

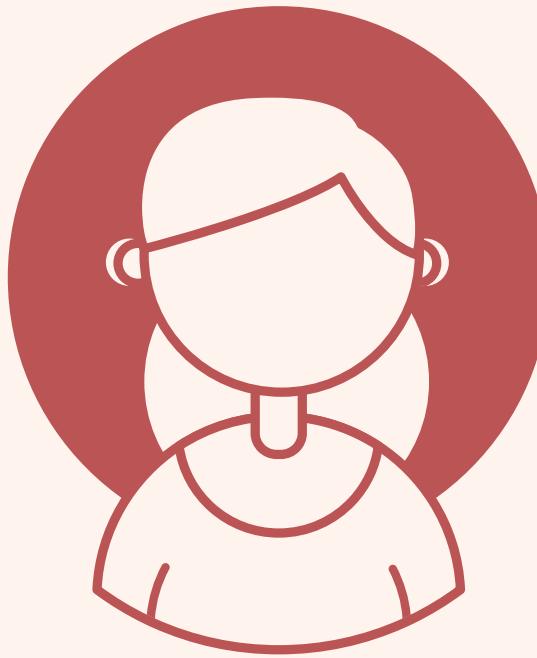


CPIT455 FINAL PROJECT PRESENTATION

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Group: 4

Team Members



Elaf Aloufi



Manar Altairy



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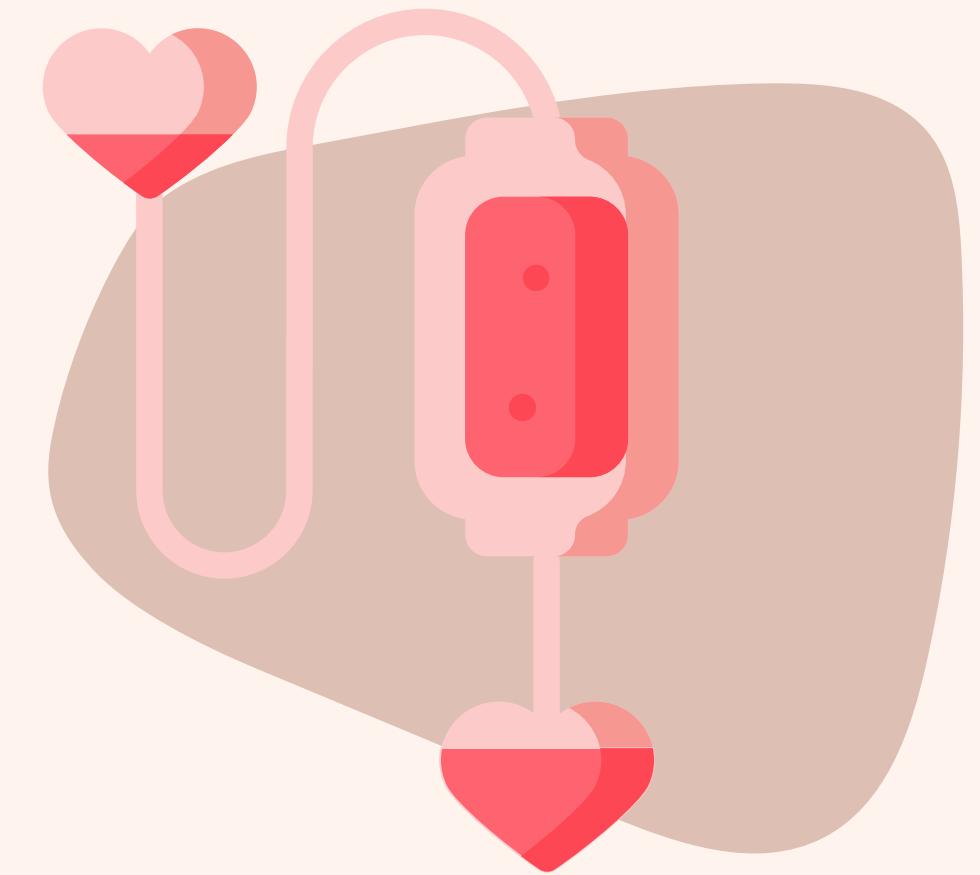
lessons learned

Used Tools

Introduction

In our daily lives, we come across people on social media who are looking for blood donors for their ill relatives, and these messages are often skipped or ignored by people.

Website aims to help users quickly locate a suitable blood donor. As well, all participants on the website will not be able to see the patient's personal information.



Problem Statement

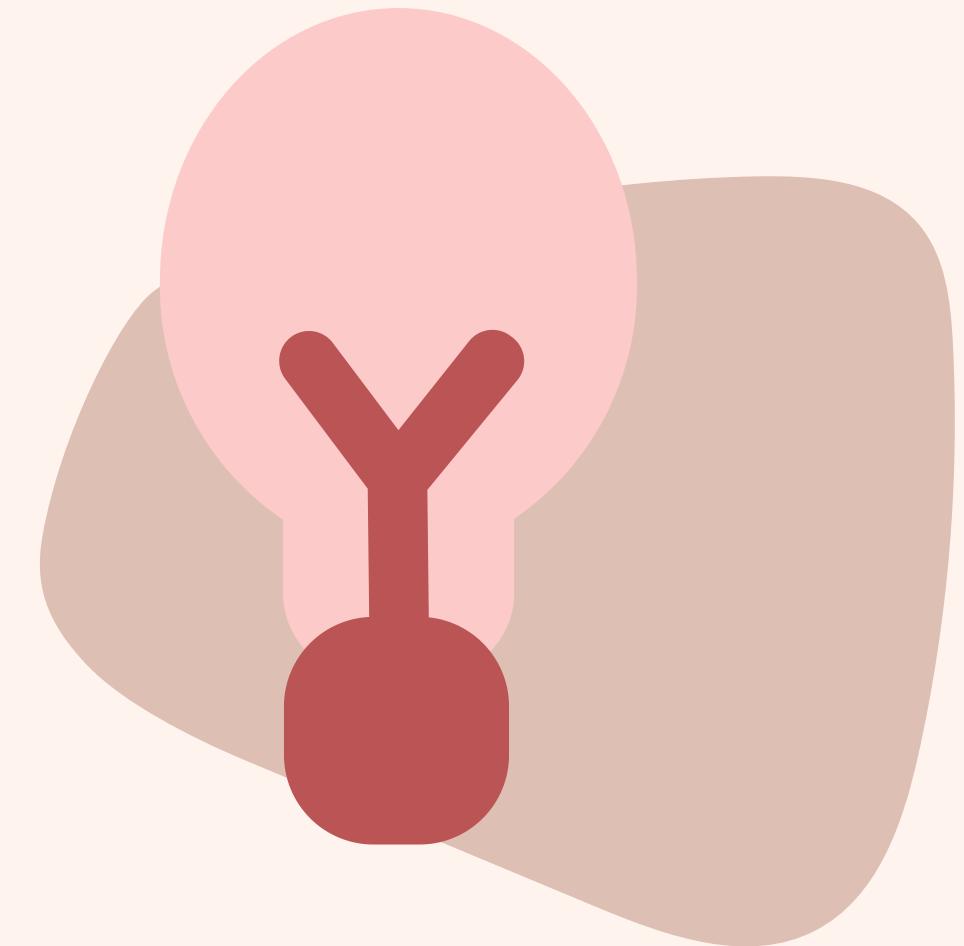


The patients and their families spend a lot of time looking for potential blood donors with no health contraindications that may prevent blood donation.

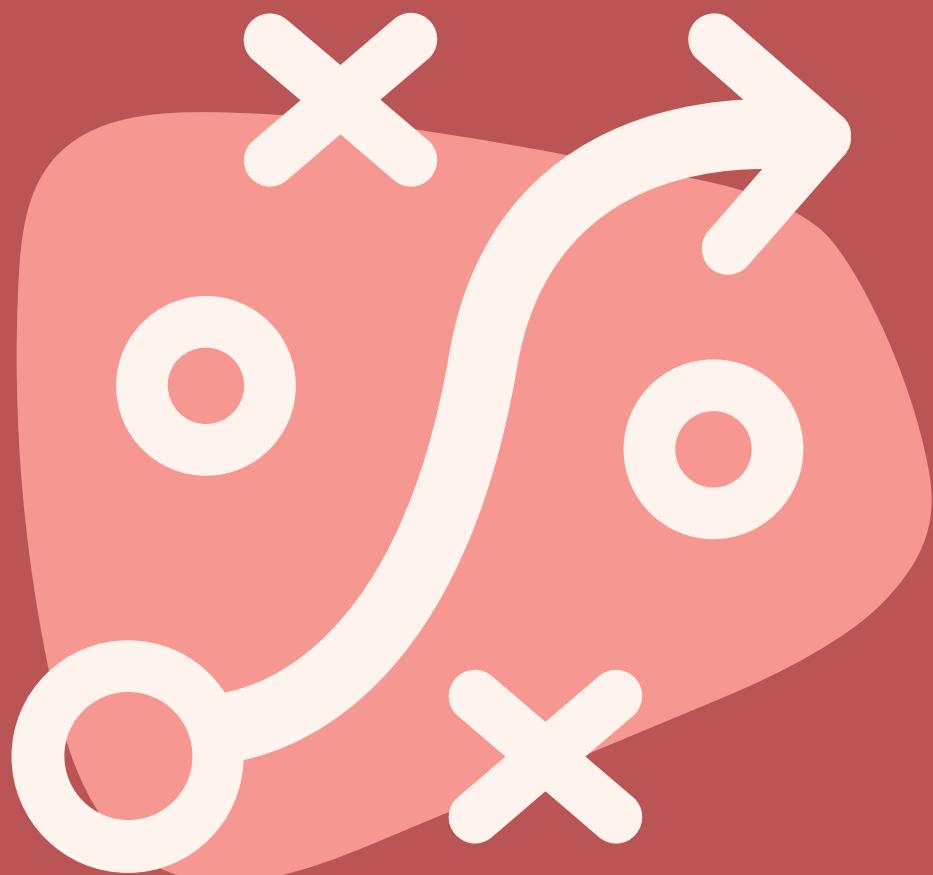
Using social media platforms to connect blood donors with recipients may be ineffective.

Proposed Solution

Create [LifeQuest] web application that assists in finding potential blood donors for emergency patients easily by posting a request on the website to find blood donors that match their blood type.



Used Approach



Scrum is an agile development methodology we used in the development and implementation of the project based on an iterative and incremental processes.

It is an adaptable, fast, flexible, and effective agile framework.

System Functional Requirements

The user shall be able to register.

The user shall be able to update their profile.

The user shall be able to log in by username and password.

The user shall be able to delete the account.

The user shall be able to post a blood donation request including blood (type/donation type).

The user shall be able to filter posts for blood requests by blood type, donation type, and/or location.

The system shall only accept unique username from user.

The system shall display blood donation instructions for donors.

The system shall redirect donor to mail program to send an email to the patient when a donner clicks the donate button.

System Non-functional Requirements

Usability: The website is simple and straightforward to use, so users will not encounter any challenges.

Security: The system shall be highly secure by encrypting sensitive information.

Security: The system shall authorize users by their username and password.

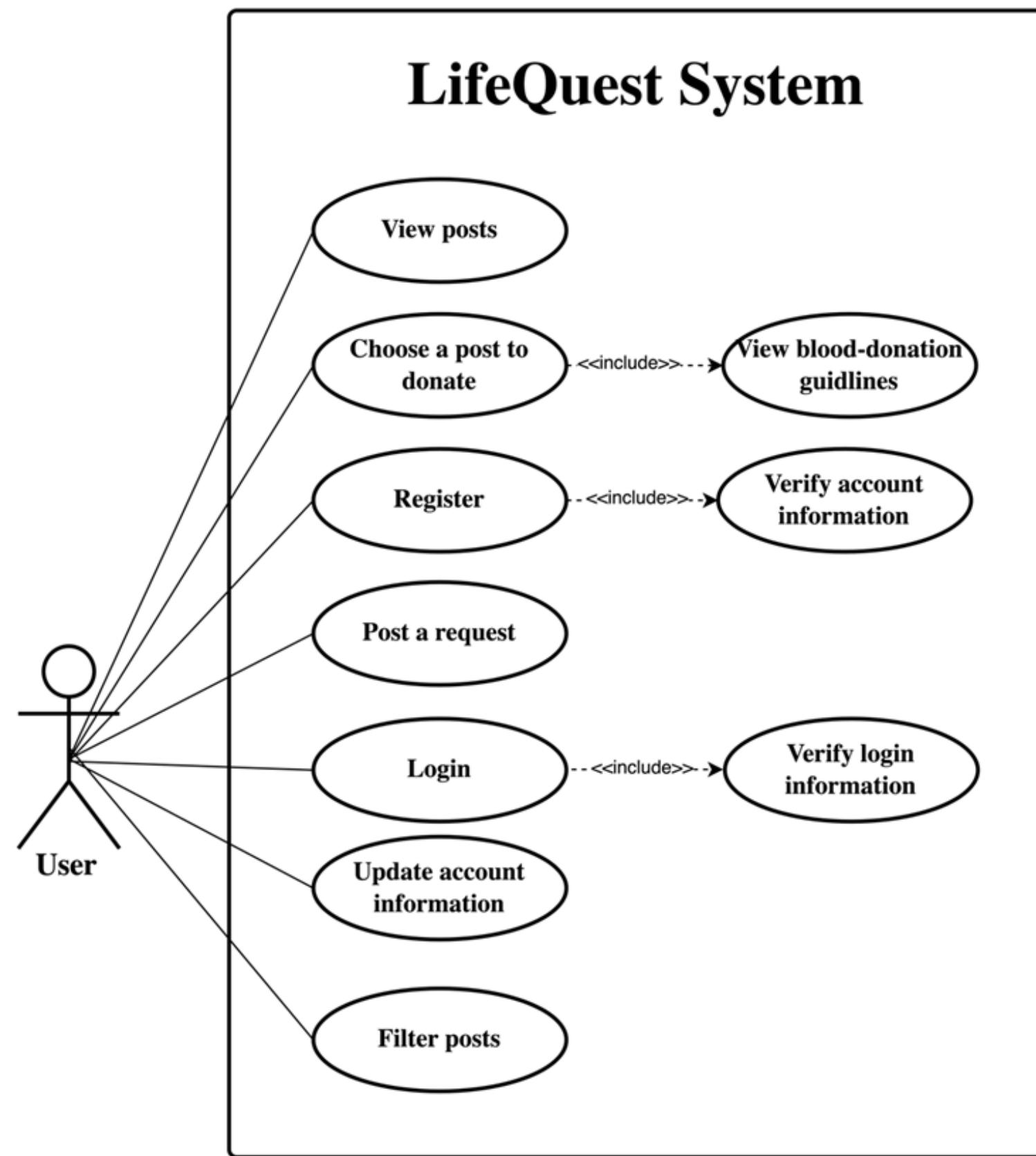
risk assessment: asset analysis in preliminary risk assessment

Assets	Value	Exposure
User login information	High. Sign-in information for system users must be inaccessible in case of any attempt of unauthorized access.	High. System confidentiality is lost and may cause harm to many users. Also, may manipulate this information and use it impersonate users.
Users' information records	Medium. Contain confidential information related to all users in the system to prevent spammers from registering.	High. Possible to harm users. There will be legal problems and a loss of reputation as a result.
Website Posts records	Low. Used to display the blood donation requests posted by system users.	Low. Does not cause any harm to system security and system users.

