

# **YUGENTALK – SPEAK JAPANESE, NATURALLY**

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An AI-powered Web App for Real-Time  
Japanese Language Practice

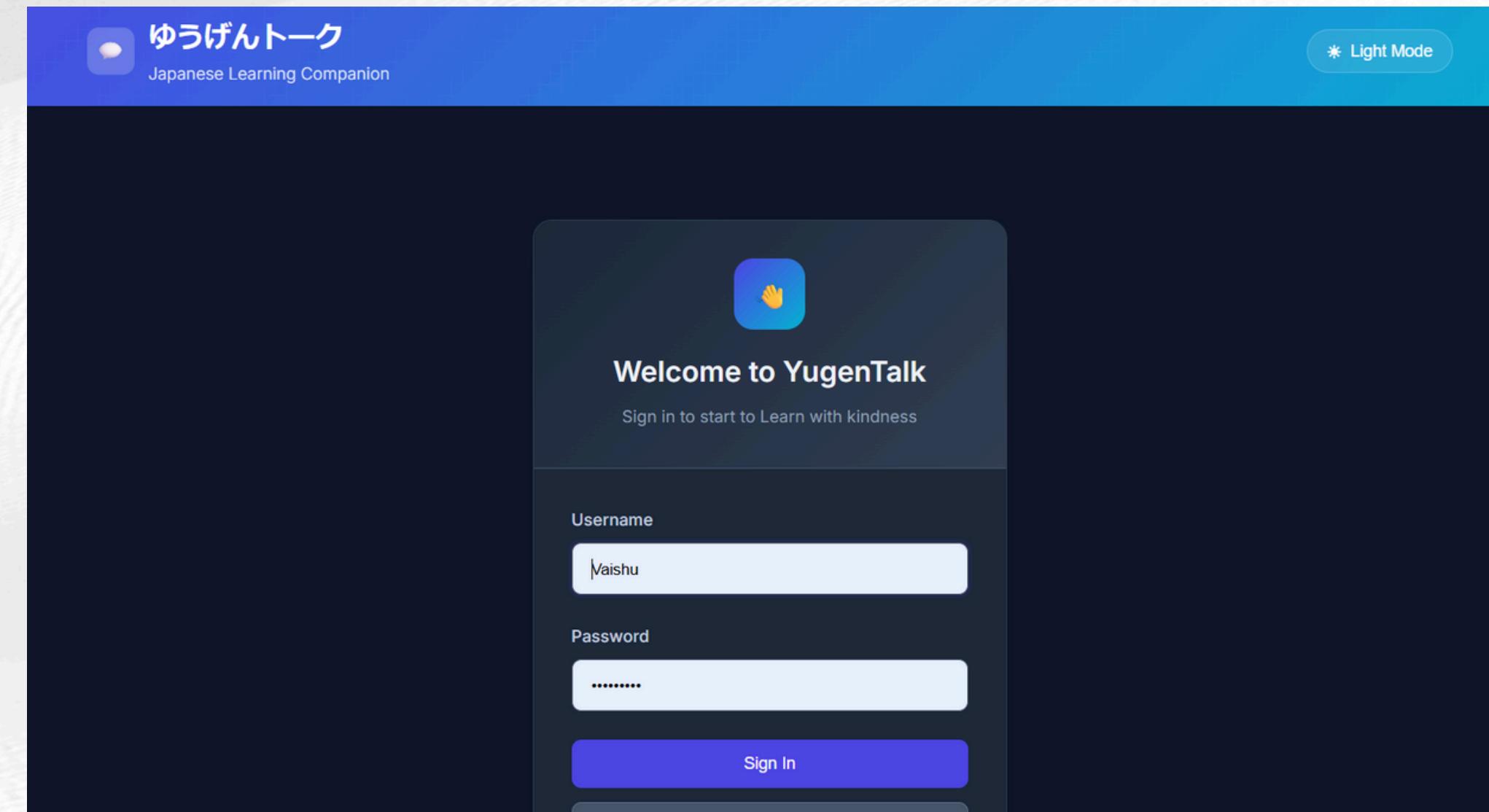
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# OVERVIEW OF YUGENTALK

YugenTalk is a web-based chat application that enables users to have real-time conversations in Japanese with the help of AI.

The app helps learners improve their Japanese language skills through meaningful, interactive dialogue.

