Project for Advanced Software Engineering Course

Gaith-غَيث

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Introduction

1.1 Overview (Idea)

A website that collects everything a person in Jordan is looking for to donate in various forms.

1.2 Main Objectives

- Opportunities to donate blood to people in need and cover the need for blood.

- The possibility of contributing to meeting the orphan's basic needs such as food.

- Providing the opportunity to contribute to the restoration and improvement of mosques.

- The Food Parcels Donation Program aims to provide individuals and families in need with a reliable and consistent source of nutritious food.

- Payment and donation processes are easy on the website that we will develop, and it will be through electronic payment platforms available in Jordan, such as efawateercom and CliQ.

1.3 Main Motivations

- To meet the need for facilitating various forms of donation, providing quick access through technological support, and enhancing reliability in cooperation with various government agencies.

- And believing that we can make a positive impact in society and make a real difference in people's lives.

1.4 Constraints

- The donation entities in this website are attached to official authorities

- To provide a place where all kinds of non-cash donations can be given and directed to its appropriate entity.

1.5 Similar Projects

- *إحسان:* ehsan.sa
- *شفاء:* shefa.sa/condition/17799/detail

1.6 Project Organization

- Minister of Health-Blood Bank manager
- Ministry of Social Development
- Ministry of Endowments (Al-Awqaf)

Chapter Two

Project Management

2.1 Feasibility study

2.1.1 Technical Feasibility

- Website Development: Developing a website to facilitate donations would require expertise in web development technologies such as HTML, CSS and JavaScript. Therefore, we need a front-end developer. A cloud-based web server is needed to host the website. The website should have a user-friendly interface that allows individuals to search for donation items, browse donation categories, and submit their donations. However, we will provide a training program to ensure that users are familiar with the website's functionalities.
- Database Management: The database should efficiently handle the storage and retrieval of donation details, donor information, and item categorization. So, we need a database administrator.
- User registration and authentication are crucial features for the website. Users should be able to register and create accounts to manage their donations. To ensure security, the website needs to implement robust authentication mechanisms, to safeguard user data.
- Security and Privacy: Implementing security measures, including data encryption, secure connections (HTTPS), and regular backups, Compliance with data protection regulations, such as GDPR or local privacy laws.
- Scalability and Performance: Employing scalable infrastructure and optimizing website performance.

2.1.2 Operational Feasibility

Some of the main problems that we aim to avoid them:

-lack of trust is a problem related to donations, as some people may be hesitant to donate due to concerns over whether their donation will be used for its intended purpose.

- Limited resources: While some individuals or organizations may be willing to donate, they may not have the financial resources to do.

-Inefficiency: In some cases, the process of donating can be inefficient, with a large portion of funds going towards administrative costs rather than the intended cause

2.1.3 Legal Feasibility

proposed project confirms the legal and ethical requirement, and the proposed system is completely fine with the legal and ethical terms. However, there's some point that needs to be clarified:

•The development team Own the rights of The Source Code, in addition to that any new feature will be considered as a new version that has its cost.

2.2 The Needed Hardware and Software

Table 2.1 presents the needed Hardware and Software to develop the project and their estimated cost

Table 1: Needed Hardware and Software

	Description	Quantity	Unit Price (JD)	Total Price	Note
HD1	Laptops	4	650 JD	2600 JD	
HD2	Printers	2	115 JD	230 JD	
SW1	cloud-based web server	1	102 JD per year	Infant	
SW2	PHP myAdmin	-	Free		
SW5	Figma	1	Free		

SW6	VS code	4	Free		
Total	**Fixed cost: 2830 JD + 102 per year**				

2.3 The Schedule and The Estimated Time:

2.3.1 Schedule

The Project Schedule is presented in Table 1

Table 2: Project schedule

Task ID	Description	Duration Time (WD)	Dependency	Responsible Partner/s, Staff	Resources
T1	Data gathering for Gather information and concepts about the project.	4 Days (13/7/2023 to 16/7/2023)	None		1) good writing skills. 2)zoom platform
T2	Prepare a project management plan for A descriptive structure to the project that must be done within a certain timeframe by showing the software process model and how the project will be executed and monitored	13 Days (17/7/2023 to 31/7/2023)	T1		good communication skills between team members

T3	study the feasibility of the project for A study that analyzes the project to figure out if it is feasible and applicable to the aspects of the project. The study will also show if the investment in the project will be successful or not	3 Days (1/8/2023 to 3/8/2023)	T1&T2 (M1)		1)spreadsheets like: Microsoft excel. 2)Being able to deal with financial issues
T4	Writing Functional and non-functional req for A roadmap and a description for the software that helps to fully understand it	3 Days (4/8/2023 to 6/8/2023)	T1& T3		Business analyst
T5	write use case diagrams and description for each for must do a diagram that represents the interactions between actors and use cases in a system.	3 Days (7/8/2023 to 9/8/2023)	T3,T4		lucid.app
T6	prepare UML diagrams for a Unified Modeling Language that represents different aspects of a system.	3 Days (10/8/2023to 12/8/2023)	T5 (M2)		lucid.app app.creately

T7	design the physical database for the logical design of a database	3 Days (13/8/2023to 15/8/2023)	T5,T6		Microsoft Access
T8	design architecture of the system for a clear and flexible structure for the system	4 Days (16/8/2023 to 19/8/2023)	T5,T6		photoshop
T9	design graphical user interface for A good GUI should be user-friendly and should provide clear and easy access to the functionality of the system	4 Days (20/8/2023to 23/8/2023)	T6,T8		Figma (cloud-based design tool)
T10	implement the graphical user interface for writing code, then adding functionality	3 Days (24/8/2023to 26/8/2023)	T7,T9		1)HTML, CSS, JavaScript programmer 2)Visual studio
T11	Test the system for to ensure the system meets requirements and functions correctly.	3 Days (27/8/2023to 29/8/2023)	T9,T10 (M3)		-
T12	prepare the user manual for A guide that helps users to know how to use the website	2 Days (30/8/2023to 31/8/2023)	T5,T9,T10,T11		Figma

2.3.2 Pert Diagram
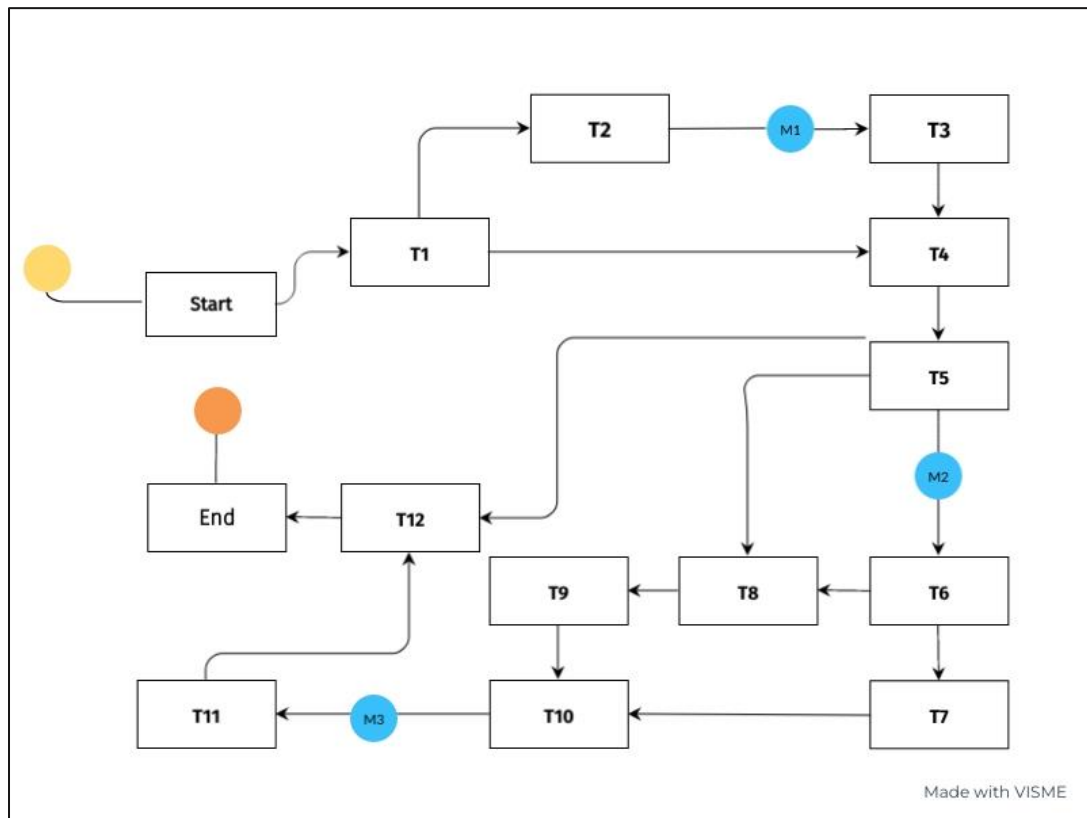
Figure 1: Pert Diagram

Estimated Time (WD) = 48 days (WDs)

Project Specifications

3.1 Stakeholder

Table 3: Stakeholders

ST ID	Stakeholder	Note
ST1	Users: Individuals who are potential blood donors, clothing contributors, donors to the orphan's needs, contributors to mosque restoration, and supporters of environmental initiatives	
ST2	Ministry of Social Development: Involved in coordinating and supporting initiatives related to meeting the needs of orphans, and collect data on poor families for food parcel	
ST3	Civil service consumer corporation :Collaborate with Civil service consumer corporation for sourcing the food items	
ST4	Ministry of Endowments (Alwqaf) : Involved in mosque restoration and improvement initiatives.	

ST5	Minister of Health-Blood Bank manager :Responsible for overseeing and coordinating blood donation initiatives and managing the Blood Bank.	
ST6	Ministry of Endowments (Alwqaf) : Involved in mosque restoration and improvement initiatives.	
ST7	Minister of Health-Blood Bank manager: Responsible for overseeing and coordinating blood donation initiatives and managing the Blood Bank.	

3.2 Data Gathering Techniques:

3.2.1 Interview:

Interview: we gathered information and requirements from project lead to understand their needs and expectations for a software project. It involves asking questions and discussing various aspects of the project to ensure a clear understanding of the scope, requirements, and desired outcomes. The information collected during interviews serves as the foundation for designing and developing an effective.

o   The Interview:

Lara: Can you provide an overview of the registration process and the information you collect from users?

Mr. Firas: Certainly. During the registration process, users are required to fill out a form with their personal information. This includes their full name, phone number, age, and residential address. Additionally, there are two checkboxes that allow users to select their notification preferences. If a user expresses interest in blood donation, further options are displayed, such as blood type, weight, health status, and gender. If a user selects orphan sponsorship, they will receive notifications when an orphan without a sponsor requires sponsorship.

Lara: That sounds like a comprehensive registration process. Now, let's discuss the login functionality. How do users access their accounts?

Mr. Firas: To log in, users enter their phone number. Once entered, a verification code is sent to their phone to ensure secure access to their account.

Lara: Great. Now, let's talk about the language selection feature. How does your system allow users to choose their preferred language?

Lara: Our system includes a language selection feature in the user profile settings. Users can choose between Arabic and English as their preferred language, and the system will adapt accordingly to display the content in their chosen language.

Lara: Excellent. Let's move on to the blood donation aspect of your project. How does your system facilitate blood donation scheduling and communication with donors?

Mr. Firas: Our system allows users to schedule blood donation appointments conveniently. It provides a user-friendly interface where donors can select suitable dates and times for their appointments. Additionally, we have a notification system

in place to remind donors about upcoming blood donation drives or urgent blood needs, ensuring effective communication and participation.

Lara: That's impressive. Now, could you tell us more about the donor tracking aspect? How does your system maintain records and history for tracking and follow-up purposes?

Mr. Firas: Our system maintains a comprehensive record of donors and their donation history. This includes details such as the dates and types of donations made by each donor. By tracking this information, we can ensure a consistent supply of blood and provide follow-up support or gratitude to donors as needed.

Lara: Moving on to orphan support, how does your system facilitate monetary donations and ensure transparency?

Mr. Firas: Our system provides a dedicated section for collecting monetary donations to support orphans' basic needs. Users can contribute by paying a monthly sponsorship amount of 25 JD. To ensure transparency and accountability, we provide regular reports on the utilization of funds, demonstrating how the donations are making a difference in the lives of the sponsored orphans.

Lara: That's commendable. How does your system indicate the sponsorship status of an orphan and handle sponsorship renewal?