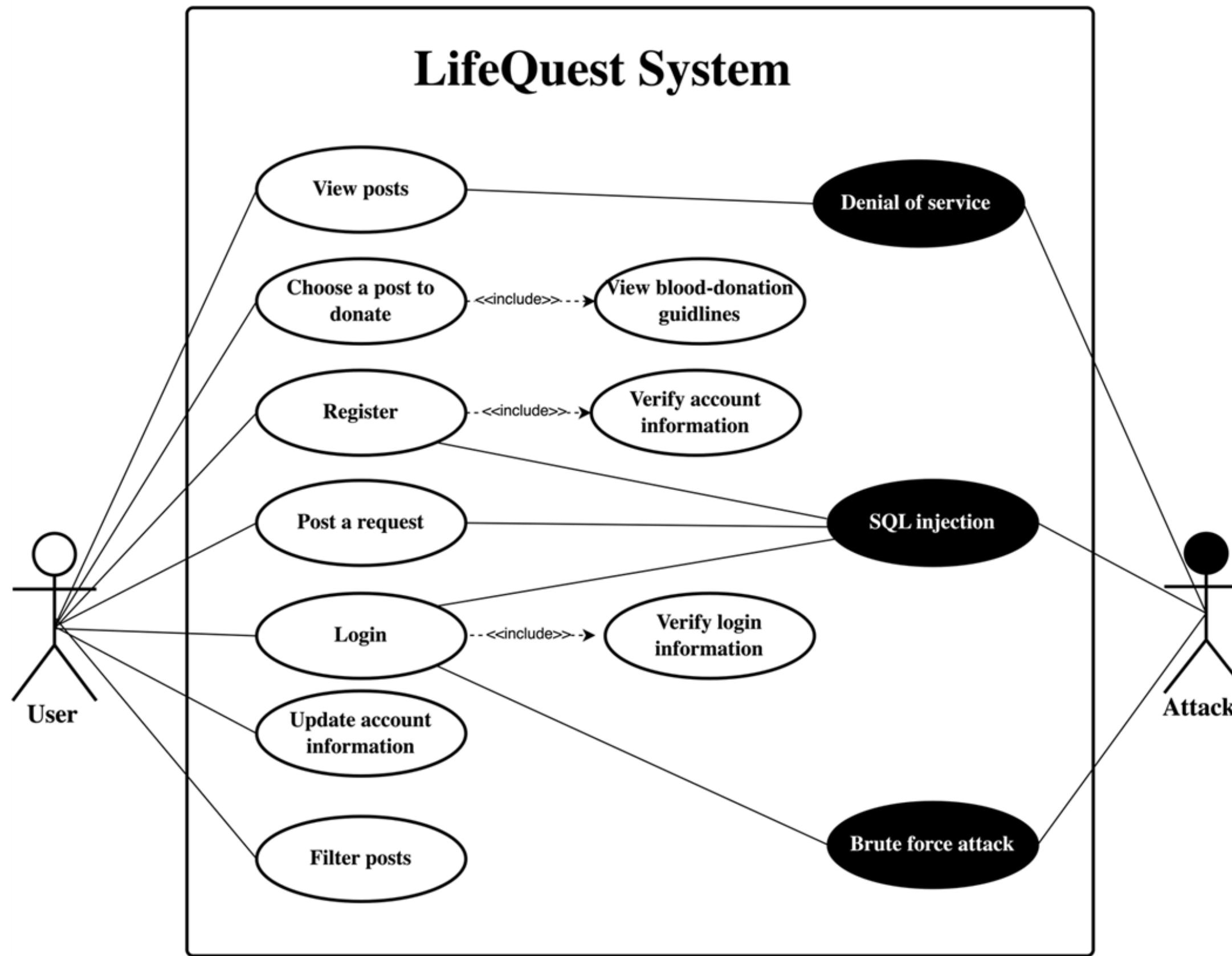
Risk assessment: threat and control analysis in preliminary risk assesment

Threat	Probability	Control	Feasibility
Spammers access website and create spam and fake posts.	High	Require all users to authenticate themselves by register to the system using their national ID, then login to their accounts	Medium cost to implement. Possible user resistance.
Structured Query Language (SQL) injection	Medium	Restrict user inputs by input validation and rejecting any potentially malicious code elements, such as single or double quotes, question marks.	An effective and low-cost implementation control can be used to detect an attack before it occurs.
Data breaches and manipulation of blood requests posts by the attacker.	Medium	Save posts information in a disparate places “database”, to provide security against data manipulation attacks, limit program data visibility and backups are also considered an effective tool for protecting data from manipulation.	Technically feasible but high cost to provide the backups.
Denial of service attack	High	Having servers in different networks with no single point of failure or bottlenecks, as well as ensuring that the network have a high level of security.	Since users want to access the system at any time, this is an extremely helpful feature. In some cases, though, it can be an expensive solution.

Use Case and Misuse Case Diagram: Use Case



Use Case and Misuse Case Diagram: Misuse Case



Security Requirements

The system shall allow the user to sign in after successful registration.

The system shall validate user login by comparing their username and password with the one in the database of the system.

The system shall allow the authorized users to post blood requests.

The system shall not accept a weak password.

The system shall verify the user password before login.

The system shall check input fields entered by the user.

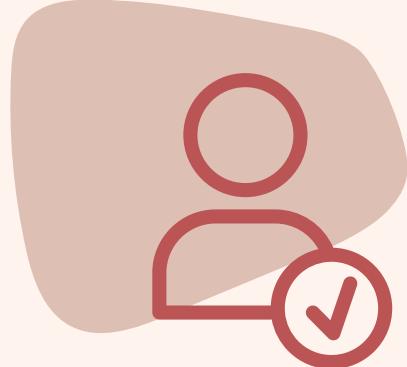
The system shall assign a unique session for each user to access the website.

Security Countermeasures



Authentication

Username/password combination used to authenticate users. Accessing the website pages requires the user's data to be verified and present in the database.



Authorization

It is not possible for an unauthorized user to enter any secure page of the website pages by directly entering the URL, as the user must log in using username/password combination to visit any website page.



Access Control

In order to minimize unauthorized access to the website pages, users are unable to access some of the website pages with invalid or undefined login information in the database.

Security Guidelines

Security Guidelines	Applicable?	What design used?
Base security decisions on an explicit security policy	No	-
Avoid a single point of failure	Yes	Ensure that when several procedures are carried out, the system may fail. As an illustration, if an attacker attempts to get into the system and enters the correct email address but the incorrect password, a warning stating "Your email address or password incorrect" will appear, making it difficult for the attacker to access the user login information.
Fail secure	Yes	We retain user information in distinct places from other information.
Balance security and usability	Yes	While concentrating on building a secure website that guards its assets against failure situations, we also provide a simple navigation process and a friendly user experience to boost usability.
Log user actions	No	-

Security Guidelines (Con.)

Security Guidelines	Applicable?	What design used?
Use redundancy and diversity to reduce risk	Yes	We won't lose our work if the attacker or any other external resource damages our project because we are using a different server from our database to store our project files.
Specify the format of all system inputs	Yes	To prevent issues from being caused by unexpected inputs, all system input formats in forms are known, specified as being within range, and compared with a potential pattern. An email address should, for instance, begin with "example.com."
Compartmentalize your assets	Yes	We keep our assets in disparate places "database", so when the system displays information, just the user-required data is shown.
Design for deployment	No	-
Design for recoverability	No	-

Security Testing

Security checklist	Input	Expected output	Actual output	Pass/fail
Create new user account with all correct inputs.	Username, password, email, national ID, phone number, birthday, blood type.	The page contains a welcoming and successful message.	A page contains a welcoming and successful message.	Pass.
Create new user account with some missing inputs (not entering the username).	Username, password, email, national ID, phone number, birthday, blood type.	Account will not be created, and a "Please fill out the field" message will display.	A "Please fill out the field" message is displayed.	Pass.
Create new user account with some invalid inputs (unrequested format of password).	Username, password, email, national ID, phone number, birthday, blood type.	Account will not be created, and a "Please match the request format" message will display.	A "Please match the request format" message is displayed.	Pass.
Log in into the system (user account) with all correct login information.	Username, password.	The user will log his account, and the system will display the home page.	The system displays the home page.	Pass.

Security Testing [Con.]

Security checklist	Input	Expected output	Actual output	Pass/fail
Log in into the system (user account) with invalid login information (invalid username).	Username, password.	The user cannot access their account, and the system will display the login page again.	The system displays the login page again.	Pass.
Accessing account page while user doesn't authorize themselves.	No inputs.	Redirect the user to the login page to be authorized.	The system redirects the user to the login page.	Pass.
Accessing create post page while user doesn't authorize themselves.	No inputs.	User cannot access it and the website ask to login or sign up first to access it.	The system shows a message that asks the user to login or sign up first.	Pass.

Testing and Code Output: Code Output

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

Gmail Ethical Hacking | U... Course: Introductio... Udemy W3Schools Online... MDN Web Docs YouTube تسجيل الدخول Blackboard kau RPA Business Analy...

LifeQuest Home Donation Requests Search for Donors About Us Sign up Login

Create new account.

Already a member? [Login](#)



