**Department of Technical Education**

**Capstone project**

**Format-5**

**Capstone Project Execution Document**

Capstone project Name: Online Blood and Organ Finder

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**Main Deliverables –**

**Design:**

**Description of the Components in The System**

* **Admin Login:-**

Here admin can login to the form using admin username and password. After logging in he can add the blood donor and organ donor.

* **Add Blood Donor:-**

After admin logged in to the form admin can add blood donors and he will checks the information about donors like age, name, city, etc.

* **Add Organ Donor:-**

Here admin can add organ donors and he will check the information about organ donors like age, name, city etc.

* **User Registration:-**

Here User can register by adding his information User have to add detailed information with username and password correctly, so admin can easily login to the form.

* **User Login:-**

After completing registration user can login to the form using username and name and password and after logging user can search blood donors and organ donors.

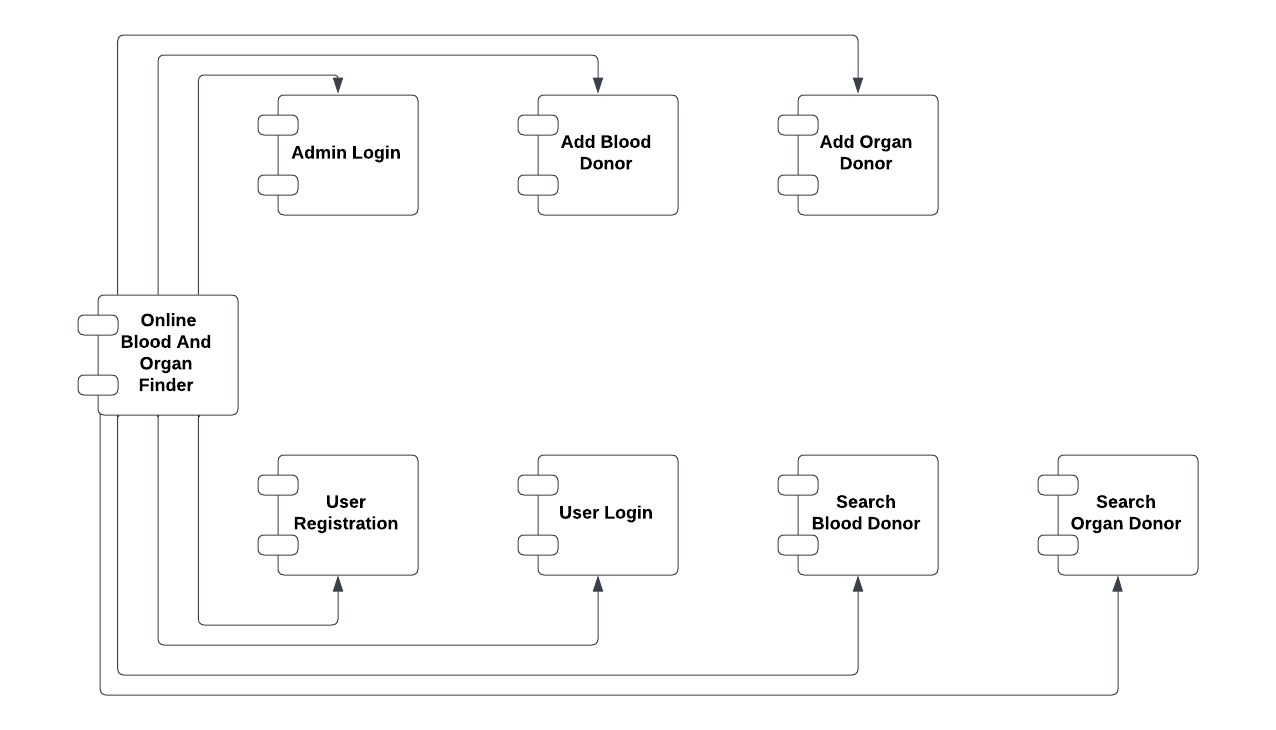
* **Search Blood Donor:-**

Here user can search the blood orders so, according which he want the actual blood group.

