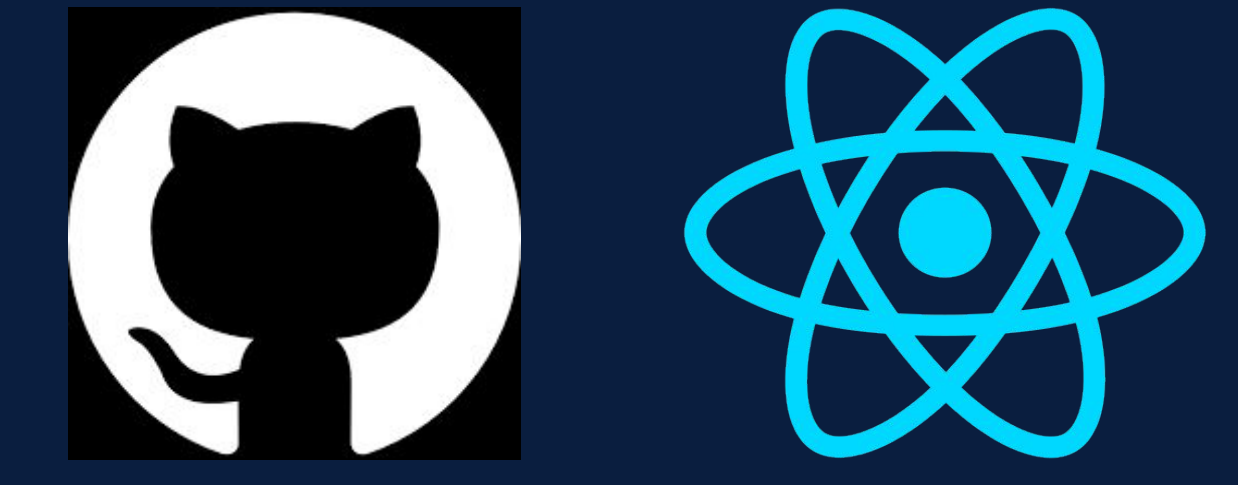




AI-Based Customizable Chatbot

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PROBLEM

Modern communication is hindered by impersonal, generic interactions

- Standard chatbots **lack personality and customization**
- Users desire more engaging and personalized experiences

Existing conversational AI solutions have limitations:

- Minimal customization options for appearance and behavior
- Lack of persistent memory across conversations
- Poor user experience and interface design

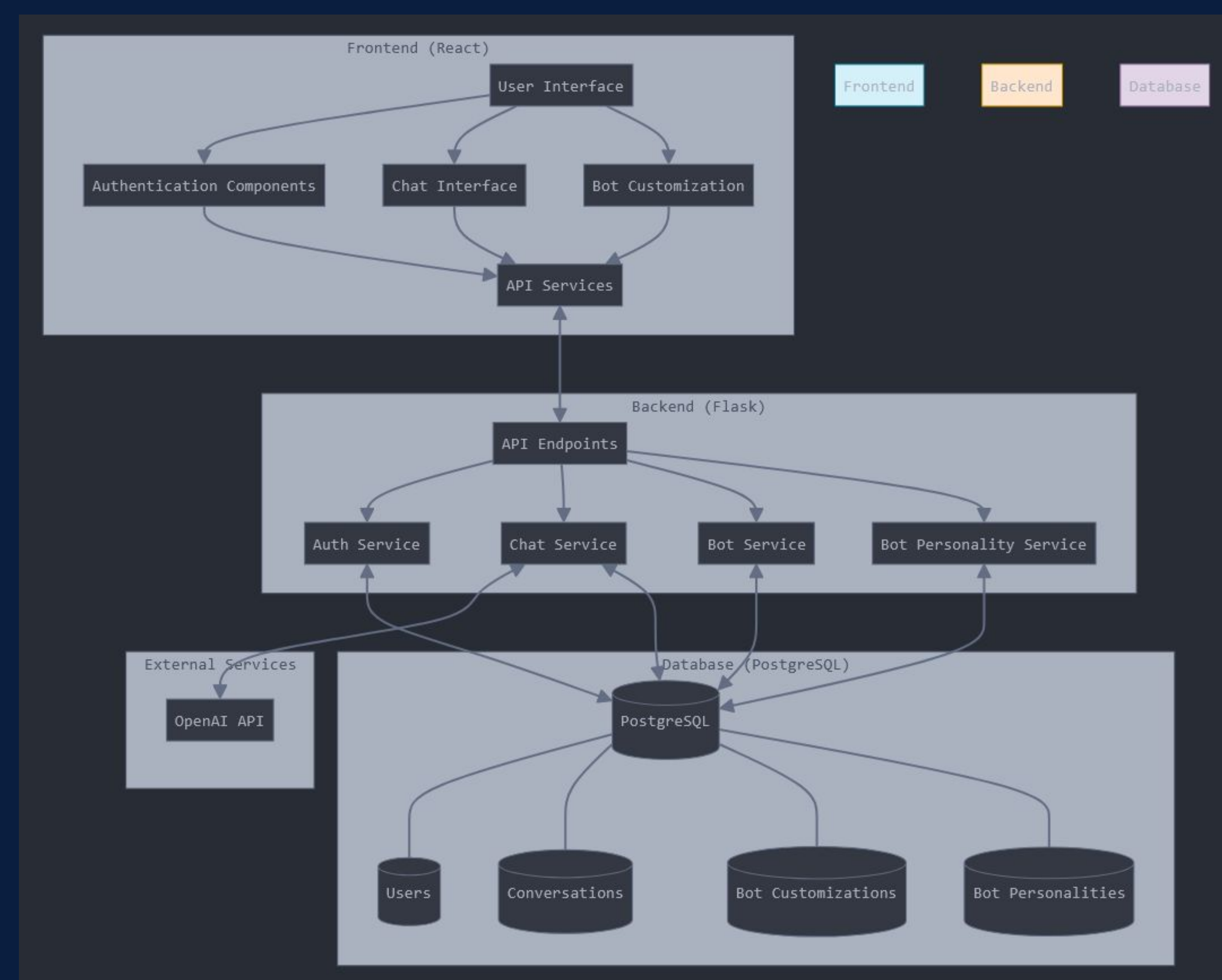
Users face challenges with current AI assistants:

