

Intelligent Mental Health Companion AI-Based Support & Personalized Guidance

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Abstract : This project aims to develop a Flask-based personal portfolio website that effectively showcases projects, technical skills, and a contact form for seamless communication. The website will feature a clean and responsive user interface, allowing visitors to explore the user's expertise and past work efficiently. The Projects section will display completed and ongoing projects with descriptions, technologies used, and links to repositories, while the Skills Showcase will highlight technical and soft skills through interactive elements. A contact form will enable visitors to send messages directly, with Flask handling email processing without database integration. The website will be built using Flask (Python), HTML, CSS, and JavaScript, ensuring a lightweight yet dynamic experience. Future enhancements may include features like a blog section, real-time analytics, and an admin panel for easy content management. This portfolio will serve as a professional platform for self-branding, job applications, and networking in the tech industry.

Keywords: Artificial Intelligence (AI), Mental Health Companion, Natural Language Processing (NLP), Sentiment Analysis, Chatbot, Flask Framework, Personalized Guidance, Emotional Well-being.

1.INTRODUCTION

A personal portfolio website is a professional online platform used to showcase a person's skills, projects, and achievements. It helps create a strong digital presence and improves career opportunities in the competitive tech industry. This project develops a portfolio website using Flask, a lightweight Python web framework, along with HTML, CSS, and JavaScript. The website includes sections such as Projects, Skills, and Contact for easy navigation. The Projects section displays completed work with descriptions and links to repositories or live demos. The Skills section highlights technical and soft skills in an attractive format. The Contact form allows visitors to send messages directly to the user. Flask handles backend processing and form submissions efficiently without requiring a database. The website is responsive, interactive, and visually appealing on all devices. It serves as a tool for self-promotion, networking, and job applications. The main objective is to build a functional and user-friendly portfolio that clearly presents the user's expertise and accomplishments.

2.LITERATURE SURVEY

Several researchers have contributed to the development of AI-based mental health support systems and web applications.

Mehta and Patel (2020) reviewed frontend technologies such as HTML5, CSS3, JavaScript, React.js, and Vue.js, highlighting the importance of responsive and interactive web design.

Reddy and Chandra (2022) studied the Flask framework and explained its simplicity, flexibility, and suitability for lightweight and scalable web applications.

Gupta and Verma (2021) analyzed web application security challenges, including XSS, SQL injection, and data protection techniques for secure web development.

Narayan and Reddy (2020) explored current trends in portfolio website design, focusing on aesthetics, usability, project showcases, and interactive features.

Sharma and Aggarwal (2023) investigated contact form integration and email handling in Flask applications, emphasizing secure form submission and communication features.

3.METHODOLOGY

The proposed system is designed to develop an AI-based mental health companion application using Python, Flask, HTML, CSS, and JavaScript. The architecture includes six major modules: User Interface Module, Backend (Flask) Module, Emotion Analysis Module, Personalized Guidance Module, Responsive Design Module, and Flask Routing & Template Rendering Module.

The User Interface Module focuses on creating a clean and user-friendly frontend with navigation menus, chat windows, input forms, and response sections. The Backend (Flask) Module manages server-side operations such as routing, form handling, user input processing, and dynamic content rendering.

The Emotion Analysis Module uses Natural Language Processing and sentiment analysis techniques to detect emotions such as stress, anxiety, sadness, and happiness from user text. The Personalized Guidance Module generates supportive responses, motivational messages, relaxation techniques, and coping strategies based on the detected emotional state of the user.

The Responsive Design Module ensures that the application works efficiently on desktops, tablets, and mobile devices with proper layout adjustments. The Flask Routing & Template Rendering Module connects frontend pages with backend logic and enables smooth communication between different modules of the system.

Finally, the system is tested using different user inputs to evaluate accuracy, response quality, emotional analysis performance, and overall user satisfaction.

4.RESULT

The Intelligent Mental Health Companion was successfully developed and tested as a web-based application. The system accepts user input, analyzes emotional states such as stress, anxiety, sadness, and happiness, and provides personalized guidance in real time. It generates supportive responses, motivational messages, and coping strategies based on the detected emotion. The application was tested with various inputs and produced accurate and relevant suggestions. The user interface is simple, interactive, and responsive across desktop and mobile devices. The Flask backend handled routing and response generation efficiently. The results demonstrate that the system effectively provides immediate emotional support and promotes mental well-being.

The Emotion Analysis Module successfully identified user emotions using Natural Language Processing techniques and improved the quality of interaction between the user and the system. The Personalized Guidance Module provided suitable recommendations such as meditation tips, relaxation activities, positive affirmations, and stress management techniques according to user emotions.