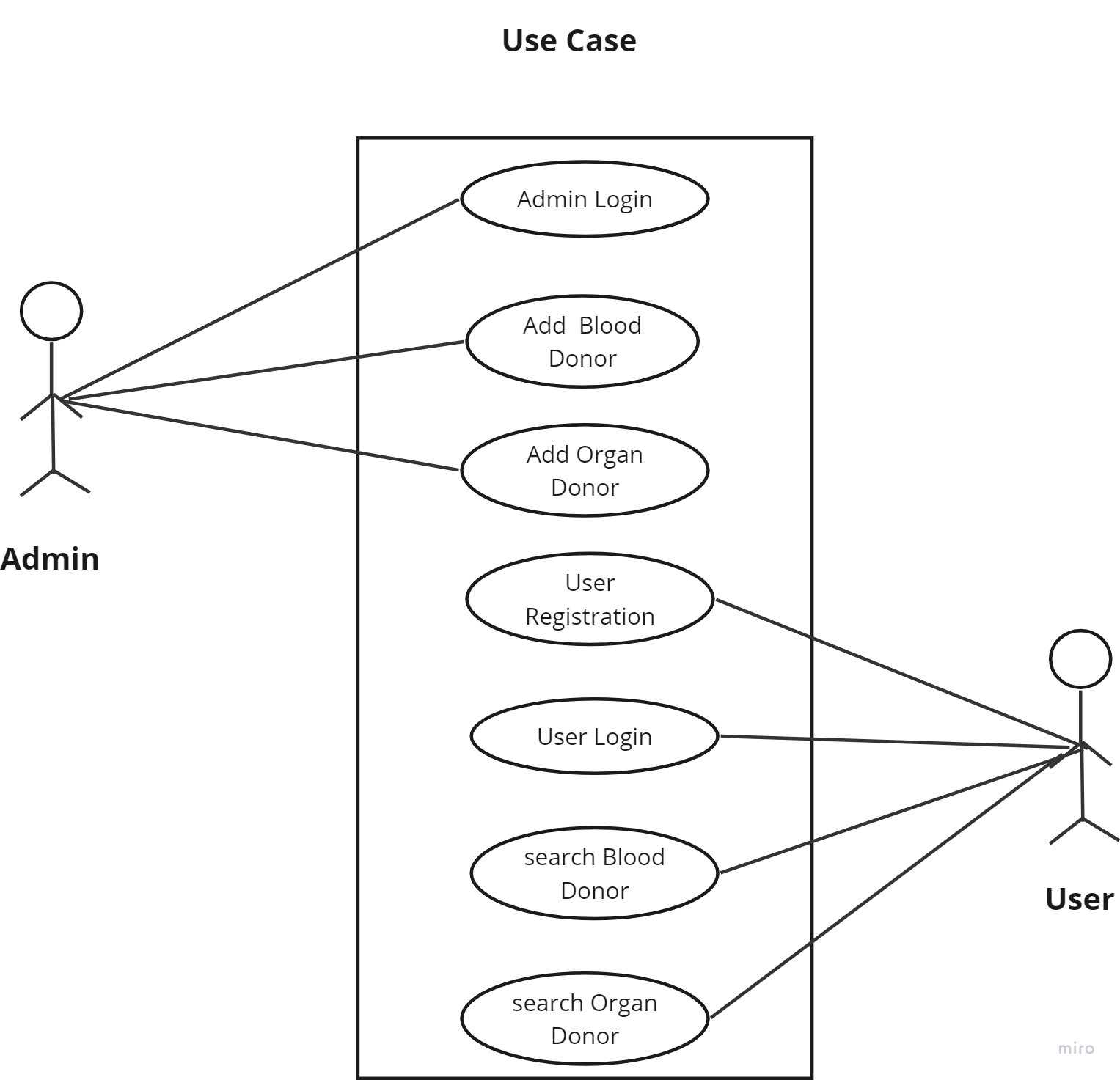
* **Search Organ Donor:-**

Here user can send the request in blood orders so which he want the actual blood group for that organ.

**Component Diagram**



**Use Case Diagram**

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**Details of Hardware Devices:-**

**Processors:-**

The processor is a chip or a logical circuit that responds and processes the basic instructions to drive a particular computer. A processor performs arithmetical, logical, input/output (I/O) and other basic instructions that are passed from an operating system. Processor is termed as the brain of any electronic systems.

**Types of Processor: -**

* **Microprocessor: -** The microprocessor is a standard processor which comprises of ALU, control unit and club of registers known as control registers, status registers, and scratchpad registers.

#### **Microcontroller: -** The microcontroller is basically a computer that comes in various packages and sizes. The reading input and responding to output is the basic function of the microcontroller.

**Advantages of Processor:-**

* Fast Calculation of Mathematical Data: - computer processor is the fast calculation of mathematical data.
* Dynamic Circuit: - A modern computer processor is basically a dynamic circuit. It contains thousands or millions of tiny switches called transistors.
* Basic Computer Functionality: - A processor is the primary basis for a computer. The rest of a computer's hardware components are essentially built around the processor itself.

**Average I3 Processor:-**

An Intel Corei3 is an Intel proprietary processor that is built on the framework of multiprocessor architecture. Advertisements. It is a type of dual-core processor with an integrated graphic processing unit (GPU). It is a successor of the Core 2 series of processors produced by Intel.

**RAM (Random Access Memory):-**

RAM, which stands for Random Access Memory, is a hardware device generally located on the motherboard of a computer and acts as an internal memory of the CPU. It allows CPU store data, program, and program results when you switch on the computer. It is the read and write memory of a computer.

## Types of RAM:-

1. **SRAM: -** SRAM stands for Static Random Access Memory. Each memory cell of SRAM is made up of a flip-flop, a 1-bit storage device. SRAM is a high speed random access memory which is used in special applications such as cache memory in computers and other embedded systems.
2. **DRAM: -** DRAM stands for Dynamic Random Access Memory. Each memory cell of DRAM is made up of one transistor and one capacitor. DRAM is a small sized and less expensive type of RAM. For this reason, it is used as RAM in most computer systems.

**Advantages of RAM:-**

1. RAM Faster than secondary storage.
2. RAM can capably read and write any type of data.
3. RAM consumes less power compared to hard disk, CD, DVD, FLOPPY disk.
4. No part of RAM moves when RAM executes an instruction.
5. RAM memory increases your [computer speed](https://quicklearncomputer.com/what-is-speed-in-computer/?swcfpc=1).
6. Central Processing Unit (CPU) reads any data faster because of RAM.

**Details of Software Products:-**

1. **Xampp:-**

Xampp is a free and open-source cross-platform web server solution stack package developed by Apache friends. XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It mainly consists of the Apache http server, Mysql database, and interpreters for scripts written in the PHP and Perl programming languages.

**2. Operating System:-**

An operating system (OS) is [system software](https://en.wikipedia.org/wiki/System_software) that manages [computer hardware](https://en.wikipedia.org/wiki/Computer_hardware) and [software](https://en.wikipedia.org/wiki/Software) resources, and provides common [services](https://en.wikipedia.org/wiki/Daemon_(computing)) for [computer programs](https://en.wikipedia.org/wiki/Computer_program). For hardware functions such as [input and output](https://en.wikipedia.org/wiki/Input_and_output) and [memory allocation](https://en.wikipedia.org/wiki/Memory_allocation), the operating system acts as an intermediary between programs and the computer hardware.

