**2. SOFTWARE REQUIREMENTS SPECIFICATIONS (SRS)**

This section serves as the technical blueprint for the BloodLink system, detailing its core capabilities and quality standards. It is divided into two key areas: Functional Requirements, which specify *what* the system will do for its users, and Non-Functional Requirements, which define *how well* the system must perform. The comprehensive Project Requirement Document (PRD), which forms the basis for these specifications, is accessible via the link below.

**Project Requirement Document (PRD) Link:** <https://olive-koi-fe3.notion.site/Project-Requirement-Document-PRD-248c4085a9578042a52cf9fdea218ae4?source=copy_link>

**2.1 Functional Requirements**

The system's functionalities are designed around the specific needs of its users, ensuring that each role is equipped with the necessary tools to perform their tasks effectively.

**1. For the Donor** To create an engaging and seamless experience for donors, the system will offer the following capabilities:

* **Authentication & Profile Management:** Donors can create a secure personal profile , log in to their account , reset a forgotten password , and easily update their personal information or profile photo.
* **Appointment Scheduling:** A user-friendly interface allows donors to find nearby donation centers, book a donation appointment , and cancel if their plans change.
* **Information and Impact:** Through a personal dashboard, donors can view their eligibility status for future donations and see the positive impact their contributions have made on the community.
* **Urgent Notifications:** Donors can opt-in to receive critical notifications for urgent blood needs in their area, enabling them to respond quickly in emergencies.

**2. For Blood Bank Staff** To empower Blood Bank Staff with efficient control over daily operations, the system provides a suite of management tools:

* **Centralized Dashboard:** Staff can access a comprehensive dashboard for a real-time overview of operations.
* **Inventory and Donor Management:** The system allows staff to manage donation schedules , update the blood inventory in real-time , view donor records , and register new donors on-site during blood drives.
* **Reporting:** Staff can generate detailed inventory reports to aid in analysis and stock management.

**3. For Hospital Staff** To ensure hospital personnel can meet urgent patient needs swiftly, the platform offers direct access to critical information and services:

* **Real-Time Blood Availability:** Staff can view the live inventory of connected blood banks to quickly find required blood units.
* **Urgent Request System:** An integrated system enables staff to place urgent digital requests for blood and monitor their status through to completion.
* **Delivery Tracking and History:** The platform provides real-time tracking of a delivery's status and maintains a viewable history of all past requests for record-keeping.

**4. For Delivery Personnel** To facilitate transparent and secure transportation, logistics personnel are equipped with the following tools:

* **Task Management:** A clear interface allows personnel to view all assigned deliveries and their details.
* **Live Status Updates:** Drivers can update the delivery status in real-time, keeping the hospital and blood bank informed.
* **Secure Confirmation:** Deliveries are confirmed using a secure OTP, ensuring the blood reaches its intended destination.

**5. For Campaign Organizers** To support community engagement, organizers have the functionality to plan and execute successful blood drives:

* **Event and Volunteer Management:** The system provides tools to plan blood drives , manage volunteers , and assign them specific roles for events.
* **Performance Analytics:** Organizers can track event performance to analyze the success of their campaigns and improve future outreach efforts.

**6. For the Administrator** To ensure smooth operation and platform integrity, the administrator has top-level oversight and control:

* **User and System Management:** The admin can manage all user accounts , define roles and permissions , monitor system-wide analytics , and view system logs.
* **Oversight and Reporting:** Admins are responsible for approving campaign requests and can generate platform-wide reports on usage and performance.

**2.2 Non-Functional Requirements**

Beyond specific features, the system's success depends on its quality and reliability. The following attributes define the operational standards BloodLink must meet.

* **Performance:** In a time-sensitive environment, system responsiveness is paramount. BloodLink is designed to be fast and efficient, ensuring that critical functions like urgent requests and inventory searches are completed in under 500 milliseconds. The architecture will be robust enough to handle peak loads without a drop in performance.
* **Reliability:** As a critical healthcare support tool, the BloodLink platform must be consistently available. The system is engineered for 24/7 operation with a 99.9% uptime target, featuring robust backup and recovery protocols to prevent data loss and ensure uninterrupted service.
* **Security:** Protecting the sensitive health and personal data of users is a fundamental requirement. All data will be secured with encryption, both in transit and at rest. Strict role-based access control and strong user authentication will be enforced to guarantee that users can only access information appropriate for their role.
* **Usability:** A positive user experience is essential for adoption and effectiveness. The interface will be designed to be intuitive, clean, and consistent across all devices, reducing the learning curve for donors and minimizing the risk of errors for staff performing critical tasks.
* **Maintainability:** To ensure the long-term viability of the platform, it will be built with clean, well-documented code and a modular architecture. This approach will simplify future updates, bug fixes, and the integration of new features.
* **Scalability:** The system must be prepared for growth. Its architecture will be designed to scale efficiently, allowing it to support an increasing number of users, hospitals, and blood banks without compromising its performance or reliability.