

Krishiv Patel

IBM Project - Report G14.pdf

-  Assignment 7
 -  Research_1
 -  Ganpat University
-

Document Details

Submission ID

trn:oid:::1:3238983776

51 Pages

Submission Date

May 5, 2025, 1:22 AM GMT+5:30

4,490 Words

Download Date

May 5, 2025, 1:23 AM GMT+5:30

30,096 Characters

File Name

IBM_Project_-_Report_G14.pdf

File Size

5.6 MB

8% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Match Groups

- 12 Not Cited or Quoted 7%
Matches with neither in-text citation nor quotation marks
- 3 Missing Quotations 1%
Matches that are still very similar to source material
- 0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation
- 0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

- 7% 🌐 Internet sources
- 4% 📖 Publications
- 0% 👤 Submitted works (Student Papers)

Match Groups

-  12 Not Cited or Quoted 7%
Matches with neither in-text citation nor quotation marks
-  3 Missing Quotations 1%
Matches that are still very similar to source material
-  0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation
-  0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

- 7%  Internet sources
- 4%  Publications
- 0%  Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

Rank	Type	Source URL	Percentage
1	Internet	www.fridafashions.com	4%
2	Internet	www.coursehero.com	<1%
3	Internet	eprint.iitd.ac.in	<1%
4	Internet	www.lakemac.com.au	<1%
5	Publication	Howard Anderson, Sharon Yull, Bruce Hellingsworth. "Higher National Computin...	<1%
6	Internet	mrsdprojects.ri.cmu.edu	<1%
7	Internet	nova.newcastle.edu.au	<1%
8	Internet	financedocbox.com	<1%
9	Internet	www.eprint.iitd.ac.in	<1%
10	Internet	pdfcoffee.com	<1%

11 Internet

www.termpaperwarehouse.com <1%

12 Internet

www.nerc.com <1%

13 Publication

Anuj Kumar Singh, Sachin Kumar. "Security, Privacy, and Trust in WBANs and E-H... <1%

IBM Project

Report

On

Build a Mental Health Counseling

Chatbot using Django and OpenAI

Developed By: -

Krishiv Patel (2116217936)

Guided By:-

Prof. Pritesh Andharia (Internal)

Yagna Patel (21162101020)

Mr. Nirav Rajgor (External)

Ayush Singh (21162122001)

Submitted to
Faculty of Engineering and Technology
Institute of Computer Technology
Ganpat University



**Institute of
Computer
Technology**



Year - 2025



CERTIFICATE

This is to certify that the IBM Project work titled "**Build a Mental Health Counseling Chatbot using Django and OpenAI**", carried out by Krishiv Patel (2116217936), Yagna Patel (21162101020), and Ayush Singh (21162122001), students of Ganpat University, is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology in Computer Science and Engineering. The project was undertaken in the CSE Department (CBA/BDA/CS). The work embodied in this project is original and has not been submitted, either in part or in full, to any other University or Institute for the award of any Degree or Diploma.

Prof. Pritesh Andharia

Internal Guide

Prof. Dharmesh Darji

Head , CSE Department

**PLACE : ICT - GUNI
DATE OF EXAMINATION : 8-5-2025**

ACKNOWLEDGEMENT

The IBM Internship project has been a remarkable opportunity for learning, growth, and self-development. I feel truly fortunate and honored to have received support and guidance from so many dedicated individuals throughout the course of this project. First and foremost, I would like to express my heartfelt gratitude to Dr. Rohit Patel, Principal, ICT, and Prof. Dharmesh Darji, Head of the ICT Department, for providing us with the opportunity to undertake this project. I am especially thankful to Prof. Pritesh Andharia (Internal Guide) and Mr. Nirav Rajgor (External Guide) for their valuable guidance, encouragement, and unwavering support during our work on the project titled Predicting Application Rating of Google Play Store. Despite their demanding schedules, they took the time to listen, advise, and guide us in the right direction. This project would not have been possible without their mentorship. I would also like to sincerely thank the CSE Department for consistently monitoring our progress and arranging the necessary facilities, which greatly contributed to a smooth and efficient project journey. With deep appreciation, I acknowledge the contributions of everyone involved in the successful completion of this project.

Krishiv Patel
(Enrollment No:21162171036)

Yagna Patel
(Enrollment No:21162101020)

Ayush Singh
(Enrollment No:21162122001)

ABSTRACT

This report presents the design and development of a Mental Health Counseling Chatbot, a web-based application engineered to provide virtual mental health support through secure, interactive counseling sessions. Built on the Django framework and enhanced with open-source AI models—specifically leveraging the Llama 3.2 and other Open Source models via LMSTUDIO's API—the system delivers real-time analytics and responsive user interactions. The application features robust user authentication, session logging, and administrative controls, ensuring data integrity and compliance with industry standards such as HIPAA and GDPR. The underlying database architecture employs advanced transaction and access control mechanisms, including savepoints, commit/rollback strategies, and role-based privileges, to safeguard sensitive user information. Extensive testing and validation procedures confirm the system's performance, scalability, and security. This report outlines the project's scope, technical design, and the methodologies adopted to create a reliable and efficient mental health counseling solution.

o3-mini

INDEX

11	1. INTRODUCTION.....	1
	1.1 Project Background.....	2
	1.2 Purpose.....	2
	1.2.1 Project Statement.....	2
	1.2.2 Aim.....	2
	1.2.3 Objectives.....	2
	1.3 Challenges.....	2
	1.4 Impact on Real World.....	3
	1.5 Significance of Project.....	3
4	2. PROJECT SCOPE.....	4
6	3. SOFTWARE AND HARDWARE REQUIREMENTS.....	6
	3.1 Software Requirements.....	7
	3.2 Hardware Requirements.....	7
10	4. PROCESS MODEL.....	9
	4.1 User Interaction Flow.....	10
	4.2 Internal Data Processing Flow.....	10
	4.3 Development Lifecycle.....	11
	5. PROJECT PLAN.....	12
	5.1 Project Overview.....	13
	5.2 Timeline and Milestones.....	13
	5.3 Task Breakdown and Deliverables.....	14
	5.4 Resource Allocation.....	14
	5.5 Risk Management and Contingency Plans.....	14
	5.6 Communication and Reporting.....	15
	5.7 Quality Assurance.....	15
	6. IMPLEMENTATION DETAILS.....	16
	6.1 Backend Development.....	17
	6.2 Database Implementation.....	17
	6.3 AI Model Integration.....	18
	6.4 Frontend Development.....	19
	6.5 Performance, Security, and Scalability.....	19
	6.6 Deployment and Maintenance.....	20
	6.7 Testing and Validation.....	21
	7. INTERFACE.....	26
	8. CONCLUSION AND FUTURE WORK.....	42
	9. REFERENCES.....	44

 8

CHAPTER: 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

1.1 Project Background

This project report details the development of a Mental Health Counseling Chatbot designed to deliver virtual mental health support through a secure, web-based platform. The application is built using the Django framework and integrates open-source AI capabilities, specifically leveraging the Llama 3.2 and other open-source models via LMSTUDIO's API. The system is engineered to facilitate real-time counseling sessions, ensuring efficient user authentication, session management, and secure data handling in compliance with healthcare regulations such as HIPAA and GDPR.

1.2 Purpose

1.2.1 Project Statement

Driven by the increasing demand for accessible mental health services, this project focuses on the creation of a virtual counseling assistant that combines ease of use with technical robustness.

1.2.2 Aim

This project aims to deliver an intuitive and responsive mental health counseling chatbot, accessible to users at any time and from anywhere, while maintaining strict privacy, security, and adherence to legal compliance standards.

1.2.3 Objectives

Develop a web-based chatbot platform using Django and integrate it with open-source AI models.

- Ensure secure authentication, role-based access, and compliance with HIPAA and GDPR.
- Enable real-time counseling sessions with support for data integrity and logging.
- Deliver a user-friendly interface optimized for accessibility and responsiveness.
- Create a scalable backend system capable of handling concurrent users efficiently.

1.3 Challenges

- Ensuring compliance with strict healthcare regulations (HIPAA, GDPR).
- Integrating and fine-tuning AI models for sensitive mental health conversations.
- Managing secure real-time communication over the web.
- Designing a system architecture that supports scalability and reliability.

1.4 Impact on Real World

This chatbot has the potential to increase access to mental health services, especially in underserved or remote areas. It reduces the strain on human counselors by handling preliminary support and triaging, allowing professionals to focus on more critical cases.

1.5 Significance of Project

The project bridges the gap between technology and mental health care, offering a solution that addresses both accessibility and privacy. It showcases the practical application of AI in healthcare, potentially transforming how mental health services are delivered globally.

  12

CHAPTER: 2 PROJECT SCOPE

CHAPTER 2 PROJECT SCOPE

The Mental Health Counseling Chatbot project encompasses the complete lifecycle of designing, developing, testing, and deploying a secure web-based application for delivering virtual mental health support. The key aspects of the project scope include:

- **System Development:** Building the application using the Django framework integrated with open-source AI capabilities, specifically leveraging the Llama 3.2 and other Open Source models via LMSTUDIO's API.
- **User Functionality:** Facilitating secure user authentication, session management, and real-time interactions to support effective mental health counseling sessions.
- **Data Management:** Implementing a robust database architecture that includes secure storage of session logs and user information, with advanced transaction control and role-based access to ensure data integrity and confidentiality.
- **Analytics and Reporting:** Integrating tools for real-time data analytics and reporting to provide actionable insights for improved counseling outcomes.
- **Compliance and Security:** Ensuring the application adheres to healthcare data regulations such as HIPAA and GDPR, with comprehensive security measures including encryption and secure data transfer.
- **Scalability and Maintenance:** Designing the system to support scalability for increased user demand and ease of future enhancements, along with structured maintenance and support procedures.

This project aims to streamline mental health counseling by offering a reliable, user-friendly digital platform that enhances the overall effectiveness of mental health services.

 5

CHAPTER: 3 SOFTWARE AND HARDWARE REQUIREMENTS

CHAPTER 3 SOFTWARE AND HARDWARE REQUIREMENTS

3.1 Software Requirements:

- **Operating System:**
 - A Linux-based OS (e.g., Ubuntu or CentOS) is recommended for hosting the application, though Windows Server may also be used.
- **Web Framework & Programming Language:**
 - Django framework built on Python (version 3.8 or later) to manage application logic and backend services.
- **Database Management:**
 - A relational database system such as MySQL or PostgreSQL, configured to support ACID transactions and handle the required data integrity through advanced transaction control mechanisms.
- **AI Model Integration:**
 - Integration with the LMSTUDIO API for accessing the Llama 3.2 and other Open Source models, ensuring seamless processing of natural language inputs for counseling sessions.
- **Web Server Software:**
 - Nginx or Apache to serve the application, manage load balancing, and secure HTTP/HTTPS communications.
- **Frontend & Browser Compatibility:**
 - Utilize modern web browsers (such as Chrome, Firefox, Safari, and Edge) to deliver a responsive and user-friendly interface.
- **Additional Software Tools:**
 - Necessary Python libraries (e.g., Django Rest Framework, psycopg2) and development tools (e.g., Git for version control, IDEs for development) along with SSL/TLS certificates for encrypted data transmission.

