**Functional Requirements Table :-**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Feature** | **Description** | **Details/Notes** | **Priority** | **Key Type** |
| **User Registration** | Allow users to register as Donor or Acceptor. | Fields: Name, Email, Password, Phone No., Address. | High | N |
| **Login/Logout** | Provide secure authentication for users. | Use email and password; manage sessions. | High | N |
| **Profile Management** | Users can update personal information. | Both donors and acceptors; fields to be updated. | Medium | N |
| **Blood Donation Scheduling** | Donors can schedule their donation appointments. | Fields: Date, Time, Blood Type, Location. | High | N |
| **Blood Requesting** | Acceptors can request blood with required details. | Fields: Blood Type, Quantity, Request Date. | High | N |
| **Search & Display** | Search for donors or acceptors by criteria. | Criteria: Blood Type, Location, Availability. | Medium | N |
| **Admin Dashboard** | Interface for admin to manage users and view statistics. | Features: User Management, Inventory Control, Reports. | High | N |
| **Messaging** | Communication feature between donors and acceptors. | Inbox system, notifications. | Medium | N |
| **Report Generation** | Generate reports related to donations and requests. | Types: Donation Statistics, Request Summaries. | Medium | N |

**Non-Functional Requirements Table :-**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Requirement** | **Details/Notes** | **Priority** | **Status** | **Key Type** |
| **Performance** | System response time | Define acceptable response times for various actions. | High | Not Started | N |
| **Scalability** | Handle increasing load | System should scale with increased users and data. | High | Not Started | N |
| **Security** | Data protection | Ensure data encryption and secure access controls. | High | Not Started | N |
| **Usability** | User interface design | Ensure easy-to-use and accessible interface. | Medium | Not Started | N |
| **Reliability** | System uptime and availability | Define required uptime percentage and backup plans. | High | Not Started | N |

**Use Cases Table** (Rough Implemementation) :-

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Use Case** | **Description** | **Actors** | **Preconditions** | **Postconditions** | **Steps** | **Key Type** |
| **User Registration** | Users register as Donor or Acceptor. | New User | User is not registered. | User is registered. | 1. Enter details<br>2. Verify email<br>3. Confirm registration | N |
| **Login/Logout** | Users login and logout of the system. | Registered User | User credentials valid. | User is logged in/out. | 1. Enter credentials<br>2. Authenticate<br>3. Access system | N |
| **Schedule Donation** | Donors schedule a blood donation. | Donor | Donor is registered. | Donation is scheduled. | 1. Select date<br>2. Confirm details<br>3. Save schedule | N |
| **Request Blood** | Acceptors request blood. | Acceptor | Acceptor is registered. | Blood request is created. | 1. Select blood type<br>2. Enter quantity<br>3. Submit request | N |
| **Search Donors/Acceptors** | Search for donors or acceptors based on criteria. | User | User is logged in. | Search results are displayed. | 1. Enter search criteria<br>2. View results | N |
| **Admin Management** | Admin manages users and views statistics. | Admin | Admin is logged in. | Users and stats are managed. | 1. View user list<br>2. Manage inventory<br>3. Generate reports | N |

**Data Model Requirements Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity** | **Attribute** | **Type** | **Description** | **Key Type** |
| **User** | UserID | Integer | Unique identifier for users. | PK |
|  | Name | String | User's name. | N |
|  | Email | String | User's email address. | N |
|  | Password | String | User's password. | N |
|  | Phone No. | String | User's phone number. | N |
|  | Address | String | User's address. | N |
|  | UserType | String | Type of user (Donor/Acceptor). | N |
| **Donor** | DonorID | Integer | Unique identifier for donors. | PK, FK |
|  | BloodType | String | Blood type of the donor. | N |
|  | LastDonationDate | Date | Date of the last donation. | N |
|  | TotalDonations | Integer | Total number of donations made. | N |
| **Acceptor** | AcceptorID | Integer | Unique identifier for acceptors. | PK, FK |
|  | BloodType | String | Blood type needed by the acceptor. | N |
|  | RequestDate | Date | Date of the blood request. | N |
|  | Status | String | Status of the blood request. | N |
| **BloodDonation** | DonationID | Integer | Unique identifier for donations. | PK |
|  | DonorID | Integer | Link to the donor making the donation. | FK |
|  | DonationDate | Date | Date of the donation. | N |
|  | BloodType | String | Blood type of the donation. | N |
|  | Quantity | Integer | Quantity of blood donated. | N |
|  | Health Criteria | String | Health criteria met for donation. | N |
| **BloodRequest** | RequestID | Integer | Unique identifier for requests. | PK |
|  | AcceptorID | Integer | Link to the acceptor requesting blood. | FK |
|  | RequestDate | Date | Date of the request. | N |
|  | BloodType | String | Blood type requested. | N |
|  | Quantity | Integer | Quantity of blood requested. | N |
|  | Status | String | Status of the request. | N |
| **Location** | LocationID | Integer | Unique identifier for locations. | PK |
|  | Address | String | Address of the location. | N |
|  | City | String | City of the location. | N |
|  | State | String | State of the location. | N |
|  | ZipCode | String | Zip code of the location. | N |