Sign Up

Username

Password

Email

National ID

Phone number

Testing and Code Output: Code Output

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp



Email _____

National ID _____

Phone number _____

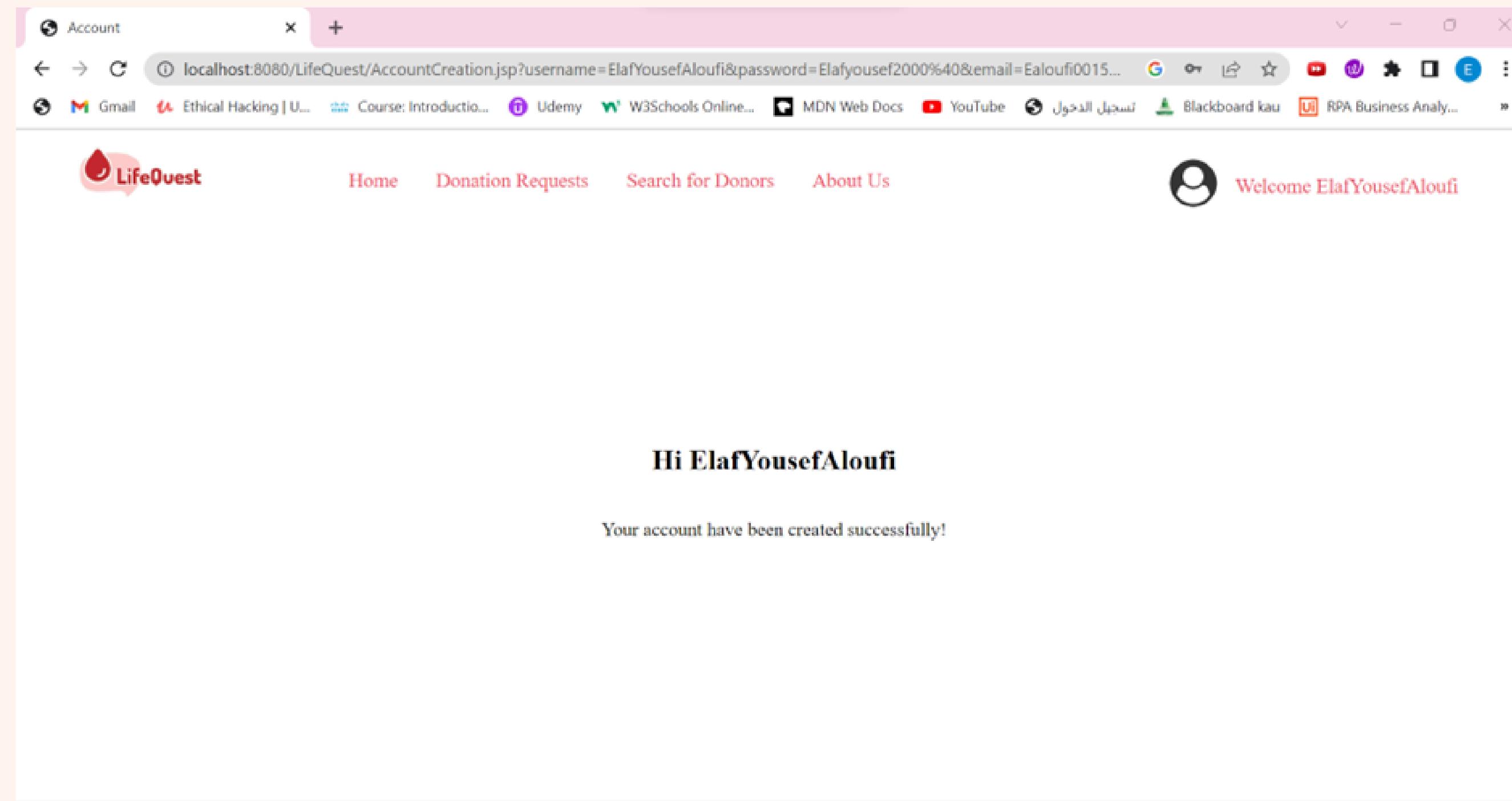
Birthday mm/dd/yyyy _____

Enter your blood type Type _____

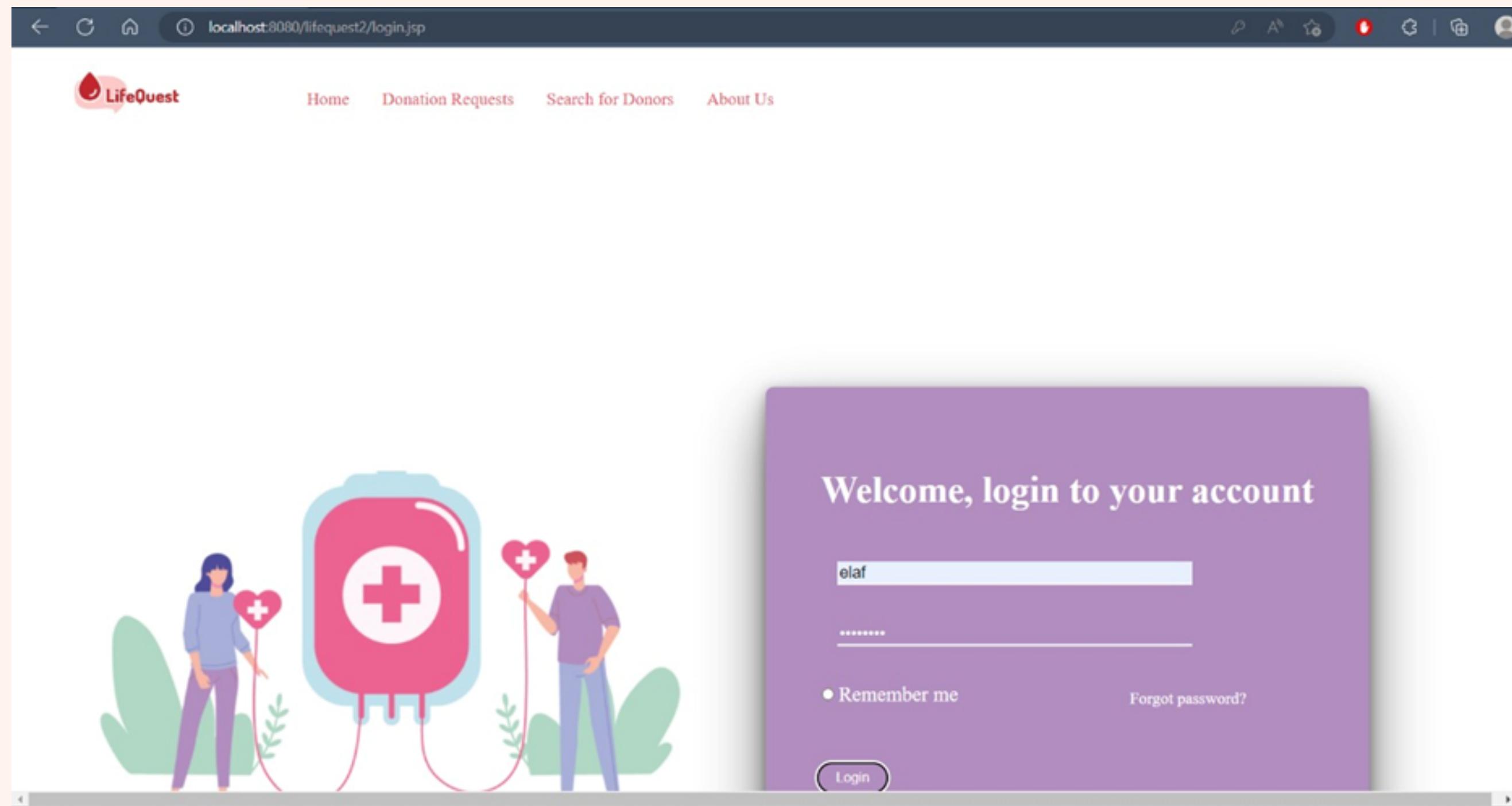
S U B M I T

localhost:8080/LifeQuest/SignUp.jsp#

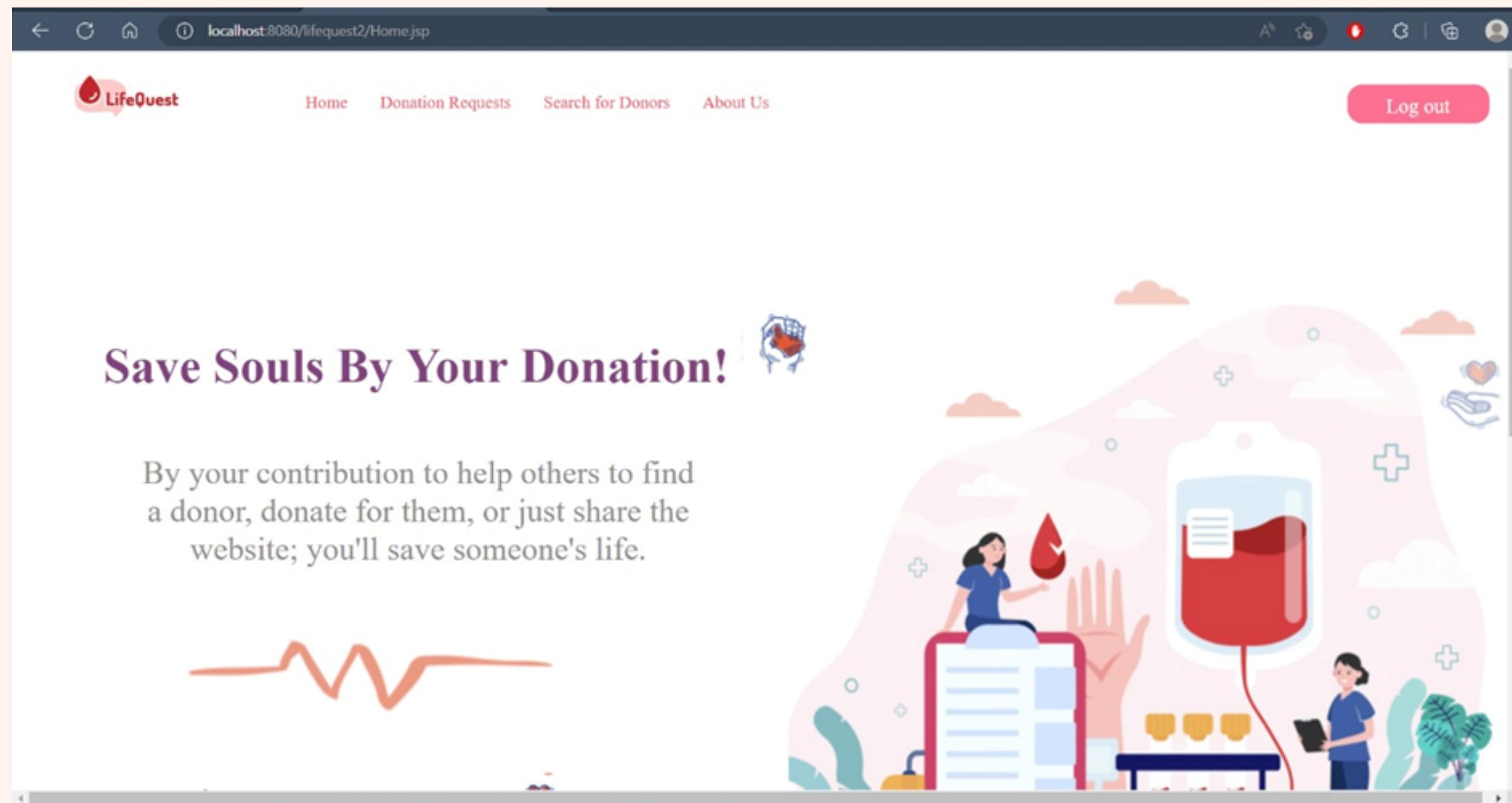
Testing and Code Output: Code Output



Testing and Code Output: Code Output



Testing and Code Output: Code Output



Testing and Code Output: Code Output

The screenshot shows a web browser window with the URL `localhost:8080/LifeQuest/Create_Post.jsp`. The page title is "Create Blood Donation Request Post". The header includes the LifeQuest logo, navigation links for "Home", "Donation Requests", "Search for Donors", and "About Us", and a welcome message "Welcome JoudAlghamdi" with a user icon.

The main content area is titled "New Post" and contains the following fields:

- City:** i.e. Jeddah
- Hospital Name:** i.e. KAU Hospital
- Blood Type:** (dropdown menu)
- Post Body (Optional):** (text area)
Post Length Shouldn't Exceed 140 Letters
- Post Body (Optional):** (dropdown menu)

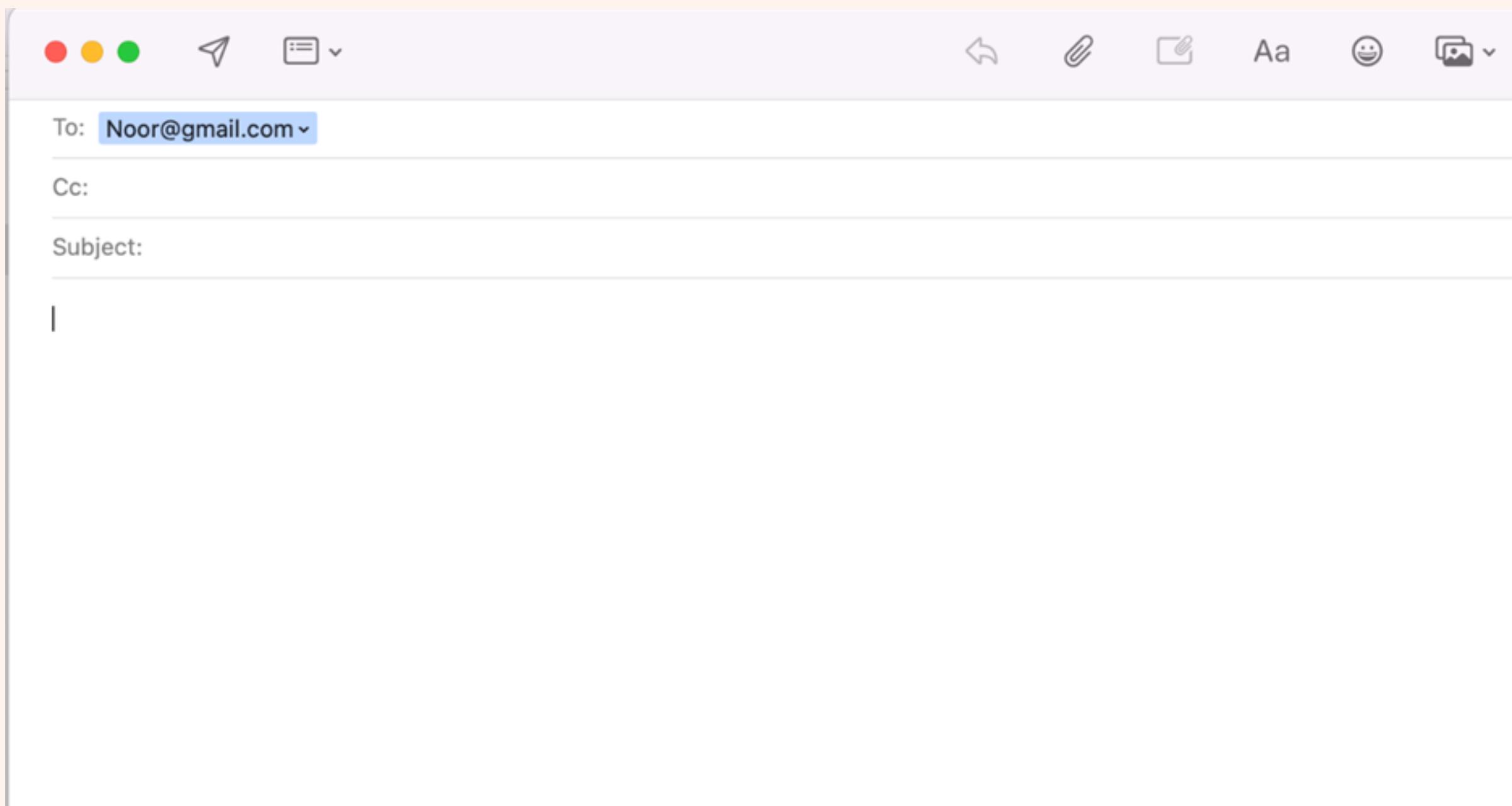
At the bottom are two buttons: "Create" and "Clear".

Testing and Code Output: Code Output

The screenshot shows a web browser window with the URL `localhost:8080/LifeQuest/View_Post.jsp`. The page is titled "Blood Donation Requests" and displays a message: "People Posts Their Urgent Blood Request, Donate To [Help](#) Them." On the left, there is a "Filter Results" sidebar with dropdown menus for "Blood Type", "Blood Donation Type", and "City", followed by a "Filter" button. The main content area shows two requests:

- JoudAlghamdi**
In KAU Hospital Looking For A+ Blood Type
2022-11-05
We need plasma blood donor
A+ Plasma
 Jeddah, KAU Hospital
[Donate](#)
- SaraAhmad**
In KAH Hospital Looking For AB+ Blood Type
2022-11-05

Testing and Code Output: Code Output



Testing and Code Output: Code Output

The screenshot shows a web browser window with the URL `localhost:8080/LifeQuest/View_Post.jsp`. The page is titled "Blood Donation Requests" and displays two posts from users JoudAlghamdi and SaraAhmad.