3.2 Hardware Requirements:

- **Server Hardware:**
 - **Processor:** Medium-High processors (e.g., Intel i7,i9, Xeon or equivalent) to handle concurrent user requests and AI processing tasks.
 - **Memory:** A minimum of 16GB RAM is recommended for development, with 32GB or more advised for production environments to support scalability and efficient performance.
 - **Storage:** At least 100GB of disk space, preferably using SSDs for faster data access and improved performance, especially given the need for storing session logs and analytics data.
 - **GPU:** Nvidia GeForce RTX 4060 is recommended to accelerate AI model inference and handle computationally intensive tasks associated with real-time analytics and processing.

- **Network:** A reliable, high-speed internet connection is critical to support real-time interactions, API communications, and efficient data transfer.

- **Redundancy and Scalability:**

- Redundant server setups, including failover configurations and backup power supplies, to ensure high availability and system reliability.

- **Client Hardware:**

- End users should have devices (desktops, laptops, tablets) capable of running modern web browsers for seamless access to the application.

These requirements have been defined to ensure that the Mental Health Counseling Chatbot delivers a secure, scalable, and responsive service while maintaining high performance and compliance with relevant standards.

CHAPTER: 4 PROCESS MODEL

CHAPTER 4 PROCESS MODEL

The process model for the Mental Health Counseling Chatbot outlines both the user interaction flow and the underlying internal processing steps, as well as the development lifecycle used to build and refine the system.

4.1 User Interaction Flow

- **User Authentication:**

Users initiate their session by logging in with secure credentials. The authentication mechanism validates identity and grants access to the counseling features.

- **Session Initiation:**

Once authenticated, users begin a counseling session by setting clear objectives. The system registers the start of a session and prepares to log interactions.

- **Chat Interaction:**

The chatbot engages in real-time dialogue with the user. Using natural language processing powered by Llama 3.2 and other Open Source models, the chatbot processes inputs and generates contextually appropriate responses throughout the session.

- **Session Termination and Reporting:**

At the conclusion of the interaction, the system compiles a session summary. This summary, along with the detailed chat transcript, is stored securely for future reference and analysis.

4.2 Internal Data Processing Flow

- **Data Capture and Transaction Management:**

Every interaction is captured and stored in the database using robust transaction control measures. This includes the use of commit/rollback strategies and savepoints to ensure data consistency and integrity.

- **Real-Time Analytics:**

As session data is recorded, integrated analytics modules process the information in real time. This enables the identification of key patterns and the generation of actionable insights to support effective counseling.

- **Administrative Oversight:**

Administrators have dedicated tools to monitor session logs, manage user accounts, and review system performance. This oversight ensures that the system operates reliably and remains compliant with security and regulatory standards.

4.3 Development Lifecycle

- **Requirements Analysis and Design:**

The project begins with a detailed analysis of user requirements and system functionalities, documented in the SRS and database design outlines. This phase establishes the foundation for the overall system architecture.

- **Implementation and Integration:**

The application is developed using the Django framework, with integration of the Llama 3.2 and other Open Source models via LMSTUDIO's API. Key functionalities such as user authentication, session management, and secure data handling are implemented iteratively.

- **Testing and Validation:**

A rigorous testing phase follows, including functional, performance, security, and compliance testing. This ensures that every component of the system meets predefined quality standards before deployment.

- **Deployment and Maintenance:**

After successful testing, the system is deployed on secure server hardware featuring multi-core processors, ample memory, high-speed SSD storage, and an Nvidia GeForce RTX 4060 GPU to accelerate AI processing. Ongoing maintenance and regular updates support scalability and system enhancements.

This process model ensures a seamless flow from user engagement to backend processing while adhering to industry standards for security, performance, and reliability.

CHAPTER: 5 PROJECT PLAN

CHAPTER 5 PROJECT PLAN

5.1 Project Overview

This plan outlines the structured approach for developing the Mental Health Counseling Chatbot. The project encompasses planning, design, implementation, testing, deployment, and ongoing maintenance. It is designed to ensure timely delivery of a secure, scalable, and high-performance web application that meets industry standards.

5.2 Timeline and Milestones

- **Phase 1: Initiation and Planning (Weeks 1–2):**
 - Finalize project scope and objectives
 - Identify stakeholders and assemble the project team
 - Establish communication channels and project tracking methods
- **Phase 2: Requirements Analysis and Design (Weeks 3–4):**
 - Develop Software Requirements Specification (SRS) and Database Design documents
 - Create system architecture diagrams, process models, and ER diagrams
 - Define detailed functional and non-functional requirements
- **Phase 3: Implementation (Weeks 5–10):**
 - Develop backend services using Django and integrate the Llama 3.2 and other Open Source models via LMSTUDIO's API
 - Implement user authentication, session management, and frontend interfaces
 - Conduct iterative development with code reviews and integration testing
- **Phase 4: Integration and Testing (Weeks 11–13):**
 - Perform unit, integration, performance, and security testing
 - Address any identified issues or bottlenecks
- **Phase 5: Deployment (Week 14):**
 - Configure production servers with required hardware (including Nvidia GeForce RTX 4060 GPU)
 - Deploy the application and ensure secure, high-availability operations
 - Conduct final system validation in the live environment
- **Phase 6: Maintenance and Support (Week 15 onward):**
 - Monitor system performance and implement regular updates
 - Provide user support and maintain detailed maintenance logs
 - Plan for future scalability and feature enhancements

5.3 Task Breakdown and Deliverables

- **Requirements Analysis and Documentation:**
 - Deliverables: SRS document, Database Design Overview
- **System Architecture and Design:**
 - Deliverables: Process models, ER diagrams, interface design mockups
- **Development:**
 - Tasks: Backend development (Django), frontend interface implementation, AI model integration
 - Deliverables: Source code repository, API integrations, technical documentation
- **Testing:**
 - Tasks: Develop and execute test cases for functional, performance, and security aspects
 - Deliverables: Test reports, bug tracking logs, quality assurance documentation
- **Deployment:**
 - Tasks: Server configuration, final system deployment, performance monitoring setup
 - Deliverables: Deployed application, deployment documentation, user manuals
- **Maintenance:**
 - Tasks: System monitoring, risk assessment, regular updates and support
 - Deliverables: Maintenance reports, risk mitigation logs, updated documentation

5.4 Resource Allocation

- **Hardware Resources:**
 - Server with multi-core processors, minimum 16GB RAM, 100GB SSD storage
 - Nvidia GeForce RTX 4060 GPU for AI processing acceleration
- **Software Resources:**
 - Django framework (Python 3.8+), MySQL/NoSQL database
 - LMSTUDIO API for Llama 3.2 and other Open Source models integration, Nginx/Apache web server, development tools (e.g., Git, IDEs)

5.5 Risk Management and Contingency Plans

- **Identified Risks:**
 - Security vulnerabilities and potential data breaches
 - Integration challenges with the AI model
 - Performance issues under peak loads

- **Mitigation Strategies:**

- Implement robust encryption, regular security audits, and access control measures
- Conduct early integration testing and iterative validation
- Perform load testing and design the system for horizontal scalability

5.6 Communication and Reporting

- Regular weekly meetings and status updates
- Use of issue tracking systems for prompt resolution of concerns
- Documentation of progress against milestones and transparent reporting to stakeholders

5.7 Quality Assurance

- Comprehensive testing protocols covering functionality, performance, security, and compliance
- Use of both automated and manual testing approaches
- Continuous integration and feedback loops to ensure high-quality deliverables

This project plan ensures that all stages of development are carefully managed, risks are mitigated, and deliverables are met on schedule, resulting in a robust Mental Health Counseling Chatbot that meets the needs of users and stakeholders alike.

CHAPTER: 6 IMPLEMENTATION DETAILS

CHAPTER 6 IMPLEMENTATION DETAIL

The implementation of the Mental Health Counseling Chatbot involves several interrelated components that work together to deliver a secure, efficient, and responsive virtual counseling experience. The following sections detail the key aspects of the system's implementation:

6.1 Backend Development

- **Framework & Architecture:**

The application is built using the Django framework, following the Model-View-Template (MVT) design pattern. Django's robust ecosystem facilitates rapid development while ensuring a clean separation between data models, business logic, and presentation layers.

- **Authentication & Session Management:**

Django's built-in authentication system is utilized to manage secure user logins and session handling. Custom middleware and views manage the initiation, maintenance, and termination of counseling sessions, ensuring that each session's data is logged and processed appropriately.

- **Business Logic & API Integration:**

Custom Django views encapsulate the business logic, including handling user interactions and interfacing with the LMSTUDIO API for the Llama 3.2 and other Open Source models. The integration is designed to asynchronously process natural language inputs and generate contextually relevant counseling responses in real time.

- **Chat Sharing Functionality:** Users can share specific chat sessions via unique, secure links or by exporting them. The backend stores sharing permissions and session metadata to manage access.

- **Document-Based Chat Input:** Added support to parse uploaded .docx, .pdf, or .txt files. The backend extracts text content and passes it to the AI model, treating it as user input for contextual discussions.

- **Preprocessing for AI Analysis:** Implemented logic to handle structured data from documents or links and convert them into a format suitable for LLM processing.

6.2 Database Implementation

- **Database Design & Schema:**

The system employs a relational database (PostgreSQL or MySQL) with a well-defined schema that includes key tables such as users and session_logs. Each table is structured with appropriate constraints (e.g., primary keys, foreign keys, and unique indices) to maintain data integrity.

- *Example:* The users table includes fields for user_id, username,

password_hash, email, and role, while the session_logs table records session details along with timestamps.

- **Transaction Control & Data Consistency:**

Transaction Control Language (TCL) commands are used to ensure that operations like session logging are atomic. This involves using commit/rollback strategies and savepoints to handle errors and maintain consistency across multiple related operations.

- **Access Control:**

Data Control Language (DCL) commands manage user permissions, ensuring that access to sensitive data (e.g., session logs) is restricted to authorized personnel. Role-based access control is implemented to provide differentiated privileges to regular users, administrators, and support staff.

- **Schema Enhancements for Document and Sharing Logs:** New tables such as uploaded_files, shared_chats, and user_reports were added to manage content-sharing features and log user interactions involving external content.

- **Log Generation and Storage:** Detailed logs of user sessions, file uploads, and AI interactions are generated and stored with timestamped entries to enhance traceability and enable reporting.

- **Data Integrity for Uploaded Content:** Each document is stored with a unique hash and user reference to prevent duplication and support secure retrieval.

6.3 AI Model Integration

- **LMSTUDIO API & Llama 3.2 and other Open Source models:**

The AI component leverages the Llama 3.2 and other Open Source models via the LMSTUDIO API. A dedicated Django view handles API requests by packaging session transcripts and sending them to the AI model. The responses are then parsed and relayed back to the user in real time.

- **Real-Time Data Processing:**

As user inputs are received, the system processes and logs the data while simultaneously sending it to the AI model for generating counseling responses. This dual-path processing ensures that both the interaction flow and data analytics requirements are met.

- **Document Analysis Integration:** AI receives extracted text from uploaded documents as context. The model can summarize, answer questions, or extract insights from the file contents.

- **YouTube Link Processing:** Backend fetches the transcript (using an API or scraper), summarizes the content, and allows the chatbot to interact with it as if it were a user-submitted article.
- **Dynamic Context Switching:** AI models handle varying inputs (live chat, document, video) and adjust context handling accordingly, improving relevance and personalization of responses.