Mr. Firas: The system clearly indicates whether an orphan is currently sponsored or not. This information is displayed alongside the orphan's profile or in a designated section. Additionally, the system tracks the duration of each sponsorship period, showing the start date and the number of months it has been ongoing. If the sponsorship period expires, the system sends a notification or reminder to the user, encouraging them to renew their sponsorship if they wish to continue their support.

Lara: Let's move on to the Food Parcels program. How does your system handle partnerships, parcel composition, and donation options?

Mr. Firas: Our system collaborates with the Civil Service Consumer Corporation for sourcing the food items needed for the parcels, optimizing costs, and maximizing distribution. We also partner with the Ministry of Social Development to collect data on poor families. The system offers three flexible donation options: food parcels for 1-2 persons priced at 18 JD, for 3-5 persons priced at 35 JD, and for 6-7 persons priced at 50 JD. Users can select the desired number of food parcels they wish to donate.

Lara: That's impactful. Could you elaborate on the volunteer aspect? How do users indicate their interest and choose the most convenient time for them?

Mr. Firas: Users who wish to volunteer can indicate their interest on the website. They can choose between preparing food parcels or providing delivery services to families' houses. Once they select their preferred option, the system displays available slots and appointments. Users can then choose the most convenient time for their volunteering activities.

Lara: Let's talk about the restoration and improvement of mosques. How does your system support these projects and facilitate financial donations?

Mr. Firas: We collaborate with the Ministry of Endowments (Al-Awqaf) to support restoration and improvement projects in need of funding. Our system provides a platform where users can make financial donations specifically for mosque restoration and improvement. This ensures that individuals can contribute directly to these projects and help preserve and enhance these important community spaces.

Lara: Lastly, let's discuss electronic payment integration. How does your system incorporate electronic payment platforms for seamless transactions?

Mr. Firas: We have integrated electronic payment platforms such as efawateercom and Click to Donate into our website. This allows users to make secure and convenient online transactions when donating or making payments for various aspects of our project. By leveraging these platforms, we aim to provide users with a smooth and hassle-free payment experience.

Lara: Thank you, Mr. Firas, for providing insights into your project's functionalities. It's evident that your system is designed to address multiple aspects of support and convenience for users. We appreciate your time and wish you continued success with your initiative.

Mr. Firas: Thank you for having me. It's been a pleasure discussing our project with you. We hope that our efforts can make a positive impact on the lives of those in need.

3.2.2 Survey:

Questionnaire: is a research instrument that consists of a set of questions or other types of prompts that aims to collect information from a respondent.

Figure 2: Questionnaire

How to identify people in need of donation
كيف تتعرف على الأشخاص المحتاجين للتبرع

*You can choose more than one answer

40 responses

Personal knowledge - معرفة شخصية	18 (45%)
Friends or parents - الأصدقاء أو الأهل	31 (77.5%)
Personal search for charities - بحث شخصي عن جمعيات خيرية	13 (32.5%)
Advertising from social media - اعلان من مواقع التواصل الاجتماعي	14 (35%)

How often do you donate?
كيف تتبرع عالبًا؟

40 responses

directly to the needy- للمحتاج مباشرة	28 (70%)
relative or friend - قريب أو صديق	15 (37.5%)
Bank - بنك	10 (25%)
Donation websites - مواقع الكترونية خاصة بالتبرع	6 (15%)
جمعيات	1 (2.5%)

Have you ever donated through reliable means of donation in the Kingdom such as (Tkiyet Um Ali and the Central Blood Bank...)

هل سبق وتبرعت عن طريق وسائل التبرع الموثوقة في المملكة مثل (تكية أم علي وبنك الدم المركزي ..)

Copy

40 responses

- yes
- no

75%

25%
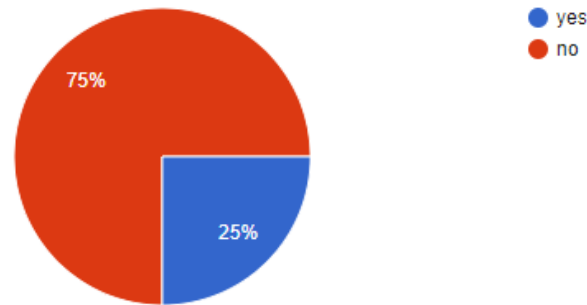
In your opinion, why don't people use the official websites to donate?

برأيك، لماذا لا يستخدم الناس المواقع الالكترونية الرسمية للتبرع؟

Copy

- I agree
- I don't know
- I disagree

30

20

10

0

Not knowing the use of sites to donate - عدم معرفة كيفية استخدام المواقع للتبرع

Lack of trust in the sites - عدم الثقة في مواقع التبرع

Facing difficulty in electronic payment methods - مواجهة صعوبة في طرق الدفع الالكترونية
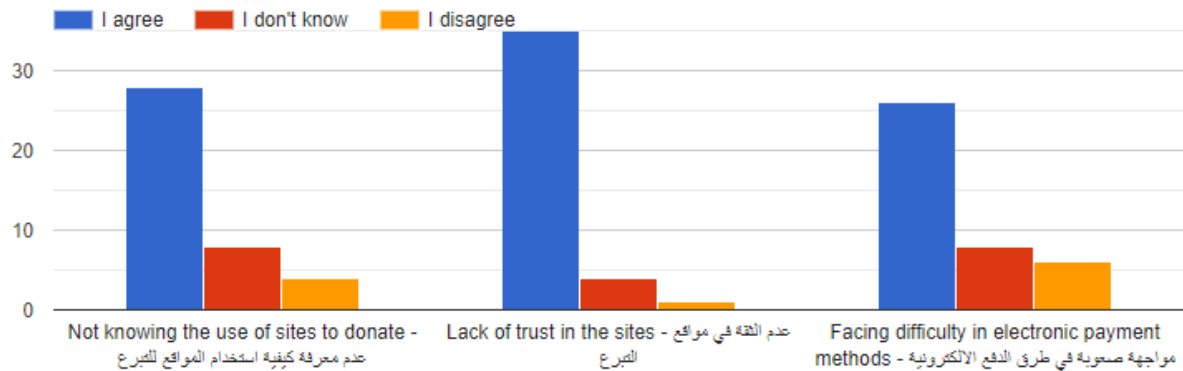
If there is a site that collects the official donation sites, what humanitarian services would you prefer to provide?   □ Copy

اذا كان هناك موقع يجمع المواقع الرسمية للتبرع, ما الخدمات الانسانية التي تفضل تقديمها؟

40 responses

Category	Value
blood donation - التبرع بالدم	18 (45%)
orphan - كفالة يتيم	25 (62.5%)
Food parcels - طرود غذائية	34 (85%)
Mosque service - خدمة المساجد	20 (50%)
	3 (7.5%)
All of the above	1 (2.5%)
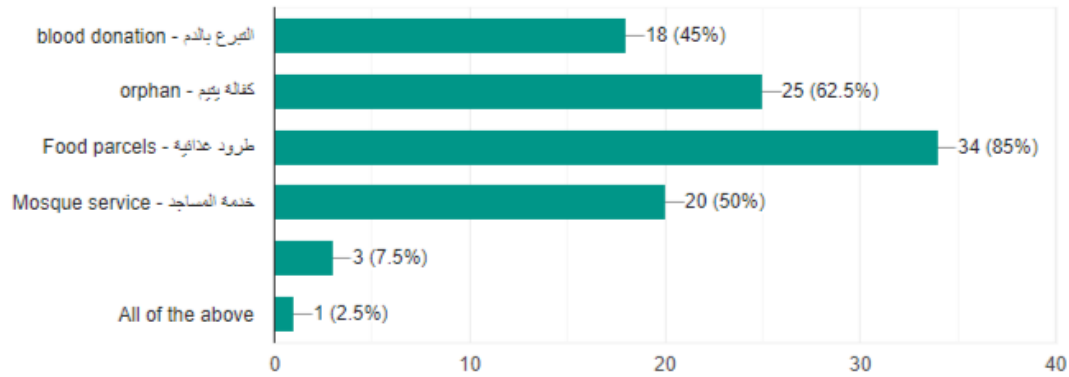
If their is an official site that has all the official donation entities, will it encourage you to donate?   □ Copy

اذا كان هناك موقع يجمع المواقع الرسمية للتبرع, هل سيشجّعك ذلك على التبرع؟

40 responses

- yes
- no
- maybe

67.5%
30%

If this site is available, would you like to volunteer in the Food Parcels Section? [Copy

بحال توفر هذا الموقع، هل تود التطوع في قسم الطرود الغذائية؟

40 responses

- yes
- no
- maybe

32.5%

67.5%
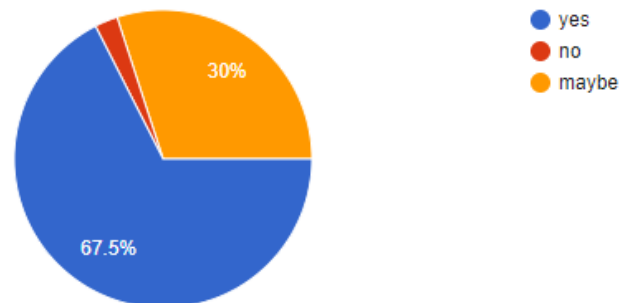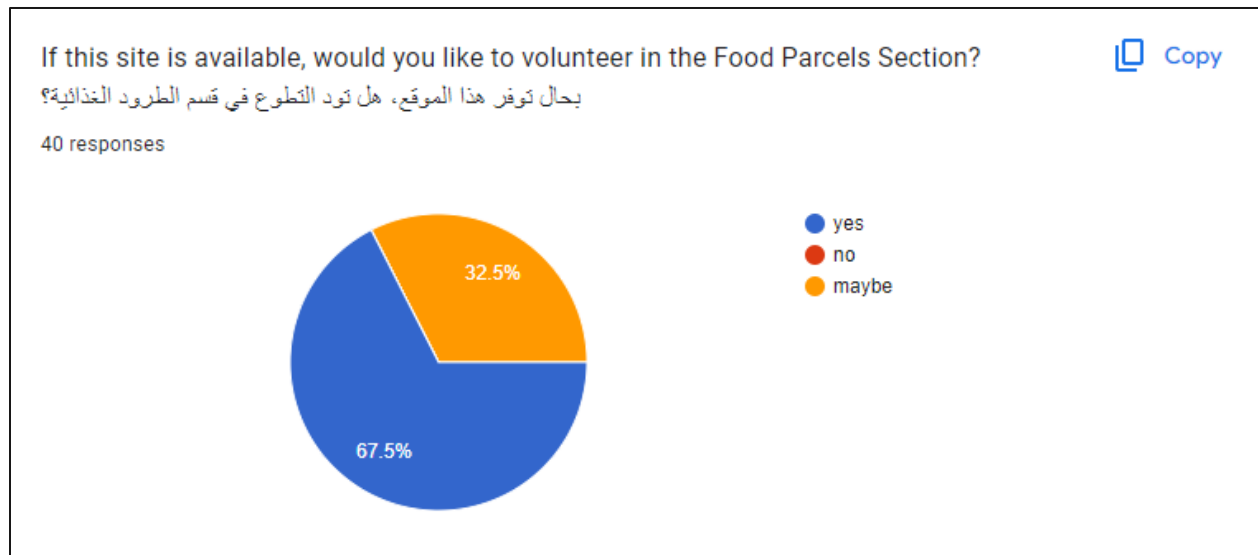
3.3 Functional Requirements

The functional requirements are shown in Table 3.3

Table 4: Functional Requirements

FR-ID	Description	ST	Priority	Note
FR1	The user can click sing-up the button	ST1	5	
FR2	The system displays a registration form with fields for Name, Phone Number, Age, and Address.	ST1 ST7	5	
FR3	The user enters the required information.	ST1	5	
FR4	The user selects one or both checkboxes for Notification Purposes (Blood Donation and Orphan Sponsorship).	ST1 ST2 ST5	4	

FR5	If the user selects the Blood Donation checkbox, the system displays additional fields for Blood Type, Weight, Health Status, and Gender.	ST1 ST5	4	
FR6	The user submits the registration form.	ST1 ST7	4	
FR7	The system validates the entered information, ensuring a unique phone number If the information is valid, the system creates a new user account and sends a verification code.	ST1 ST7	4	
FR8	The user receives the verification code and follows the instructions to verify the account.	ST1 ST7	4	
FR9	The user visits the login page.	ST1	4	
FR10	The system provides a field for the user to enter their phone number.	ST1 ST7	4	
FR11	The user enters their phone number.	ST1	4	
FR12	The system sends a verification code to the user's phone number.	ST7	4	
FR13	The user enters the verification code.	ST1	4	