User Interface Elements:

- Header:** Includes the LifeQuest logo, navigation links for "Home", "Donation Requests", "Search for Donors", and "About Us", and a welcome message "Welcome SaraAhmad".
- Filter Results:** A sidebar on the left allows filtering by blood type, with "AB+" selected.
- Post 1 (JoudAlghamdi):** User profile picture, name "JoudAlghamdi", location "In KAU Hospital Looking For A+ Blood Type", date "2022-11-05". Description: "We need plasma blood donor". Blood type: "A+" with a "Plasma" icon. Location: "Jeddah, KAU Hospital".
- Post 2 (SaraAhmad):** User profile picture, name "SaraAhmad", location "In KAH Hospital Looking For AB+ Blood Type", date "2022-11-05". Description: "As shown in this post, we need whole blood donor in riyadh.". Blood type: "AB+" with a "Whole Blood" icon.

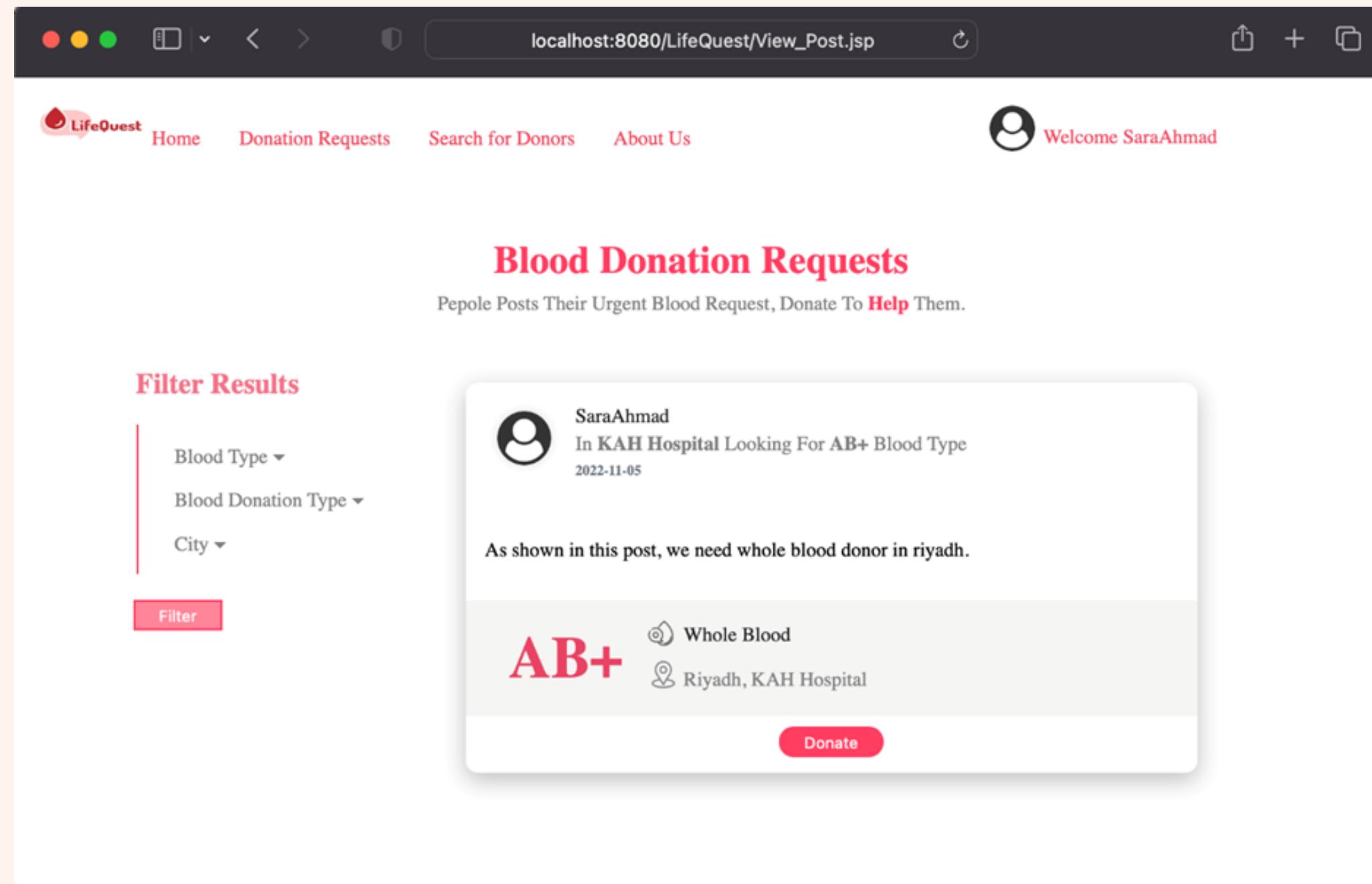
Testing and Code Output: Code Output

The screenshot shows a web browser window with the URL `localhost:8080/LifeQuest/View_Post.jsp`. The page is titled "Blood Donation Requests" and displays two posts from users JoudAlghamdi and SaraAhmad. On the left, there is a "Filter Results" sidebar with dropdown menus for "Blood Type", "Blood Donation Type", and "City". The "City" dropdown is open, showing options "Jeddah" and "Riyadh", with "Riyadh" selected.

User Post 1: JoudAlghamdi (In KAU Hospital Looking For A+ Blood Type, 2022-11-05)
We need plasma blood donor
A+ Plasma
Jeddah, KAU Hospital
Donate

User Post 2: SaraAhmad (In KAH Hospital Looking For AB+ Blood Type, 2022-11-05)
As shown in this post, we need whole blood donor in riyadh.
AB+ Whole Blood

Testing and Code Output: Code Output



A screenshot of a web browser window displaying a blood donation request page from "LifeQuest". The URL in the address bar is "localhost:8080/LifeQuest/View_Post.jsp". The page title is "Blood Donation Requests". The header includes the LifeQuest logo, navigation links for "Home", "Donation Requests", "Search for Donors", and "About Us", and a welcome message "Welcome SaraAhmad". On the left, there is a "Filter Results" sidebar with dropdown menus for "Blood Type", "Blood Donation Type", and "City", and a "Filter" button. The main content area shows a post by user "SaraAhmad" from KAH Hospital, looking for AB+ blood type. The post text says, "As shown in this post, we need whole blood donor in riyadh." Below the post, it specifies "AB+" blood type, "Whole Blood" needed, and the location "Riyadh, KAH Hospital". A "Donate" button is at the bottom of the post box.

localhost:8080/LifeQuest/View_Post.jsp

Welcome SaraAhmad

Blood Donation Requests

Pepole Posts Their Urgent Blood Request, Donate To [Help](#) Them.

Filter Results

Blood Type ▾

Blood Donation Type ▾

City ▾

[Filter](#)

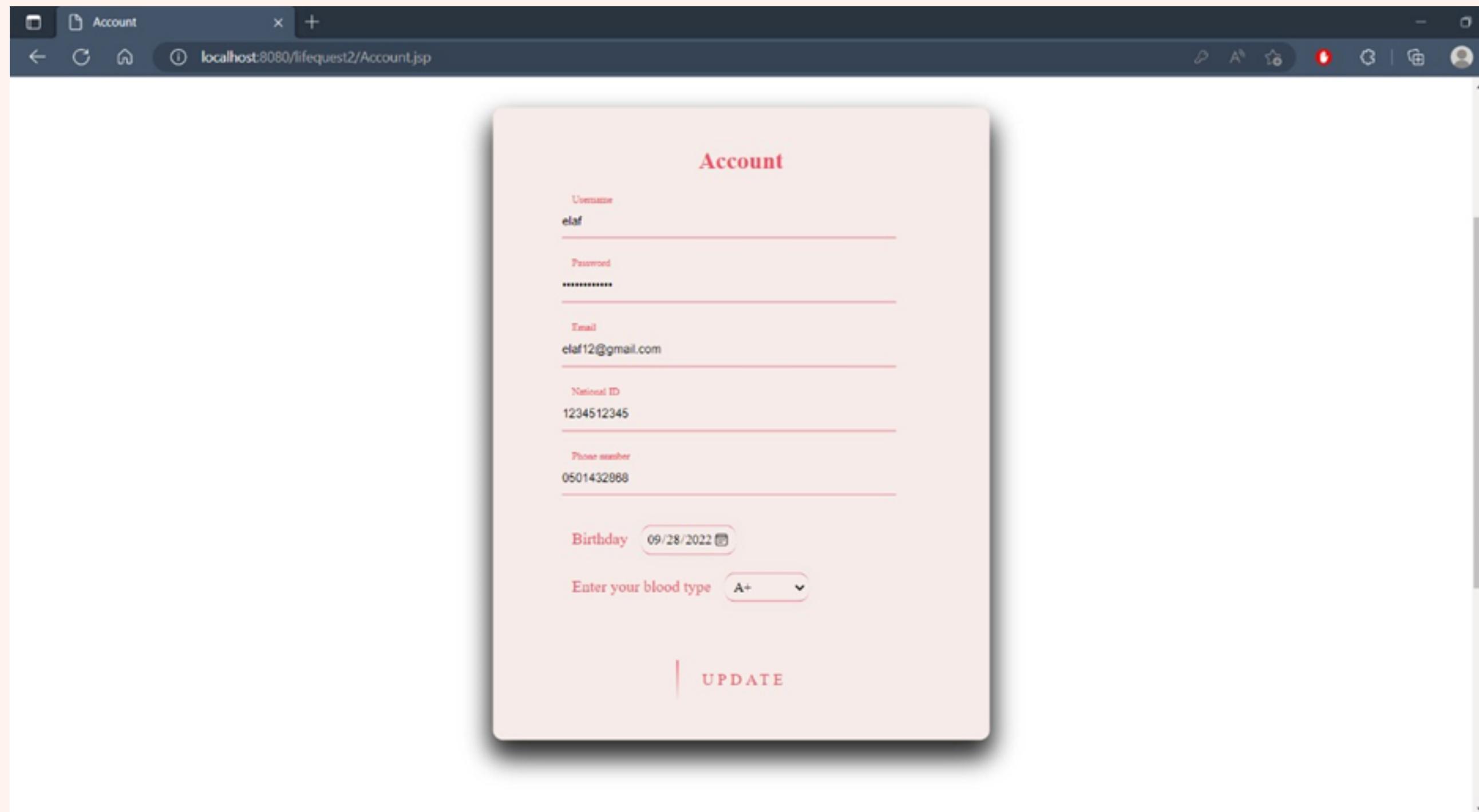
SaraAhmad
In KAH Hospital Looking For AB+ Blood Type
2022-11-05

As shown in this post, we need whole blood donor in riyadh.

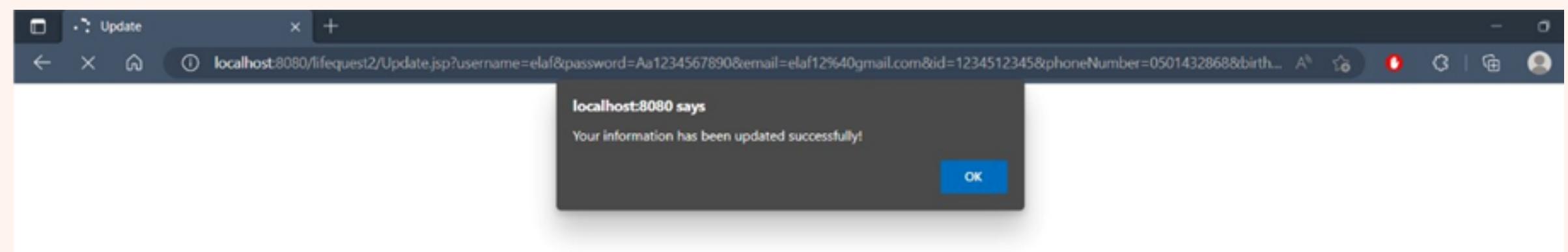
AB+ Whole Blood
Riyadh, KAH Hospital

[Donate](#)

