

SMART BLOOD BANK (SANJEEVANI)

Fortex36 A National Level 36 hours Hackathon



Team Name : *NEURAL SQUAD*

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Date of Submission: 29/01/26

Project Website Link: <https://v0-language-box-dialog.vercel.app/>

GitHub Repository link :

<https://github.com/konchadarupesh-gif/Sanjeevani>

2. Abstract

In emergency healthcare situations, the availability of blood is often not the main issue; rather, the lack of coordination, real-time information, and awareness causes delays that can cost lives. The Smart Blood Bank project, also called Sanjeevani, aims to address this critical problem by providing a centralized, technology-driven platform that connects donors, blood banks, and patients efficiently.

The system offers features such as blood availability information, donor awareness, multi-language support, and AI-assisted interaction to improve accessibility and response time during emergencies. The project was validated through real-world news analysis and a rapid survey of over 60 people conducted within 24 hours. Within the limited hackathon duration, a functional web-based solution was developed and deployed.

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3. Problem Statement

Blood emergencies require immediate action, but existing systems are often fragmented, manual, or difficult to access during critical moments. Patients and hospitals struggle to quickly find suitable blood donors or nearby blood banks, while potential donors lack proper guidance and motivation.

Major challenges include lack of real-time information, language barriers, absence of awareness regarding donation eligibility, and poor coordination between stakeholders. These limitations result in delays that can become life-threatening. The Smart Blood Bank project addresses this gap by offering a unified, accessible, and intelligent platform.

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4. Proposed Solution

The Smart Blood Bank system is designed as a user-friendly web platform that simplifies the process of blood donation and emergency requests. Users can interact with the system using an AI-powered health assistant, check eligibility criteria, and receive guidance in their preferred language.

Key features include:

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- AI-based health assistant bot for instant guidance
 - Blood donation eligibility criteria explanation
 - Multi-language support for wider accessibility
 - Automated popup dialog box after 60 seconds of inactivity
 - AI assistant direct command shortcut for faster interaction
 - Live GPS tracking to locate nearby blood banks or donors

These features collectively enhance user experience, reduce response time, and improve coordination during emergencies.

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5. Technology Stack

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- **Frontend Development:** AI-assisted UI generation using v0 by Vercel
 - **Framework:** React / Next.js (generated and deployed via v0)
 - **Hosting & Deployment:** Vercel cloud platform
 - **AI Integration:** AI-powered assistant for health guidance and user interaction
 - **Localization:** Multi-language support (7 languages)
 - **Location Services:** GPS-based live location tracking

These technologies were chosen for rapid development, scalability, and ease of deployment within the hackathon timeframe.

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6. System Architecture and Design

The system follows a web-based architecture where the frontend interacts directly with users. The AI assistant module handles user queries and commands. Location services provide live GPS-based data for nearby blood banks. Multi-language support ensures inclusivity, while UI automation features improve engagement.

The platform is hosted on a cloud environment to ensure availability and fast access.

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7. Implementation Details

The project was implemented using AI-assisted development tools to quickly generate and customize user interfaces. Core logic such as the health assistant bot, eligibility criteria checks, inactivity popup dialog, AI command shortcuts, language switching, and live GPS tracking were integrated and tested.

The website structure was organized to ensure smooth navigation and quick access to emergency-related information.

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8. Results and Demonstration

By the end of the hackathon, a functional and deployable web platform was successfully developed. The system demonstrates real-time interaction through the AI assistant, supports multiple languages, and provides live location-based assistance. The project effectively showcases how technology can improve blood donation awareness and emergency response.

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9. Challenges Faced

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- Limited time during the 36-hour hackathon
 - Integrating multiple features such as AI assistance and GPS tracking
 - Ensuring usability across different languages
 - Learning and adapting to AI-assisted development tools quickly
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These challenges were overcome through teamwork, rapid learning, and efficient task distribution.

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10. Future Scope

Future enhancements may include full backend integration with hospital databases, real-time donor availability tracking, secure authentication, mobile application support, and integration with government or NGO blood banks for wider impact.

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11. Conclusion

The Smart Blood Bank (Sanjeevani) project successfully demonstrates how modern web technologies and AI-assisted tools can be used to solve critical healthcare problems. The solution addresses real-world challenges related to blood availability and emergency response, making the system practical, accessible, and impactful within the hackathon scope.

GitHub Repository link :

<https://github.com/konchadarupesh-gif/Sanjeevani>

12. References

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- Vercel Documentation
 - v0 by Vercel Platform
 - Blood donation awareness resources
 - Lovable
 - Chat-gpt
 - Replit ai
 - Bolt
 - Times of india
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GitHub Repository link :

<https://github.com/konchadarupesh-gif/Sanjeevani>