FR14	The system verifies the code and logs the user into the home page.	ST7	4
FR15	user navigates to the right most of the page, The system presents a language selection option.	ST1 ST7	1
FR16	The user chooses their preferred language (Arabic or English) And The system displays the user interface and content in the selected language.	ST1 ST7	1
FR17	The user can go back to the home page by clicking the back button.	ST1	1
FR18	The user clicks the blood donation program in the home page	ST1	4
FR19	The system displays available time slots and donation centers.	ST5 ST7	3
FR20	The user selects a suitable time slot and donation center.	ST1	3
FR21	The system confirms the appointment and sends a confirmation notification to the user.	ST7	3
FR22	The system sends reminders to the user about the upcoming appointment.	ST7	3

FR23	If there is an urgent blood need or a recipient requiring blood matching the user's blood type, the system sends a notification to the user.	ST5 ST7	3	
FR24	The user can track their blood donation history through the system.	ST1 ST7	3	
FR25	The user clicks the orphan program in the home page	ST1	4	
FR26	The system provides options for making monetary donations to support orphans' basic needs.	ST1 ST2	3	
FR27	The user selects the option to pay a monthly amount of 25 JD for orphan sponsorship.	ST1 ST2	3	
FR28	Users can select their preferred electronic payment method during the donation process.	ST1 ST6	3	
FR29	The system records the donation and updates the user's sponsorship status.	ST2 ST7	3	
FR30	The system generates regular reports on fund utilization and provides transparency to donors.	ST7	3	

FR31	If the user's sponsorship period expires, the system sends a notification or reminder to renew the sponsorship.	ST7	3	
FR32	The user clicks the Food parcel program in the home page	ST1	4	
FR33	The system offers a section that enables users to donate to the food parcels program.	ST7	3	
FR34	Users are presented with three flexible donation options a. Food parcel for 1-2 persons priced at 18 JD. b. Food parcel for 3-5 people priced at 35 JD. c. Food parcel for 6-7 people priced at 50 JD.	ST2 ST3 ST7	3	
FR35	Users can select the desired number of food parcels they wish to donate.	ST1 ST7	3	
FR36	On the same page, the system includes an additional field for users who wish to volunteer.	ST7	2	
FR37	Users can choose from two options: a. Volunteer to prepare food parcels. b. Volunteer to provide delivery services to families' houses.	ST1 ST7	2	
FR38	After selecting the desired volunteer option, the system displays available slots and appointments	ST7	2	

FR39	Users can select the most convenient time slot for their volunteering activity	ST1	2	
FR40	The user clicks the improvement mosque program in the home page	ST1	4	
FR41	The system provides a platform for accepting financial donations for mosque restoration and improvement projects.	ST4 ST7	3	
FR42	Users can donate funds through the system.	ST1 ST6	3	
FR43	User can go back to the home page by clicking a home button	ST1 ST7	3	
FR44	User can log out	ST1 ST7	2	

For priority; 5 means highest and 1 means lowest Priority.

3.4 Non-Functional Requirements

The non-functional requirements are shown in Table 3.4

Table 5: Non-Functional Requirements

ID	Requirement	Description	Priority
NFR1	Speed	The website should be as fast as possible to achieve the purpose. the website won't take more than 5 seconds to load the pages	4
NFR2	Ease of use	The time frame should include all human and system processes. In addition, it should be easy for the user to learn how to use the website.	5

		It will take the users 30 minutes training to use the website, a 10-minute quiz with a score out of 10 about the icons, buttons will get an average of 8.5	
NFR3	Reliability	extent which it works as and when needed	5
NFR4	Security	All data entered by user or consultant such as login information, phone number, residential address must be secured and well stored in the database.	4

Priority: 1 for lowest priority, 5 for Highest Priority

3.5 Domain Requirements

Table 6: Domain Requirements

DR-ID	Description
DR1	As the system is a web application, internet connectivity is a must. The system must be connected at all times to the internet. The users must be connected to the internet when connecting and viewing the site as well.
DR2	The users must be able to use a browser on their devices. The browser is the application that allows them to connect to the website.

3.6 Requirements Analysis and the Architecture Design

GR1 (Regression): FR1+FR2, FR3, FR4+FR5, FR9, FR10+FR11, FR12+FR13, FR14, FR45

GR2 (Home page): FR15, FR16, FR17, FR18, FR25, FR32, FR40

GR3 (Blood Donation): FR19, FR20, FR21, FR22, FR23, FR24

GR4 (The orphan program): FR26, FR27, FR28, FR29, FR30, FR31

GR4 (Food parcel): FR33+FR34, FR35, FR36+FR37, FR38, FR39

GR5 (Improvement Mosque program): FR41, FR42

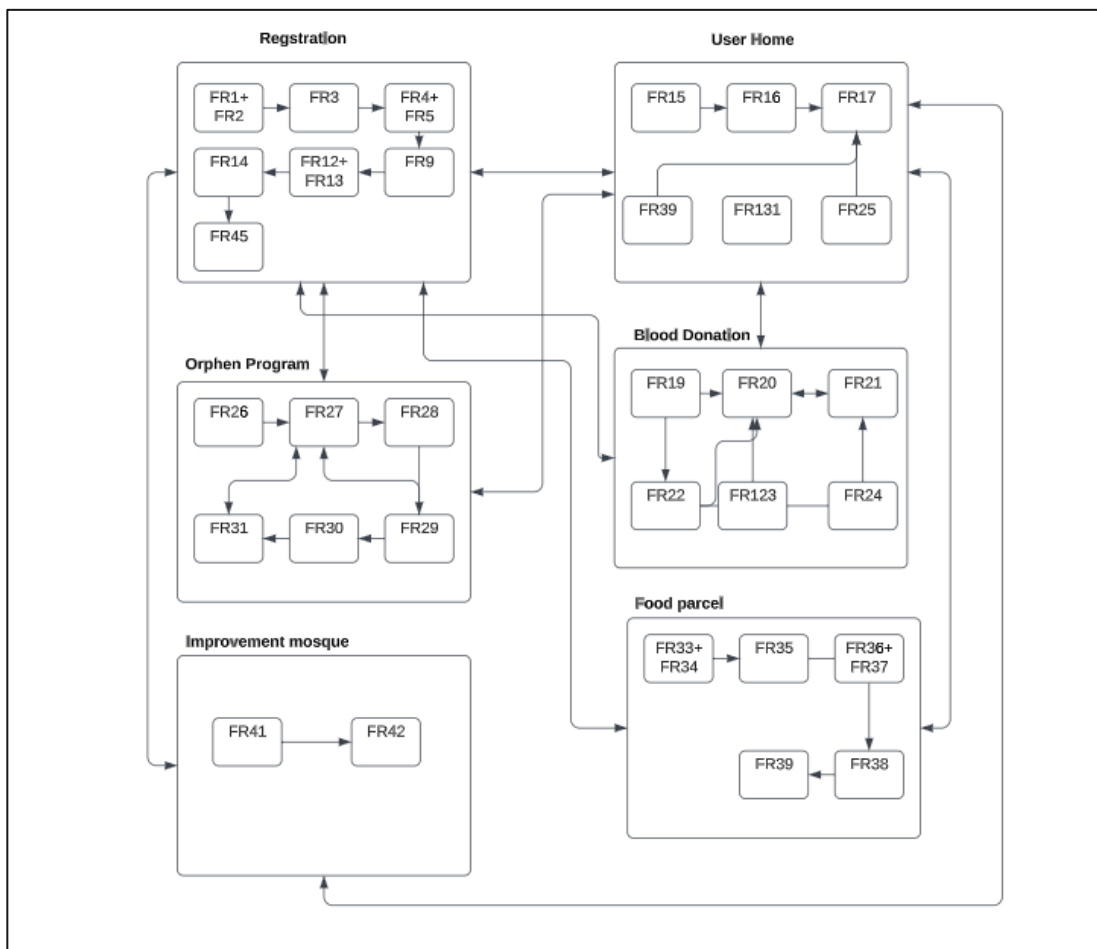*Figure 3: Architecture Design*

Chapter Four

Project Design

4.1 Class Diagram
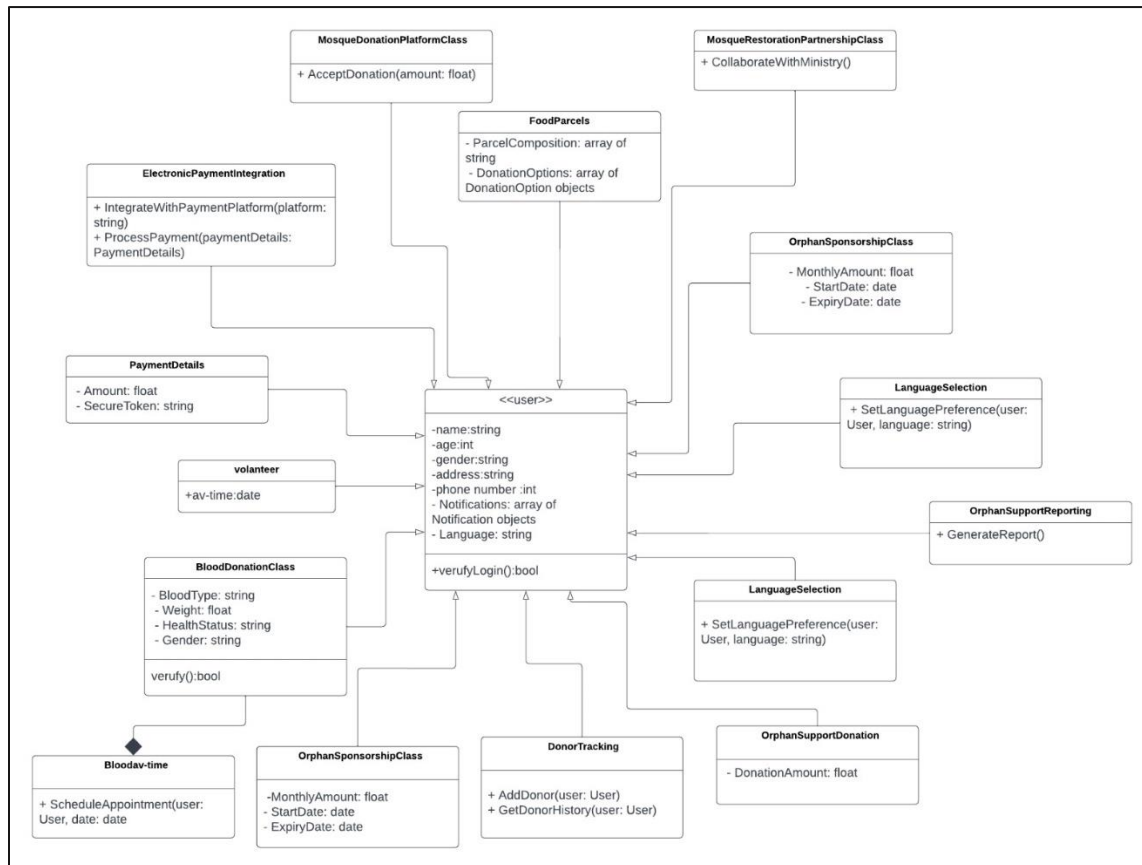
Figure 4: Class Design

❖ Identify Entities:
- User.
- Payment Details.
- Electronic Payment Integration.
- Mosque Donation Platform Class.
- Food Parcels.
- Mosque Restoration Partnership Class.
- Orphan Sponsorship Class.
- Language Selection.

- Orphan Support Reporting.
- Language Selection.
- Orphan Support Donation.
- Donor Tracking.
- Orphan Sponsorship Class.
- Volunteer.
- Blood Donation Class.
- Bloodav-time.

❖ Define Attribute:
- User:
- Name(string).
- Age(int).
- Gender(string).
- Address (string).
- Phone number(int).
- Notification (array of Notification object).
- Language (String).

❖ Payment Details:
- Amount(float).
- Secure Token (string).

❖ Electronic Payment Integration:
- Integrate With Payment Platform (string).
- Process Payment (Payment Details).

❖ Mosque Donation Platform Class:

- Accept Donation (float).

❖ Food Parcels:
  - Parcel Composition (array of string).
  - Donation Options (array of Donation Options object).

❖ Mosque Restoration Partnership Class:
  - Collaborate With Ministry ().

❖ Orphan Sponsorship Class:
  - Monthly Amount (float).
  - Start Date (date).
  - Expiry Date (date).

❖ Language Selection:
  - Set Language Preference (string).

❖ Orphan Support Reporting:
  - Generate Report ().

❖ Language Selection:
  - Set Language Preference (user:User, Language:string).