Testing and Code Output: Code Output



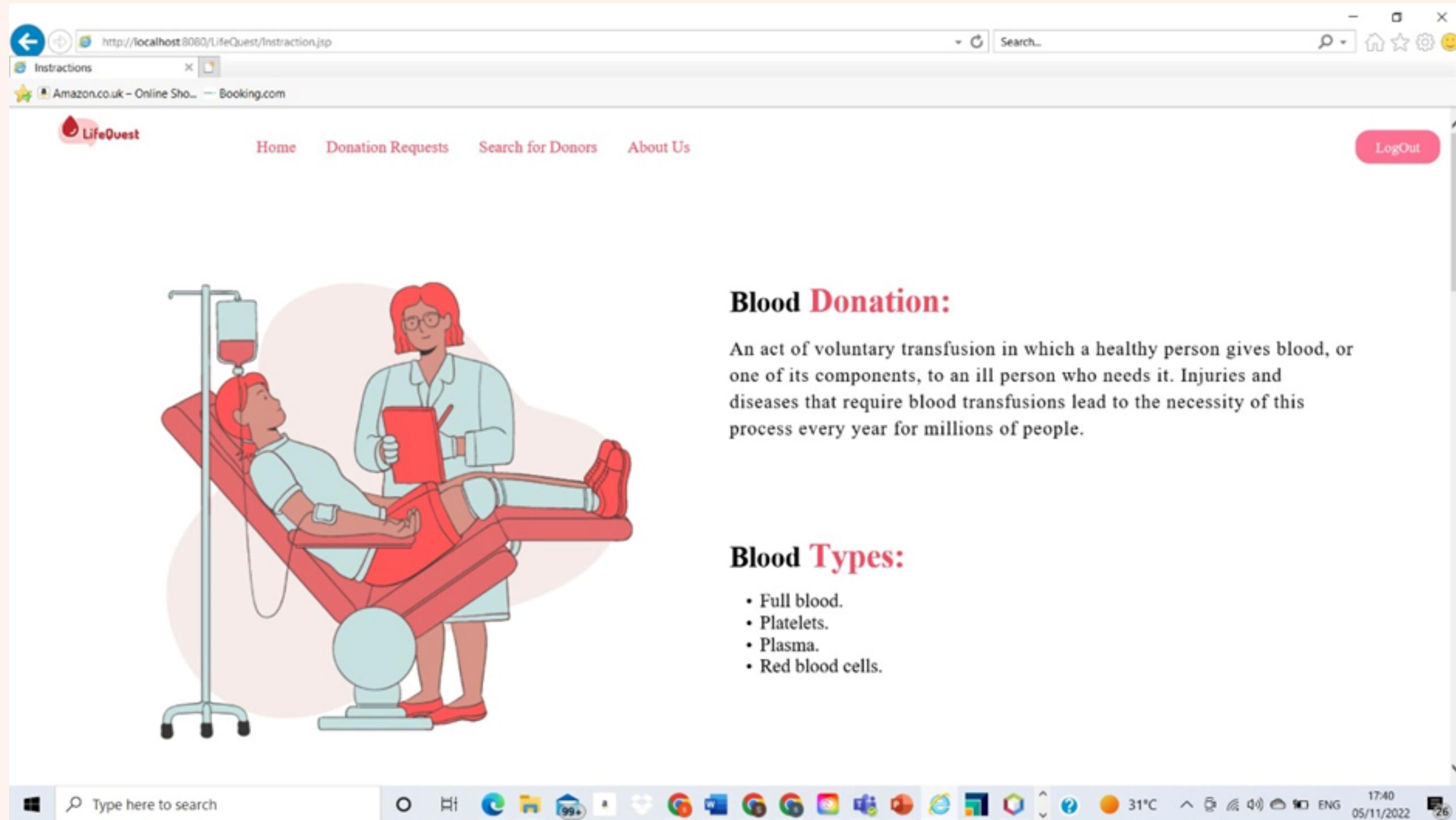
Testing and Code Output: Code Output

A screenshot of MySQL Workbench. The interface includes a top menu bar with File, Edit, View, Query, Database, Server, Tools, Scripting, Help, and a toolbar with various icons. On the left is a Navigator pane showing Schemas (lifequest, manar_1906775, sakila, sys, world) and Tables (account, manar_altaiary). The main area contains a SQL editor with the query "SELECT * FROM lifequest.account;" and a Result Grid displaying data from the account table. The Result Grid shows two rows of data with columns: username, password, email, id, phoneNumber, birthdate, and bloodType. The data is as follows:

username	password	email	id	phoneNumber	birthdate	bloodType
Manar	12345	manar.altaiary@gmail.com	112233	0501432868	2000-07-17	O
elaf	Aa1234567890	elaf12@gmail.com	1234512345	0501432868	2022-09-28	B+
*	NULL	NULL	NULL	NULL	NULL	NULL

The bottom of the screen shows the Output panel with the message "2 row(s) returned".

Testing and Code Output: Code Output



The screenshot shows a web browser window with the URL <http://localhost:8080/LifeQuest/Instruction.jsp> in the address bar. The browser's toolbar includes icons for back, forward, search, and other functions. Below the toolbar, there are several tabs open, including "Instructions" (the active tab), "Amazon.co.uk - Online Sho...", and "Booking.com". The main content area features the "LifeQuest" logo at the top left. A navigation menu with links to "Home", "Donation Requests", "Search for Donors", and "About Us" is positioned above a large illustration. To the right of the illustration, there is descriptive text about blood donation and a list of blood types. The bottom of the screen shows the Windows taskbar with various pinned icons and system status information.

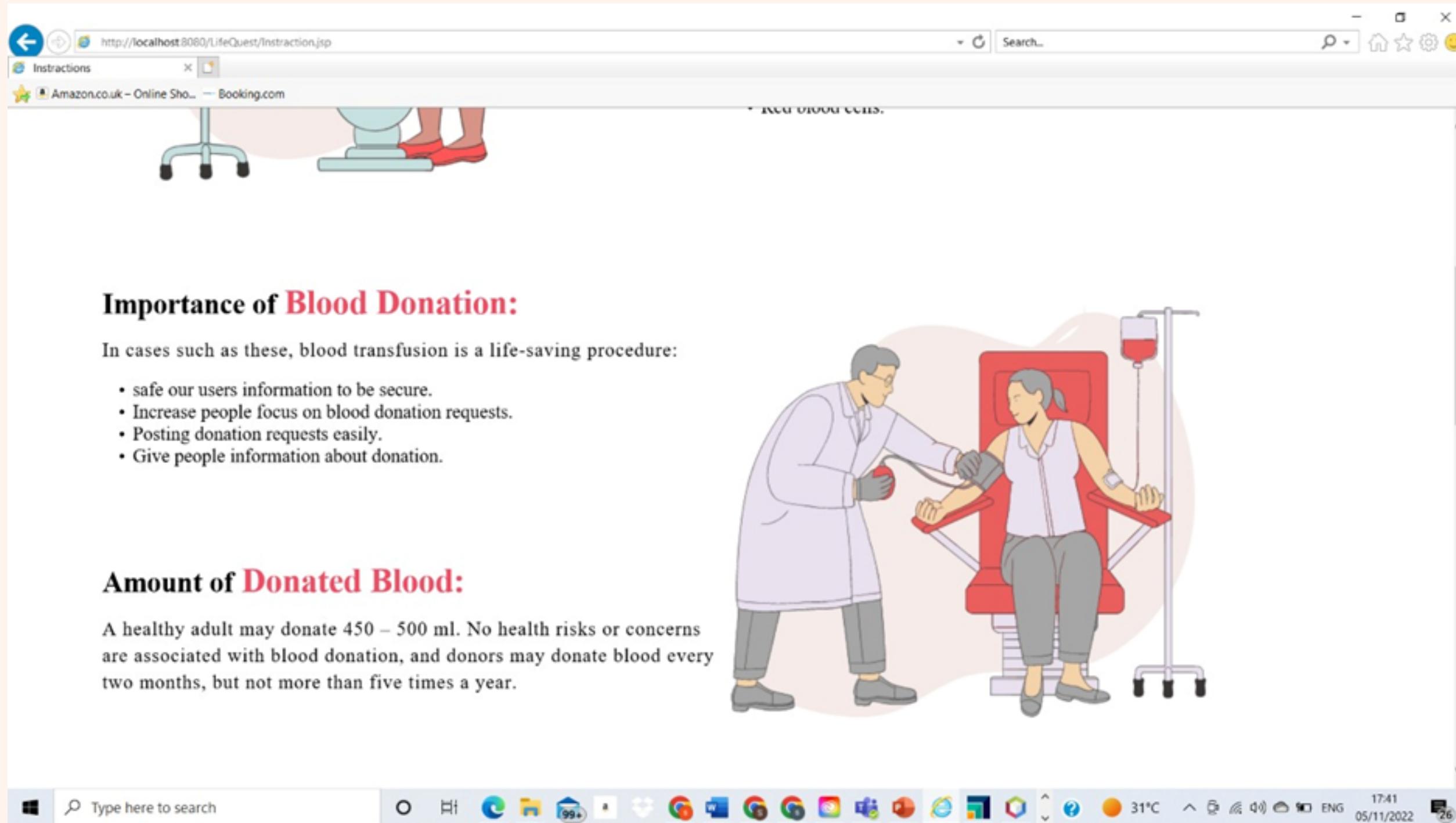
Blood Donation:

An act of voluntary transfusion in which a healthy person gives blood, or one of its components, to an ill person who needs it. Injuries and diseases that require blood transfusions lead to the necessity of this process every year for millions of people.

Blood Types:

- Full blood.
- Platelets.
- Plasma.
- Red blood cells.

Testing and Code Output: Code Output



The screenshot shows a web browser window with the URL <http://localhost:8080/LifeQuest/Instruction.jsp>. The page displays a cartoon illustration of a person's legs standing on a scale, with a red liquid being poured from a funnel into a bowl on the scale. Below the illustration, there is a section titled "Importance of Blood Donation:" followed by a bulleted list of reasons. To the right of the text is an illustration of a doctor in a white coat performing a blood draw from a donor seated in a red chair. The donor has a blood bag hanging from an IV stand next to her. At the bottom of the screen is the Windows taskbar.

Importance of Blood Donation:

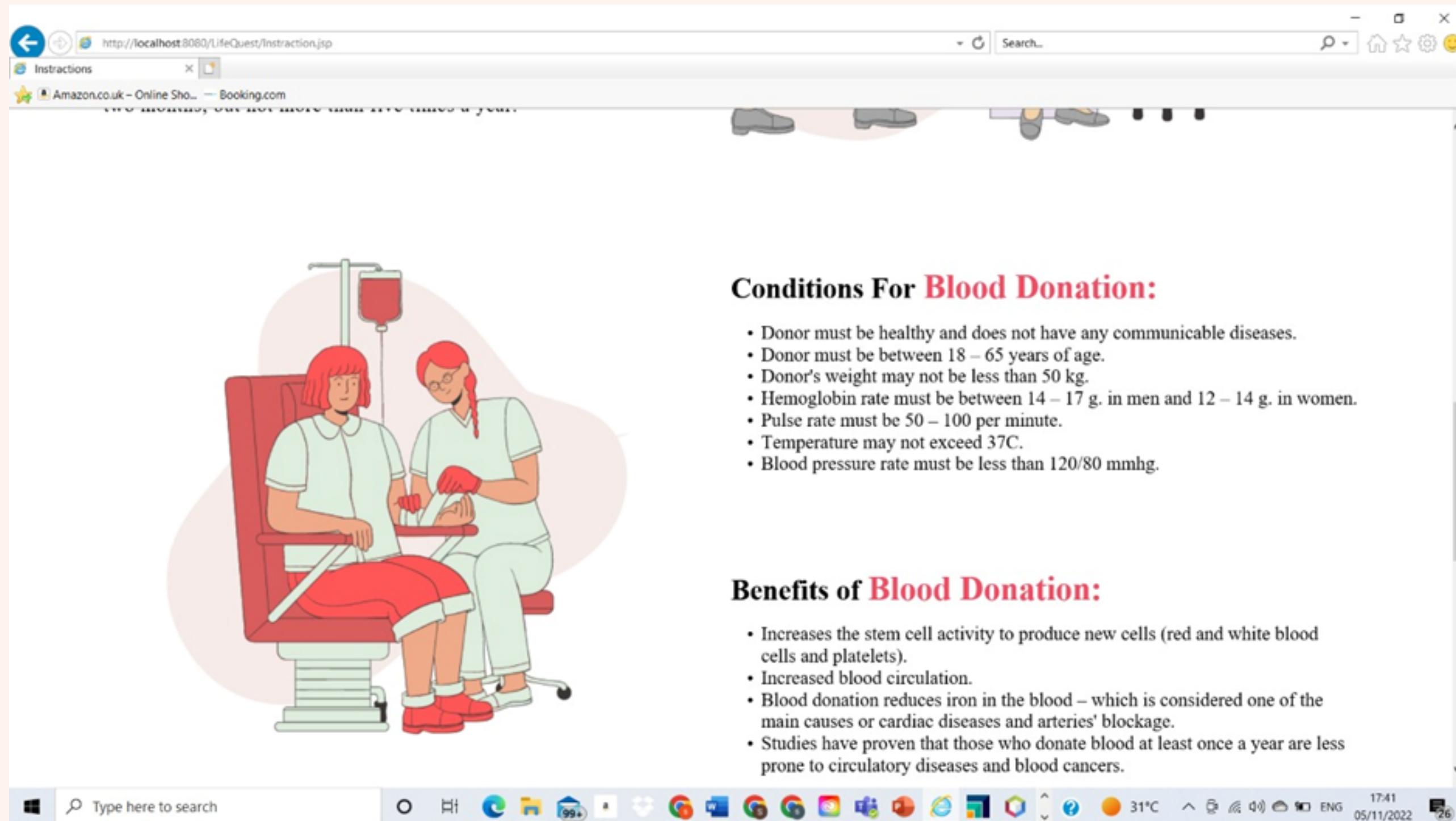
In cases such as these, blood transfusion is a life-saving procedure:

- safe our users information to be secure.
- Increase people focus on blood donation requests.
- Posting donation requests easily.
- Give people information about donation.

Amount of Donated Blood:

A healthy adult may donate 450 – 500 ml. No health risks or concerns are associated with blood donation, and donors may donate blood every two months, but not more than five times a year.