**3. Browser:-**

A browser is an [application program](https://www.techtarget.com/searchsoftwarequality/definition/application) that provides a way to look at and interact with all the information on the [World Wide Web](https://www.techtarget.com/whatis/definition/World-Wide-Web). This includes Web pages, videos and images. A Web browser is a [client](https://www.techtarget.com/searchenterprisedesktop/definition/client) program that uses [HTTP](https://www.techtarget.com/whatis/definition/HTTP-Hypertext-Transfer-Protocol) (Hypertext Transfer Protocol) to make requests of Web [server](https://www.techtarget.com/whatis/definition/server)s throughout the Internet on behalf of the browser user

**4. PHP Designer:-**

PHP Designer is a complete PHP IDE (Integrated Development Environment) and PHP editor that caters for just about all your PHP coding needs but it also applies itself to HTML, CSS and JavaScript development. The main aim of PHP Designer is to boost your productivity and make your life easier

**5. Visual Code:-**

Visual Studio Code is a free open source text editor by Microsoft. VS Code is available for Windows, Linux, and macos. VS Code supports a wide array of programming languages from Java, C++, and Python to CSS, Go, and Dockerfile. The VS Code user interface allows for a lot of interaction compared to other text editors. 

**6. MYSQL:**

MySQL is a relational database management system developed by oracle that is based on structures query language .MySQL is one of the most recognizable technologies in the modern big data ecosystem.MySQL is integral to many of the most popular software stacks for building and maintaining everything from customer-facing web applications.

**Web Apache Server:**

As a Web server, Apache is responsible for accepting directory (HTTP) requests from Internet users and sending them their desired information in the form of files and Web pages. Much of the Web's software and code is designed to work along with Apache's features

**Programming Languages:-**

**1. HTML:**

HTML stands for hypertext markup languge.It is client side scripting languge.It is used to create static web pages. File extension of html is html/.html. HTML contains pre-defined tags HTML describes the structure of a Web page. HTML consists of a series of elements.

Advantages:-

* HTML is simple to understand and implement.
* HTML is completely free.
* HTML is Simple to Edit.
* HTML is lightweight and quick.

**2. CSS:**

CSS stands for Cascading Style Sheets. CSS saves a lot of work. It can control the layout of multiple web pages all at once. External style sheets are stored in CSS files. CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

Advantages:-

* CSS saves time.
* Easy maintenance.
* Global web standards.

**3. Javascript:**

JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

Advantages:-

* Interoperability.
* It offers procedural programming features.
* Simplicity.
* Speed.

**4. PHP:**

PHP is stands for hypertext pre-processor. PHP is a server side scripting language. It is used for to create dynamic web pages. PHP is the default file extension for php files. PHP is open source scripting language. PHP supports a large number of major protocols such as POP3, IMAP, and LDAP.

Advantages:-

* Extremely scalable.
* Free to use.
* Support of community
* Easy to use.

**5. MYSQL:**

MySQL is a relational database management system developed by oracle that is based on structures query language .MySQL is one of the most recognizable technologies in the modern big data ecosystem.MySQL is integral to many of the most popular software stacks for building and maintaining everything from customer-facing web applications.

Advantages:-

* Open source.
* Data security.
* Higher efficiency.
* Complete transaction support.

**6. Bootstrap:**

Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website. It is absolutely free to download and use. It is a front-end framework used for easier and faster web development.

Advantages:-

* Bootstrap is Easy to Use
* Fast and Time-Saving Framework
* Support is Amazing
* Bootstrap's Consistency

**Fabrication:**

* **Admin Login:-**

Here admin can login to the form using admin username and password. After logging in he can add the blood donor and organ donor.

* **Add Blood Donor:-**

After admin logged in to the form admin can add blood donors and he will checks the information about donors like age, name, city etc.

* **Add Organ Donor:-**

Here admin can add organ donors and and he will check the information about organ donors like age, name, city etc.

* **User Registration:-**

Here User can register by adding his information User have to add detailed information with username and password correctly, so admin can easily login to the form.

* **User Login:-**

After completing registration user can login to the form using username and name and password and after logging user can search blood donors and organ donors.