❖ Orphan Support Donation:
  - Donation Amount (float).

- ❖ Donor Tracking:
  - Add Donor (user: User).
  - Get Donor History (user: User).

- ❖ Orphan Sponsorship Class:
  - Monthly Amount(float).
  - Start Date (date).
  - Expiry Date (date).

- ❖ Volunteer:
  - Av-time (date).

- ❖ Blood Donation Class:
  - Blood Type (string).
  - Weight (float).
  - Health Status (string).
  - Gender (string).

- ❖ Bloodav-time1:
  - Schedule Appointment(user:User,date:date)

- ❖ Specify Constraints:
  - Phone Number should be vailed.
  - Age should be within reasonable a range.

- ❖ Define Relationship:
  - Blood Donation Class and Blood av-time have a many-to-one relationship.
  - All entity with the user has a one-to one relationship.
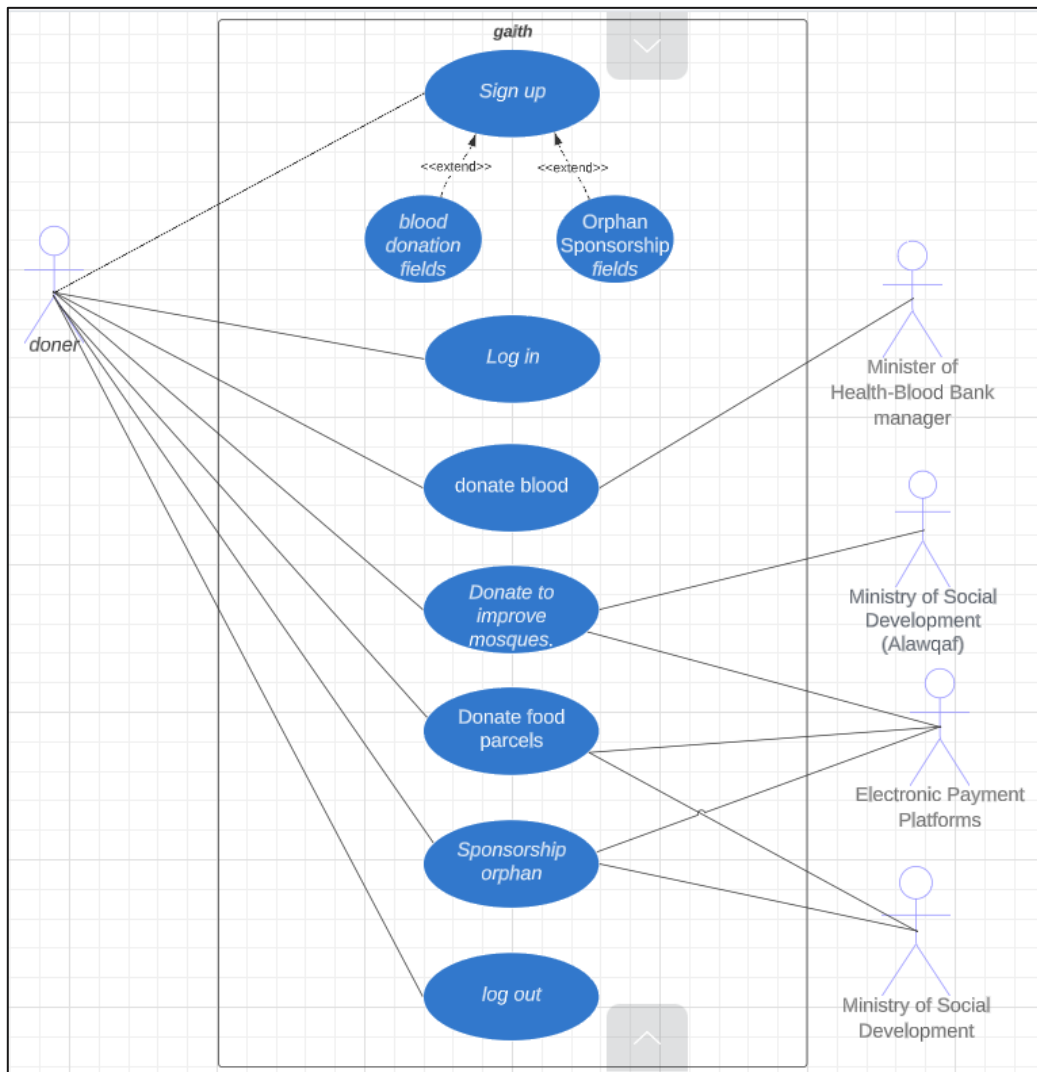
4.2 Use case Diagram

Figure 5: Use case Diagram

4.2.1 USE-CASE Description

Table 7: Use Cases Description:

Sign Up	
Actors	User
Description	The user will enter a Name, valid Phone Number, Age, and valid Address, and is registered in the database.
Data	Name, Phone Number, Age, and Address
Stimulus	User clicks Sign Up button
Response	Sign up is successfully done and user is redirected allowed to login using Phone Number
Comments	If the user enters invalid email, or they enter an already Phone Number, or invalid Address he won't be able to sign up successfully.
Blood Donation Fields	
Actors	User
Description	The user will enter Weight, Health Status, and Gender, then is registered in the database.
Data	Weight, Health Status, and Gender.
Stimulus	User submits the registration form.
Response	If there is an urgent blood need or a recipient requiring blood matching the user's blood type, the system sends a notification to the user.
Comments	_____
Orphan Sponsorship Fields	
Actors	User
Description	checkboxes for Notification Purposes If the donor is interested in contributing to support Orphan.
Data	_____
Stimulus	The user selects checkbox Orphan Sponsorship.
Response	If there is an opportunity, donate to orphans the system sends a notification or reminder to the user.

Comments	_____

Log in	
Actors	User
Description	User enters his Phone Number, and then he clicks on Login. Then he is redirected to the homepage.
Data	Phone Number, verification code.
Stimulus	User clicks the login button.
Response	Login succeeds and the system sends a verification code to the user's phone number, the user should enter the code in the system then will redirected to homepage.
Comments	User is not logged in if his phone number or verification code is wrong.

Donate Blood	
Actor	User and Minister of Health-Blood Bank manager
Description	User selects a suitable time slot and donation center.
Data	List of available dates for donation and donation centers.
Stimulus	User clicks donate button.
Response	The system confirms the appointment and sends a confirmation notification to the user and sends reminders to the user about the upcoming appointment.
Comments	If there is an urgent blood need or a recipient requiring blood matching the user's blood type, the system sends a notification to the user.

Donate to improve mosques.	
Actor	User, Ministry of Social Development (Alawqaf) and Electronic Payment Platforms
Description	After the user sees the mosque restoration and improvement projects on the system, he can donate funds through the system to improve mosques.
Data	mosque restoration and improvement projects
Stimulus	User clicks donate button.
Response	The donation is through electronic payment platforms.
Comments	_____

Donate food parcels	
Actor	User, Electronic Payment Platforms and Ministry of Social Development
Description	Users can select the desired number of food parcels they wish to donate, and the system includes an additional field for users who wish to volunteer.
Data	food parcels options
Stimulus	User clicks selected option (radio button) and users can choose from volunteering options.
Response	The donation is through electronic payment platforms.
Comments	The volunteering is an optional

Sponsorship orphan	
Actor	User, Electronic Payment Platforms and Ministry of Social Development.
Description	The user selects from provided options for donations to support orphans by donate a monthly amount of 25 JD.
Data	Orphans' data.
Stimulus	The user chooses the selected orphan.
Response	The system records the donation and updates the user's sponsorship status.

Logout	
Actor	User.
Description	User clicks on the logout button. His session is then destroyed.
Data	No data.
Stimulus	User clicks Logout button.
Response	User session is destroyed.
Comments	Session is not destroyed if the system's servers are down.
Comments	If the user's sponsorship period expires, the system sends a notification or reminder to renew the sponsorship.