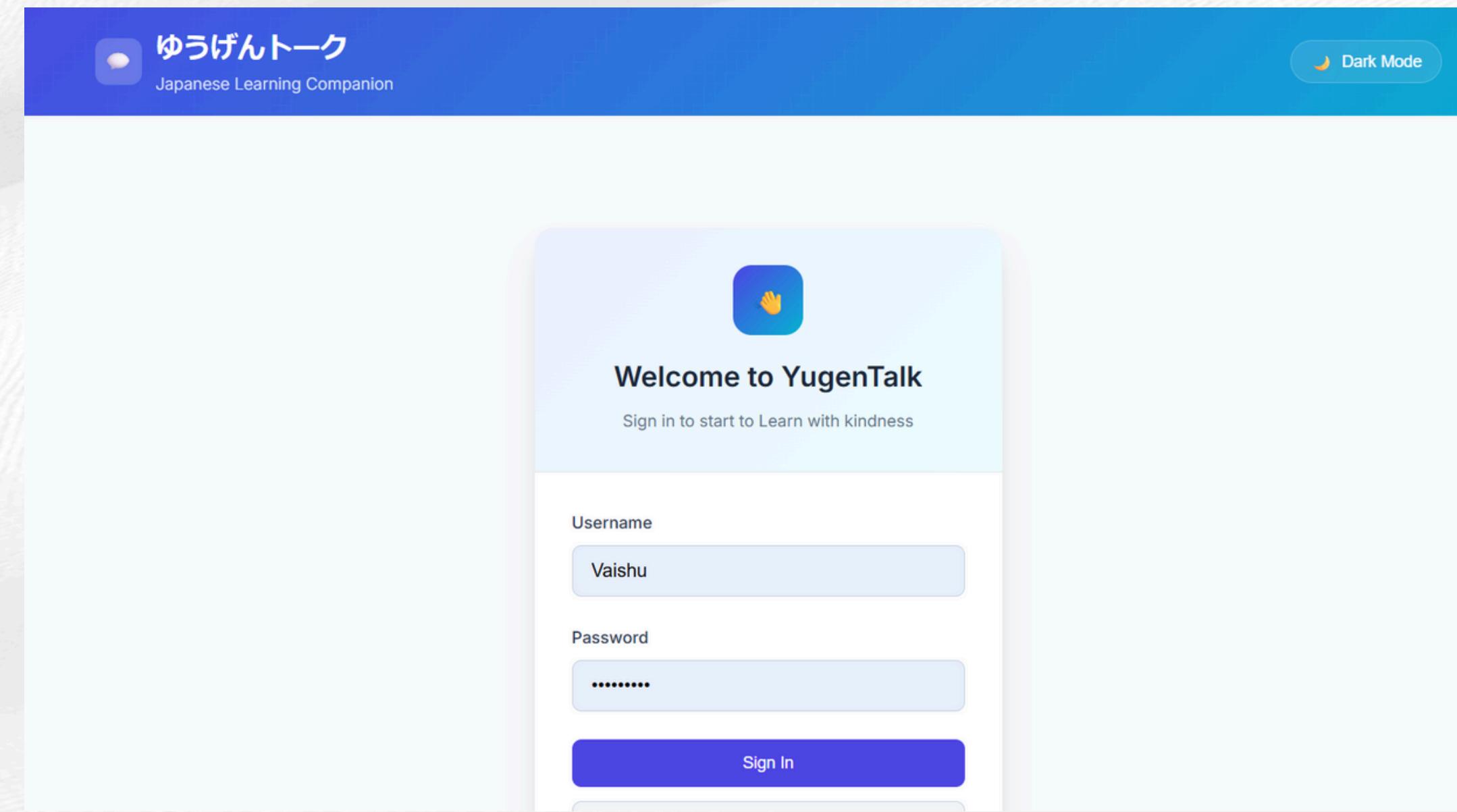
Features include AI-generated Japanese responses, Romaji pronunciation help, and English translations. The chat history and user data are securely stored for further review.