The Responsive Design Module ensured smooth performance and proper layout adjustments on different screen sizes and devices. The chatbot interface enabled continuous communication and improved user engagement through interactive conversations. The backend system efficiently managed user requests, processed data quickly, and generated responses without delay.

The overall performance of the proposed system shows that AI-based emotional assistance can help users manage stress and emotional imbalance effectively. The project demonstrates the practical implementation of Artificial Intelligence, Machine Learning, and NLP technologies in the healthcare and mental wellness domain.

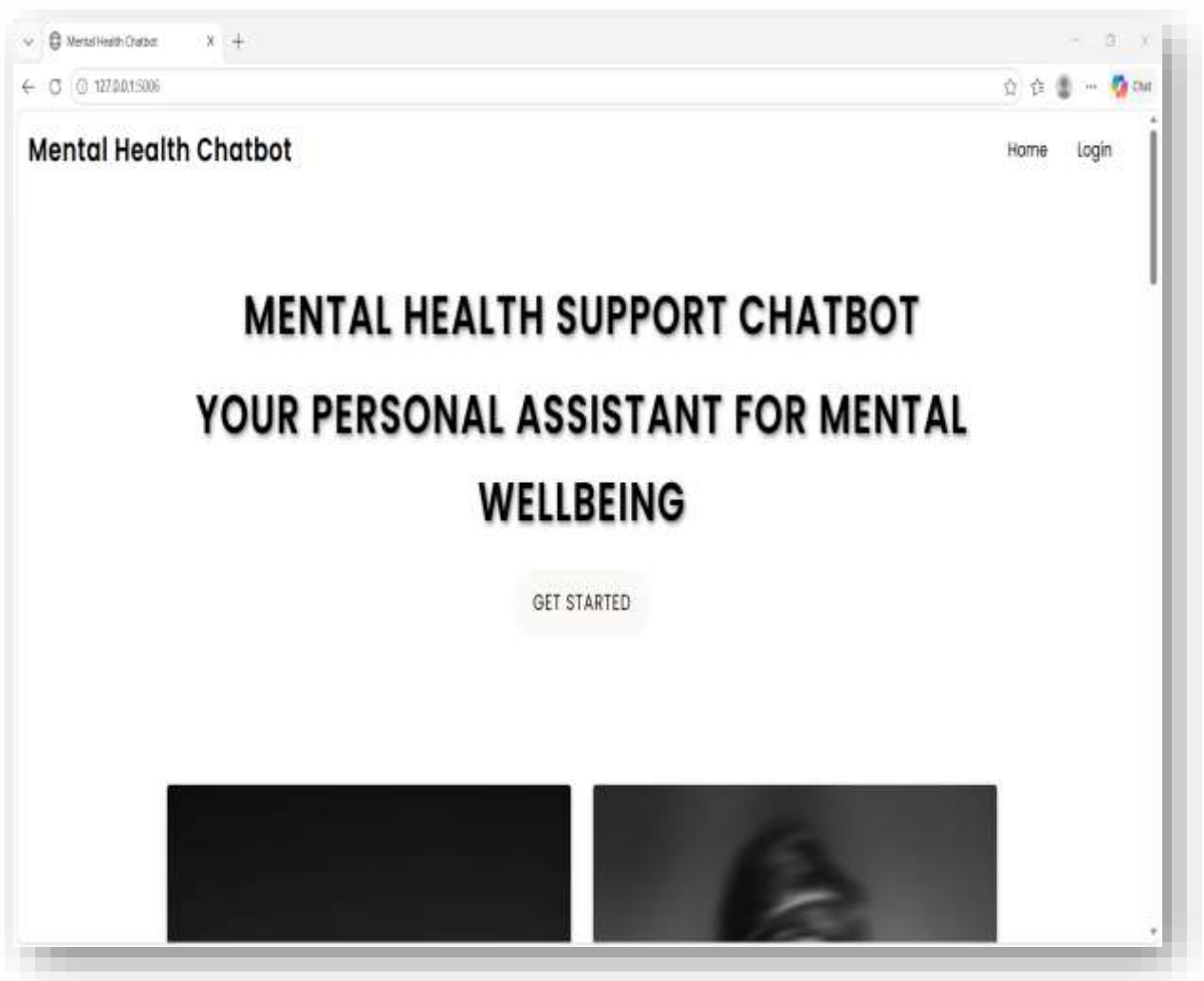


Figure: Home Page of Mental Health Support Chatbot

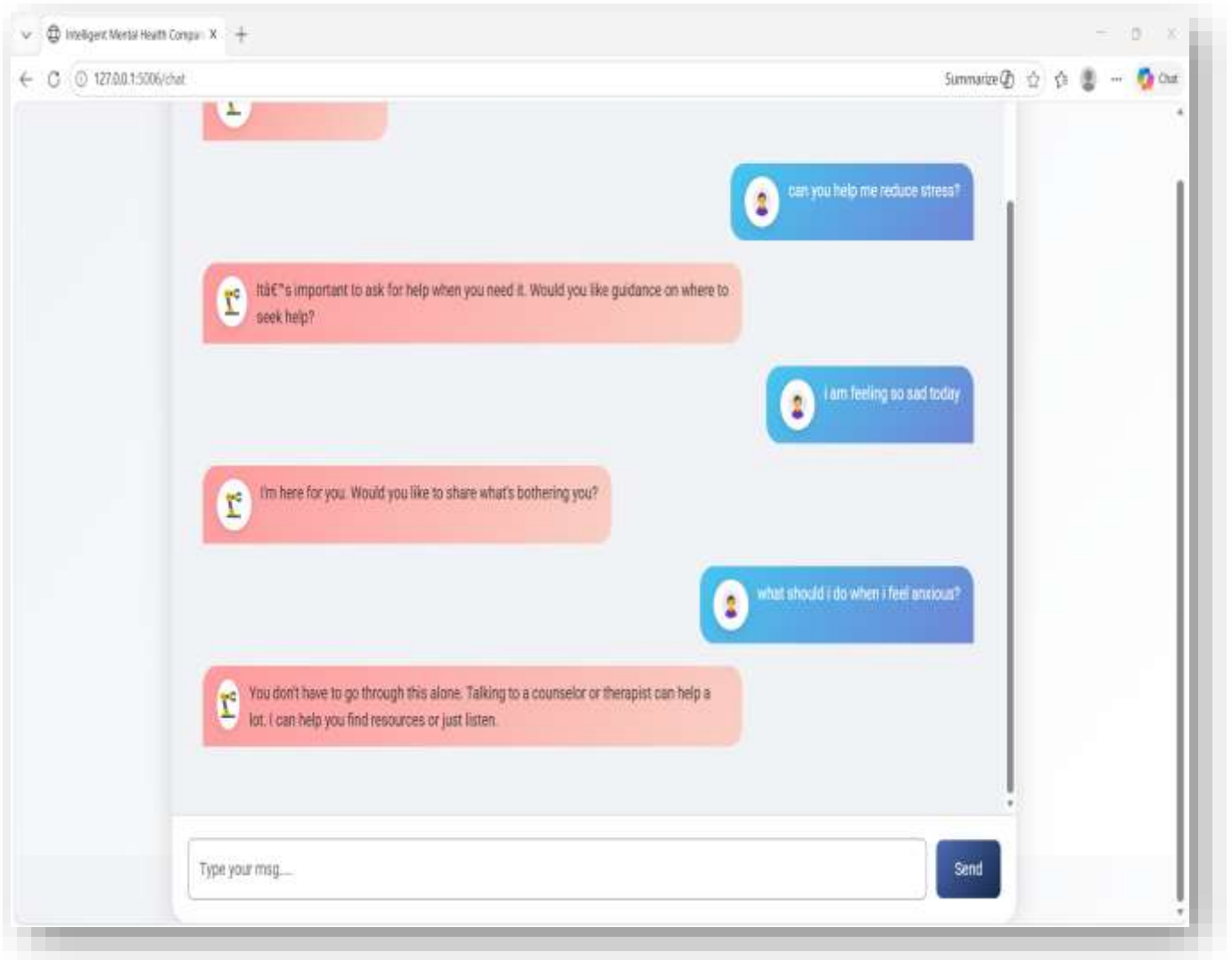


Figure: Chatbot Conversation Interface

5.CONCLUSION

In conclusion, the Flask-based personal portfolio website offers a streamlined approach for professionals to showcase their skills and projects while enabling easy communication with visitors. With its clean and responsive design, the website will serve as a powerful tool for self promotion and professional networking. The use of Flask for backend email handling ensures a lightweight yet dynamic experience without the complexity of a database. Looking ahead, future enhancements such as a blog, analytics, and an admin panel will further elevate the website, making it an even more comprehensive platform for career growth. This portfolio is a valuable asset in building a strong digital presence in the tech industry.

6.REFERENCE

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