4.3 Sequence Diagrams

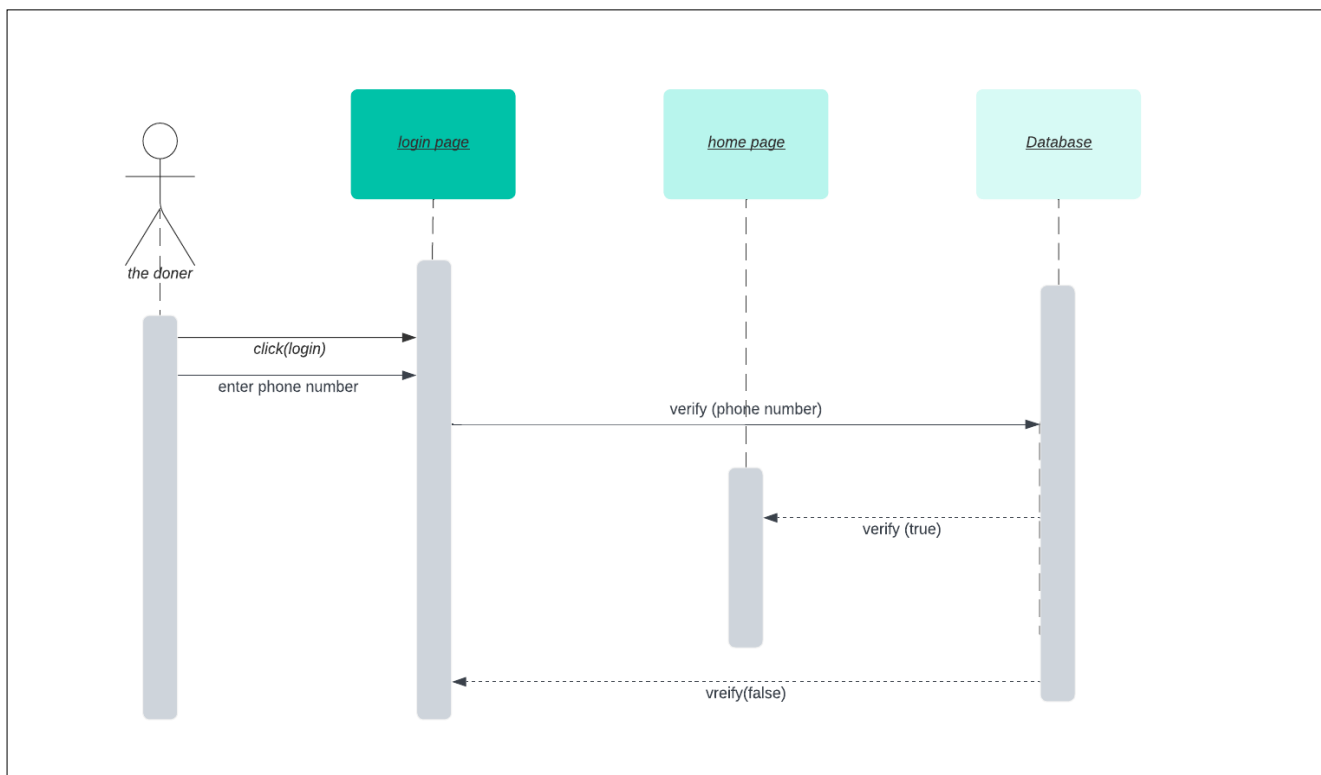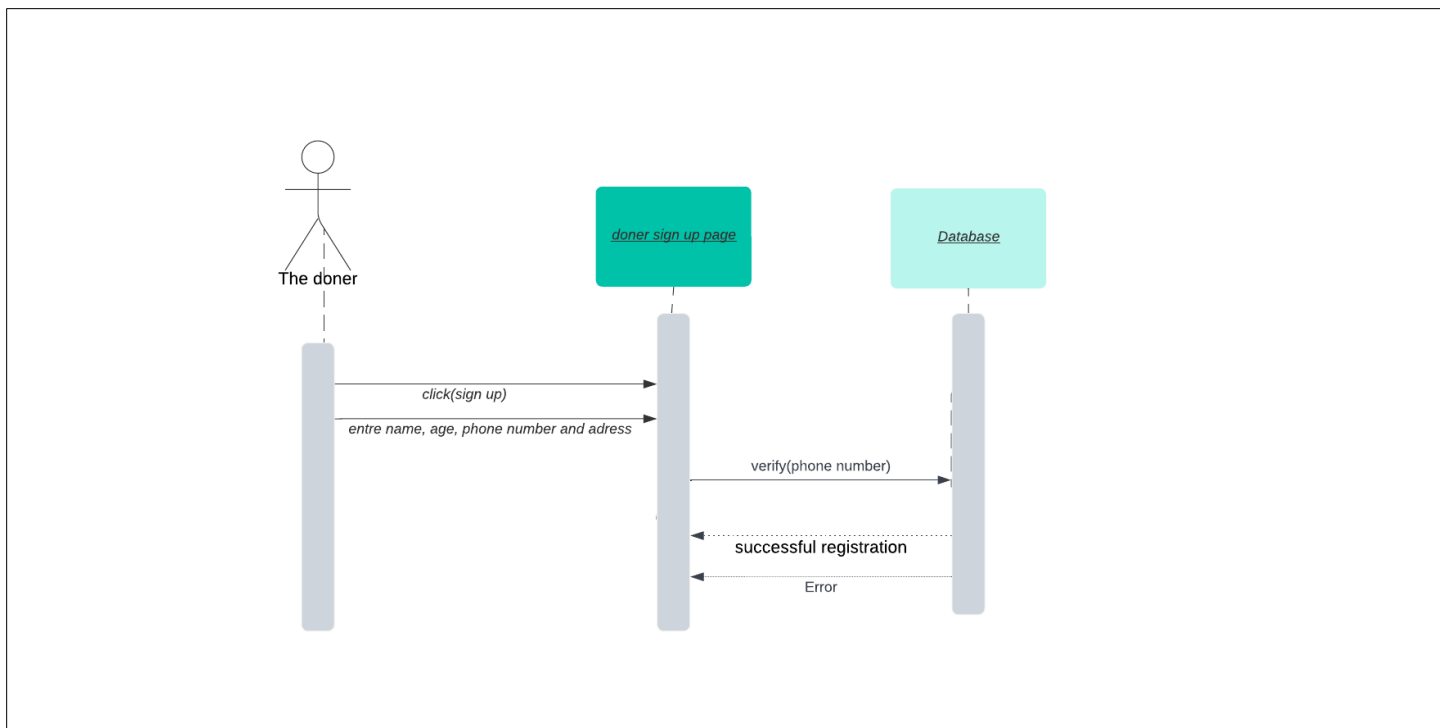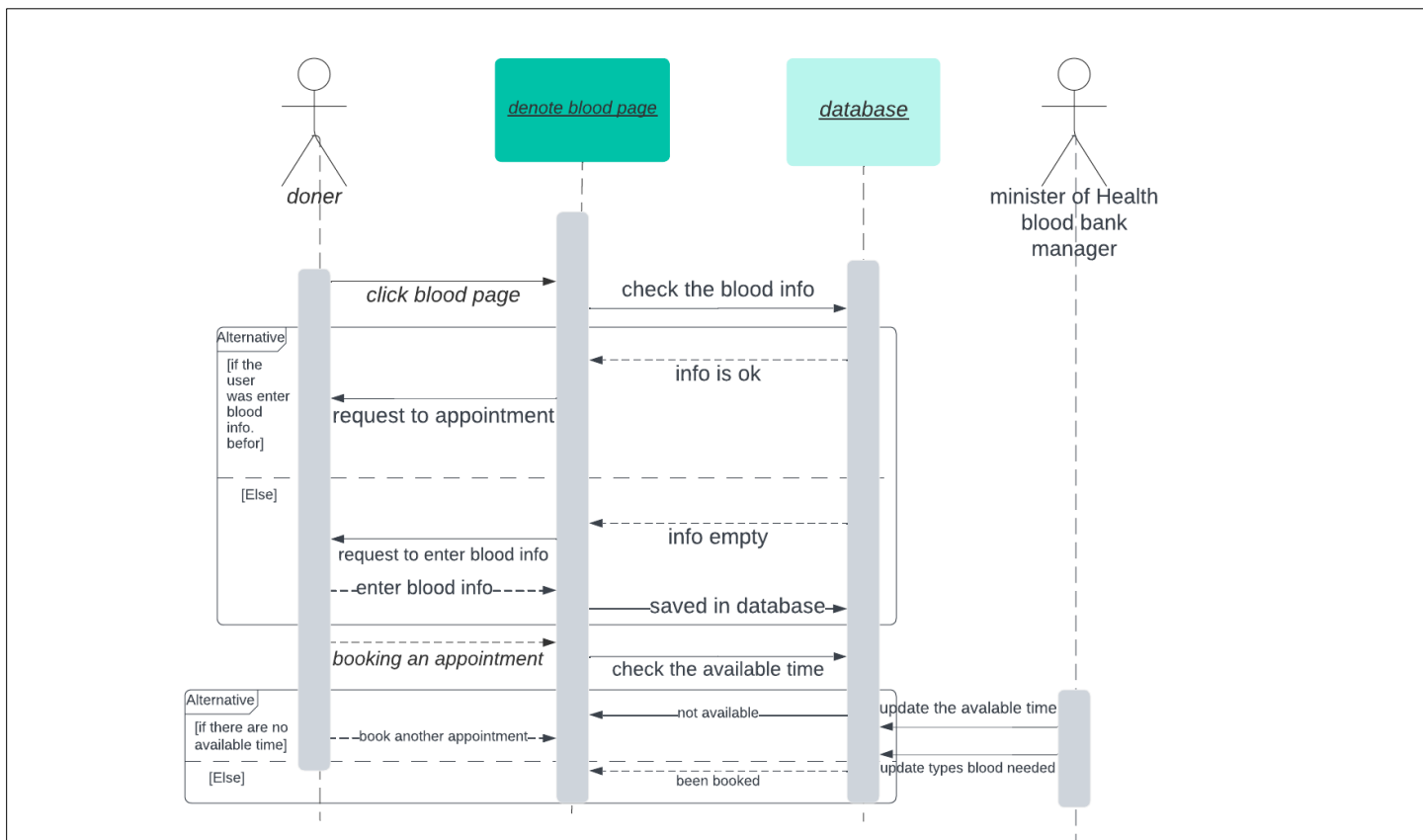Figure 6:Log in.