6.4. Frontend Development

- **User Interface:**
Leveraging HTML, CSS, and JavaScript, the frontend provides a responsive and user-friendly interface, with AJAX enabling asynchronous content updates for a smooth user experience without reloading the page.
- **Browser Compatibility & Accessibility:**
The implementation follows current W3C web standards and WCAG accessibility guidelines, ensuring consistent functionality across major browsers and usability for diverse user groups.
- **File Upload and Chat Sharing UI:** New components added for drag-and-drop or manual upload of documents, video link input, and buttons to generate shareable chat links or downloadable reports.
- **Input Validation and Status Feedback:** Real-time feedback mechanisms for file type validation, upload success, or processing errors using JavaScript and AJAX.
- **Session Visualization Enhancements:** Added UI to visualize documents or video summaries within the chat interface for better user engagement.

6.5. Performance, Security, and Scalability

- **Performance Optimization:**
Caching strategies, optimized database queries, and efficient API call management ensure that the system maintains response times under 500ms. The deployment leverages an Nvidia GeForce RTX 4060 GPU to accelerate AI inference and handle computationally intensive tasks.
- **Security Measures:**
The application ensures secure data transmission by enforcing HTTPS protocols through SSL/TLS. Sensitive data is encrypted during both transmission and storage. To maintain security, the system undergoes regular security audits, penetration testing, and complies with industry standards such

as HIPAA and GDPR.

- **Scalability & Redundancy:**

The architecture is designed for horizontal scalability to support up to 500 concurrent users. Redundant server configurations and load balancing mechanisms ensure high availability and resilience against failures.

- **End-to-End Encryption (E2EE):** Implemented for user messages and file transmissions using public-key cryptography. Messages and documents are encrypted client-side before being sent.

- **Secure File Handling:** Files are encrypted at rest using AES-256 and decrypted only when processed in memory, ensuring no plaintext exposure on disk.

- **Optimized AI Request Management:** Caching intermediate responses from document/video analysis reduces redundant processing and improves performance under load.

6.6 Deployment and Maintenance

- **Server Configuration:**

The application is deployed on a Linux-based server environment equipped with multi-core processors, a minimum of 16GB RAM, 100GB SSD storage, and an Nvidia GeForce RTX 4060 GPU. Web servers like Nginx or Apache manage incoming requests and static content delivery.

- **Monitoring & Support:**

Continuous monitoring of system logs, user interactions, and performance metrics is implemented to promptly identify and address issues. Regular maintenance windows, backed by comprehensive backup strategies, ensure ongoing system reliability and data integrity.

- **Server Upgrades for Media Processing:** Added support for asynchronous tasks and background workers (e.g., Celery) to handle file parsing, transcript generation, and model interaction without blocking main threads.

- **Monitoring of Shared/Uploaded Content:** Logs and performance metrics for all user-uploaded documents and shared links are continuously monitored to detect issues or misuse.

- **Scheduled Cleanup Tasks:** Automatic purging of temporary files and expired shareable links to maintain storage efficiency and user privacy.

6.7 Testing and Validation

- **Testing Strategy:**

The testing approach incorporates unit, integration, performance, and security tests, with Django's built-in automated testing framework ensuring the reliability and functionality of all system components.

- **Quality Assurance:**

Regular testing and validation cycles, combined with continuous integration practices, ensure that new features and updates are thoroughly vetted before deployment. This approach minimizes downtime and enhances overall system robustness.

- **Selenium-Based UI Automation:** Automated browser testing scripts validate the end-to-end functionality of file uploads, chat sharing, YouTube analysis, and encryption processes.

- **Edge Case Testing:** Includes validation of corrupt files, unsupported formats, excessively long transcripts, and malicious input attempts.

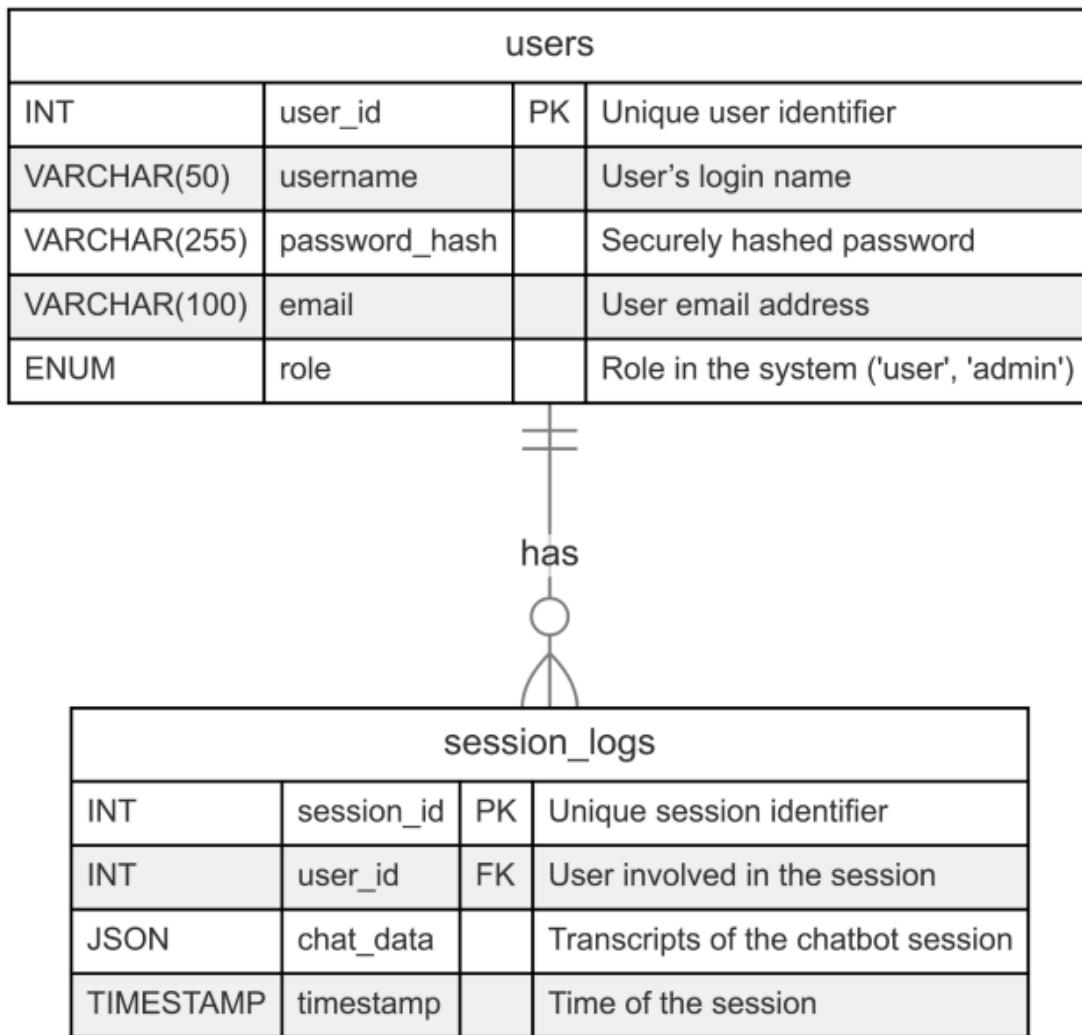
- **Security Testing:** Regular tests for E2EE effectiveness, access control on shared chats, and encryption validation for stored documents.

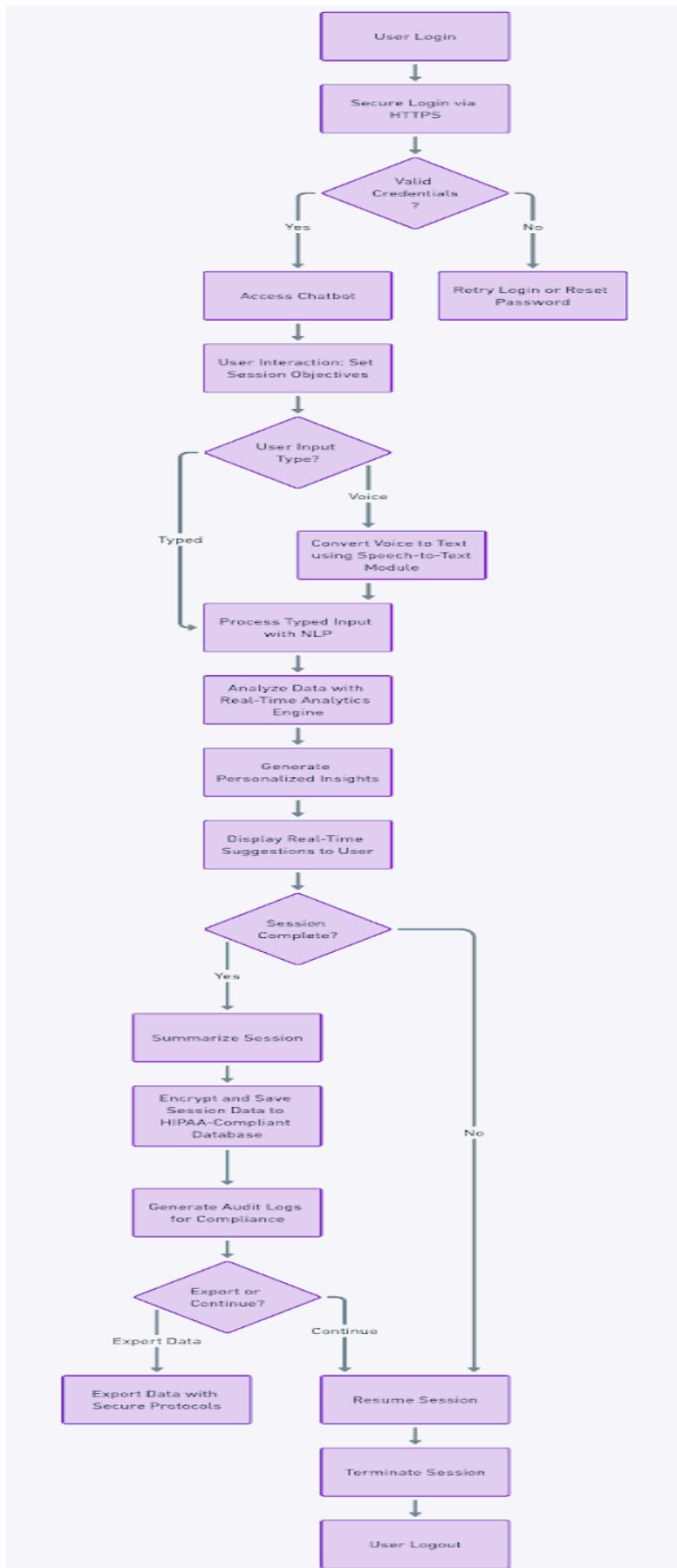
This detailed implementation strategy ensures that the Mental Health Counseling Chatbot is developed as a secure, efficient, and scalable solution, meeting the high standards required for virtual mental health support.

