

**Final Year Project Proposal**

**Blood Bridge**

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**Bachelor of Science in Information Technology (20212025)**

**SCOPE DOCUMENT REVISION HISTORY**

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# **Abstract:**

Blood Bridge is a web-based platform that connects blood donors and recipients directly, making the donation process faster and more efficient. The system allows users to register, using Google API to find nearby donors, request blood and receive real time information. With a safe and user-friendly interface, it eliminates the requirement of an intermediary blood bank. By addressing the boundaries of existing platforms, the blood bridge ensures a reliable, accessible and timely solution for blood donation, eventually helps to save life.

**Introduction:**

Blood Bridge is an online platform designed to connect blood donors and recipients directly, making the donation process faster and more accessible. Finding a suitable donor in emergency can be challenging, and traditional systems often include delays. Blood Bridge solves users to find nearby donors, request blood and receive quick updates in a spontaneous and safe environment. With a user-friendly interface and real time communication, the platform ensures that the needy people may be efficiently interested, eventually more lifesaving.

# **Scope:**

**Blood Bridge is** designed to simplify and improve the blood donation process by connecting donors and recipients through a web-based platform. The system enables users to register, finds nearby donors using location-based services, requests blood, and receives Realtime notifications. This platform facilitates blood donation for individuals requiring blood, voluntary donors and organizations. This blood bank eliminates the need for a blood bank, making the process faster and more efficient. The user ensures authentication, safe data handling and an easy-to-use interface to increase the system accessibility. **Blood Bridge will** be available to users mainly to users within a defined geographical area, ensuring that finding location-based donors be relevant. Future expansion may include mobile app integration, AI based donor recommendations and increased security facilities to improve reliability. The purpose of this project is to create a seamless and lifesaving solution that bridges the gap between blood donors and people with immediate needs.

**Problem Statement:**

Many individuals require blood in an emergency arising from accidents, operations or disease, but in time it is not easy to detect the donor. Blood banks and hospitals usually experience deficiency, and there is no simple mechanism to bring donors and recipients immediately together. The system is now based on manual intervention, which can be slow and useless. This can cause delay in providing blood to recipients, sometimes causing serious health risk.

**Solution Using Proposed System:**

Traditional blood donation process includes often delays, limited donor availability and disabled communication. **Blood Bridge** addresses these challenges by providing a web-based platform that directly connects blood donors with recipients. With an easy registration process, donor can create profiles and specify your blood type and availability. The recipients can search for the surrounding donors using location-based services and send direct requests to emergency situations. Real time notifications ensure quick reactions, which reduces the time required to find a donor. The system also enhances security by confirming the user details and maintaining data privacy. By eliminating the requirement of the blood bank mediator, Blood **Bridge makes the donation process faster, more accessible and more reliable. This ensures that people with immediate requirement of blood can quickly find interested donors, eventually saving more lives.**

# **Related System Analysis/Literature Review:**

Blood donation is an important process that saves millions of lives in the world. However, the traditional blood donation system often faces challenges such as the donor's unavailability, real time lack of communication and disabled request handling. Many existing platforms try to address these issues but come up with their limits. For example, Sundas **Foundation Sialkot, Seal Blood Donor, Sialkot Blood Donor, and UMT Blood Donor Society like** platforms provide blood donation services, but often rely on manual coordination, which is slow and untrustworthy. Some have a lack of real-time donor tracking, while others have old interfaces that make the donor communication difficult. **Blood Bridge Improves** these systems, which by offering real-time donor search, location-based matching using Google API, and by offering a user-friendly web-based platform with immediate notifications for blood requests. Unlike traditional methods, it eliminates the requirement of an intermediary blood bank, which ensures rapid and more direct communication between donors and recipients. By addressing the shortcomings of existing solutions, blood **bridges provide** more efficient, safe and accessible approach to blood donation management. **Pros/Benefits of Proposed System:**

**Direct Donor Recipient Connection:** Eliminates the requirement of a blood bank, allowing recipients to contact the donors directly, which reduces the delay in emergency.

**RealTime Donor Search:** Uses location-based services to help recipients find nearby donors quickly.

**Instant notification: Sends** Realtime alert to donors and recipients, ensure rapid response time.

**Userfriendly** **interface:** It makes it easier to register for a simple and easy design users, searching donors and request blood without complications.