Testing and Code Output: Code Output



The screenshot shows a web browser window with the URL <http://localhost:8080/LifeQuest/Instruction.jsp> in the address bar. The browser interface includes a back button, forward button, search bar, and various icons in the toolbar. A sidebar on the left contains icons for Home, Favorites, Settings, and Help. The main content area features a large illustration of a person sitting in a red chair, connected to a blood donation machine with a red bag hanging above. To the right of the illustration, there are two sections of text:

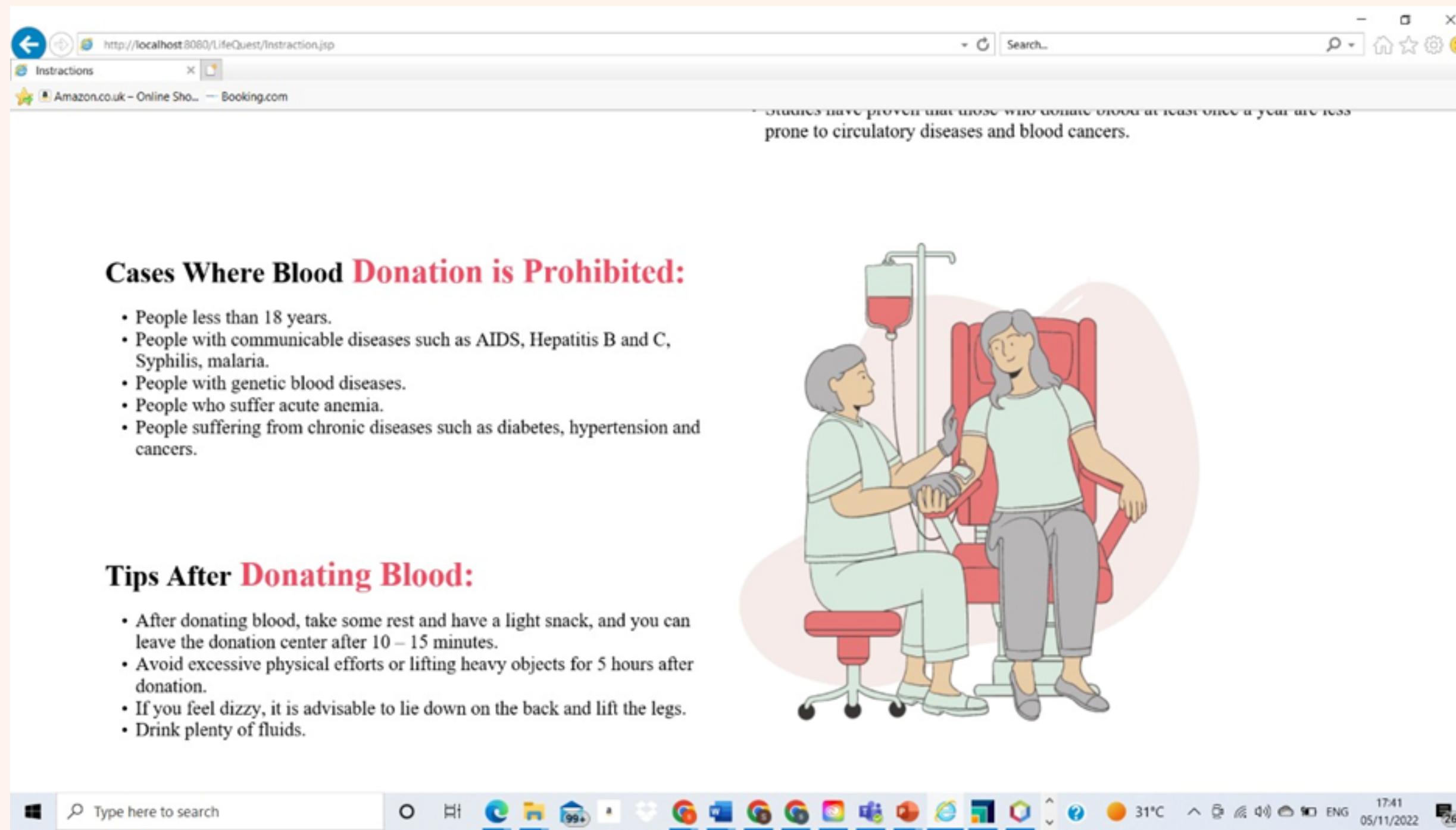
Conditions For Blood Donation:

- Donor must be healthy and does not have any communicable diseases.
- Donor must be between 18 – 65 years of age.
- Donor's weight may not be less than 50 kg.
- Hemoglobin rate must be between 14 – 17 g. in men and 12 – 14 g. in women.
- Pulse rate must be 50 – 100 per minute.
- Temperature may not exceed 37C.
- Blood pressure rate must be less than 120/80 mmhg.

Benefits of Blood Donation:

- Increases the stem cell activity to produce new cells (red and white blood cells and platelets).
- Increased blood circulation.
- Blood donation reduces iron in the blood – which is considered one of the main causes of cardiac diseases and arteries' blockage.
- Studies have proven that those who donate blood at least once a year are less prone to circulatory diseases and blood cancers.

Testing and Code Output: Code Output



The screenshot shows a web browser window with the URL <http://localhost:8080/LifeQuest/Instruction.jsp> in the address bar. The page content discusses the benefits of blood donation, mentioning that studies have shown those who donate blood at least once a year are less prone to circulatory diseases and blood cancers. Below this text is a section titled "Cases Where Blood Donation is Prohibited:" followed by a list of prohibited cases. Further down is a section titled "Tips After Donating Blood:" with a list of tips. At the bottom of the page is a navigation bar with various icons and links, including a search bar, file manager, and system status indicators.

Studies have proven that those who donate blood at least once a year are less prone to circulatory diseases and blood cancers.

Cases Where Blood Donation is Prohibited:

- People less than 18 years.
- People with communicable diseases such as AIDS, Hepatitis B and C, Syphilis, malaria.
- People with genetic blood diseases.
- People who suffer acute anemia.
- People suffering from chronic diseases such as diabetes, hypertension and cancers.

Tips After Donating Blood:

- After donating blood, take some rest and have a light snack, and you can leave the donation center after 10 – 15 minutes.
- Avoid excessive physical efforts or lifting heavy objects for 5 hours after donation.
- If you feel dizzy, it is advisable to lie down on the back and lift the legs.
- Drink plenty of fluids.

Testing and Code Output: Code Output

The screenshot shows a web browser window with the URL <http://localhost:8080/LifeQuest/AboutUs.jsp> in the address bar. The browser interface includes standard controls like back, forward, search, and a toolbar with icons for home, star, gear, and smiley face. Below the address bar, there are tabs for "About Us info" and "Amazon.co.uk - Online Sho... — Booking.com". The main content area features a header with the "LifeQuest" logo, navigation links for "Home", "Donation Requests", "Search for Donors", and "About Us", and a "LogOut" button. A large section titled "About US." contains text about the website's purpose: "LifeQuest is a website that aims to assist in finding potential blood donors for emergency patients quickly. Instead of posting the patients' information on all the social media applications, and many people ignore it, they can post their request here to let them know they need blood donation." To the right of the text is a colorful illustration depicting a medical theme with a doctor, a patient, a blood bag, and a clipboard. At the bottom of the browser window, the Windows taskbar is visible, showing the Start button, a search bar with the placeholder "Type here to search", and various pinned application icons.

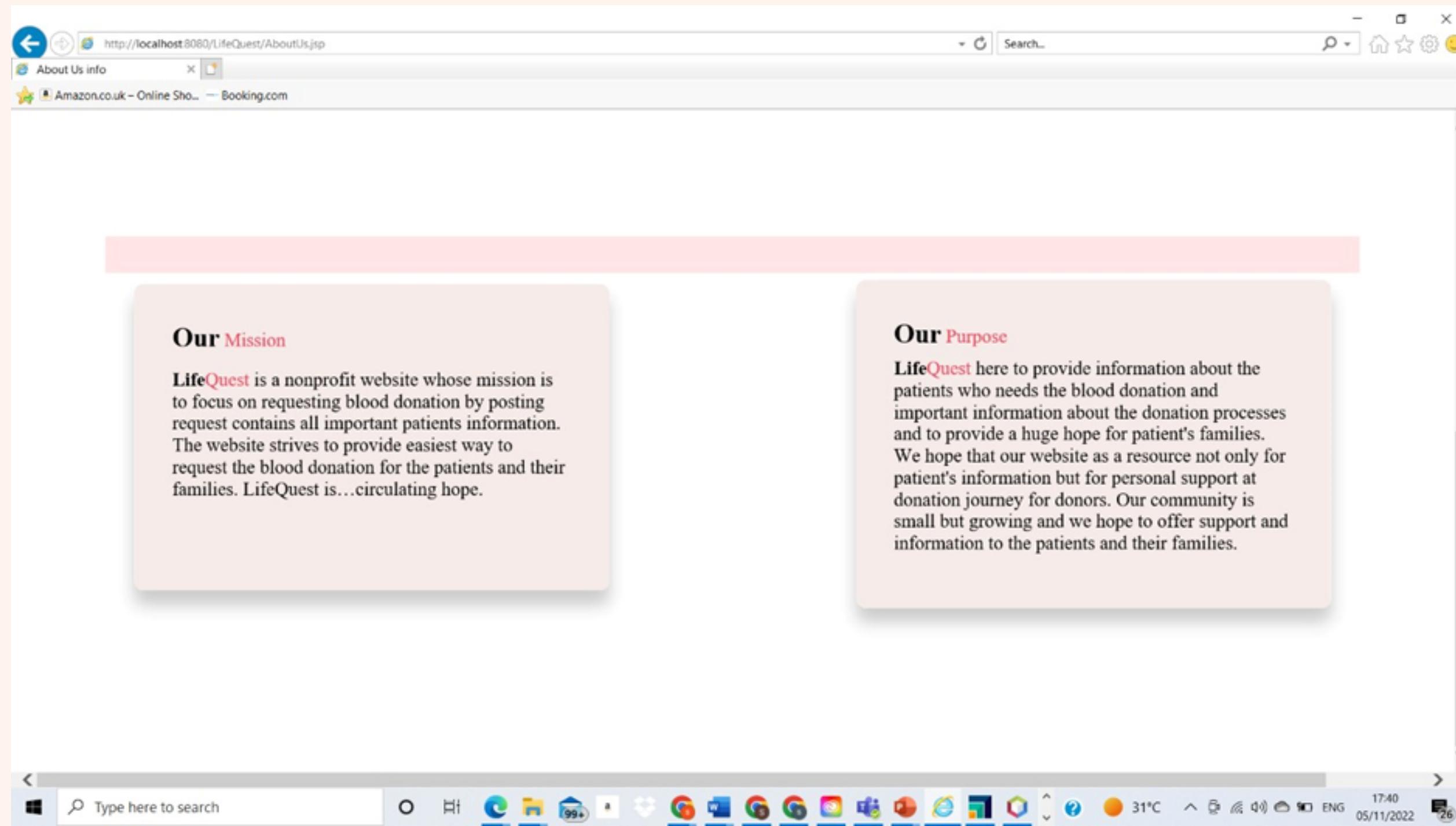
About US.

LifeQuest is a website that aims to assist in finding potential blood donors for emergency patients quickly. Instead of posting the patients' information on all the social media applications, and many people ignore it, they can post their request here to let them know they need blood donation.

Our Objectives.

- safe our users information to be secure.
- Increase people focus on blood donation requests.
- Posting donation requests easily.
- Give people information about donation.

Testing and Code Output: Code Output



Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

Gmail Ethical Hacking | U... Course: Introductio... Udemy W3Schools Online... MDN Web Docs YouTube تسجيل الدخول Blackboard kau RPA Business Analy...

Create new account.

Already a member? [Login](#)



Sign Up

Username:

Password: Please fill out this field.

Email: Ealoufi0015@stu.kau.edu.sa

National ID: 1911265123

Phone number: 0509117257

Birthday: 05/15/2000

Enter your blood type: O+

Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

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Create new account.

Already a member? [Login](#)



Sign Up

Username: ElafYousefAloufi

Password: ! Please match the requested format.
Must contain at least one number and one uppercase and lowercase letter, and at least 8 or more characters

Phone number: 1911265123

Birthday: 05/15/2000

Enter your blood type: O+

Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

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Create new account.

Already a member? [Login](#)



Sign Up

Username: ElafYousefAloufi

Password:

Email: Ealoufi0015 ! Please include an '@' in the email address. 'Ealoufi0015' is missing an '@'.

Phone number: 0509117257

Birthday: 05/15/2000

Enter your blood type: O+

Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

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Already a member? [Login](#)



ElaYousefAloufi

Password

Email

Elaoufi0015@stu.kau.edu.sa

National ID

1911265

Phone

Please match the requested format.
05091

Birthday

05/15/2000

Enter your blood type

O+

SUBMIT

localhost:8080/LifeQuest/SignUp.jsp#

Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp

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Already a member? [Login](#)



ElaYousefAloufi

Password

Email

Ealoufi0015@stu.kau.edu.sa

National ID

1911265000

Phone number

0509

Bir Please match the requested format.

Enter your blood type O+

SUBMIT

localhost:8080/LifeQuest/SignUp.jsp#

Testing and Code Output: Testing

Sign up Form

localhost:8080/LifeQuest/SignUp.jsp



Ealoufi0015@stu.kau.edu.sa

National ID
1911265000

Phone number
0509117257

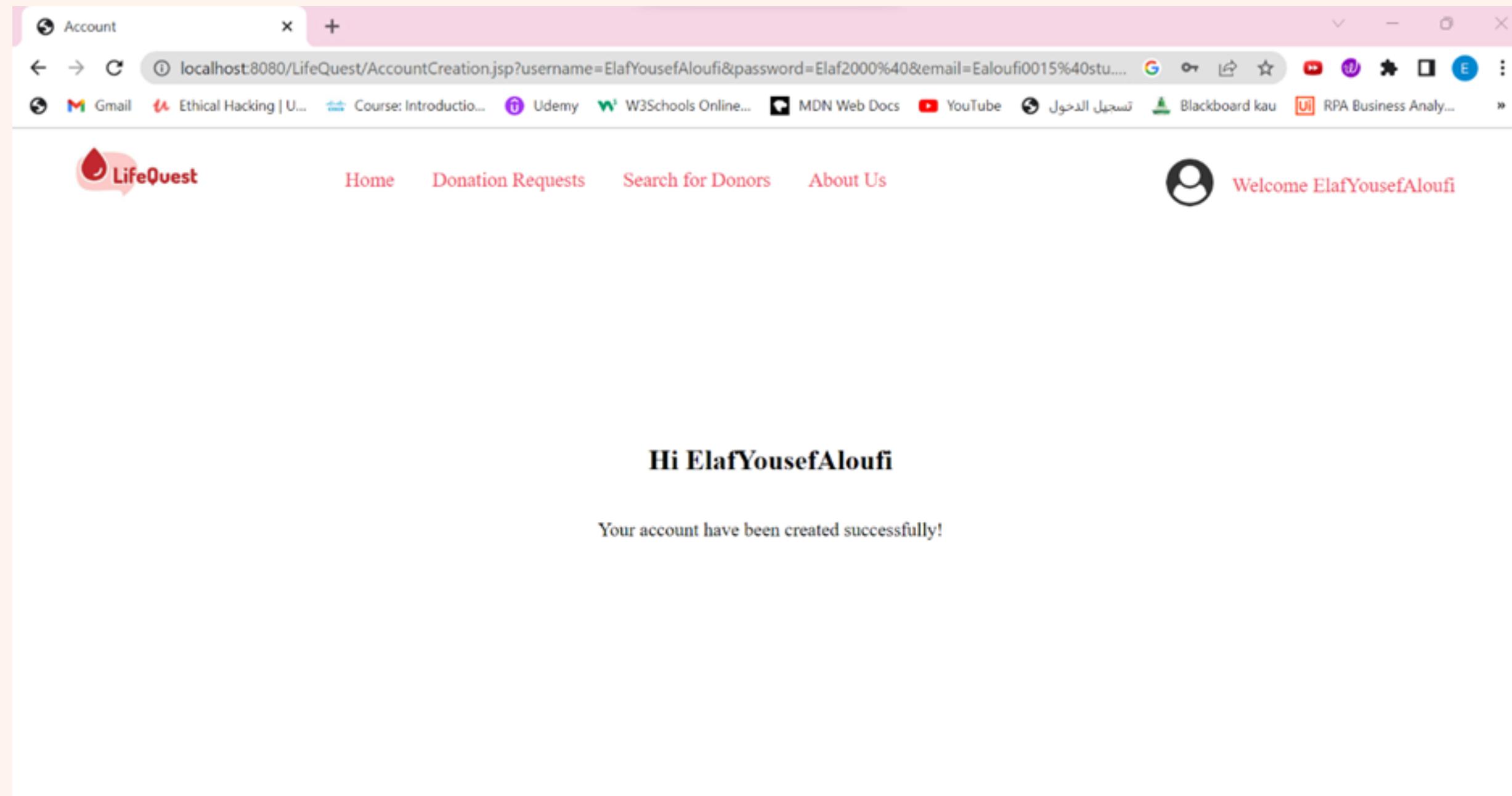
Birthday

Enter your blood type

S U B M I T

This screenshot shows a web browser displaying a sign-up form titled "Sign up Form" at the URL "localhost:8080/LifeQuest/SignUp.jsp". The page features a background illustration of medical professionals and a blood donation bag. The form includes fields for email, National ID, phone number, birthday, and blood type. The "SUBMIT" button is visible at the bottom.