Database Design Overview

Key Tables

Table Name	Field Name	Data Type	Description	Constraints
users	user_id	INT	Unique user identifier	PRIMARY KEY, AUTO_INCREMENT
	username	VARCHAR(50)	User's login name	UNIQUE, NOT NULL
	password_hash	VARCHAR(255)	Securely hashed password	NOT NULL
	email	VARCHAR(100)	User email address	UNIQUE, NOT NULL
session_logs	role	ENUM('user', 'admin')	Role in the system	DEFAULT 'user'
	session_id	INT	Unique session identifier	PRIMARY KEY, AUTO_INCREMENT
	user_id	INT	User involved in the session	FOREIGN KEY(users.user_id)
	chat_data	JSON	Transcripts of the chatbot session	
	timestamp	TIMESTAMP	Time of the session	DEFAULT CURRENT_TIMESTAMP

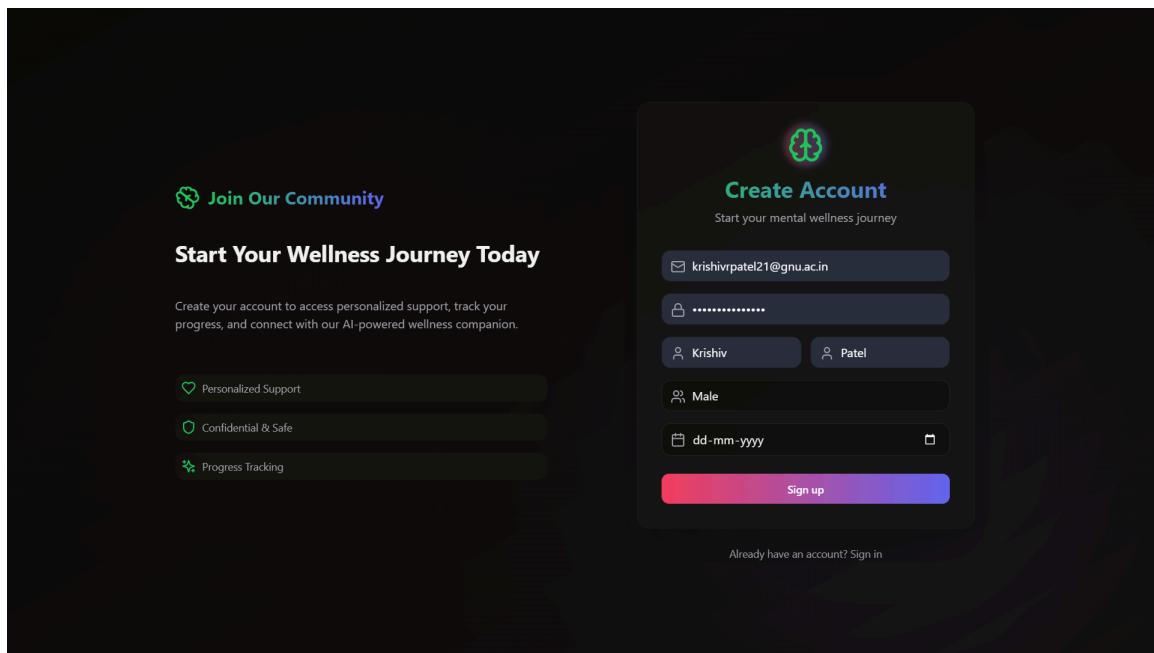
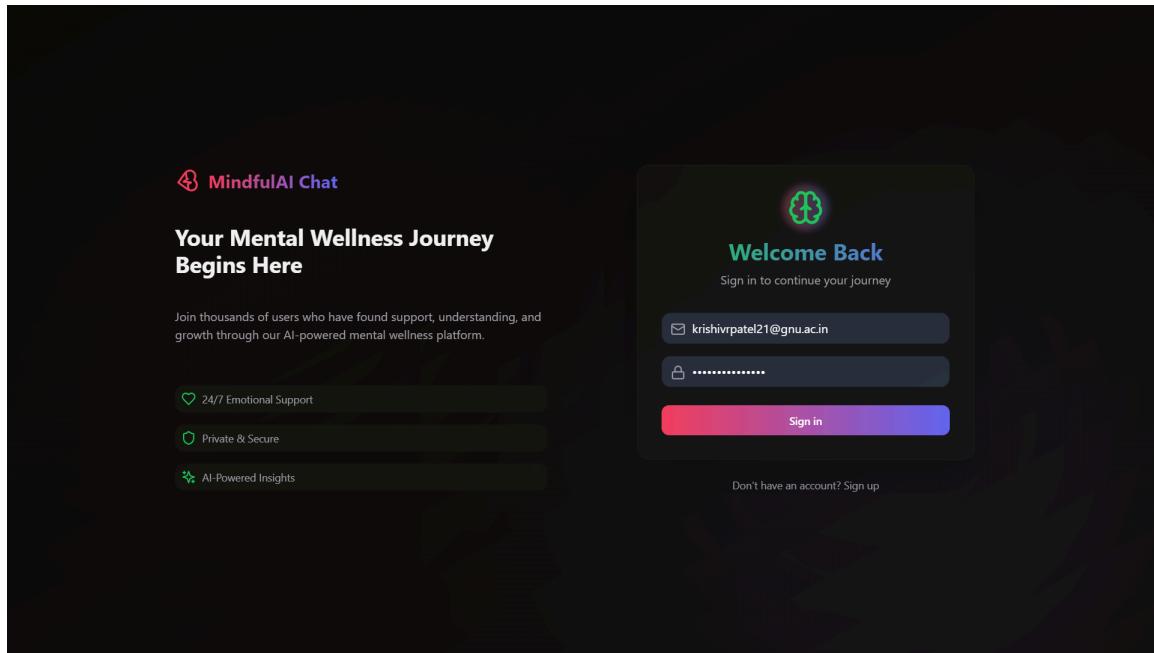
ER DIAGRAM

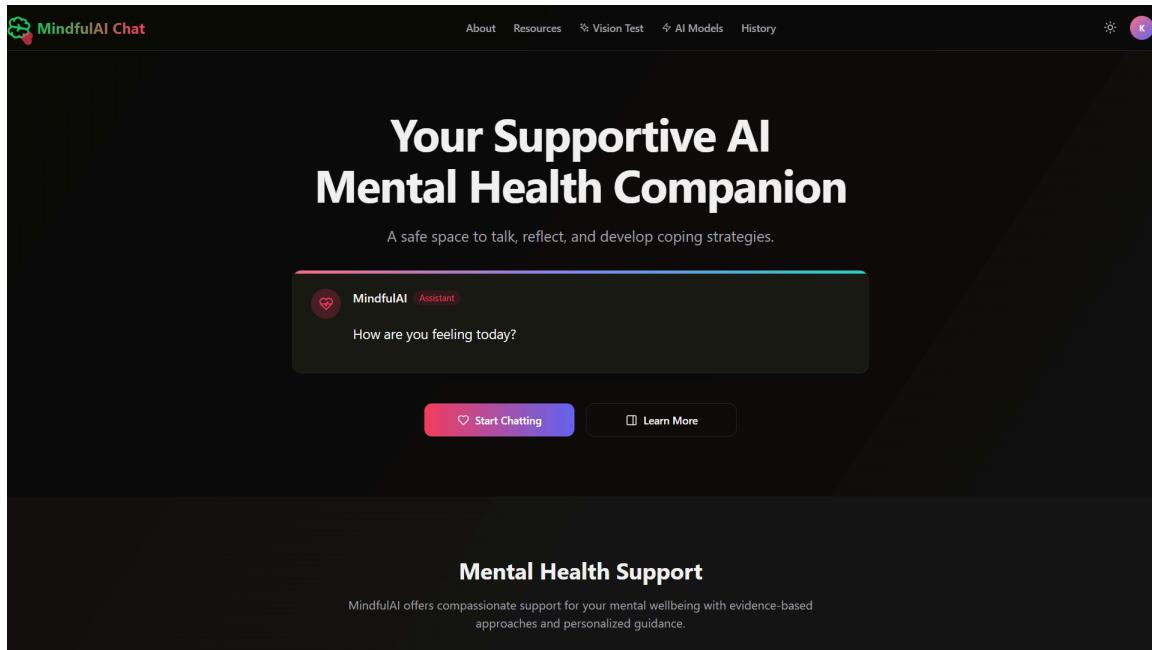




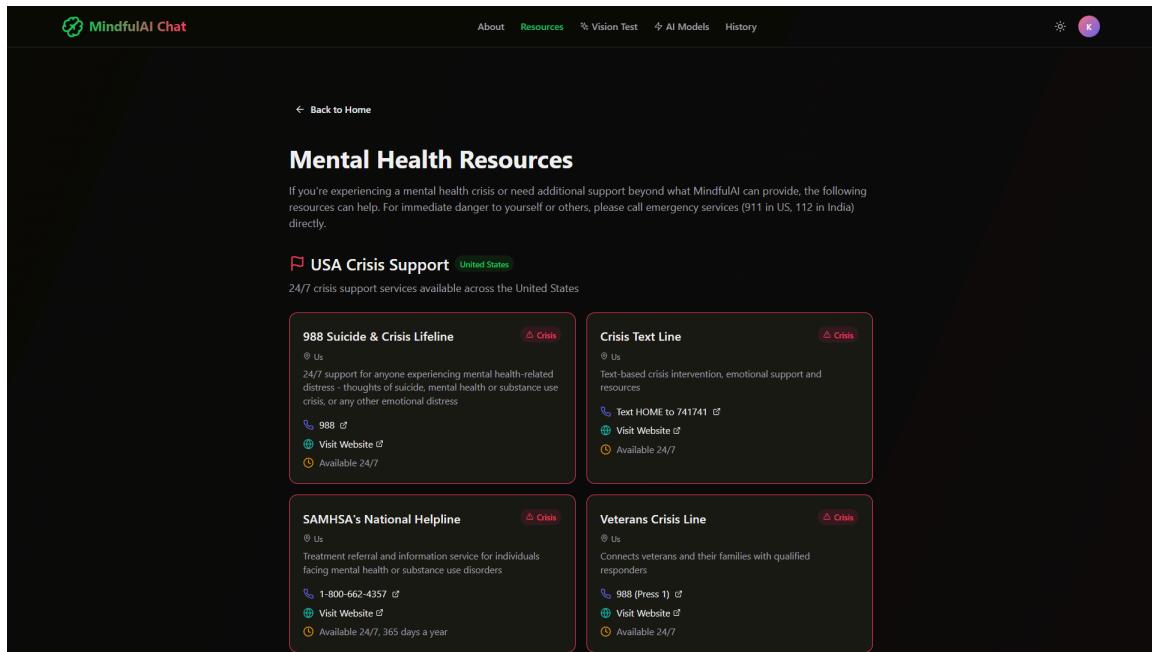
CHAPTER: 7 INTERFACE

CHAPTER 7 : INTERFACE





The screenshot shows the homepage of MindfulAI Chat. At the top, there's a navigation bar with links for About, Resources, Vision Test, AI Models, and History. A user profile icon is in the top right corner. The main title "Your Supportive AI Mental Health Companion" is prominently displayed in the center. Below it, a subtitle reads "A safe space to talk, reflect, and develop coping strategies." A chat interface window shows a message from "MindfulAI Assistant" asking "How are you feeling today?". At the bottom, there are two buttons: "Start Chatting" and "Learn More".



The screenshot shows the "Mental Health Resources" page. At the top, there's a navigation bar with links for About, Resources, Vision Test, AI Models, and History. A user profile icon is in the top right corner. A "Back to Home" link is visible above the main content. The main section is titled "Mental Health Resources" and includes a paragraph about crisis support. Below this, there are four cards for different resources:

- USA Crisis Support (United States)**: 24/7 crisis support services available across the United States.
- 988 Suicide & Crisis Lifeline**: 24/7 support for anyone experiencing mental health-related distress - thoughts of suicide, mental health or substance use crisis, or any other emotional distress.
- Crisis Text Line**: Text-based crisis intervention, emotional support and resources.
- SAMHSA's National Helpline**: Treatment referral and information service for individuals facing mental health or substance use disorders.
- Veterans Crisis Line**: Connects veterans and their families with qualified responders.