- Inability to **tailor AI personalities** to specific needs
- Disconnected conversations requiring repetitive context-setting
- Limited accessibility across devices and platforms

Our solution: A fully customizable AI chatbot web application that allows users to:

- Create personalized bot appearances and personalities
- Maintain conversation history and context
- Enjoy a seamless, intuitive user experience

SYSTEM DESIGN



VERIFICATION

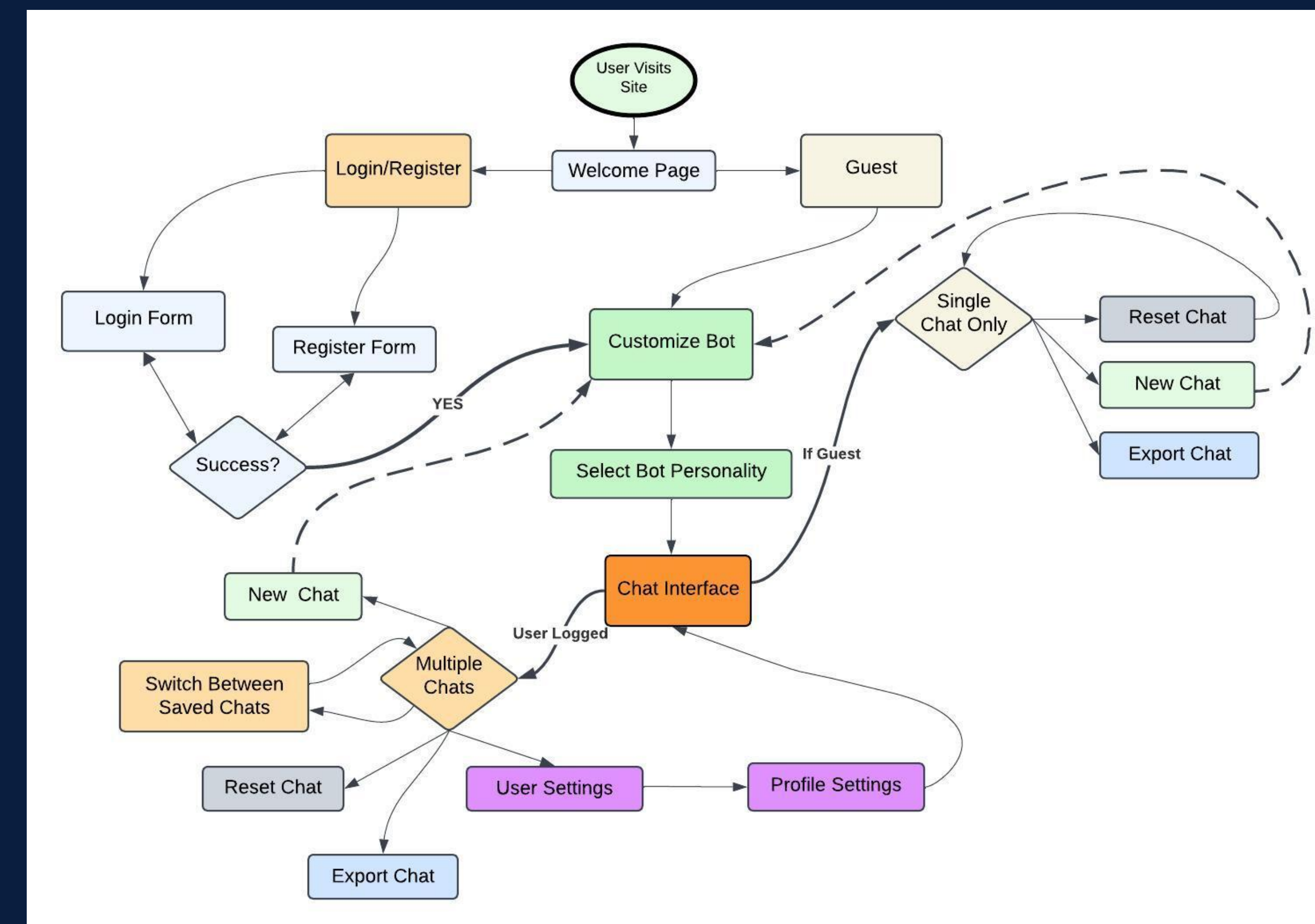
At the end of this process, verification ensured the software met all requirements and standards to produce a fully functioning app.