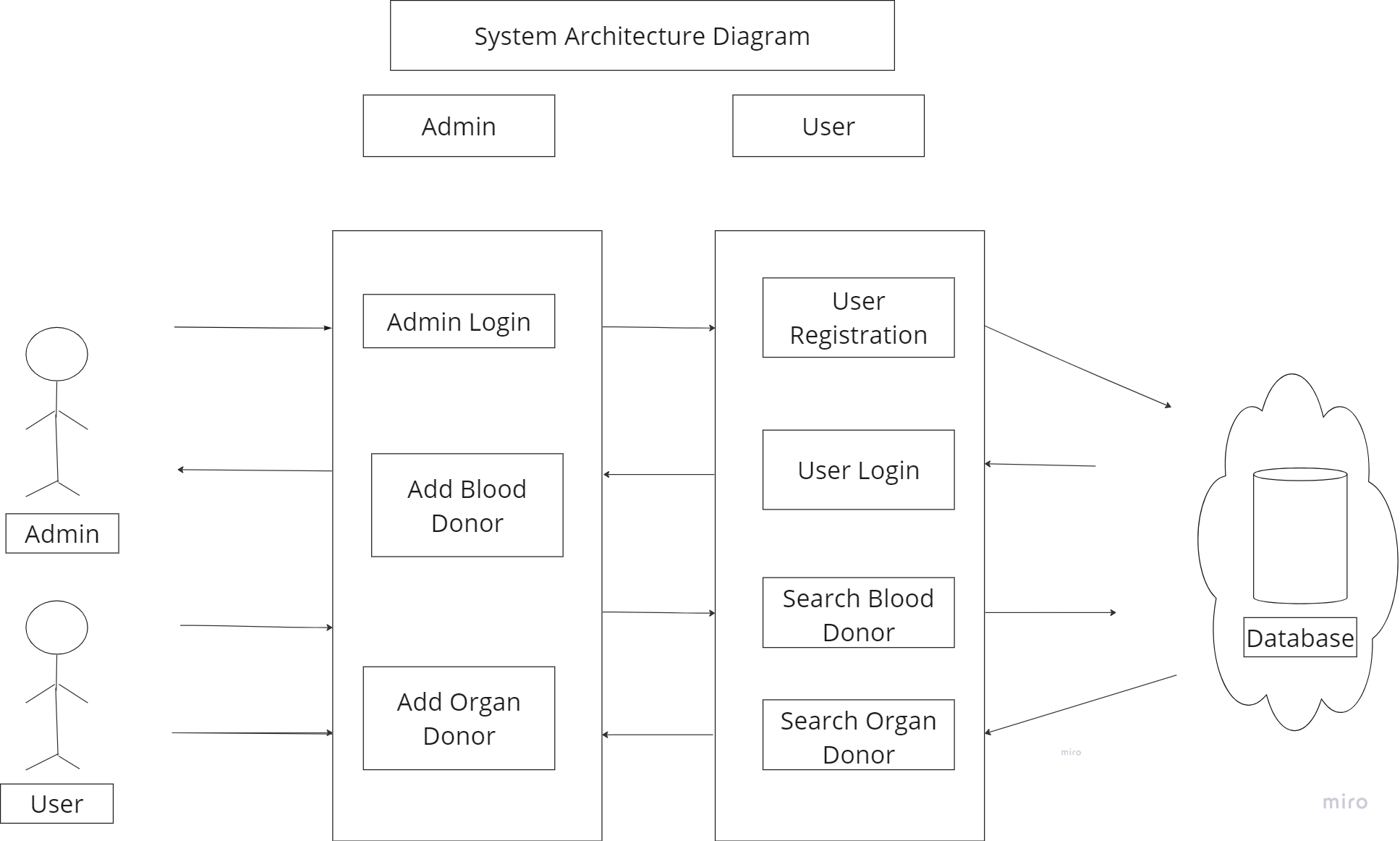
* **Search Blood Donor:-**

Here user can search the blood orders so, according which he want the actual blood group.

* **Search Organ Donor:-**

Here user can send the request in blood orders so which he want the actual blood group for that organ.

**System Architecture Diagram**



1. **Testing and validation**:

**Testing Types: -**

**Manual Testing: -**

Manual Testing is a kind of software testing in which a software tester develops and executes the test cases without using any automated testing tools. The main objective of manual testing is to detect the issues, bugs, and defects of a software application. Any new software application should be manually tested before performing the automation testing. The software testing fundamental “100% Automation is not possible” makes Manual Testing essential.

**Unit Testing: -**

Unit testing is a software development process in which the smallest testable parts of an application, called units, are individually scrutinized for proper operation. Software developers and sometimes QA staff complete unit tests during the development process. The main objective of unit testing is to isolate written code to test and determine if it works as intended. Unit testing is an important step in the development process. If done correctly, unit tests can detect early flaws in code which may be more difficult to find in later testing stages.

**Integration Testing: -**

Integration testing (sometimes called integration and testing, abbreviated I&T) is the phase in software testing in which individual software modules are combined and tested as a group. Integration testing is conducted to evaluate the compliance of a system or component with specified functional requirements. It occurs after unit testing and before system testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

**White Box Testing: -**

White box testing is a form of application testing that provides the tester with complete knowledge of the application being tested, including access to source code and design documents. This in-depth visibility makes it possible for white box testing to identify issues that are invisible to grey and black box testing.

**Black Box Testing: -**

Black box testing involves testing a system with no prior knowledge of its internal workings. A tester provides an input, and observes the output generated by the system under test. This makes it possible to identify how the system responds to expected and unexpected user actions, its response time, usability issues and reliability issues.

1. **Admin Login: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC01 | Check Admin Login with valid data | Enter username  Enter password | Username: admin  Password: admin | User should login into an application | As Excepted | Pass |

1. **Add Blood Donor: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC02 | While Adding the Blood Donor, Check Blood Group Name  Empty Email | Enter Blood Donor name:  Empty valid email address | Blood Donor name:  Raj. S  Email Id:  Raj43@gmail.com | Admin should check the correct details about added blood donor | As Excepted | Pass |

1. **Add organ Donor: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC03 | Selection of the organs & symptoms must be correctly done. | Enter Organ name:  Empty valid email address | Organ name:  Shivani .k  Email Id:  Shivani43@gmail.com | Admin should check the correct details about added organ donor. | As Excepted | Pass |

1. **User Registration: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC04 | Here, user can register with his correct Details | Username  Email Id:  Place: | Username: Soumya Kalinge  Email Id:  Soumya45@gmail.com  Chikodi | User should correctly  Register & Login themselves | As Excepted | Pass |

1. **User Login: -**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** | |
| TC05 | Here the user will login using username & password. | Username  Password: | Username: Soumya Kalinge  Password:  Soumya@4543 | User should correctly  Register & Login themselves | As Excepted | Pass |

1. **Search Blood Donor: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC06 | Here User can search blood donor according which he want blood group | Blood donor name:  Blood Group: | Donor name: Shruti. K  Blood Group: A+ | User should provide blood bags | As Excepted | Pass |

1. **Search Organ Donor: -**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case Description** | **Test Steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status** |
| TC07 | Here User can request to the website so which he want organ type | Organ donor name:  Organ Type: | Organ name: Rahul .M  Organ Type:  Kidney | User should provide organ type so which he want | As Excepted | Pass |

**Findings**

**Admin login**

a) Empty Username: - If admin doesn’t provide any username in username field, we will receive a pop-up message as please enter username, and we expected the same result, hence the test is passed.

b) Empty Password: - If admin doesn’t provide any password in password field, we will receive a pop-up message as please enter password, and we expected the same result, hence the test is passed.