MindfulAI Chat

About Resources % Vision Test ⚡ AI Models History

India Crisis Support India
24/7 crisis support services available across India

Tele MANAS Crisis India Government of India's 24/7 mental health support service available in English and 20 regional languages 14416 Ⓜ Visit Website Ⓜ Available 24/7	Vandrevala Foundation Crisis India Crisis intervention and psychological counseling helpline for individuals across India 9999666555 Ⓜ Visit Website Ⓜ Available 24/7
iCall (TISS) Crisis India Psychosocial helpline run by Tata Institute of Social Sciences providing free counseling for emotional distress 022-25211111 Ⓜ Visit Website Ⓜ Mon-Sat, 10am-8pm	NIMHANS Mental Health Helpline Crisis India National Institute of Mental Health and Neurosciences' helpline for psychological support and crisis intervention 080-46110007 Ⓜ Visit Website Ⓜ Available 24/7
Asra Crisis India 24/7 helpline for people in emotional distress and suicidal crisis 9820466726 Ⓜ Visit Website Ⓜ Available 24/7	Sneha Foundation Crisis India Suicide prevention organization providing emotional support to those in distress 044-24640050 Ⓜ Visit Website Ⓜ Available 24/7

MindfulAI Chat

About Resources % Vision Test ⚡ AI Models History

India Online Resources India

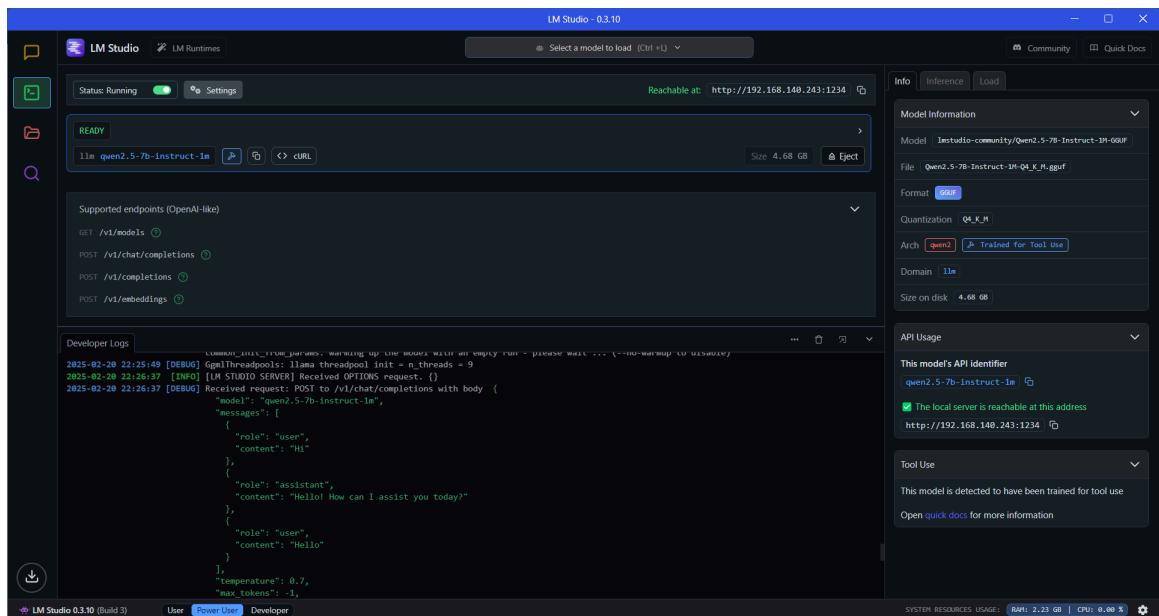
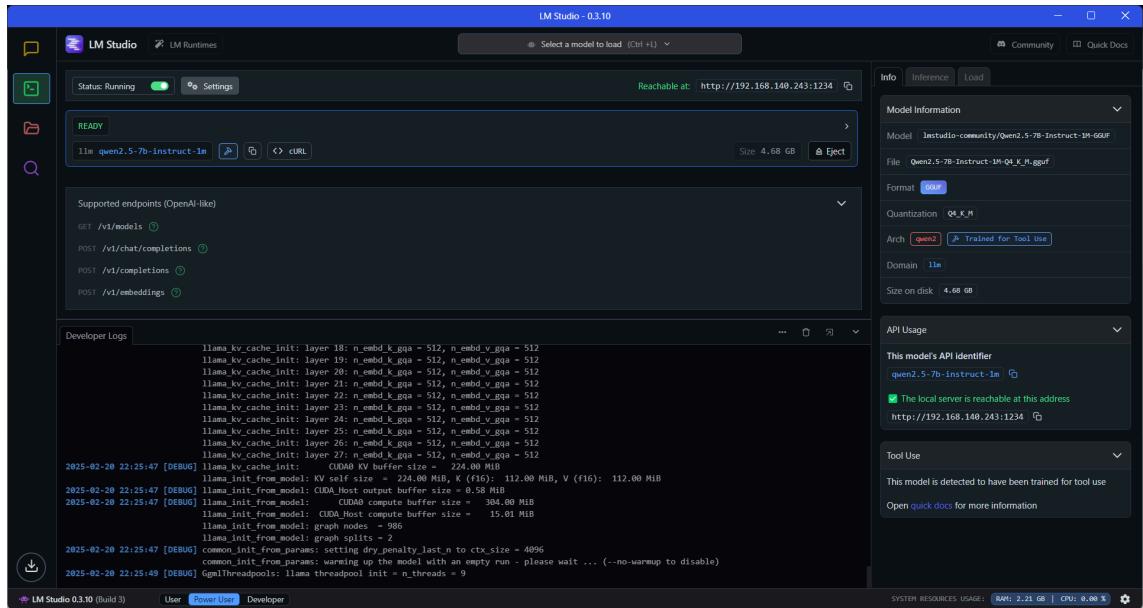
The Live Love Laugh Foundation India Foundation focused on reducing stigma and providing resources for depression and mental health awareness in India Visit Website Ⓜ	MPower Minds India Mental health initiative focusing on creating awareness, alleviating stigma, and providing support for mental health needs in India 1800-120-820050 Ⓜ Visit Website Ⓜ Available 24/7
Mann Talks India Initiative focused on empowering individuals to take charge of their mental health through professional support 8686139139 Ⓜ Visit Website Ⓜ 9:00 AM - 8:00 PM, 7 days a week	Sangath India Non-profit organization working to make mental health services accessible and affordable across India 011-41198666 Ⓜ Visit Website Ⓜ 10:00 AM - 6:00 PM, 7 days a week
YourDOST India Online counseling and emotional wellness platform Visit Website Ⓜ	NIMHANS Digital Academy India Online mental health resources and education from India's premier mental health institute Visit Website Ⓜ

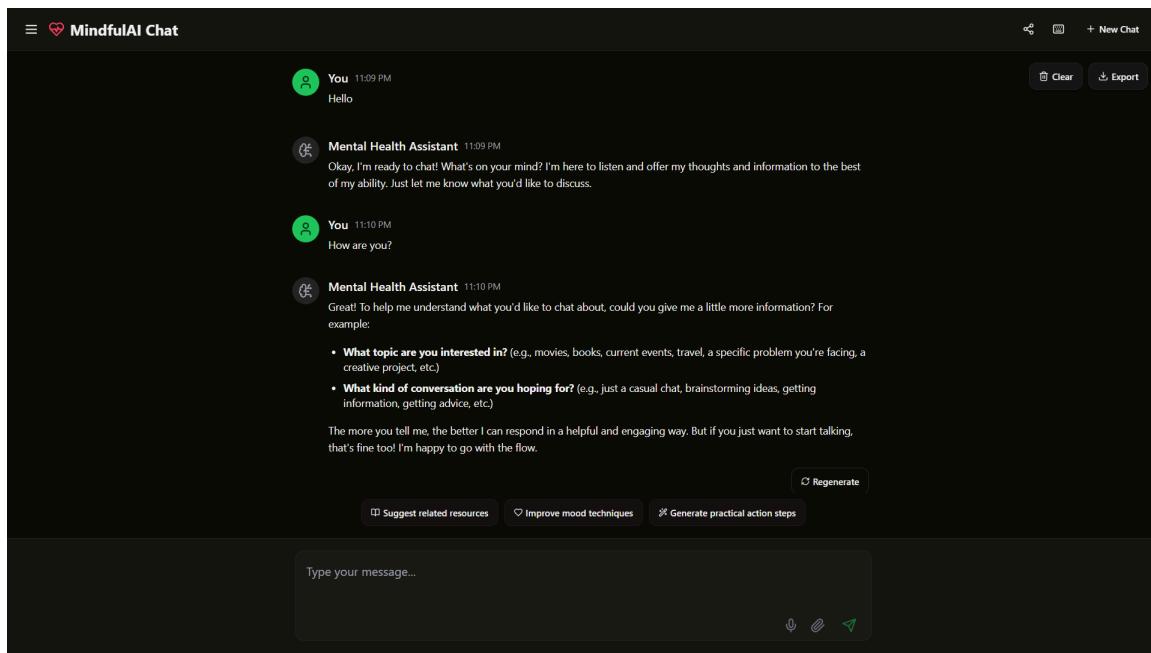
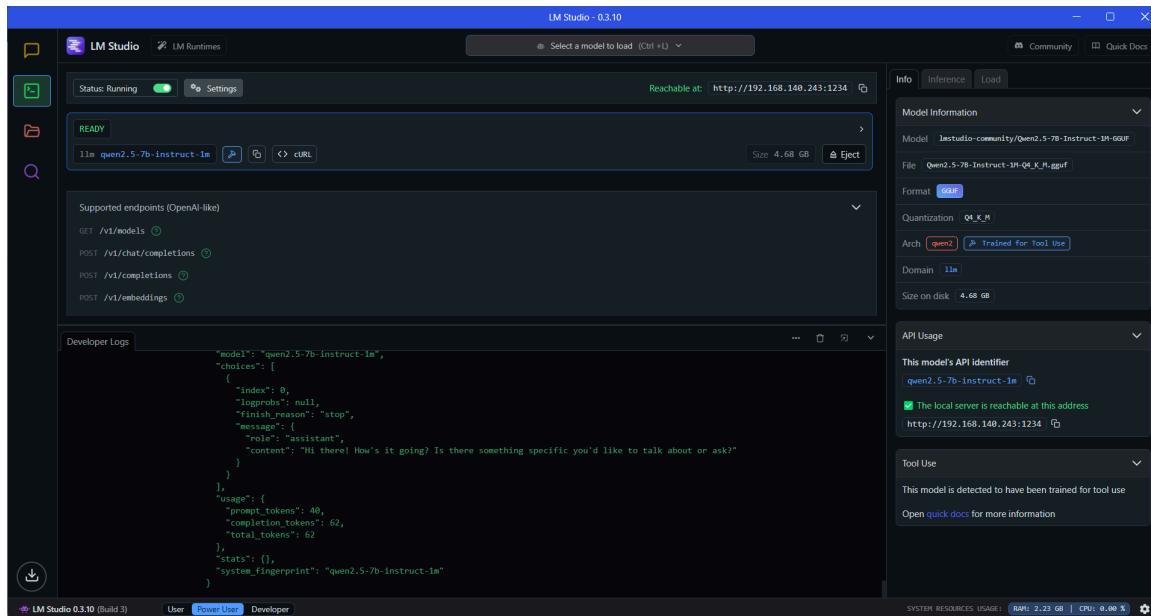
The screenshot shows a dark-themed web application for "MindfulAI Chat". At the top, there's a navigation bar with links for "About", "Resources", "Vision Test", "AI Models", and "History". A user profile icon is also visible. The main heading is "Mental Health Support", with a subtext: "MindfulAI offers compassionate support for your mental wellbeing with evidence-based approaches and personalized guidance." Below this, there are six service cards arranged in two rows of three:

- Emotional Support**: 24/7 compassionate listening and support for your feelings and concerns without judgment.
- CBT Techniques**: Cognitive behavioral therapy strategies to help identify and change negative thought patterns.
- Mood Tracking**: Monitor your emotional patterns over time to gain insights into your mental wellbeing.

