

GlowMinds – Mental Awareness Chatbot Project Report

1. Introduction

GlowMinds is a mental awareness chatbot designed to provide real-time emotional support and mental health resources. The chatbot engages users in natural language conversations, offering empathy, self-care tips, and India-specific crisis helpline numbers. This project demonstrates the integration of modern web technologies with Dialogflow's NLP capabilities to create an accessible, interactive mental health tool.

2. Project Objectives

- Provide immediate, empathetic responses to user queries.
- Offer self-care tips and resources for stress, anxiety, and burnout.
- Integrate a conversational AI backend using Dialogflow.
- Ensure a responsive and user-friendly interface.

3. System Architecture

The system consists of a frontend built with HTML, CSS, and JavaScript, which communicates with a Node.js backend via Socket.io for real-time messaging. The backend forwards user messages to a Dialogflow agent, which processes the input, detects intents, and returns appropriate responses. The server then emits these responses back to the frontend. This architecture ensures low latency and a seamless chat experience.

4. Frontend Implementation

The frontend interface features a centered chat widget with a clean, modern design. User messages appear in green bubbles aligned to the right, while bot replies appear in gray bubbles on the left. The input area includes an intuitive text field and a prominent send button. The CSS ensures responsiveness across desktop and mobile devices.

5. Backend Implementation

The backend uses Node.js with the Express framework. Socket.io is used to manage real-time bi-directional communication between client and server. Each user session is assigned a unique ID generated with the uuid library. Incoming chat messages are sent to Dialogflow via the Google Cloud client library, and the fulfillment text is returned to the user.

6. Dialogflow Integration

A custom Dialogflow agent was configured with two main intents: General Mental Health Advice and India Resources. Each intent includes a variety of training phrases ranging from basic to complex queries. The agent provides empathetic advice, self-care suggestions, and India-specific helpline numbers like the Kiran Mental Health Helpline (1800-599-0019) and AASRA (9152987821).

7. Sample Interaction

User: "I'm feeling anxious about my exams."

Bot: "I understand that exams can be stressful. Try practicing deep breathing exercises, breaking your study sessions into small chunks, and taking short breaks. If you feel overwhelmed, consider talking to a counselor or trusted friend."

8. UI/UX Design Considerations

The design prioritizes accessibility and readability. Colors are chosen for low eye strain, and message alignment clarifies speaker identity. Auto-scrolling keeps the latest messages in view. The responsive layout adapts to various screen sizes.

9. Deployment

The project is hosted on Vercel for the frontend and can be deployed to Heroku or another provider for the backend. Environment variables like the Dialogflow service account key are secured via platform-specific settings. The GitHub repository includes a detailed README .

Future Work :

Future enhancements include adding user authentication, session history, sentiment analysis charts, multilingual support, and integration with additional mental health resources globally.

10. Conclusion

GlowMinds demonstrates how conversational AI can be applied to the sensitive domain of mental health. By combining a user-friendly interface with reliable NLP technology, we provide a supportive tool usable by anyone seeking immediate mental health guidance.