**Add Blood Donor**

a) Numeric Name: - If blood donor provide numbers and special character in the name field, we will receive a pop-up message as name should not be numeric, and we expected the same result, hence the test is passed.

b) Empty Email: - Blood donor doesn’t entered email address in the field, we will receive a pop-up message as please enter valid email address, and we expected the same result, hence the test is passed.

Add Organ Donor

c) Enter Organ Name: - If admin doesn’t provide any organ name in the field, we will receive a pop-up message as please enter organ name, and we expected the same result, hence the test is passed.

Empty Phone Number: - If admin doesn’t provide any phone number in phone number field, we will receive a pop-up message as please enter phone number, and we expected the same result, hence the test is passed.

**User Registration**

a) Numeric Name: - If user provide numbers and special character in the name field, we will receive a pop-up message as name should not be numeric, and we expected the same result, hence the test is passed.

b) Empty Email: - User doesn’t entered email address in the field, we will receive a pop-up message as please enter valid email address, and we expected the same result, hence the test is passed.

**User Login**

a) Empty Username: - If user doesn’t provide any username in username field, we will receive a pop-up message as please enter username, and we expected the same result, hence the test is passed.

b) Empty Password: - If user doesn’t provide any password in password field, we will receive a pop-up message as please enter password, and we expected the same result, hence the test is passed.

**Search Blood Donor**

a) Enter Blood Donor Name: - If user doesn’t provide any blood donor name in name field, we will receive a pop-up message as please enter blood door name, and we expected the same result, hence the test is passed.

b) Enter Phone number: - If user doesn’t provide any phone number in phone number field, we will receive a pop-up message as please enter phone number, and we expected the same result, hence the test is passed.

**Search Organ Donor**

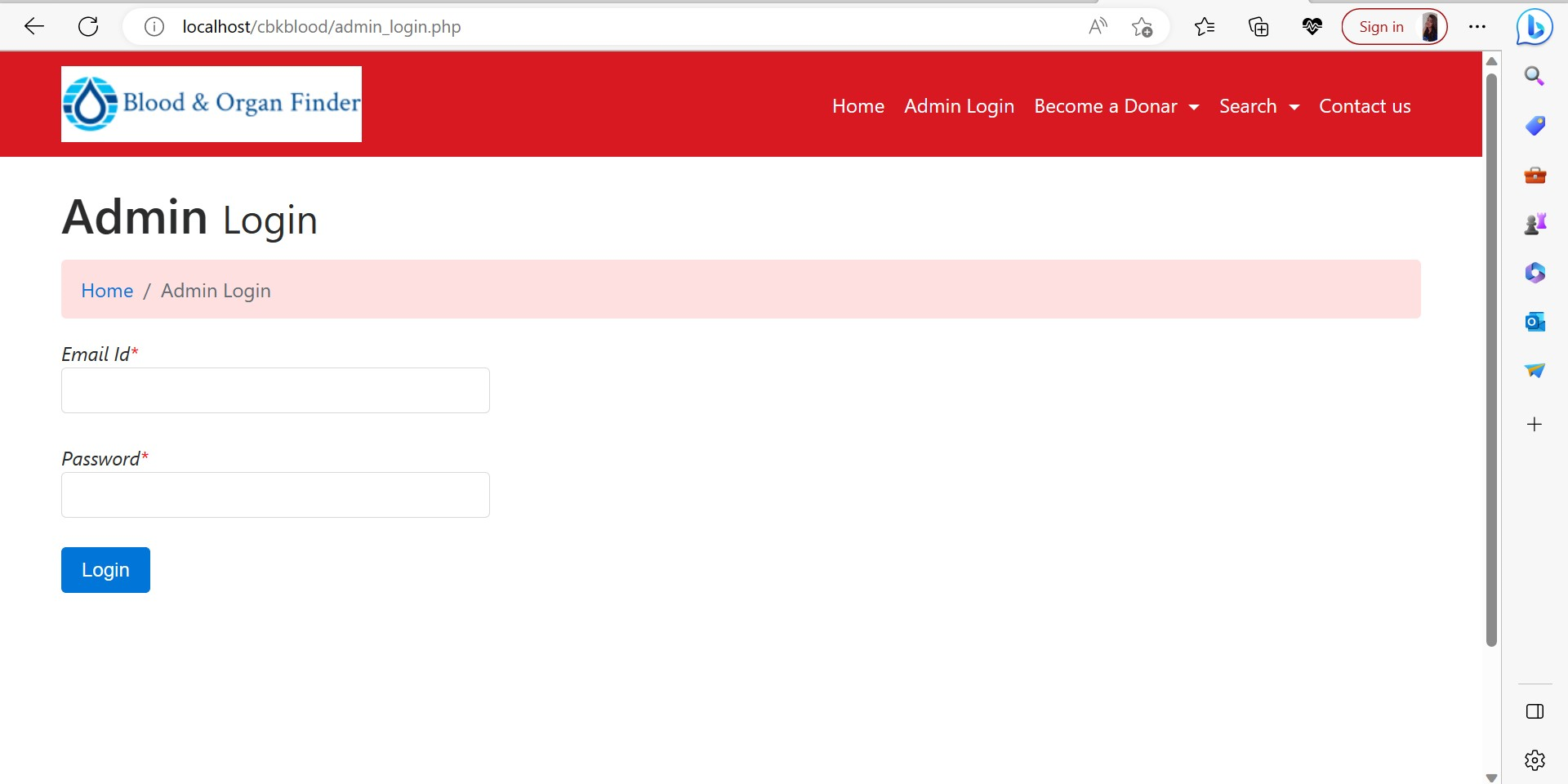
a) Enter Organ Name: - If user doesn’t provide any organ name in name field, we will receive a pop-up message as please enter organ name, and we expected the same result, hence the test is passed.

b) Enter Place Name: - If user doesn’t provide any place name in the place name field, we will receive a pop-up message as please enter place name, and we expected the same result, hence the test is passed.