- Private & Secure**: Your conversations are private and secure, creating a safe space for honest discussion.
- Guided Resources**: Access to mindfulness exercises, meditation guides, and evidence-based mental health information.
- Crisis Support**: Resources and guidance for difficult moments, with connections to professional help when needed.

The screenshot shows the same "MindfulAI Chat" interface but with a light-colored background. The layout and service cards are identical to the dark-themed version, providing the same mental health support options: Emotional Support, CBT Techniques, Mood Tracking, Private & Secure, Guided Resources, and Crisis Support.





MindfulAI x **I Chat**

+ New Chat

Recent Conversations

- Hello
- https://youtube.com/s...
- What is this?
- What is this and which...
- What is this?
- Hello

View All History

AI Models

You 11:09 PM Hello

Mental Health Assistant 11:09 PM Okay, I'm ready to chat! What's on your mind? I'm here to listen and offer my thoughts and information to the best of my ability. Just let me know what you'd like to discuss.

You 11:10 PM How are you?

Mental Health Assistant 11:10 PM Great! To help me understand what you'd like to chat about, could you give me a little more information? For example:

- What topic are you interested in? (e.g., movies, books, current events, travel, a specific problem you're facing, a creative project, etc.)
- What kind of conversation are you hoping for? (e.g., just a casual chat, brainstorming ideas, getting information, getting advice, etc.)

The more you tell me, the better I can respond in a helpful and engaging way. But if you just want to start talking, that's fine too! I'm happy to go with the flow.

Regenerate

Suggest related resources Improve mood techniques Generate practical action steps

Ask me anything...   

Google Gemini (Default) Gemini 2.5 Pro Experimental

MindfulAI Chat

You 11:27 PM

Logo.png



Mental Health Assistant 11:27 PM This is the logo and accreditations of Ganpat University's Institute of Computer Technology. It also shows various ratings and accreditations the university has received, including Diamond QS I-Gauge rating, NAAC "A" Grade accreditation, 4-star rating from the Institution's Innovation Council, and a 5-star GSIRF rating.

Regenerate

Suggest related resources Improve mood techniques Generate practical action steps

Ask me anything...   

You 9:38 PM <https://www.youtube.com/shorts/V778MBtCfFeature-shared>

Mental Health Assistant 9:38 PM
Okay, I'm ready to chat! What's on your mind? I can talk about a wide range of topics, so don't hesitate to bring up anything you're interested in. I'm here to listen and provide information to the best of my ability. Let me know what you'd like to discuss.

You 9:39 PM
The video is a humorous comparison of the views on time held by Isaac Newton, Albert Einstein, and Karl Marx. It begins with a split screen showing portraits of Newton and Einstein along with their respective quotes: "Time is absolute" (Newton) and "Time is relative" (Einstein). Below Newton's quote, there's a clip of Ben Stiller looking intense is shown. Under Einstein's quote, there's a clip of Owen Wilson smiling. Finally, the screen adds a portrait of Karl Marx with his quote: "Time is what is measured by objective clocks". Under Marx's quote, there's a clip of the word "time" from the movie "Last Days in the Desert". The video uses visual representations to humorously contrast the perspectives of these three figures on the concept of time.

Mental Health Assistant 9:39 PM
The video is a humorous comparison of the views on time held by Isaac Newton, Albert Einstein, and Karl Marx. It begins with a split screen showing portraits of Newton and Einstein along with their respective quotes: "Time is absolute" (Newton) and "Time is relative" (Einstein). Below Newton's quote, there's a clip of Ben Stiller looking intense is shown. Under Einstein's quote, there's a clip of Owen Wilson smiling. Finally, the screen adds a portrait of Karl Marx with his quote: "Time is what is measured by objective clocks". Under Marx's quote, there's a clip of the word "time" from the movie "Last Days in the Desert". The video uses visual representations to humorously contrast the perspectives of these three figures on the concept of time.

Ask me anything... Clear Export

MindfulAI Chat About Resources [Vision Test](#) AI Models History

Gemini Vision Capabilities Test

Test Gemini Vision API

Prompt
Describe what you see in these images in detail

YouTube URL (optional)
 Clear

Upload Media
Drag & drop files here, or click to select files
Supported file formats: Images (JPG, PNG, WEBP), Videos (MP4, MOV, AVI)
Maximum size: 20 MB | Maximum files: 10

Analyze with Gemini Vision Clear All

Google AI Models
Found 17 available models

Model Name	Description	Input Token Limit	Output Token Limit	Supported Methods
Embedding 001 models/embedding-001	Obtain a distributed representation of a text.	2,048	1	embedContent
Gemini 1.0 Pro Vision models/gemini-1.0-pro-vision-latest	The original Gemini 1.0 Pro Vision model version which was optimized for image understanding. Gemini 1.0 Pro Vision was deprecated on July 12, 2024. Move to a newer Gemini version.	12,288	4,096	generateContent countTokens
Gemini 1.5 Flash 001 models/gemini-1.5-flash-001	Stable version of Gemini 1.5 Flash, our fast and versatile multimodal model for scaling across diverse tasks, released in May of 2024.	1,000,000	8,192	generateContent countTokens createCachedContent
Gemini 1.5 Flash 001 Tuning models/gemini-1.5-flash-001-tuning	Version of Gemini 1.5 Flash that supports tuning, our fast and versatile multimodal model for scaling across diverse tasks, released in May of 2024.	16,384	8,192	generateContent countTokens createTunedModel
Gemini 1.5 Flash 002 models/gemini-1.5-flash-002	Stable version of Gemini 1.5 Flash, our fast and versatile multimodal model for scaling across diverse tasks, released in September of 2024.	1,000,000	8,192	generateContent countTokens createCachedContent

100 models [Refresh](#)

Conversation History

Hello May 4, 2025, 11:10 PM	Edit Delete
https://youtube.com/shorts/vZ7... Apr 25, 2025, 9:38 PM	Edit Delete
What is this? Apr 20, 2025, 11:46 AM	Edit Delete
What is this and which song is... Apr 20, 2025, 11:59 AM	Edit Delete
What is this? Apr 20, 2025, 11:53 AM	Edit Delete
Hello Apr 20, 2025, 11:27 AM	Edit Delete

Table Editor

Filter Sort Insert

schema public conversations logs messages profiles user_keys

Search tables...

id uid user_id uid title text updated_at timestamptz public_key text

0085bc83-f0b8-4a76-8ea-b7e9b9e8ac	55a4bbab-c2e0-4f7-85e1-e7b291...	What is this? https://youtube...	2025-04-20 05:04:38.183368+0	NULL
027935e5-1483-4e65-97aa-b4c0b725907	5ab6950b-ac81-44d2-b022-681d...	Hello, this is a test message	2025-04-13 11:51:16.59727+0	NULL
0a427478-9e0d-4a54-b9a9-9bba7c59615	55a4bbab-c2e0-4f7-85e1-e7b291...	What is this?	2025-04-20 06:16:35.022558+0	NULL
0b26cbfd-2744-4eb0-9296-c5db5a6437	5ab6c484-cfc4-4586-bc5d-920c...	I've been feeling anxious late...	2025-04-06 15:14:08.744723+0	NULL
0d6dfb08-3108-4889-a7ed-63686137dc4	5ab6950b-ac81-44d2-b022-681d...	Hello, this is a test message	2025-04-13 11:58:39.120316+0	NULL
16fb94cb-ba77-4a07-addd-488425148f4	5ab6950b-ac81-44d2-b022-681d...	Hi	2025-04-19 16:41:53.090982+0	NULL
1be3abb-6e01-495b-a622-298ba80922	55a4bbab-c2e0-4f7-85e1-e7b291...	I've been feeling anxious late...	2025-04-19 16:33:34.028224+0	NULL
2f200f3a-a251-4c90-9e86-cbf1227260af	55a4bbab-c2e0-4f7-85e1-e7b291...	Hello	2025-04-06 12:08:36.430864+0	NULL
33e7ac3a-0335-4a2b-9719-221a285365ad	5ab6950b-ac81-44d2-b022-681d...	Hello, this is a test message	2025-04-13 11:46:36.003917+0	NULL
37851606-188f-4910-9dd1-c70cfb62d78f	5ab6950b-ac81-44d2-b022-681d...	Hello, this is a test message	2025-04-13 12:07:41.2356227+0	NULL
3790d5bb-1058-4806-9e8-5e902bd9b9	55a4bbab-c2e0-4f7-85e1-e7b291...	Hello	2025-04-06 11:39:51.004653+0	NULL
42c031fc-5c25-47b2-b9eb-d8592c4785d2	5ab6950b-ac81-44d2-b022-681d...	Hello, this is a test message	2025-04-06 09:10:46.464901+0	NULL
44748e0b-4a52-48e1-858e-9e785d8f8d0	5ab6c484-cfc4-4586-bc5d-920c...	Hi	2025-04-26 04:05:37.627662+0	NULL
4c2a78a8-d9bc-440c-a604-cc96da36dd	5ab6950b-ac81-44d2-b022-681d...	Hi	2025-04-13 15:32:30.7779634+0	NULL
4c381bd1-bfb4-4c9e-a03e-5e5c88c109f7	55a4bbab-c2e0-4f7-85e1-e7b291...	The image is a cartoon or styl...	2025-04-13 08:23:34.099841+0	NULL
4d3a94d4-d3f4-49a8-b363-f8b88d14b03	55a4bbab-c2e0-4f7-85e1-e7b291...	What is this: https://www.yout...	2025-04-20 04:39:58.435876+0	NULL

Table Editor

Filter Sort Insert

schema public conversations logs messages profiles user_keys

Search tables...

id uid user_id uid conversation_id uid timestamp timestamptz level log_level category

000518s-6475-4ef4-ae14-csd937f2db88	55a4bbab-c2e0-4f7-85e1-e7b291...	3790d5bb-1058-4806-aea8-5e90...	2025-04-06 11:39:39.168+0	info	chat
00136e6f-698e-42df-94f6-61b2312d85c9	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-13 11:48:09.474+0	info	chat
0013d1d9-63be-441e-96ca-a65eb289e4	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-20 05:47:29.92+0	info	chat
0017b335-d756-413b-bfac-7879340ea86	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-04 17:35:51.1737+0	info	system
001bf94-79ee-4bbf-a37b-cfa77d2d8f53	5ab6950b-ac81-44d2-b022-681d...	NULL	2025-04-06 09:14:51.91+0	info	chat
0020a0de-49cb-477a-9de1-dbbab1ff71f2	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-20 05:09:15.945+0	info	chat
0030c167-d41e-452b-80d7-f96f3c8bbf23	5ab6950b-ac81-44d2-b022-681d...	NULL	2025-04-06 15:28:52.037+0	info	chat
0040cd5-9575-4dee-9b58-e7a80af3c	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-20 07:11:07734+0	info	system
0042f8ds-3ac1-4070-b417-9b94db287697	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-20 06:07:25.366+0	info	system
0045fec6-414e-4374-979f-52139aa4a565	55a4bbab-c2e0-4f7-85e1-e7b291...	67b3181e-b6ae-4889-be74-309c7...	2025-04-13 11:38:40.873+0	info	chat
004615f6-713d-4f5c-8261-5ec94562cbfa	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-06 11:26:46.21+0	info	system
00480s64-dd90-43d4-b7f1-0e952sa0ef8	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-06 12:06:37.51+0	info	system
004e4eae-6c10-4434-9b88-feaf87b542d	55a4bbab-c2e0-4f7-85e1-e7b291...	67b3181e-b6ae-4889-be74-309c7...	2025-04-13 11:43:47.213+0	info	chat
0061fe49-15f2-4512-95b9-a47b74a836d2	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-06 15:42:33.752+0	info	system
0065ead7-721a-4baf-b484-7ccf014a9912	55a4bbab-c2e0-4f7-85e1-e7b291...	NULL	2025-04-04 17:35:51.527+0	info	auth
0068bca9-f4e2-4ac0-9153-0d7803f46a3t	5ab6950b-ac81-44d2-b022-681d...	NULL	2025-04-06 09:12:23.084+0	info	system

Your Activity Log

View and track how you interact with the mental health chatbot

[Return to Chat](#) [View Chat History](#)

[About Activity Logs](#)

This page shows your activity logs in the application. You can use these logs to track your usage and understand how you interact with the mental health chatbot. Your logs help you maintain awareness of your journey and conversations over time.