Figure 7:Sign up
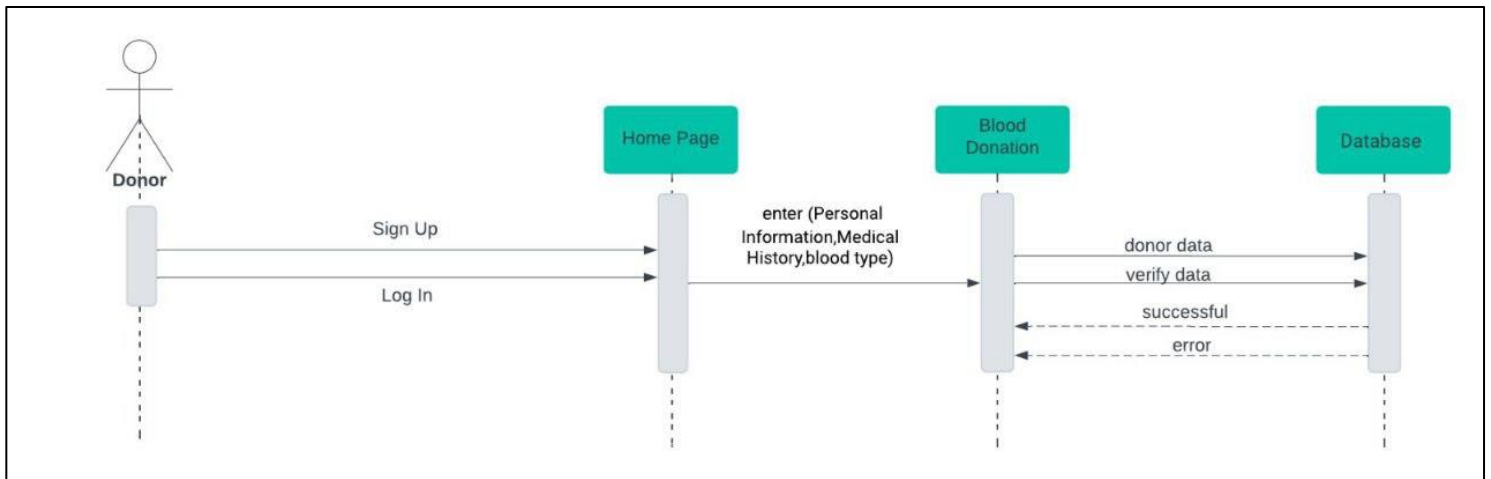

Figure 8: Denote blood

blood donation feilds

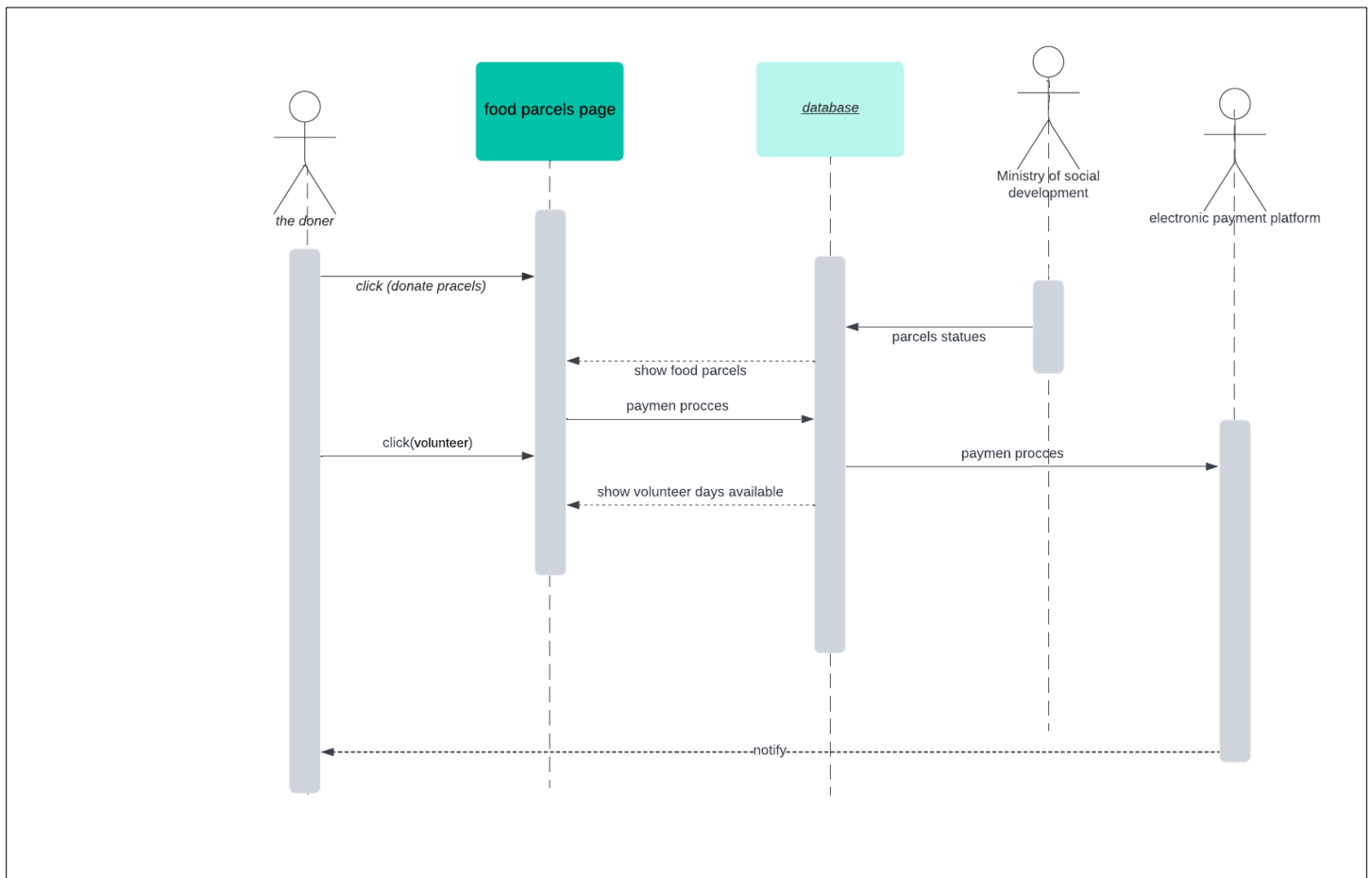*Figure 9: Bood donation fields*

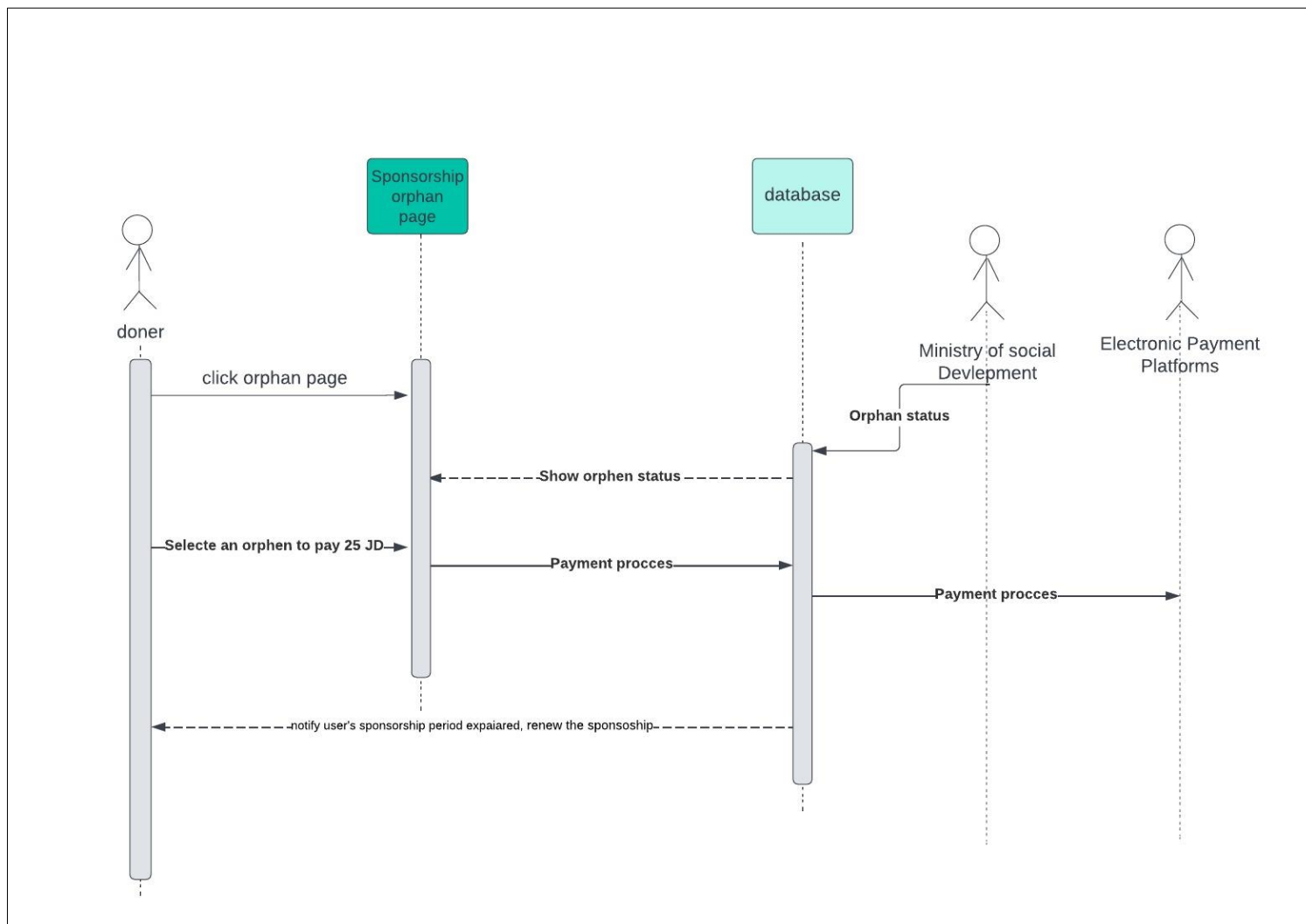

Figure 10: The food parcels.
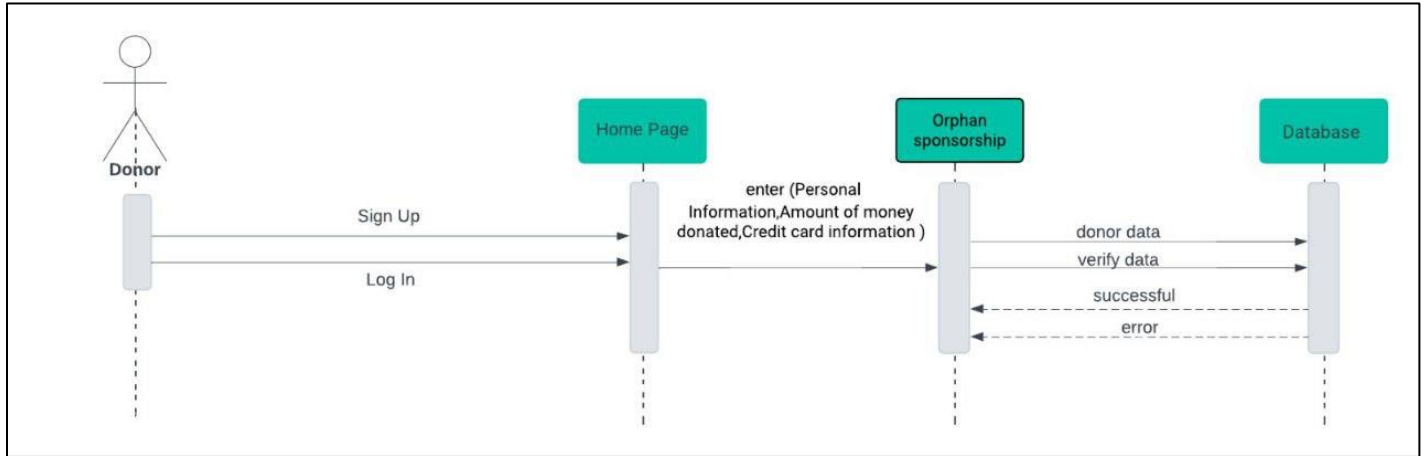
Figure 11: Orphans

Figure 12: Orphans fields
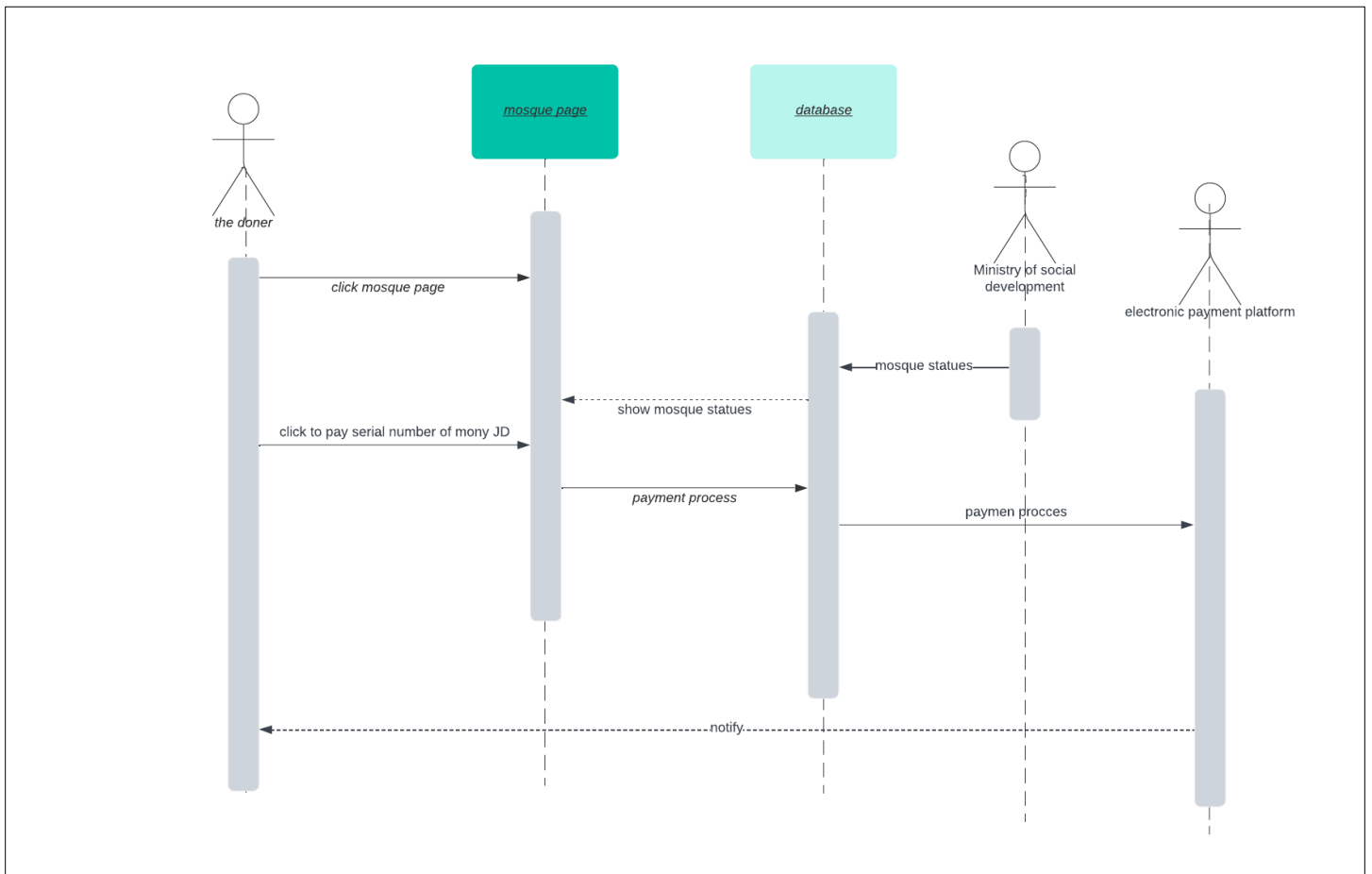
Figure 13: Mosque
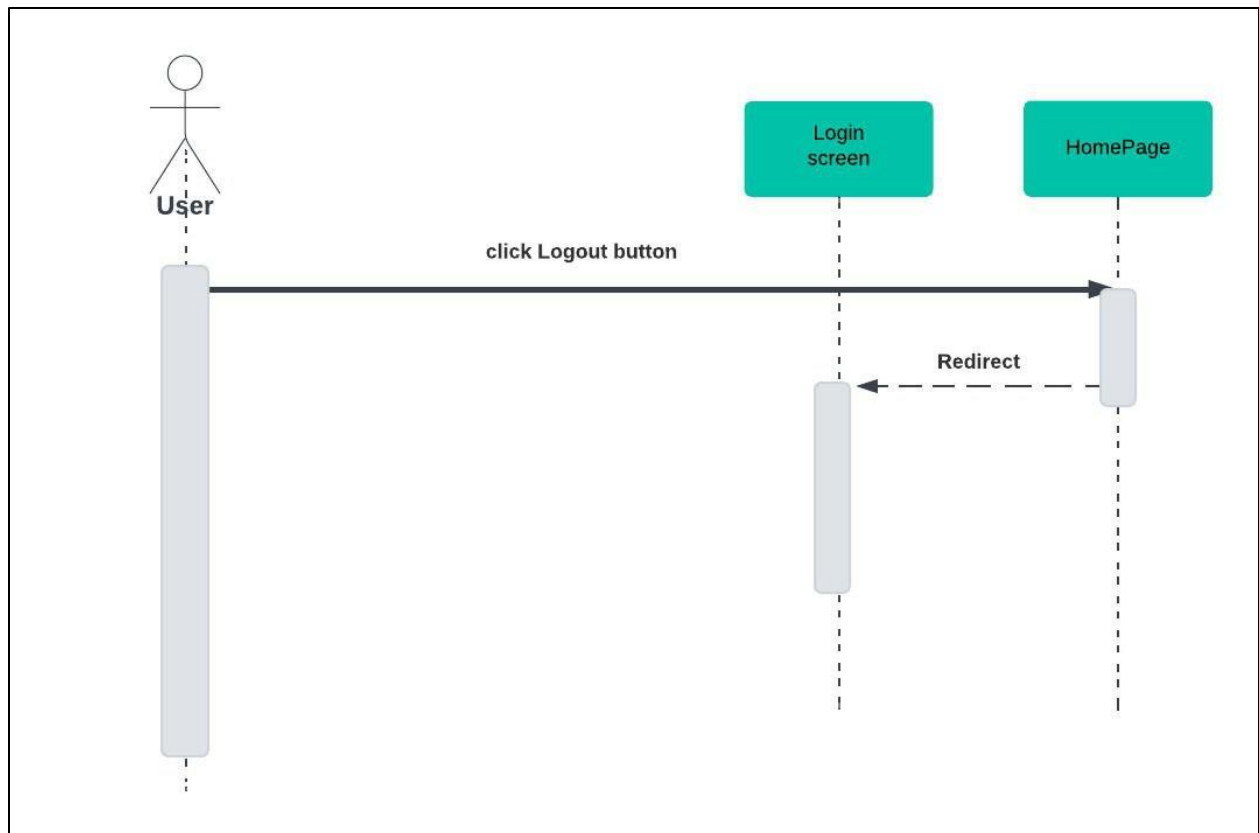
Figure 14: Logout

