scrollbar="true" style="position: relative; height: auto">

              <div class="d-flex justify-content-between">
                <p class="typing-animation small p-2 ms-3 mb-3 rounded-3 " style="background-color: #f5f6f7;"
id="chat-output">
                  Chatbot: Start Coversation (Type 'exit' to end)
                  <br>
                  <br>
                </p>

              </div>
              <br>
              <br>  <br>
              <br>  <br>
              <br>  <br>
              <br>  <br>
              <br>  <br>

                </div>
              </div>
            <div class="card-footer text-muted d-flex justify-content-start align-items-center p-3">
              <div class="input-group mb-0">
                <input type="text" class="form-control" id="user-input" placeholder="Type message"
                  aria-label="Recipient's username" aria-describedby="button-addon2" />
                <button class="btn btn-warning" type="submit"  id="send-button" style="padding-top: .55rem;">
                    <i class="fa-brands fa-telegram fa-beat-fade" value="PLAY" onclick="play()"></i>
                    <audio id="audio" src="https://s27.aconvert.com/convert/p3r68-cdx67/c4lpg-az7kc.mp3"></
audio>
                  </button>
              </div>
            </div>
          </div>

        </div>
      </div>

    </div>
  </section>
 </body>
 <script>
```

```
        const chatOutput = document.getElementById('chat-output');
        const userInput = document.getElementById('user-input');
        const sendButton = document.getElementById('send-button');

        sendButton.addEventListener('click', function () {
          function play() {
                    var audio = document.getElementById("audio");
                    audio.play();
                }
            const message = userInput.value;
            if(message == 'exit')
            {
              window.location.reload("Refresh")
              alert('Your Coversation ends')
            }
            var audio = new Audio('sound.mp3');
            audio.play();
            if (message.trim() !== '') {
                appendMessage('You: ' + message);
                userInput.value = '';

                // Send user input to the server and get chatbot response
                fetch('/get_response', {
                    method: 'POST',
                    body: new URLSearchParams({ 'user_input': message }),
                })
                .then(response => response.text())
                .then(data => {
                    appendMessage('Chatbot: ' + data);
                });
            }
        });

        function appendMessage(message) {
            const messageElement = document.createElement('div');
            messageElement.textContent = message;
            chatOutput.appendChild(messageElement);
        }
    </script>
</body>
</html>
```

Conclusion

This document provides a basic foundation for creating a chat application that serves as both a terminal and a web interface using Flask and a provided dataset. You can enhance this application by adding more interactive features and extending the web interface to support real-time chat interactions.