Chat interactions Authentication events System activities File operations

System Logs

[Your Activity](#)

Filters Export CSV

TIME	LEVEL	CATEGORY	MESSAGE	DETAILS
May 4, 11:12:39 PM just now	INFO	System	Navigated to /logs	No details
May 4, 11:12:34 PM just now	INFO	System	Navigated to /	No details
May 4, 11:12:34 PM just now	INFO	System	Navigated to /	No details
May 4, 11:12:34 PM just now	INFO	Auth	Session restored	No details
May 4, 11:12:34 PM just now	INFO	Auth	Session restored	No details
May 4, 11:12:34 PM just now	INFO	System	Navigated to /	No details
May 4, 11:12:34 PM just now	INFO	Auth	Session restored	No details
May 4, 11:12:34 PM May 4, 11:16:49 PM just now	INFO	System	Navigated to /chat	No details
May 4, 11:12:26 PM just now	INFO	Chat	Successfully fetched conversations	View Details
May 4, 11:10:03 PM 2 minutes ago	INFO	Chat	Added user message	View Details
May 4, 11:10:03 PM 2 minutes ago	INFO	Chat	Successfully fetched messages	View Details
May 4, 11:10:02 PM 2 minutes ago	INFO	Chat	Successfully saved assistant message	View Details
May 4, 11:10:02 PM 2 minutes ago	INFO	Chat	Received response chunk	View Details
May 4, 11:10:02 PM 2 minutes ago	INFO	Chat	Received response chunk	View Details
May 4, 11:10:02 PM 2 minutes ago	INFO	Chat	Received response chunk	View Details
May 4, 11:10:02 PM 2 minutes ago	INFO	Chat	Received response chunk	View Details
May 4, 11:10:01 PM 2 minutes ago	INFO	Chat	Received response chunk	View Details
May 4, 11:10:00 PM 3 minutes ago	INFO	Chat	Successfully fetched conversations	View Details

[Hide Details](#)

Details for log entry

```
{  
  "conversationCount": 33  
}
```

May 4, 11:12:46 PM just now INFO Chat Navigated to /chat No details

May 4, 11:12:03 PM just now INFO Chat Successfully fetched conversations > View Details < Hide Details

May 4, 11:10:03 PM 3 minutes ago INFO Chat Added user message Details for log entry

```
{
  "messageId": "0fbfb9f31-0cd1-48f0-89c1-1bebc4070eee",
  "isEncrypted": true,
  "hasAttachment": false
}
```

May 4, 11:10:03 PM 3 minutes ago INFO Chat Successfully fetched messages > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Successfully saved assistant message > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:02 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:01:01 PM 3 minutes ago INFO Chat Received response chunk > View Details

May 4, 11:10:00 PM 3 minutes ago INFO Chat Successfully fetched conversations > View Details

Autosave off logs-2025-05-04.csv ▾ Search

File Home Insert Page Layout Formulas Data Review View Help

Cut Copy Format Painter Clipboard Font Alignment Conditional Formatting Styles Insert Delete Format Cells AutoSum Fill Sort & Filter Select Add-ins Add-ins

POSSIBLE DATA LOSS Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format. Don't show again Save As...

B10 : fx 2025-04-17T17:42:34.41+00:00

	A	B	C	D	E	F	G
13	0e3579ee-7ae9-4f39-80d4-e0e94e2c7a9f	2025-04-17T17:42:26.19+00:00	info	system	Navigated to /chat	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
14	c14047e9-6b6c-413a-805b-96f5bae45aa9	2025-04-17T17:42:26.182+00:00	info	chat	Successfully fetched conversations	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	{"conversationCount":33}
15	5c688574-bc4b-463c-ac88-a0f31b15c14	2025-04-17T17:40:03.0574+00:00	info	chat	Added user message	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	"messageId":"0fbfb9f31-0cd1-48f0-89c1-1bebc4070eee","isEncrypted":true,"hasAttachment":false}
16	71bf9399-61be-43d6-a487-156ff5f9542e	2025-04-17T17:40:03.0490+00:00	info	chat	Successfully fetched messages	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	{"messageCount":4}
17	74d5957d-b43a-4d4f-8832-1b8ccf3ca8b7	2025-04-17T17:40:02.9014+00:00	info	chat	Successfully saved assistant message	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
18	3d420c74-002c-40d0-ba1f-233c90505fc	2025-04-17T17:40:02.84+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
19	c53440b1-5828-44ed-ac31-39a4251ad8k	2025-04-17T17:40:02.5524+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
20	6ef4fa4d-4c74-4b58-ba01-78ef9f70de7d	2025-04-17T17:40:02.386+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
21	1cbf1d37-6a96-43d0-b770-f4547beff641	2025-04-17T17:40:02.206+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
22	24adfbfd-113c-4f86-8418-40d71127358	2025-04-17T17:40:02.161+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
23	ea3fb1bd-1e4a-4ada-9457-43b85da94935	2025-04-17T17:40:01.99+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
24	833aae741-d8ba-4e11-a024-bc5a5778029	2025-04-17T17:40:00.372+00:00	info	chat	Successfully fetched conversations	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
25	8180d6c8-0337-42f3-bf84-0fe4ab1721a7	2025-04-17T17:40:00.214+00:00	info	chat	Using gemini API for response generation	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
26	072d4fffc-0b71-4e41-a4c3-8858c38a9cfa	2025-04-17T17:39:53.18+00:00	info	chat	Added user message	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
27	f1b0e456-7ac9-4a87-b07f-78764e99917a	2025-04-17T17:39:53.175+00:00	info	chat	Successfully fetched messages	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
28	c3391ad5-3878-430b-b7a8-088fe64466f5	2025-04-17T17:39:53.0174+00:00	info	chat	Successfully saved assistant message	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
29	e9f52500-159e-440f-87aa-6351ef1fb0d6c	2025-04-17T17:39:52.939+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
30	86e1f28b-070c-47f8-884d-75baffcc1c5f	2025-04-17T17:39:52.8974+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
31	a83231ea-e01f-4fc8-b8d1-1a3b7106e43a	2025-04-17T17:39:52.77+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
32	f63b5d67-0f76-47aa-86a7-6702025b6701	2025-04-17T17:39:52.60+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
33	50d0b77c-3bdc-4179-b490-0fe4ab4b3365	2025-04-17T17:39:52.683+00:00	info	chat	Received response chunk	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
34	e5f6d130-3689-4d58-9688-304-0fe4ab49f6	2025-04-17T17:39:50.569+00:00	info	chat	Successfully fetched conversations	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
35	7e9e329e-17a0-4de8-a811-9b08e0f3a306	2025-04-17T17:39:50.348+00:00	info	chat	Using gemini API for response generation	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
36	b3110735-e7b7-413d-be9f-3d4f1633b732	2025-04-17T17:39:30.878+00:00	info	system	Navigated to /chat	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
37	ae584cf6-9ca5-423e-81b0-a90184b65674	2025-04-17T17:39:30.868+00:00	info	chat	Successfully fetched conversations	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	
38	775b6380-7f11-4b1e-a3d2-0701e326358	2025-04-17T17:38:19.479+00:00	info	system	Navigated to /	55a4bbab-c2e0-41f7-85e1-e7b291fc35de	{"conversationCount":32}

logs-2025-05-04

Table Editor

schema public

messages

id	user_id	role	content	timestamp
1dd7b0a6-b677-4449-b414-4c7ee7d9f33	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-19 16:37:57.293
2036df57-0aae-4585-ba15-333ea5e33329	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-26 16:10:27.689
218e2016-6365-47fd-8936-45f0d01e3e31	5ab6950b-ac81-44d2-b022-681...	user	[Encrypted Message]	2025-04-13 15:25:11.379+
2356d242-a7f2-4e77-a323-0bad0bb842	55a4bbab-c2e0-4ff7-85e1-e7b291...	user	[Encrypted Message]	2025-04-13 11:31:31.288+
23d097f3-e39b-491b-8d20-c854c17c016c	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-06 12:20:25.512
257e0b2d-13a7-4e40-bff5-258a61206asad	55a4bbab-c2e0-4ff7-85e1-e7b291...	user	[Encrypted Message]	2025-04-20 05:48:02.07
279bfd54-671e-4db1-ba50-cdde91c303f	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-06 11:39:45.506
2a629603-229a-4a4a-9c2c-ca5854df27el	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-26 16:08:20.521
2b64f90c-44ae-4142-8dc6-ba8asfa46fb	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-19 16:39:03.204
2b7e253f-bc8b-4bdc-874f-1ce0217be456	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-13 10:05:35.724
2bc79c94-e51c-447f-ba55-6fc2be25e93	55a4bbab-c2e0-4ff7-85e1-e7b291...	user	[Encrypted Message]	2025-04-06 11:36:23.438
2ec91cae-d107-4935-8637-a3d4fb6cb	151d51b_b69e-441e-88f1-530204...	user	[Encrypted Message]	2025-05-02 06:45:35.96
308f271-783d-4733-a64d-bfa3779a8e54	55a4bbab-c2e0-4ff7-85e1-e7b291...	user	[Encrypted Message]	2025-04-19 16:33:28.261
3430e4f0-3433-4760-a4d4-4363f767045	55a4bbab-c2e0-4ff7-85e1-e7b291...	assistant	[Encrypted Message]	2025-04-06 11:36:25.785
35e3cc5c-7043-41eb-8217-7612fa13d2a	5ab6950b-ac81-44d2-b022-681...	user	[Encrypted Message]	2025-04-06 15:39:52.682
36a1048c-67ec-4682-b351-0e4dc1se671b	d3b6c484-cfcf-4586-bc5d-920c...	user	[Encrypted Message]	2025-04-06 15:13:30.841