# TECH STACK

## WHY IT WAS USED

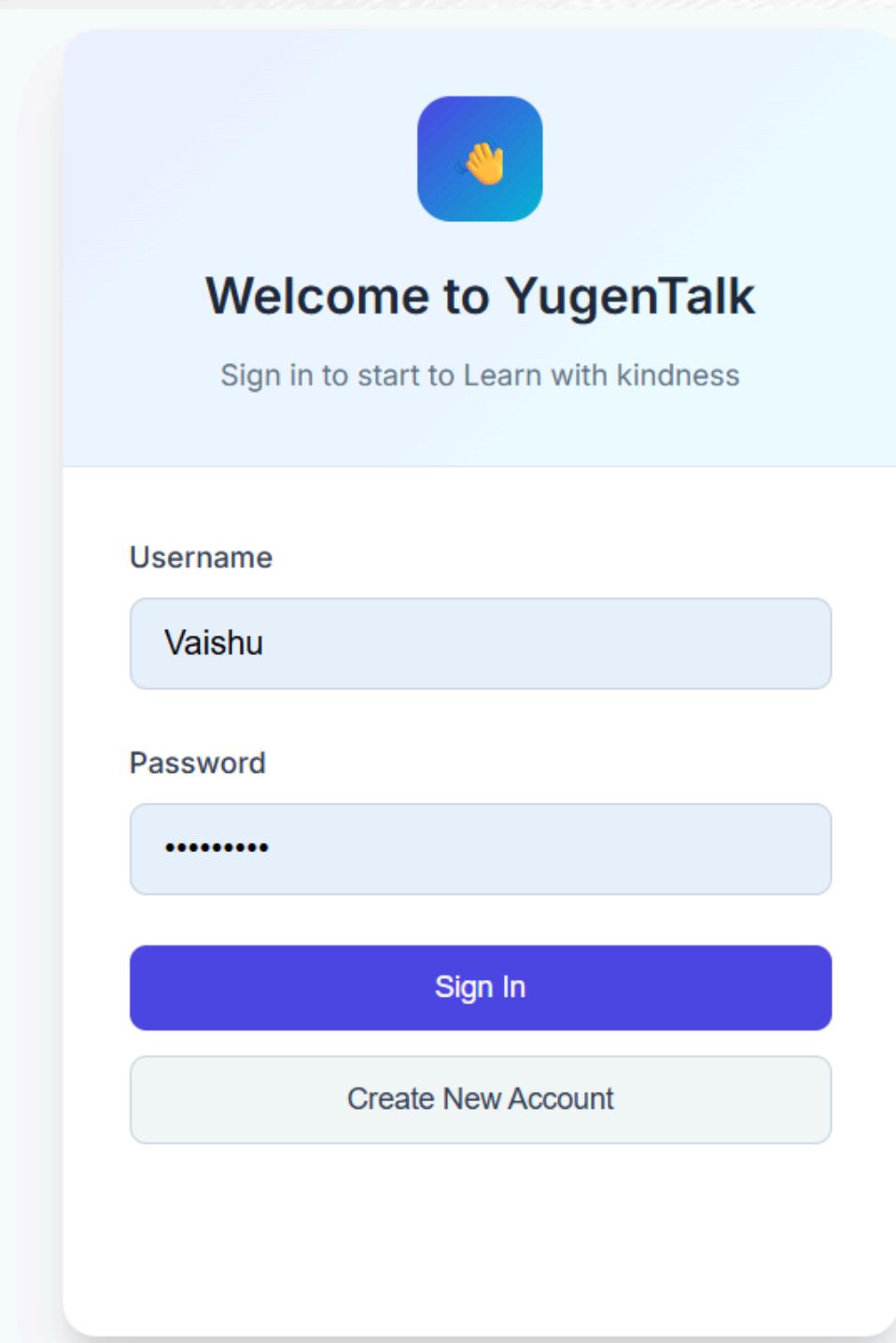
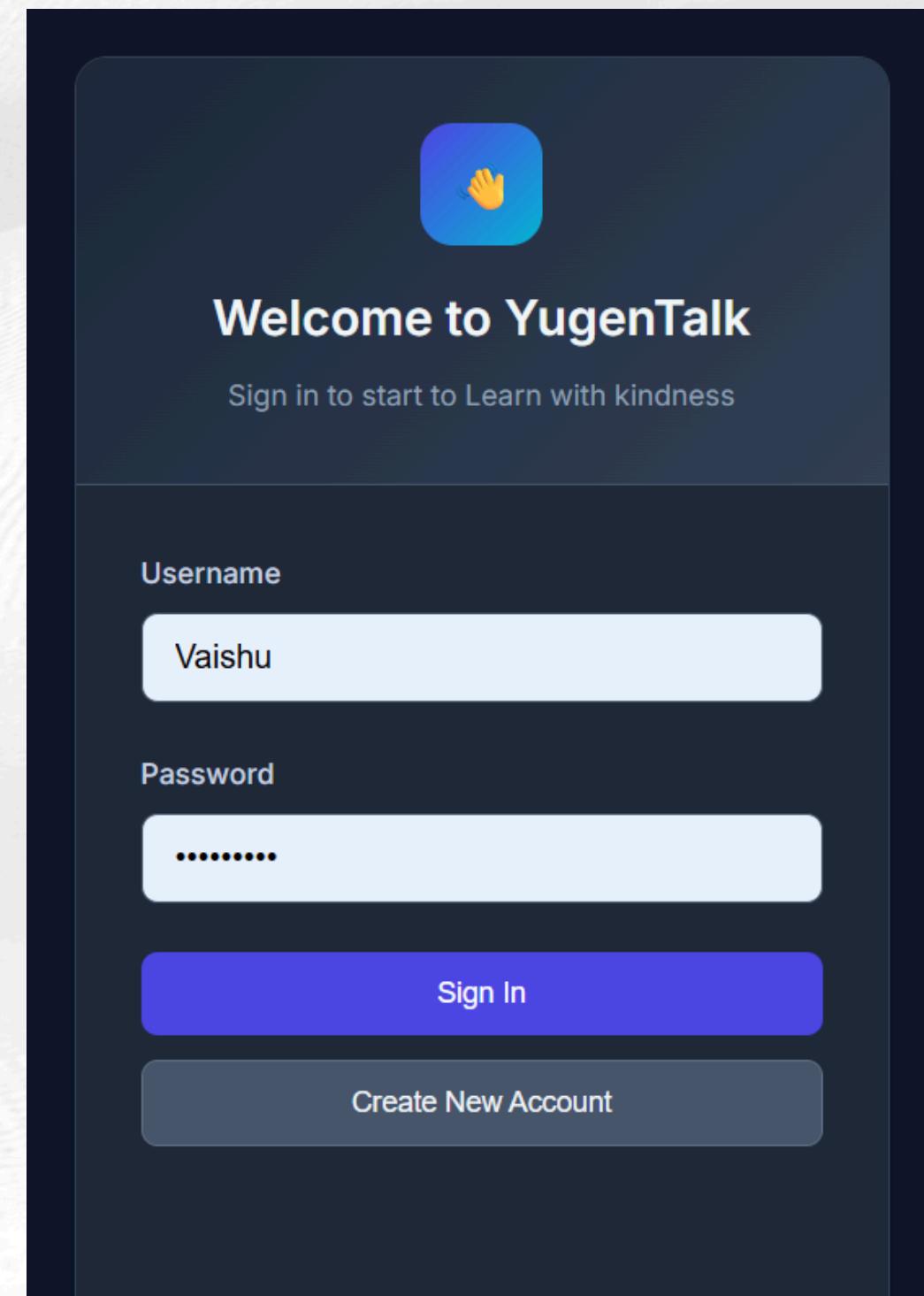
- **Spring Boot** – Used for building the backend APIs and WebSocket services.
- **MongoDB** – Stores user profiles and chat history efficiently.
- **WebSocket** – Enables real-time bi-directional communication.
- **Gemini AI** – Processes messages and generates Japanese responses with translation and Romaji.
- **Node.js** – Real-time AI handling & middle server
- **HTML, CSS, JS** – Frontend interface for user interaction.
- **GitHub** – team to collaborate on code, content, and research



