Telehealth Platform - Detailed Report

Team Members:

1. Krish Dave - Team Lead, Frontend:

- Contributions:

- Led frontend development, ensuring a cohesive and user-friendly interface.

- Implemented the Unified Chat Interface as the primary gateway for patient interactions.

- Ensured cross-platform accessibility, allowing users to seek medical assistance from their preferred devices.

- Collaborated with the backend team to integrate frontend components seamlessly.

- Frontend development for JWT authentication.

2. Vaibhav Mittal - Frontend:

- Contributions:

- Implemented responsive design for both web and mobile platforms, enhancing user experience.

- Integrated severity-based routing features, facilitating the platform's ability to direct interactions based on the patient's condition.

- Collaborated on the unified chat interface, ensuring a smooth and interactive communication experience.

3. Chirag MV - Chatbot:

- Contributions:

- Explored initial solutions like DialogFlow and Rasa for chatbot implementation, showcasing adaptability.

- Explored the OpenAI API, demonstrating a commitment to finding the best tools for the job.

- Implemented the chatbot using customized Botpress, showcasing innovation in overcoming challenges.

4. Valmik Belgaonkar - Backend:

- Contributions:

- Led backend development, implementing robust server logic for routing and handling interactions.

- Implemented severity-based routing, directing patients to appropriate levels of medical expertise.

- Integrated intermediary connection and live summary features, enhancing the platform's versatility.

- Implemented JWT authentication for secure user authentication, prioritizing user privacy.

- Backend development for JWT authentication.

- Backend development for OTP verification.

- Backend development for Admin Panel.

Key Features of the Telehealth Platform:

1. Unified Chat Interface:

- Explanation:

- Serves as the central hub for patient interactions, offering both human and chatbot interactions for a comprehensive user experience.

- Provides a user-friendly interface upon login, ensuring a seamless connection between patients and the platform.

2. Severity-Based Routing:

- Explanation:

- Assesses the severity of the patient's condition, allowing the platform to offer general advice through chatbots for less serious cases.

- Directs critical cases to the right medical professionals, ensuring timely and appropriate assistance.

3. Intermediary Connection:

- Explanation:

- Connects patients to qualified intermediaries (nurses, medical assistants) when necessary, providing preliminary guidance.

- Enhances the platform's ability to handle a wide range of medical scenarios, catering to varying levels of urgency.

4. Live Summary Sharing (optional):

- Explanation:

- Generates a live summary of patient information during interactions, aiding in smooth transitions between different levels of medical expertise.

- Provides doctors with valuable information, contributing to informed discussions during critical cases.

5. Doctor Connect for Critical Cases:

- Explanation:

  - Facilitates direct connections to doctors through real-time audio or video calls.

  - Enables doctors to access live summaries, fostering informed discussions and efficient decision-making during critical situations.

6. Cross-Platform Accessibility:

- Explanation:

  - Ensures users can access the platform through both mobile and web applications.

  - Enhances user convenience, allowing medical assistance from the comfort of their chosen device.

7. Regional Language Support (optional):

- Explanation:

  - Utilizes Google Translate API to enable multilingual capabilities.

  - Promotes inclusivity, ensuring users can seek medical assistance in their regional languages.

8. Challenges Faced and Solutions:

- Chatbot:

  - Initial challenges with DialogFlow and Rasa led to the adoption of Botpress, a customizable open-source solution.

  - Botpress customization allowed the team to tailor the chatbot to the specific needs of the telehealth platform.

- Chatroom:

  - Challenges with socket.io integration led to the adoption of ChatEngine.io, an open-source chat feature.

  - Ongoing work on backend storage for chat history showcases a commitment to improving the platform's functionality.

- Video:

  - Initial challenges with Agora integration led to the adoption of ZEGOCLOUD for seamless video calling.

  - ZEGOCLOUD's features, such as easy integration and reliable video calling, contribute to a positive user experience.

- Authentication using JWT:

  - Implementation of JWT authentication ensures secure user authentication without compromising user information.

  - Key benefits include secure transmission of information and enhanced user privacy.

  - Backend development for JWT authentication.

- One-Time Password (OTP) Verification:

  - Implementation of OTP verification for secure patient registration.

  - OTPs are sent via email, ensuring a reliable and secure delivery mechanism.

  - Backend development for OTP verification.

- Admin Panel:

  - Implementation of an Admin Panel to manage user access, permissions, and system functionalities.

  - Granular control over user access through the use of groups.

  - Functionality includes groups management, user permissions, and user management.

- Token Blacklist:

  - Management of blacklisted and outstanding tokens for the JWT Authentication system.

  - Functionality includes viewing and managing tokens that are no longer valid, as well as monitoring currently active tokens.

- Verify Authentication App: OTPs:

  - Focuses on the Email Verification system, specifically managing OTPs (One-Time Passwords).

  - Although not integrated with the frontend, lays the groundwork for a secure authentication system.

  - Functionality includes OTP management and tracking the status of email verifications.