Testing and Code Output: Testing



Testing and Code Output: Testing

The screenshot shows the MySQL Workbench interface with the following details:

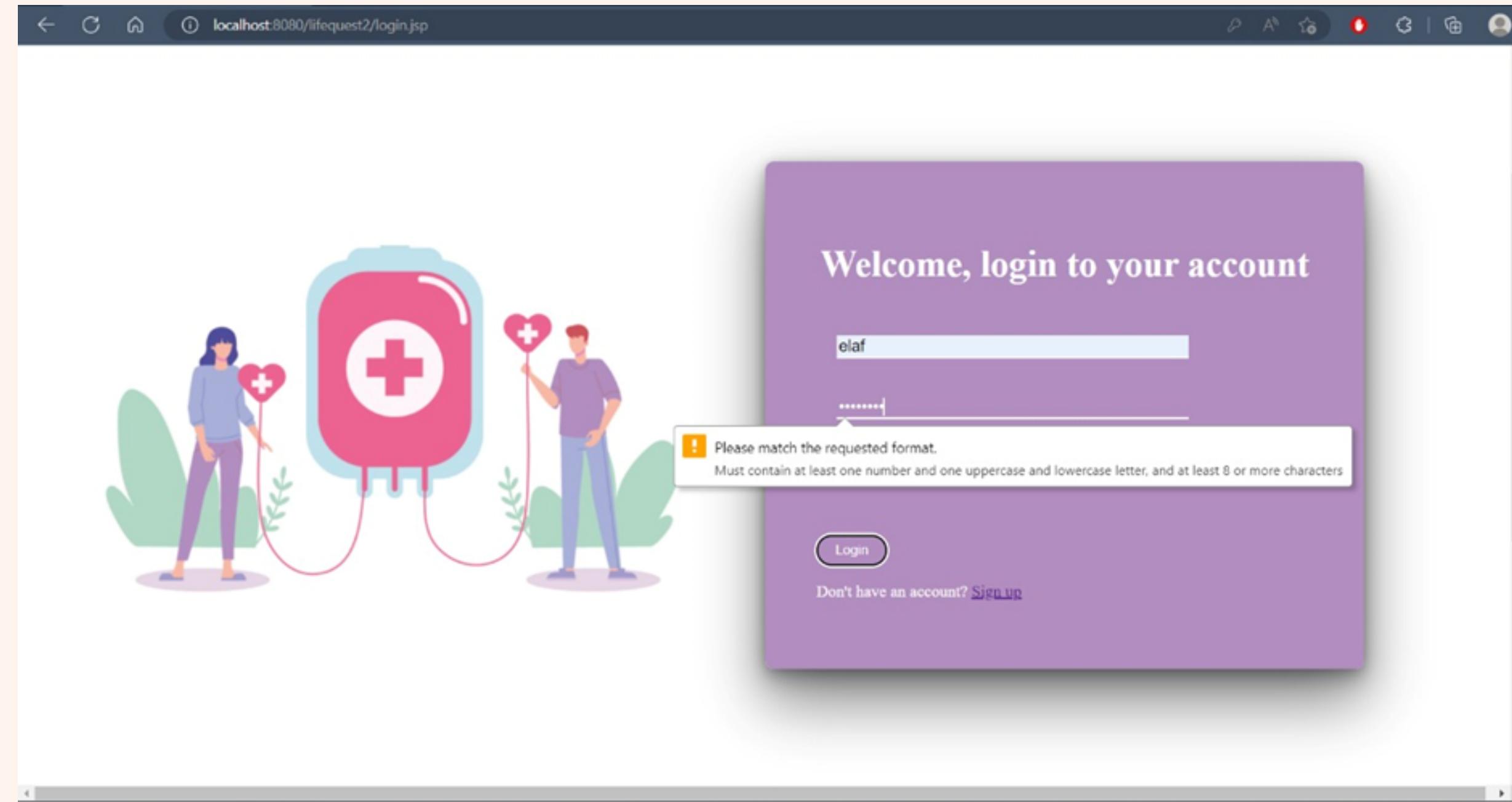
- Navigator:** Shows the **SCHEMAS** section with **lifequest** selected. Under **Tables**, the **account** table is listed.
- Query Editor:** The current tab is **Query 1 elafaloui**. The SQL code is:

```
1 • use lifequest;
2 • SELECT * FROM account;
```
- Result Grid:** Displays the results of the `SELECT * FROM account;` query. The columns are: username, password, email, id, phoneNumber, birthdate, bloodType. The data row is:

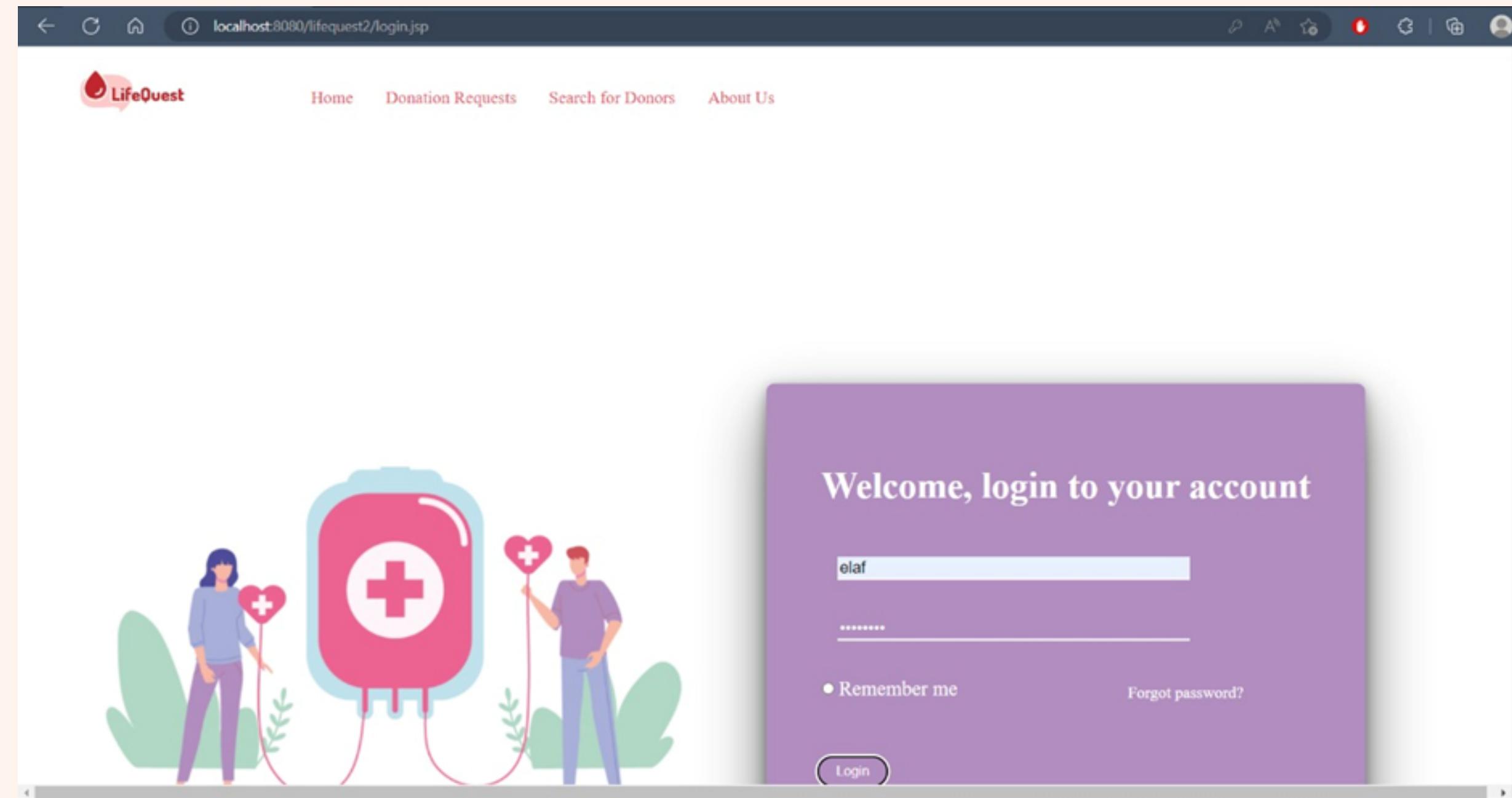
ElaYousefAloui	ElaF2000@	Ealoufi0015@stu.kau.edu.sa	1911265000	0509117257	2000-05-15	O+
NULL	NULL	NULL	NULL	NULL	NULL	NULL
- Action Output:** Shows the history of actions taken in the session:

#	Time	Action	Message	Duration / Fetch
26	17:20:11	use lifequest	0 row(s) affected	0.000 sec
27	17:20:11	SELECT * FROM account LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
28	17:21:01	use lifequest	0 row(s) affected	0.000 sec
29	17:21:01	SELECT * FROM account LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