# HOW IT WORKS

## : STEP-BY-STEP

- User logs in or signs up.
- Chat messages are sent via WebSocket to the Spring Boot backend.
- Backend forwards the message to Gemini AI
- Gemini AI returns Japanese text, Romaji, and English translation.
- Response is sent back to the client in real-time.
- MongoDB stores the chat for future access
- The summary of the chat can be downloaded, exported, and deleted.



# ABOUT MY ROLE

- **Roles & Responsibilities:**

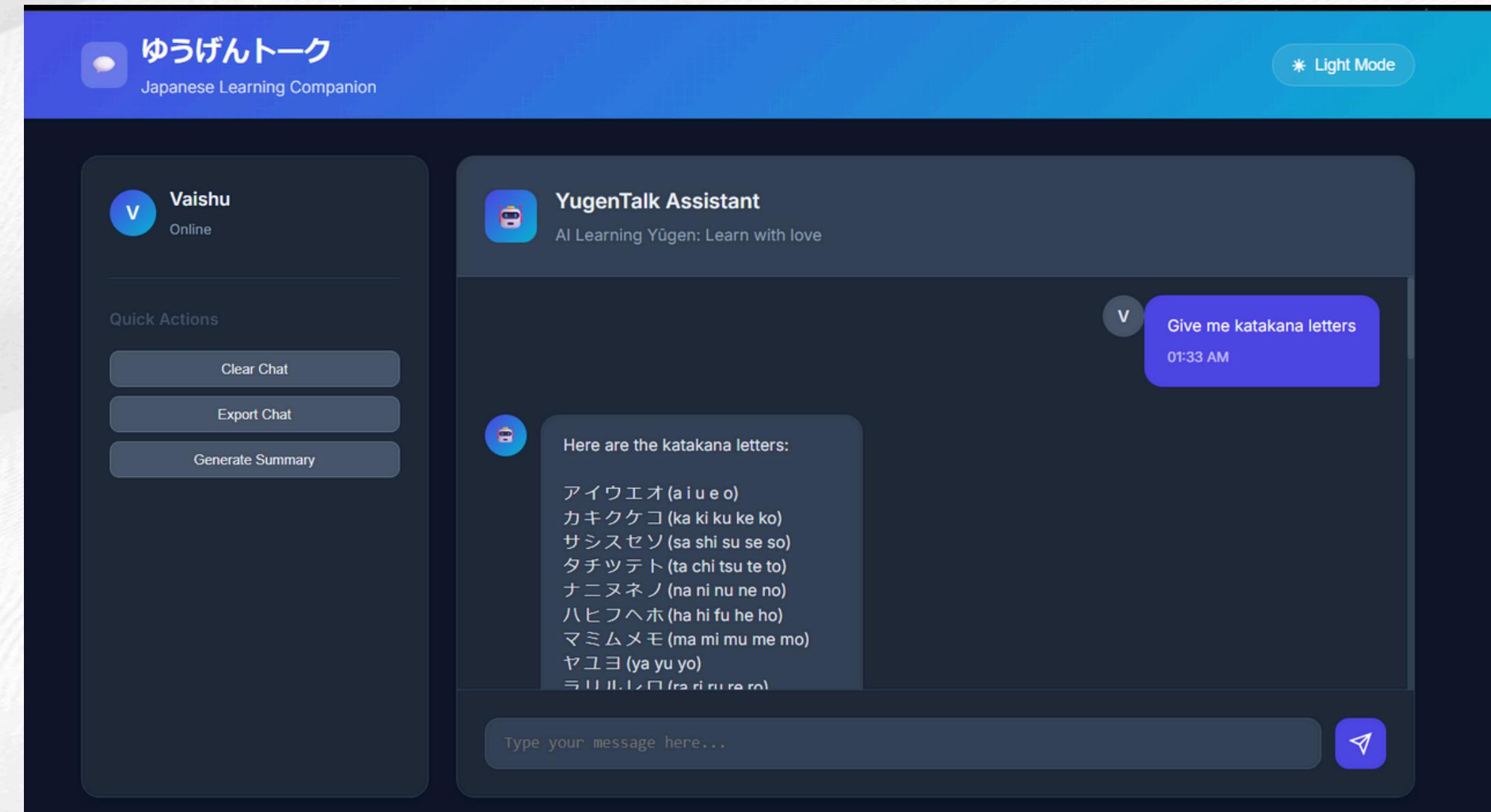
- Acted as the **Team Lead**, planning the project structure and setting goals.
- Designed the **frontend interface** using HTML, CSS, and JavaScript. Integrated **WebSocket** for real-time messaging. Coordinated **team collaboration** using GitHub.

- **Challenges Faced:**

- UI inconsistencies across devices during chat design. Real-time message synchronization issues with WebSocket.

- **Solutions Applied:**

- Refactored the CSS to ensure responsive design.
- Debugged and optimized WebSocket logic to handle simultaneous chats.



# CONCLUSION

YugenTalk bridges the gap between learners and fluent Japanese communication using AI.

## Main Takeaways:

- Real-time AI responses
- Accurate translations & Romaji
- Responsive frontend
- Scalable backend with persistent storage

**Live Demo :** [https://drive.google.com/file/d/1WgNwhtfKK7InPyccFDZL\\_rlcbUrh4XJ/view?usp=sharing](https://drive.google.com/file/d/1WgNwhtfKK7InPyccFDZL_rlcbUrh4XJ/view?usp=sharing)