<u>Chapter Five</u>

5.1 Project Implementation

5.1.1 The Programming Language.

We use Html, CSS, JavaScript, PHP

Segment of the most important part of implementation

Figure 15: Registration

```
Explorer (Ctrl+Shift+E)      register.php  ✕

C: > xampp > htdocs > SWadv >    register.php
  1    <!DOCTYPE html>
  2    <html lang="en">
  3
  4    <head>
  5        <meta charset="utf-8">
  6        <meta name="viewport" content="width=device-width, initial-scale=1.0">
  7        <link rel="icon" type="image/x-icon" href="favicon.png"/>
  8        <title>ghaith</title>
  9        <style>
 10            form {display: grid;grid-template-columns: 1fr;grid-gap: 10px}
 11            body {display: grid;place-items: center;min-height: 100vh;background-color: #ccc; background-repeat: no-repeat;background-size:1400
 12            input {width: 100%;padding: 0.75em 1.25em;margin: 0.5em 0;display: inline-block;border: 0.063em solid #ccc;box-sizing: border-box;}
 13            button {background-color: #ccc;color: 128d77;padding: 0.875em 1.25em;margin: 0.5em 0;border: none;cursor: pointer;width: 100%;}
 14            button:hover {opacity: 0.8;}
 15            .container {padding: 1em; .container {display: grid;grid-template-columns: 1fr;grid-gap: 20px;text-align: center;}}
 16            .main {position: relative;z-index: 1;padding:1.33em; border-radius: 0.67em;background-color: #128d77;/*background-color: rgba(255,
 17            .wrap-login100 {padding: 55px 15px 37px;width: 400px;margin: 0 auto;}
 18            @media (max-width: 576px) {.wrap-login100 {width: 80%;}}
 19            a {color:#ccc;}
 20            a.acss {  opacity: 0.8; background-color: #ccc;color: #128d77 ;   padding: 0.5em 1.5em;margin: 0.5em 0;border: none;cursor: pointer
 21            input.weightcss {font-size: 5pt;style="height:20px; width:50px;"}
 22
 23
 24        </style>
 25    </head>
 26    <body>
 27        <!--register form-->
 28        <img src="logo.jpg" alt="website-logo" width="130em" height="100em"/>
```

```
27          <!--register form-->
28          <img src="logo.jpg" alt="website-logo" width="130em" height="100em"/>
29          <div class ="wrap-login100 main">
30              <p style="font-size:2.5em;margin-top:0px; "> Sign UP </p>
31              <form action="" method="post">
32                  <div class="container">
33                      <label for="fn"><b> Name</b></label>
34                      <input type="text" placeholder="Enter your Name" name="name" required>
35                      <label for="ln"><b>Phone</b></label>
36                      <input type="text" placeholder="Enter your phone number" name="phone_number" required>
37                  <!--  <label for="psw"><b>Password</b></label> -->
38                  <!--  <input type="password" placeholder="Enter Password" name="password" required>-->
39                      <label for="ln"><b>Age</b></label>
40                      <input type="text" placeholder="Enter your Age" name="age" required>
41                      <label for="ln"><b>Address</b></label>
42                      <input type="text" placeholder="Enter your Address" name="address" required>
43
44
45                      <label for="ln"><b>If you are interested in receiving notifications if there are orphans in need of support, click here
46                      <input type="checkbox" id="orphan" name="orphan" value="orphan"><label for="orphan"></label><br>
47
48                      <label for="ln"><b>If you are interested in receiving notifications if there is a need for a blood unit, click here</b>
49                      <input type="checkbox" id="blood" name="blood" value="blood"><label for="blood"> </label><br>
50
51
52
53                      <div class="additionalOptions2" id="additionalOptions2" style="display: none;">
54                      <strong>Enter your data(Health Status):</strong><br>
55                      <label for="type">Choose your blood type:</label>
```

```
56                      <select>
57                      <option>O-</option>
58                      <option>O+</option>
59                      <option>B-</option>
60                      <option>B+</option>
61                      <option>A+</option>
62                      <option>A-</option>
63                      <option>AB-</option>
64                      <option>AB+</option>
65                      </select><br>
66
67                      <label for="gender">Click your gender:</label>
68                        <select>
69                        <option>male</option>
70                        <option>female</option>
71                        </select><br>
72
73                       <label for="weight">Enter your weight in kilograms:</label>
74                        <input  class="weightcss" style="height:20px; width:30px;"  type="text" name="additionalOption2" id="addOptionA">
75                        <br>
76
77
78                        <label style="font-size:1em"> Do you suffer from high blood pressure?  </label>  <input style="height:20px; width:20
79                        <label style="font-size:1em"> Do you suffer from diabetes?  </label>    <input style="height:20px; width:20px;" type
80                        </div>
81
```

```
76
77
78                 <label style="font-size:1em"> Do you suffer from high blood pressure?  </label>  <input style="height:20px; width:20
79                 <label style="font-size:1em"> Do you suffer from diabetes?  </label>   <input style="height:20px; width:20px;" type
80                 </div>
81
82                  <script>
83                    document.getElementById("blood").addEventListener("click",
84
85                    function() {
86                      document.getElementById("additionalOptions2").style.display = "";
87                    });
88                    </script>
89
90
91
92             <button id ="submit"  type="submit" name="submit">save data</button>
93
94             <a name='submit2' href='HP.php' class='acss' > Sign Up </a>
95             <p> Already have an account?- <a href="login.php"> Log In </a> </p>
96
97             <script>history.pushState({}, "", "")</script>
98
99
100
101
102
103             </div>
```

```
106
107
108        <?php
109    //insert new users in DB
110    session_start();
111    $conn = mysqli_connect('localhost','root','','ghaith');
112
113    if(isset($_POST['submit'])){
114        $user_name=$_POST['name'];
115        $user_phone_number=$_POST['phone_number'];
116      // $user_password=$_POST['password'];
117        $user_age=$_POST['age'];
118        $user_address=$_POST['address'];
119
120        $name=mysqli_real_escape_string($conn,$user_name);
121        $phone_number=mysqli_real_escape_string($conn,$user_phone_number);
122        //$password=mysqli_real_escape_string($conn,$user_password);
123        $age=mysqli_real_escape_string($conn,$user_age);
124        $address=mysqli_real_escape_string($conn,$user_address);
125
126      // $password=password_hash($password,PASSWORD_BCRYPT);
127      //  $query = "INSERT INTO users (name, phone_number, password, age, address) VALUES ('{$name}', '{$phone_number}', '{$password}', '{$
128        $query = "INSERT INTO users ( name, phone_number, age, address) VALUES ('{$name}', '{$phone_number}', '{$age}', '{$address}')";
129      mysqli_query($conn,$query);
130      header("Location:login.php");
131        exit();
```

Figure 16: Home Page

```php
1   <!DOCTYPE html>
2   <html>
3
4   <head>
5     <!-- Basic -->
6     <meta charset="utf-8" />
7     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
8     <!-- Mobile Metas -->
9     <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
10    <!-- Site Metas -->
11    <meta name="keywords" content="" />
12    <meta name="description" content="" />
13    <meta name="author" content="" />
14    <link rel="shortcut icon" href="Logo.png" type="">
15
16    <title>Ghaith</title>
17
18    <link href="https://fonts.googleapis.com/icon?family=Material+Icons+Outlined" rel="stylesheet">
19    <!-- bootstrap core css -->
20    <link rel="stylesheet" type="text/css" href="css/bootstrap.css" />
21
22    <!-- fonts style -->
23    <link href="https://fonts.googleapis.com/css2?family=Roboto:wght@400;500;700;900&display=swap" rel="stylesheet">
24
25    <!--owl slider stylesheet -->
26    <link rel="stylesheet" type="text/css" href="https://cdnjs.cloudflare.com/ajax/libs/OwlCarousel2/2.3.4/assets/owl.carousel.min.css" />
27
28    <!-- font awesome style -->
```

```php
38   <body>
39
40     <div class="hero_area">
41
42       <div class="hero_bg_box">
43         <img src="Header1.png" alt="">
44       </div>
45
46       <!-- header section strats -->
47       <header class="header_section">
48         <div class="container">
49           <nav class="navbar navbar-expand-lg custom_nav-container ">
50             <a class="navbar-brand" href="HP.php">
51               <span>
52                 Ghaith
53               </span>
54             </a>
55
56             <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSu
57               <span class=""> </span>
58             </button>
59
60             <div class="collapse navbar-collapse" id="navbarSupportedContent">
61               <ul class="navbar-nav">
62                 <li class="nav-item active">
63
64                   <a class="nav-link"  href="register.php"> Sing Up <span class="sr-only">(current)</span></a>    <!-- Aya -->
```

```
74              </div>
75          </nav>
76        </div>
77    </header>
78    <!-- end header section -->
79    <!-- first section -->
80    <section class="slider_section ">
81        <div id="customCarousel1" class="carousel slide" data-ride="carousel">
82          <div class="carousel-inner">
83            <div class="carousel-item active">
84              <div class="container ">
85                <div class="row">
86                  <div class="col-md-7">
87                    <div class="detail-box">
88                      <h1>
89                        ﴾وَأَحْسِنُوا إِنَّ اللَّهَ يُحِبُّ الْمُحْسِنِينَ﴿
90                        <br>
91                      </h1>
92                      <p>
93
94                      </p>
95                    </div>
96                  </div>
97                </div>
98              </div>
99            </div>
100         </div>
101
```

```
107
108
109   <!--  second section starts-->
110   <section class="cards" id="Serv" >
111     <h2 class="title">Our Programs</h2>
112     <div class="content">
113       <div class="card" onclick="location.href='photo.html'">
114         <a href="Blood.html">
115           <img src="Donation.png" alt="" class="center"
116           width="200"
117           height="200" >
118         </a>
119         <div class="info">
120           <h3>Blood Donation</h3>
121         </div>
122       </div>
123
124       <div class="card" onclick="location.href='photo.html'">
125         <a href="orphan.html">
126           <img src="Orphan.png" alt="" class="center"
127           width="200"
128           height="200" >
129         </a>
130           <div class="info">
131             <h3>Orphan Care</h3>
132           </div>
133       </div>
134       <div  class="card" onclick="location.href='#Project'">
135         <a href="FoodParcel (1).html">
```

```
150        <div class="info">
151          <h3>Mosque Improvement</h3>
152        </div>
153   </div>
154     </div>
155   <br><br>
156    <section id="sponsers">
157      <div class="container">
158        <section class="sponsers pb-5 pt-3" aria-label="Supervisory Authorities">
159          <div class="line-with-words mb-4">
160            <div class="line me-5"></div>
161            <h5 id="sponsers" class="mb-0 title" aria-level="2">Supervisory Authorities</h5>
162            <div class="line ms-5"></div>
163          </div>
164          <div class="sponsers-items px-0 px-lg-5">
165            <div class="d-none d-md-flex align-items-center justify-content-around justify-content-lg-between">
166              <img loading="lazy" src="Ministry of Social Development.png" alt="Ministry of Social Development">
167              <img loading="lazy" src="Civil service consumer corporation.png" alt="Civil service consumer corporation ">
168              <img style="width: 120px;" loading="lazy" src="Ministry of Endowments (Alwqaf).jpg" alt="Ministry of Endowments (Awqaf)
169              >
170              <img loading="lazy" src="Minister of Health.jpg" alt="Minister of Health-Blood Bank manager">
171              <img loading="lazy" src="E-Fawateercom.png" alt="E-Fawateercom  >
172            </div>
173
174
175          </div>
176        </div>
177
178      </section>
```

```php
187
188    <p></p>
189      <!-- footer section -->
190      <footer class="footer_section">
191        <div class="container">
192          <div class="row">
193            <div class="col-md-6 col-lg-3 footer_col">
194              <div class="footer_contact">
195                <h4>
196                  Reach at..
197                </h4>
198                <div class="contact_link_box">
199                  <a href="">
200                    <i class="fa fa-map-marker" aria-hidden="true"></i>
201                    <span>
202                      Location
203                    </span>
204                  </a>
205                  <a href="">
206                    <i class="fa fa-phone" aria-hidden="true"></i>
207                    <span>
208                      Call (06) 535 5000
209                    </span>
210                  </a>
211                </div>
212              </div>
213            </div>
```

```php
213            </div>
214            <div class="col-md-6 col-lg-3 footer_col">
215              <div class="footer_detail">
216                <h4>
217                  About
218                </h4>
219                <p>
220                  To meet the need for facilitating various forms of donation, providing quick access through technological support, and enhanc
221                  And believing that we can make a positive impact in society and make a real difference in people's lives.
222
223                </p>
224              </div>
225            </div>
226
227
228        <div class="footer-info">
229          <p>
230            &copy; <span id="displayYear"></span> All Rights Reserved By Universty Of Jordan
231          </p>
232
233        </div>
234      </div>
235    </footer>
236    <!-- footer section -->
237
238  </body>
239
240  </html>
```