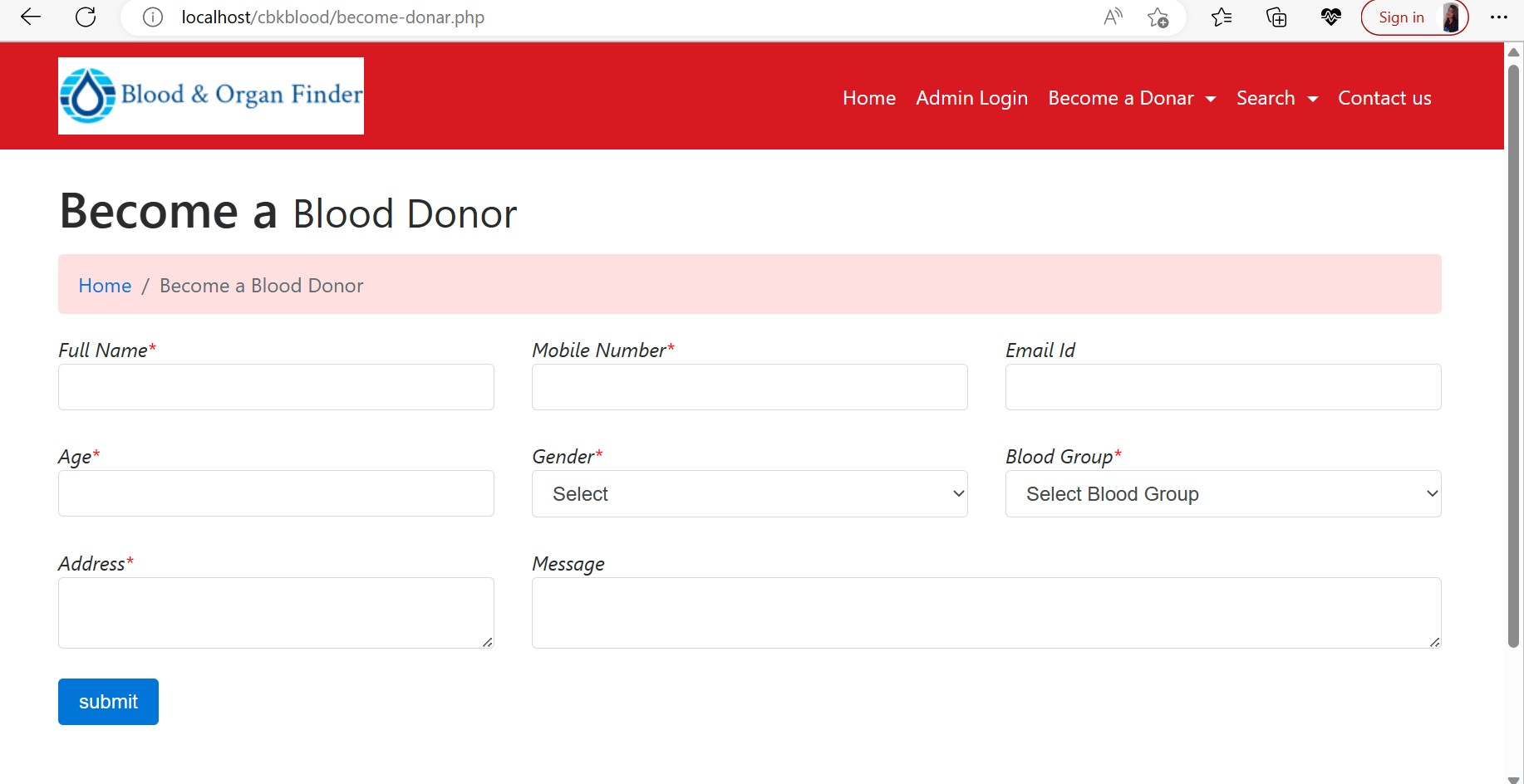
1. **Result and Inference:**



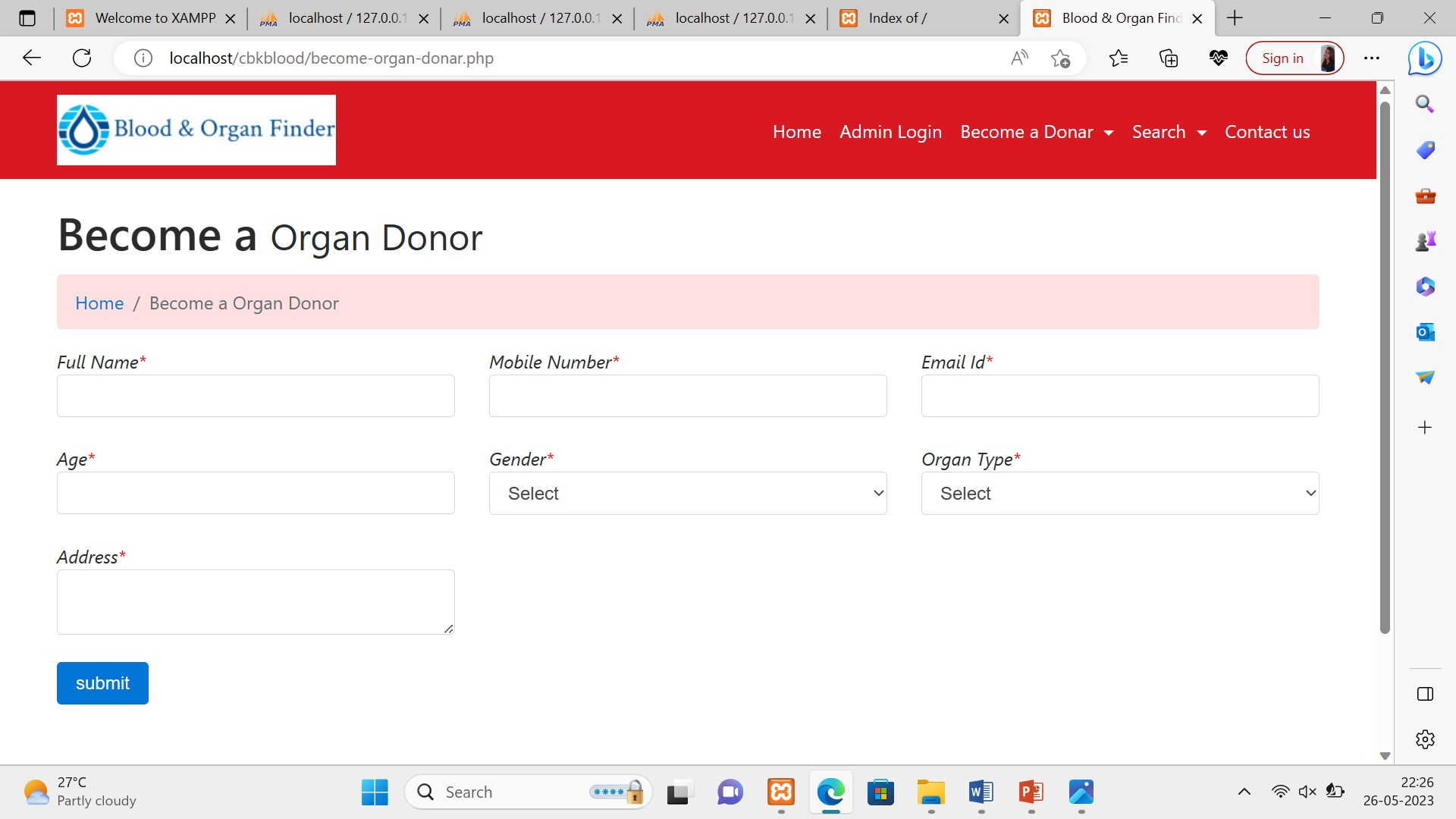
* **Admin Login:**



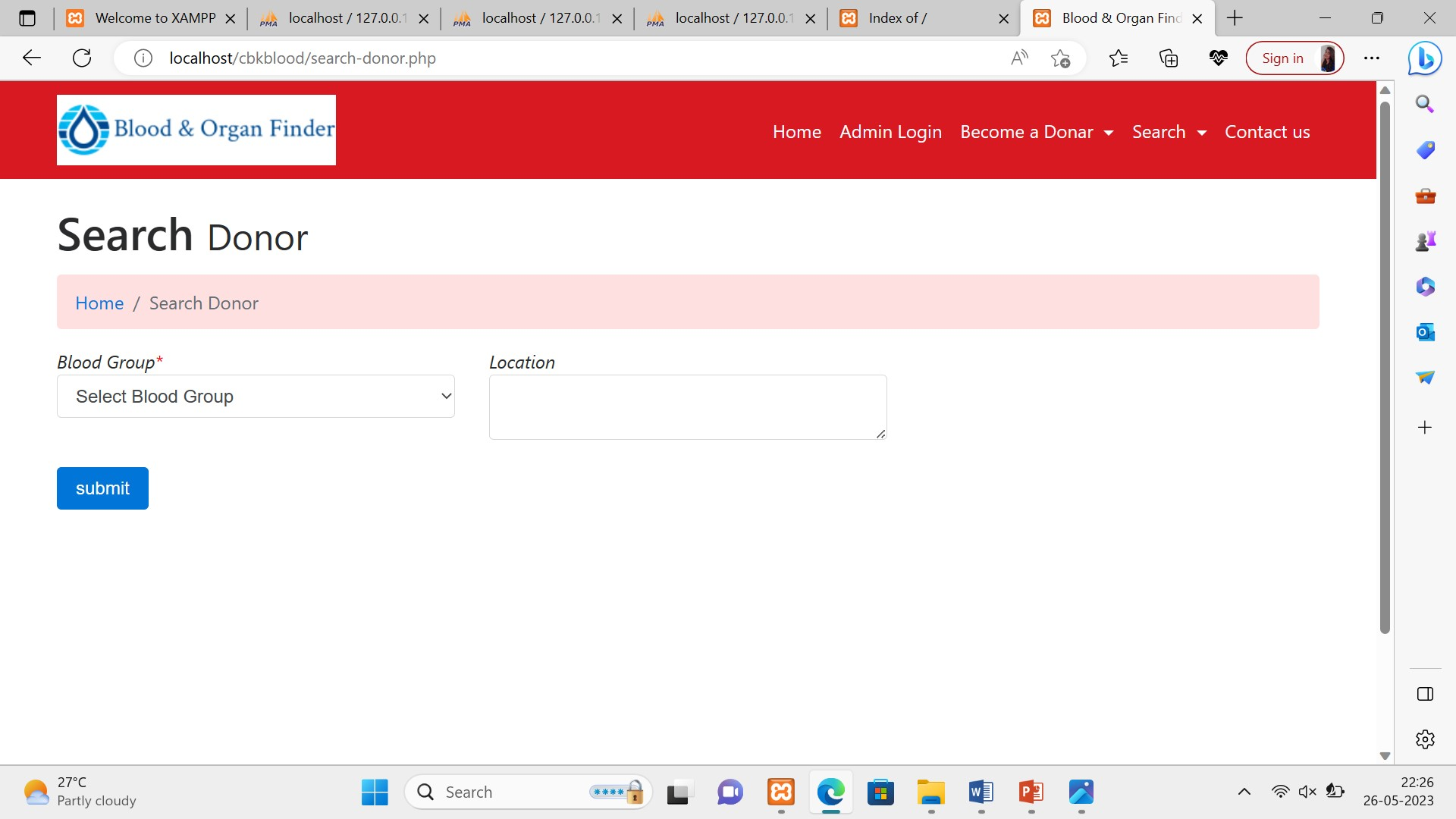
* **Add Blood Donor**



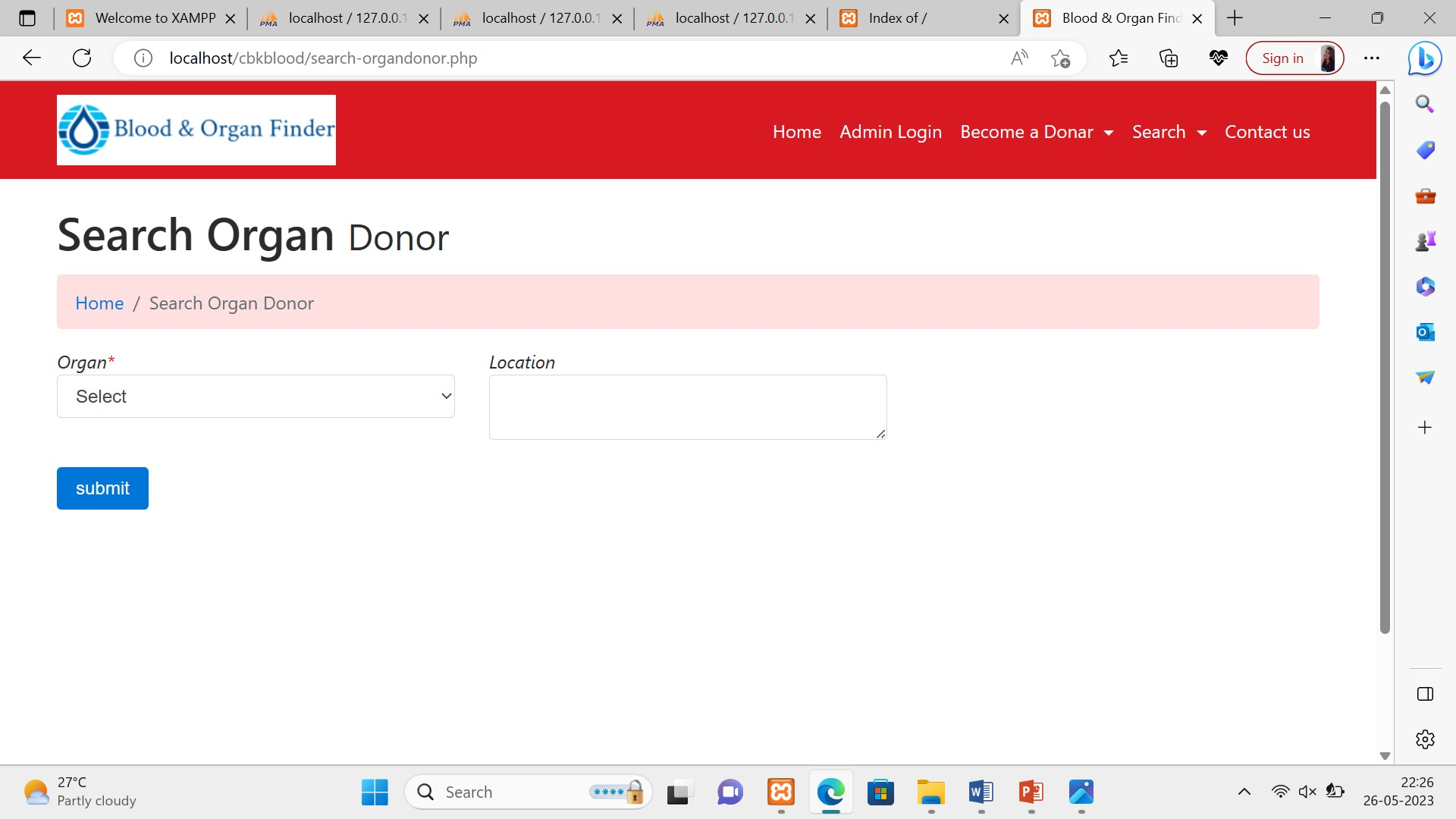
* **Add Organ Donor**



* **Search Blood Donor**



* **Search Organ Donor**



**Inference: -**

**Admin login: -**

In admin login using username and password admin can login. In this admin can manage all the sub modules like he can add blood donor and organ donor.

**Add Blood Donor: -**

After admin logged in to the form admin can add blood donors and he will checks the information about donors like age, name, city, etc.

**Add Organ Finder: -**

Here admin can add organ donors and he will check the information about organ donors like age, name, city etc.

**User Registration: -**

Here User can register by adding his information User have to add detailed information with username and password correctly, so admin can easily login to the form.

**User Login:-**

After completing registration user can login to the form using username and name and password and after logging user can search blood donors and organ donors.

**Search Blood Donor:-**

Here user can search the blood orders so, according which he want the actual blood group.

**Search Organ Donor:-**

Here user can send the request in blood orders so which he want the actual blood group for that organ.

Date Signature of the student Signature of the cohort owner