**Safe and reliable:** Data ensures privacy and user verification to maintain trust and prevent misuse.

. **Time saving and efficient**: A suitable donor reduces the time required to improve emergency response and save life.

With these benefits, blood bridge provides a more effective and modern solution for blood donation, ensuring that people needed can quickly find interested donors.

**Modules:**

**1. User authentication module**   
This module manages user registration and login to donors, recipients and administrators.   
**2. Donor management module**   
Donors can create their profiles and manage them, update their availability status, and specify their blood type. This module ensures that only interested and eligible donors are listed.   
  
**3. Recipient management module**   
The recipients may request blood, discover the nearby donors, and track their requests. This module provides an easy-to-use interface to facilitate quick donor connection.   
  
**4. Blood request and matching module**   
This allows module recipients to discover appropriate donors depending on blood type and location. The system automatically filters and displays nearby donors for rapid matching.   
  
**5. Location- based search module**   
Powered by Google API, this module helps users find donors in their surrounding area. This improves efficiency by reducing the time required to detect a donor.   
  
**6. Notification module**   
This module sends real time alerts to donors and recipients about new blood requests, confirmation and updates, which ensure timely reactions.   
  
**7. Administrator panel module**   
Administrators can manage user accounts, monitor system activity, and handle any reported issues. This module ensures smooth operation and system safety.

# **System Limitations:**

* The platform does not support offline functionality.
* Users must have an internet connection to access services.
* If a donor does not respond to the request, the system cannot guarantee blood availability.
* The search functionality depends on the accuracy of the data provided by the donors.
* The initial version can only support cities or regions in limited numbers.

# **Software Process Methodology:**

For the development of Blood **Bridge,** we are following **Agile Software Development Method to** ensure a flexible, iterative and efficient development process. The agile is chosen as it allows continuous improvement, quick adaptability for changes, and persistent response, which is important for the creation of a user friend and reliable system. The development process is divided into the following stages:

**1. requirement analysis**  Understanding the needs of the user, defining system functionality, and finalizing core features.

**2. System Design** Creating wireframe, database structures and system architecture to ensure a smooth workflow.

3**. Development (incremental approach)**  Applying system in small, managed modules and search functionality such as certification, donor/recipient management.

**4. Testing**  to identify and fix problems, unit tests, integration tests and user tests.

**5. Deployment** Launching platform for real world use, appropriate hosting and database connectivity.

**6. Maintenance and updates** collecting user feedback, fixing bugs, and adding improvements to perform the purpose and purpose. By following agile, blood bridge will be developed in an organized, efficient and usercentric manner, which will ensure high quality final product.

# **Tools and Technologies:**

|  |  |
| --- | --- |
| **Category** | **Tools And Technologies** |
| Frontend | HTML, CSS, JavaScript, Bootstrap/Tailwind CSS, jQuery (Optional) |
| Backend | PHP with MySQL, XAMPP |
| Database | MySQL, PhpMyAdmin |
| Location Services | Google Maps API |
| Development Tools | Visual Studio Code |

# **Project Stakeholders and Roles:**

|  |  |
| --- | --- |
| **Stakeholder** | **Roles** |
| Donor | Register his/her self and update his/her availability   Approve/reject blood requests  Manage their profiles and charity history. |
| Recipient | Search for donors based on blood type and location.   Send blood requests to donor and communicate with donors. |
| Admin | Manage platform operations and manage user accounts.   Monitor all the system activities.   Handling system issues, complaints and technical assistance. |
| System Developer | Design, develop and maintenance to the website.   Apply safety measures to protect user data.   Make sure the system moves efficiently with minimal downtime. |
| Healthcare Organization (Future Scope) | Healthcare Organization (Future Scope) \*\*   Can cooperate to verify donors and recipients.   Help promote the platform for broader access. |

# **References:**

From Internet.

**CERTIFICATE OF APPROVAL**

It is to certify that the final year project of BS (IT) “Blood Bridge” was developed by:

|  |  |  |
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| **Student Name** | **Registration No.** | **Roll No** |
| Sehar Akbar | 2021-js-548 | 2145 |
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| Komal Parveen | 2021-js-430 | 2102 |

Under the supervision of undersigned person and in their opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Information Technology.

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**Supervisor**

**Name: Sir Abdul Islam Bajwa**

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**DATED: \_\_\_\_\_\_\_\_\_\_29-02-2025\_\_\_\_\_\_\_\_\_\_**