

Life Link – Connecting Blood Donors to Those in Need

1.Introduction:

Life Link is a socially-driven platform designed to save lives by connecting blood donors with patients in urgent need. By allowing users to register as donors, search for compatible donors nearby, and post emergency blood requests, Life Link ensures that critical cases are prioritized and help reaches faster.

2.Objectives

- Enable users to register as blood donors with details such as blood type, location, and availability.
- Provide a real-time search system to find compatible donors nearby.
- Allow patients/hospitals to post emergency requests.
- Ensure secure authentication and data protection.

3. Technologies Used

Backend Framework: Fast API (Python)

Database: MongoDB (donor geo-search) + MySQL (relational data)

Authentication: JWT-based secure login/register

Version Control: GitHub (zennial pro)

4.Features

- 1. User Registration & Login**
- 2. Donor Module – register details and availability**
- 3. Emergency Request Module – hospitals can request donors**
- 4. Search & Match – geo-location + AI-based priority scoring**
- 5. Notifications (future) – Email/SMS alerts**

5. System Architecture

Frontend → Backend API (FastAPI) → Database (MongoDB + MySQL) matching Donor List.

6. Workflow:

1. Donor/User registers → JWT authentication
2. Donor details saved
3. Patient posts emergency request
4. System finds and scores best donors
5. Matching donors displayed

7. Benefits

- Faster response in emergencies
- Easy donor search by blood type and location
- Scalable for large user base

8. Future Enhancements

- Mobile App integration
- Real-time notifications
- Hospital system integration
- Donor rating system
- Blockchain-based records

9.Conclusion

LifeLink addresses the life-saving challenge of connecting blood donors with patients efficiently. By leveraging modern technologies, it ensures a reliable, secure, and fast solution to bridge the gap in emergency blood needs.



ZennialPro⁺