The **registration and login system** was validated to prevent duplicate accounts by checking for existing email address and confirming proper email format.

Additionally, the **chat history** was tested to ensure it was saved in the database and retrievable by the associated user.

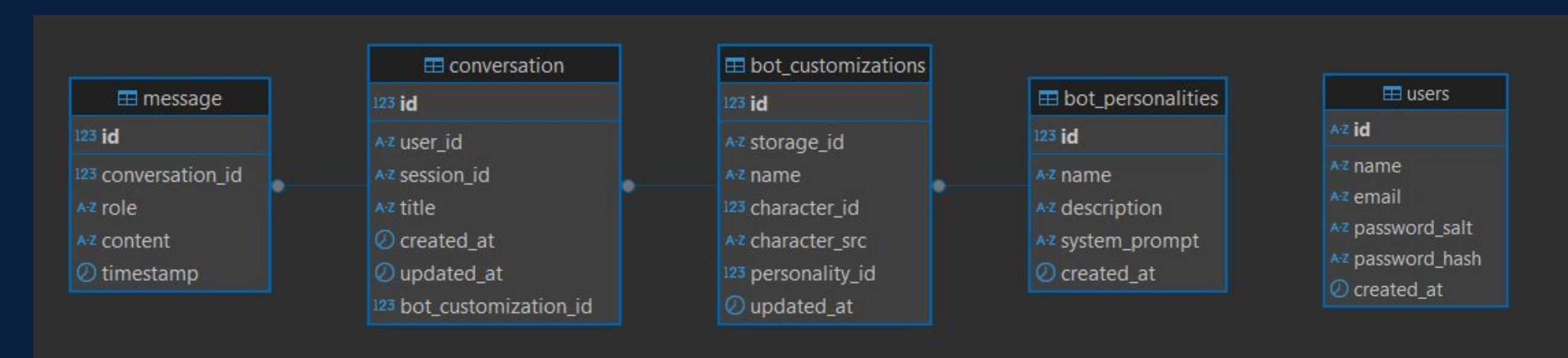
Lastly, **Bot customization preferences** were checked to ensure the user is allowed to change and retain their preferences. The verification also included testing the chatbot's ability to support multiple sessions simultaneously.

CURRENT SYSTEM



OBJECT DESIGN

- User:** Stores account information and authentication details
- Message:** Handles user inputs and bot responses
- Conversation:** Manages multi-turn interactions and context
- BotPersonality:** Defines tone and response style of the chatbot
- BotCustomization:** Enables appearance adjustments



SUMMARY

Our AI-based customer support chatbot project demonstrates the integration of modern web development with intelligent, customizable AI communication.

It offers a **personalized user experience**, allowing users to interact with chatbots that have memory, unique characters, and engaging personalities.

This project highlights our team's ability to design, develop, and deploy a **real-world AI-driven application** using full-stack development principles.

REQUIREMENTS

Hardware Requirements: Computer, 2GB RAM, 1GB Free Storage, Strong Wi-Fi

Software Requirements: Python, Command Prompt (Terminal) and Python Libraries

Flask==3.1.0
flask-cors==5.0.1
openai==0.28.0
python-dotenv==1.0.1
gunicorn==21.2.0
pyjwt==2.3.0
uuid==1.30
Flask-SQLAlchemy==3.1.0
psycopg2-binary



IMPLEMENTATION

This chatbot was created with a combination of modern web and backend technologies.

The **frontend** is a React website built using HTML, CSS, JavaScript and Node.js.

The **backend** is a Flask Python that was used to develop the core logic and backend services. In our python implementation, we used a variety of libraries including Flask and OpenAI API.

For **data storage and retrieval**, we used PostgreSQL, which is accessed through Pgadmin which is a popular database management tool used for PostgreSQL.