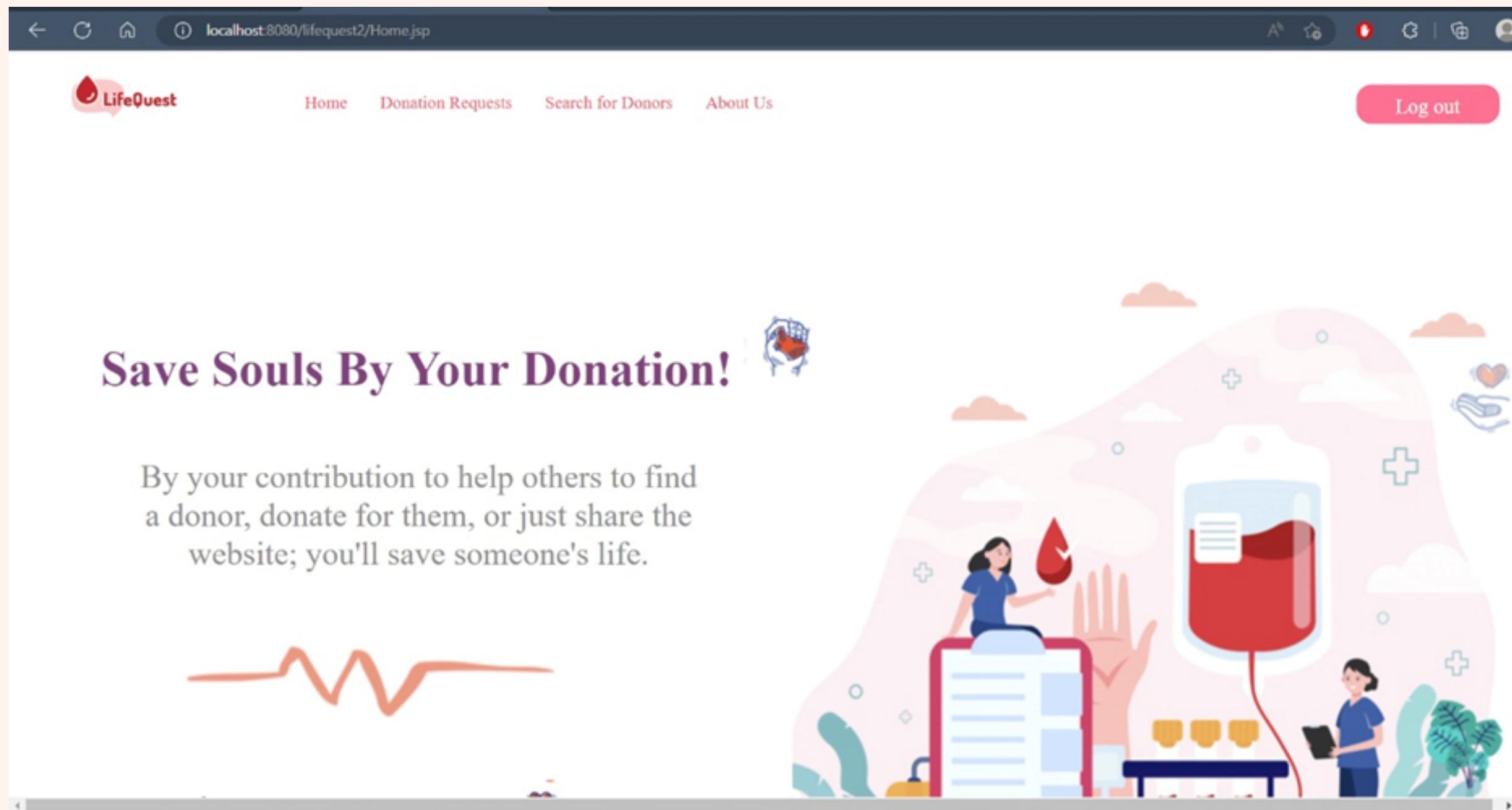
Testing and Code Output: Testing



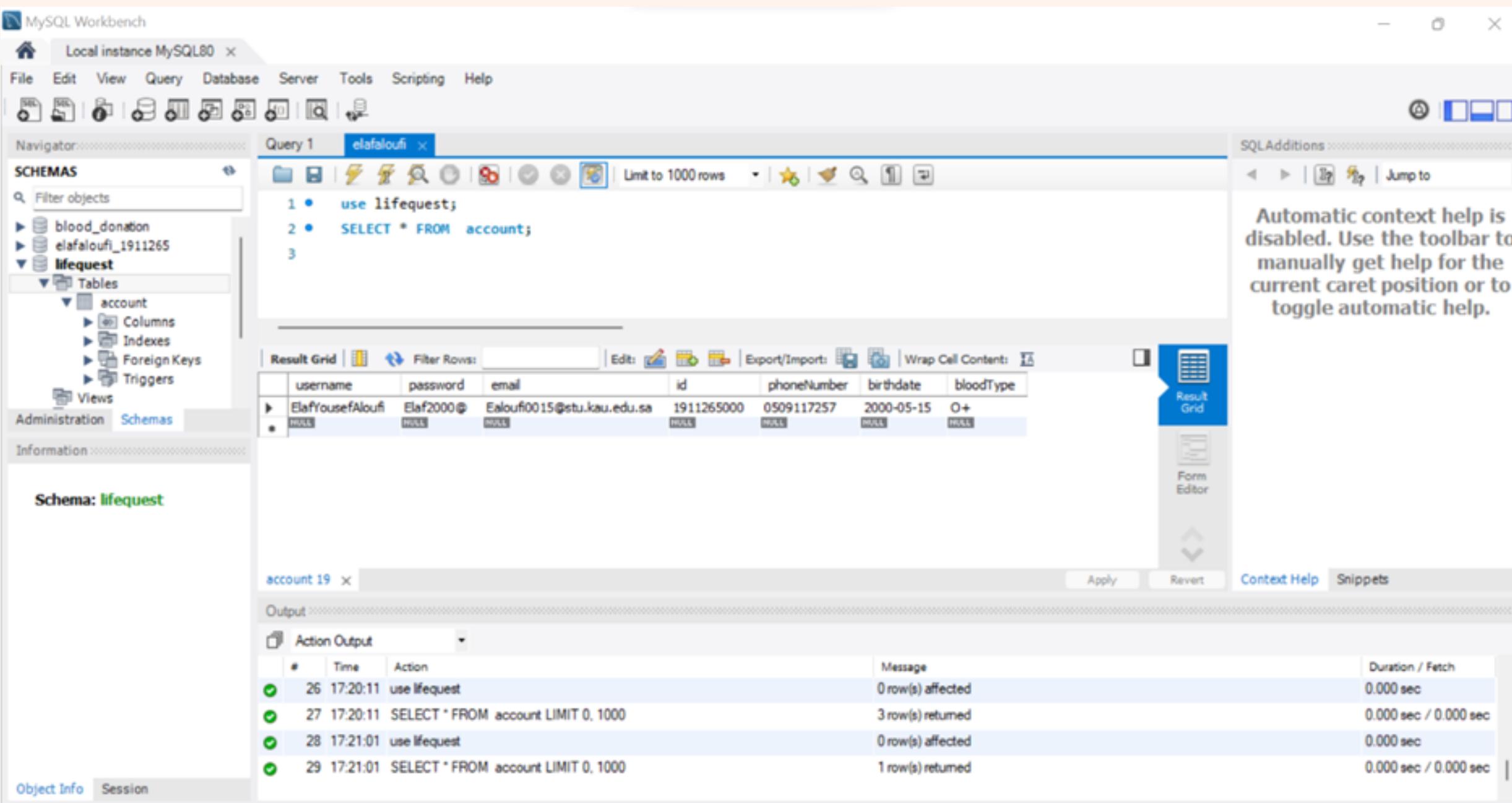
Testing and Code Output: Testing



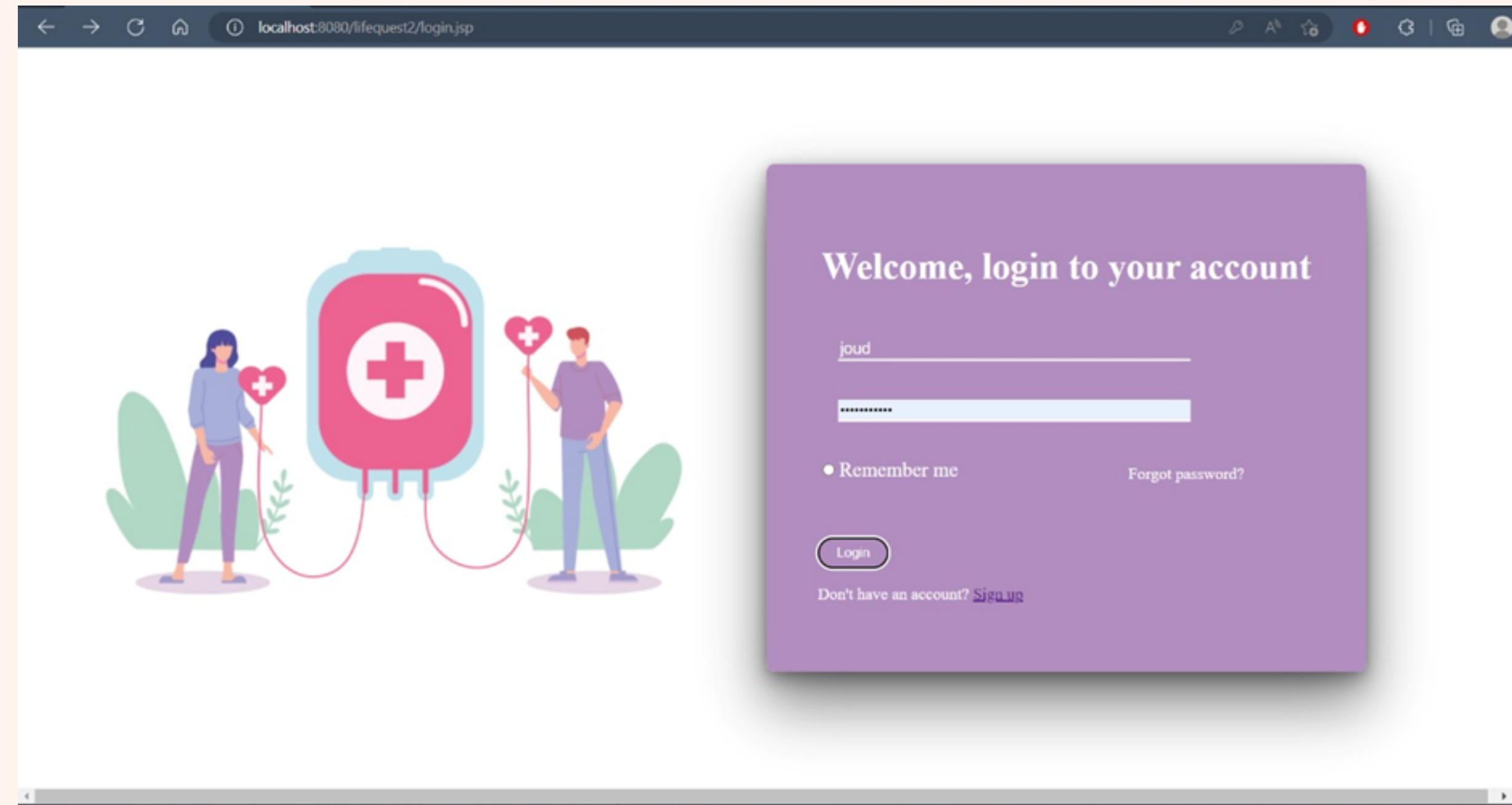
Testing and Code Output: Testing



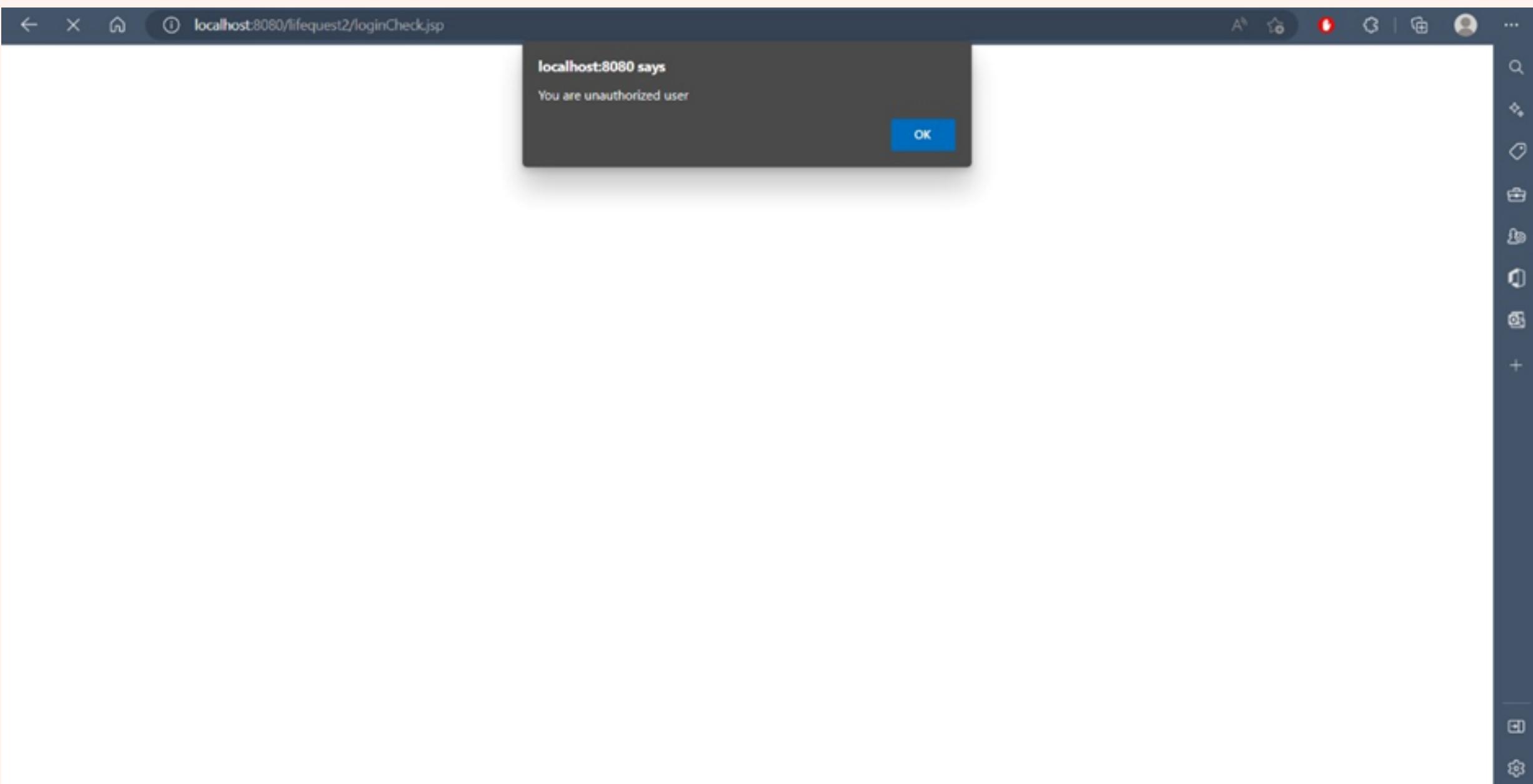
Testing and Code Output: Testing



Testing and Code Output: Testing



Testing and Code Output: Testing



Lessons Learned

Learning how to deal and cooperate with team members who have different opinions.

Building a website from scratch.

Working in scrum methodology.

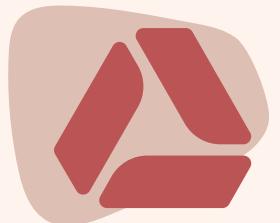
Using MySQL workbench.

Using JSP technology for developing webpages.

The application of security guidelines and dependable programming guidelines.

Developing a secure design and Applying security testing and assurance.

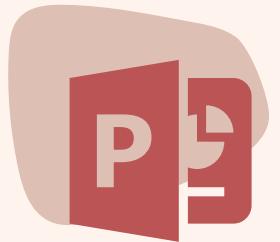
Used Tools



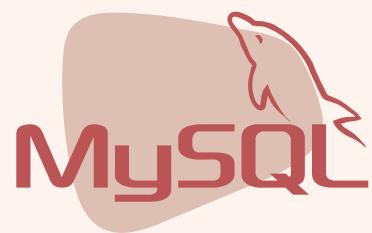
Google Drive



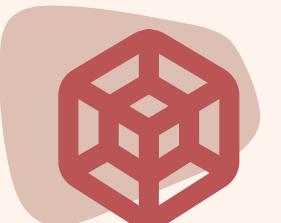
Google Documents



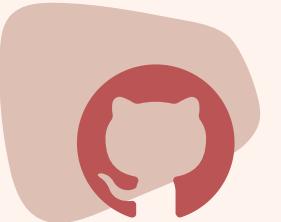
MS PowerPoint



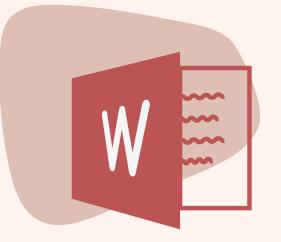
MySQL Workbench



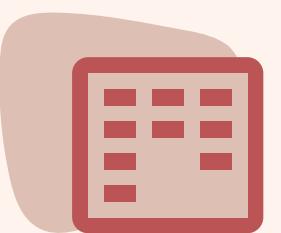
Apache NetBeans



GitHub



MS Word



Trello



Google meet

THANK
YOU FOR
YOUR
PATIENCE

FOR
YOUR
PATIENCE

THANK
YOU FOR
YOUR
PATIENCE