Table Editor

schema public

logs

id	m_id	is_encrypted	encrypted_content	nonce
1dd7b0a6-b677-4449-b414-4c7ee7d9f33	8-4806-aee8-9e50...	TRUE	TU4C0/XJVKT+dSaDjQu8DwfSghcJbM	JNZZ4uale3JuJ/qSliqhP9R4wZhd...
2036df57-0aae-4585-ba15-333ea5e33329	4379-83e-6352b...	TRUE	U8CocbyBtk45QZnIh1ekpsMeFoXGTwvfl	TCsMwAGLkTlef8vaC2-Wndg1aRqAYm...
218e2016-6365-47fd-8936-45f0d01e3e31	4-379-83e-6352b...	TRUE	tqdtDtJgcesSaZO/Vfq7q/WqnHC50k+v+	pAV68Gz9XSrKUdx4+v9BjVzdWHzqU...
2356d242-a7f2-4e77-a323-0bad0bb842	4d80-8f88-d6876...	TRUE	ya+oQFHNw+NHx+*tOQFNc2hjyHzfzBEY	gRPSmfXD6K1kpG8G3t5WCWbjmWejkC...
23d097f3-e39b-491b-8d20-c854c17c016c	4926-9d62-689745...	TRUE	t9clgyNgg8VKZO3MBz2wIzYUsfIpXif...	4j/vna3x1RYnrgp496jh03vTuXvWcPT...
257e0b2d-13a7-4e40-bff5-258a61206asad	4c9e-bc38-b9562...	TRUE	B7hxYEaoCcGpnOeZTMMLM+K9Rhzm	BsQEf6DvITUSN2KfCYZQdKMKh+EqpTe...
279bfd54-671e-4db1-ba50-cdde91c303f	8-4806-aee8-9e50...	TRUE	mssKE+r0Nrxb8siOsds1Tm3T7AkvYN8	8SXEIYOPM9EJqj5TOHmlRTR1K2b+ASGc...
2a629603-229a-4a4a-9c2c-ca5854df27el	443e-accd-ed8272...	TRUE	9duIMosQoMvn/P7vGyZbdZ-PE7mkul	rlmlqSgtf9gFjJqJc66ZBicD++pZM...
2b64f90c-44ae-4142-8dc6-ba8asfa46fb	405c-9310-2d22...	TRUE	KFj2lRvBvcOnWk+eBS9L0GvTgBrxjK...	a2gpnNsQfSgsS6JoSP/KPR4fWLMjrl...
2b7e253f-bc8b-4bdc-874f-1ce0217be456	4889-be74-3097...	TRUE	eQwhpSFlikcItteM2Woqoc4c59sjIK3kl	Bym8Ea6U69Ja8t7fgXvcfnD87dW...
2bc79c94-e51c-447f-ba55-6fc2be25e93	467e-b6fe-56c12...	TRUE	OxtkldtENROttRpxz9JlPqT9Q1	nAhJSpJbqXy/BGqljrqXp+AwTrp25...
2ec91cae-d107-4935-8637-a3d4fb6cb	4881-a64d-024ba...	TRUE	c0SQKOrct7ly33BTHpW2gQ4LHehkHF	5FPH6EtaysoEDuOBllaoNXsAJYxKhU...
308f271-783d-4733-a64d-bfa3779a8e54	495b-a622-298b9...	TRUE	L5wpRvZMSkmr+Mmdrdqmt0Rr0OS3.	CSoxvMYhCjvLCDL2AT9+Otd9at1Neo...
3430e4f0-3433-4760-a4d4-4363f767045	467e-b6fe-56c12...	TRUE	YouA7/jpmJ+UdCA23qkxyQ9Dtz9CdJf8f	E8vko5Vzc4H9WgaxazplkR6PUqjYvU...
35e3cc5c-7043-41eb-8217-7612fa13d2a	47ab-bbb5-8a142...	TRUE	ZQTrnOp9yJskXNDEXM69mgPqvDZ	S1bvpmlb3JKXYta8N5NDRPPFvN3J.pBq...
36a1048c-67ec-4682-b351-0e4dc1se671b	4-4f38-a426-1d542...	TRUE	80ZJ7KX0Bg877Nexip8nMIKhyu0lsv7r7	swD4xAt3jqQ56wyzplshP6Ecnn99N+
36eac07-6b2e-45d0-80d1-6e3234a46f1	4074-bd9-actf7...	TRUE	gmEJ2l0kQhRahshSW500/Y6kFOy	leBzldljs+gg2dlng3b3jPtukwHxJurlg6...
37810bd7-c657-4369-a01e-002f24d31ba	47ec-a0bb-db405...	TRUE	EONm18BfFYW/wkGRborpHPvh1ka6d+XV	byrhko5HrKAYDEkiHawdpExeuJurlg6...
39e1846-bcca-4971-9960-6ca9650341ff	4889-be74-3097...	TRUE	s8Jz0YpQlcuyUDC3yuztA2Sjwco67YJAx	eslrFEHg6MX/jyaMrCe6oS2vtQvbe/2u...
39e1846-bcca-4971-9960-6ca9650341ff	4889-be74-3097...	TRUE	F0vriNkTAR6v6KOAr95/1hwms77r	DAvIVnP1PbYtmv2TPRmOT15Vvn9t...

The screenshot shows two separate database table editors within a single interface. Both tables are part of the 'mentalhealth' schema in 'krishiv-patel's Org'.

Table Editor 1: profiles

id	username	full_name	avatar_url	updated_at
151d51b-b69e-441c-88ff-d3020f4...	ayushsingh22	NULL	NULL	2025-05-02 06:06:22.35
55a4bbab-c2e0-4ff7-85e1-e7b291...	krishivpatel21	NULL	https://i.ibb.co/60MvzsX/glitched-imag...	2025-04-30 05:36:42.521
5ab6950b-ac81-44d2-b022-681d...	yagnap32	NULL	NULL	2025-04-06 08:54:07.571
d3b6c484-cfc4-4586-bc5d-920c...	krishivpatel27	NULL	NULL	2025-04-06 08:23:33.281

Table Editor 2: user_keys

id	user_id	public_key	created_at	updated_at
cb630bff-9e21-467a-9da2-ebf38045dc6	5ab6950b-ac81-44d2-b022-681d...	369OSM/rRNN7UlkZbjFxQu5nloWPtD	2025-04-06 08:55:46.083+00	2025-04-06 08:55:46.092388+
d95d9ae1-8325-42b8-bd89-2a86fc0ea9f7	55a4bbab-c2e0-4ff7-85e1-e7b291...	JY7WR6KdnFHAFG/JyufEIPLnPbWHYq	2025-03-29 05:38:06.959+00	2025-03-29 05:38:18.067688+
ed53a0e2-9a5c-439c-91a-8346537284af	d3b6c484-cfc4-4586-bc5d-920c...	r7g2bxz4aGclgphgpEP/K3816q4xYpNw!	2025-04-06 12:36:36.576+00	2025-04-06 12:36:37.630617+01

mentalhealth

Table Editor

Viewing protected schema
This schema is managed by Supabase and is read-only through the table editor.

[Learn more](#)

Search tables... ▾

buckets migrations objects s3_multipart_uploads s3_multipart_uploads_parts

id	uid	bucket_id	text	name	text	owner	uuid	created_at	timestamp
0346d000-fdce-451c-bdd3-13e528892b60			mentalhealth	67b3181e-b6ae-4889-be74-309c75f67605	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-13 15:45:42.100000	
176fa4f4-1ef7-4b5d-a14f-f3a683c7f272			mentalhealth	Nov_1.xlsx	NULL			2025-04-13 08:45:17.443000	
180e9d16-6331-457e-b156-a80595fb9567			mentalhealth	7b1c5094-2f16-443e-accd-ed8272350190	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-26 16:10:33.448000	
1817e50a-73f5-4490-a61-f5b097e965e2			mentalhealth	a1eb2823-1b27-405c-9310-2d2d07f97e3/	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-19 16:38:53.793000	
2d0ea72a-acfa-4590-82a0-f780af63985			mentalhealth	test-uploads/1f4453712775-Nov_1.xlsx	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-13 09:38:49.897000	
378a7b5d-0617-46c9-a9c3-dc1981865c07			mentalhealth	7b1c5094-2f16-443e-accd-ed8272350190	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-26 16:10:43.681000	
403aadda-cs43-4a34-a63f-6b86ca05e6b			mentalhealth	0a427478-9e0d-4a54-b9a9-9bba-c59561	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-20 06:16:34.540000	
9696c09e-0c33-41fc-9927-6324b974c07e			mentalhealth	a1eb2823-1b27-405c-9310-2d2d07f97e3/	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-19 16:37:55.400000	
b53ffe93-1f02-434e-b7cb-3fd5cc24b46			mentalhealth	67b3181e-b6ae-4889-be74-309c75f67605	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-13 11:40:15.151000	
c6e3c0bd-d6db-48e5-bb64-03de40df82			mentalhealth	add27d14-253d-4881-a64d-024bab30fe26	151d151b-b69e-44fc-88f1-d3020f4dfece			2025-06-02 06:45:20.712000	
d54bbe90-62ae-47bc-b0ad-76ac29779			mentalhealth	c3476e78-0733-4291-ba11-9f637d7366/	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-13 09:45:15.746000	
e1867455-adff-445c-93d7-a4d5b582d5fa			mentalhealth	709dd607520-4000-9683-0ec6b6f518	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-20 06:09:00.526000	
f02d3709-9da1-4000-9ddf-1840f3a0c5b6			mentalhealth	588f2db2-b167-47ec-a0bb-d40576a453/	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-20 06:03:30.430000	
fe22309-994b-47c2-870c-faba39d235b			mentalhealth	b7a39c0-7b0-4c0e-a6ee-52785b69cbc5	55a4bbab-c2e0-41f7-85e1-e7b29fffc35de			2025-04-19 16:31:44.000000	

7

CHAPTER: 8 CONCLUSION AND FUTURE WORK

CHAPTER 8 CONCLUSION AND FUTURE WORK

In conclusion, the Mental Health Counseling Chatbot project has successfully demonstrated the feasibility and effectiveness of using Django combined with open-source AI models to deliver virtual mental health support. The system meets critical requirements for secure user authentication, robust session management, and real-time interaction processing while ensuring data integrity.

Looking ahead, future work on the project could focus on several key areas:

- **Enhanced AI Capabilities:** Further refinement of the AI model could improve response accuracy and context sensitivity, potentially incorporating machine learning techniques to better personalize counseling responses.
- **Feature Expansion:** Integration with additional APIs (such as mental health resource directories or telemedicine services) could broaden the scope of support offered to users.
- **Scalability and Performance:** Ongoing optimization, including the use of containerization and orchestration tools, would allow the system to handle larger user bases and more complex interactions.
- **User Experience Enhancements:** Future iterations may incorporate advanced user interface improvements, including multi-language support and accessibility features, to better serve a diverse audience.
- **Data Analytics and Reporting:** Enhanced analytical tools could provide deeper insights into session data, helping clinicians refine therapeutic approaches and measure counseling outcomes more effectively.
- **Security and Compliance:** Continuous monitoring and regular updates are essential to maintain security, particularly as the system scales and encounters evolving cyber threats.

CHAPTER: 9 REFERENCES

CHAPTER 9 REFERENCES

1. The project deliverables include detailed documentation of the underlying database architecture.
2. Software Requirements Specification (SRS) Outline – G14. Project documentation provided as part of the project deliverables.
3. Mental Health Counseling Chatbot Website. Retrieved from <https://mentalhealthcounsellingchatbot.netlify.app/>
4. Django Software Foundation. *Django Documentation*. Retrieved from <https://docs.djangoproject.com/en/stable/>
5. LMSTUDIO API Documentation for Llama 3.2 and other Open Source models. (Internal documentation provided by LMSTUDIO)