<u>Chapter Six</u>

6.1 Project Testing

6.1.1Test cases

Table 8: Test Cases

Test scenario	Test cases	Test data	Expected results	Actual results	Pass/ Fail
1- Check user sign up	enter Name, Phone Number, Age, and Address	valid Phone Number	Login must be successful	home page appears	Pass
2- Check user login	enter Phone Number	valid Phone Number	Login must be successful	user home page appears	Pass
3- Check login functionality	Check response on entering invalid Phone Number	invalid Phone Number	"Required" should be displayed	Login not successful	Pass
4- Check sign up functionality	Check response on entering invalid Phone Number	invalid Phone Number	"Required" should be displayed	Sign up not successful	Pass

6.1.2 Test methodologies

Table 9: Heuristic evaluation

Numbering scheme	Heuristic	Description
H1	**Visibility of system status.**	The system should always keep user's informed about what is going on, through appropriate feedback within reasonable time.
H2	**Match between system and the real world.**	The system should show information in the user's language, with words, phrases and concepts familiar to the user, rather that system-oriented terms. Follow real-word conventions, making information appear in a natural and logical order.
H3	**User control and freedom**	User's often choose system functions by mistake and will need a clearly marked "emergency exits" to leave the unwanted state. Support message dialog and help instruction.
H4	**Consistency and standards**	User's should not have to wonder whether different data, situations, or actions mean the same thing.
H5	**Help users recognize, diagnose and recover from errors.**	Error messages should be expressed in plain language (no code), precisely indicating the problem, and constructively suggesting a solution.
H6	**Error prevention.**	Even better than a good error message is a careful design that prevents a problem from occurring in the first place.
H7	**Recognition rather than recall.**	Make objects, actions, and options visible. The admin should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate
H8	**Flexibility and efficiency of use.**	Accelerators - unseen by the novice user – may often speed up the interaction for the expert user such that the system can cater to both inexperienced users. Allow user to tailor frequent actions.
H9	**Aesthetic and minimalist design.**	Dialogues should not contain information that is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with a relevant unit of information and diminishes their relative visibility.
H10	**Help and documentation**	Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not to be too large.

Numbering Scheme	Frequency	Ratio (%)
H1	5	10.00
H2	5	10.00
H3	3	06.00
H4	3	06.00
H5	10	20.00
H6	2	04.00
H7	5	10.00
H8	6	12.00
H9	4	08.00
H10	7	14.00
Total	**50**	**100%**

system was tested by three IT experts and there are the results:

Table 11: Severity rating and their Description

Severity Rating	Description
0	I don't agree that this is a usability problem at all
1	Cosmetic problem only: need not to be fixed unless extra times are available on project.
2	Minor usability problems: Fixing this should be given low priority.
3	Major usability problem: import to fix, so should be given high priority.
4	Usability Catastrophe: Import to fix this before product can be released.

Table 12: Summary of Violations by Severity Rating for Participant (1)

SEVERITY RATING	FREQUENCY	RATIO (%)
0	6	0.60
1	2	0.20
2	1	0.10
3	1	0.10
4	0	0.00
TOTAL	10	100%

Table 13: Summary of Violations by Severity Rating for Participant (2)

SEVERITY RATING	FREQUENCY	RATIO (%)
0	5	0.50
1	1	0.10
2	2	0.20
3	1	0.10
4	1	0.10
TOTAL	10	100%

Table 14: Summary of Violations by Severity Rating for Participant (3)

SEVERITY RATING	FREQUENCY	RATIO (%)
0	3	0.30
1	0	0.00
2	3	0.30
3	1	0.10
4	3	0.30
TOTAL	10	100%

7.1 User Manual

Log In

phone number

Enter phone number

Login

Create an account- Sign Up

The login popup screen will appear when pressing the login button under the sign up page

The sign up popup screen will appear when pressing the sign up button

Sign UP

Name

Enter your Name

Phone

Enter your phone number

Age

Enter your Age

Address

Enter your Address

If you are interested in receiving notifications if there are orphans in need of support, click here

If you are interested in receiving notifications if there is a need for a blood unit, click here

save data

Sign Up

Already have an account?- Log In

If you are interested in receiving notifications if there are orphans in need of support, click here

☐

If you are interested in receiving notifications if there is a need for a blood unit, click here

☑

Enter your data(Health Status):
Choose your blood type: O-
Click your gender: male
Enter your weight in kilograms:

Do you suffer from high blood pressure? ◯ yes

Do you suffer from diabetes? ◯ yes

save data

Sign Up

On the sign up page, below there are options to choose the notification you want and to fill in your important information in order to donate

This is Home page that the user will find when opening the website

GHAITH

SING UP   PROGRAMS

﴿وَأَحْسِنُوا إِنَّ اللَّهَ يُحِبُّ الْمُحْسِنِينَ﴾

FOOD

Our Programs

Blood Donation

Orphan Care

Food Parcel

Mosque Improvement

Supervisory Authorities

When scrolling down on the same page, you will find various donation programs, which are blood donation, orphan sponsorship, food parcel and mosque improvement.
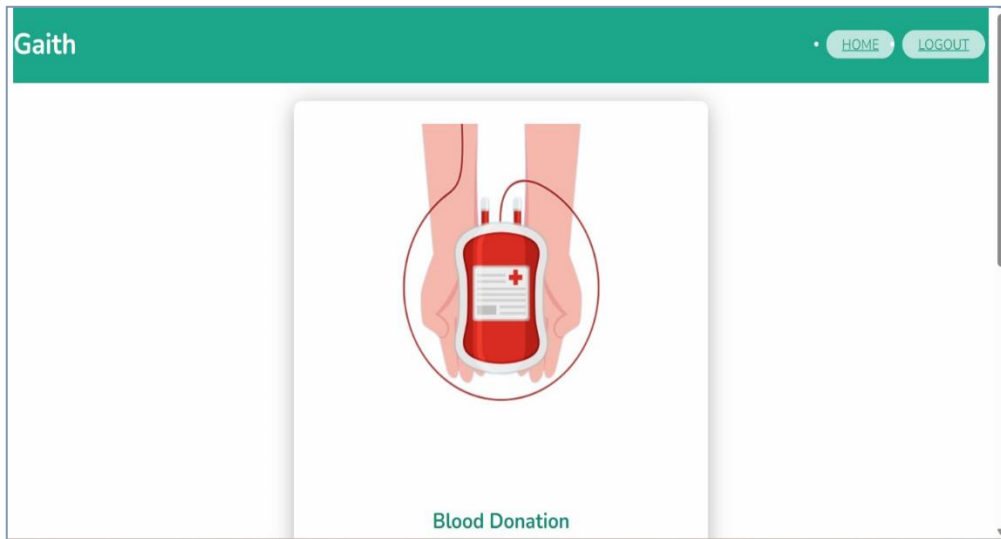

Supervisory Authorities

When scrolling down on the same page, you will find the Supervisory authorities

Reach at..

About

© All Rights Reserved By Universty Of Jordan

Location

Call (06) 535 5000

To meet the need for facilitating various forms of donation, providing quick access through technological

Gaith • HOME LOGOUT

Blood Donation

Blood Donation

It is a safe and regulated process, typically taking around 10-15 minutes, and can save lives

Choose the suitable date for you   yyyy /موي/رهش/   -- : -- --
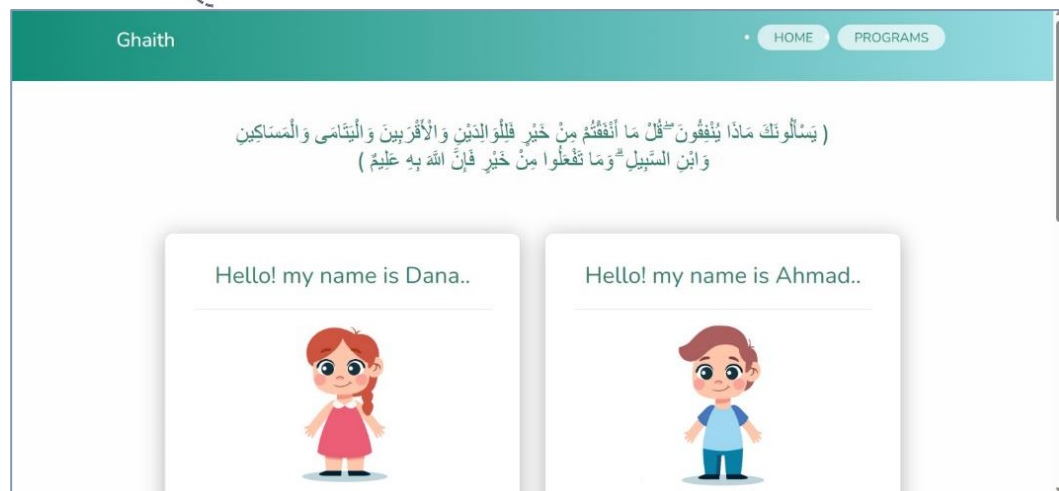
The place closest to you

After completing the sign up process successfully, you can choose the type of program that you want to donate, for example, orphan sponsorship. This page will appear to you after clicking on its icon.
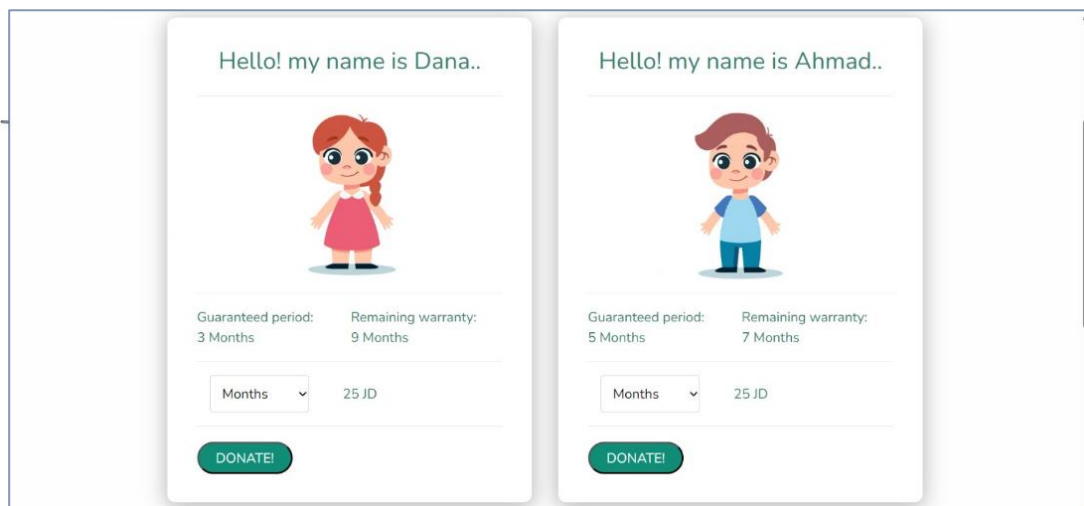
Ghaith · HOME PROGRAMS

(يَسْأَلُونَكَ مَاذَا يُنْفِقُونَ ۖ قُلْ مَا أَنْفَقْتُمْ مِنْ خَيْرٍ فَلِلْوَالِدَيْنِ وَالْأَقْرَبِينَ وَالْيَتَامَىٰ وَالْمَسَاكِينِ
وَابْنِ السَّبِيلِ ۗ وَمَا تَفْعَلُوا مِنْ خَيْرٍ فَإِنَّ اللَّهَ بِهِ عَلِيمٌ)

Hello! my name is Dana..

Hello! my name is Ahmad..

When scrolling down on the same page, the donor can choose the amount depending on the number of months

Hello! my name is Dana..

Hello! my name is Ahmad..

Guaranteed period: 3 Months   Remaining warranty: 9 Months

Guaranteed period: 5 Months   Remaining warranty: 7 Months

Months   25 JD

Months   25 JD

DONATE!

DONATE!

Donate food parcels

Choose the food parcel you want to donate:

○ Food parcel for 1-2 persons.....**18 JD**

○ Food parcel for 3-5 persons.....**35 JD**

○ Food parcel for 6-7 persons.....**50 JD**

Do you wont to be a volunteer?
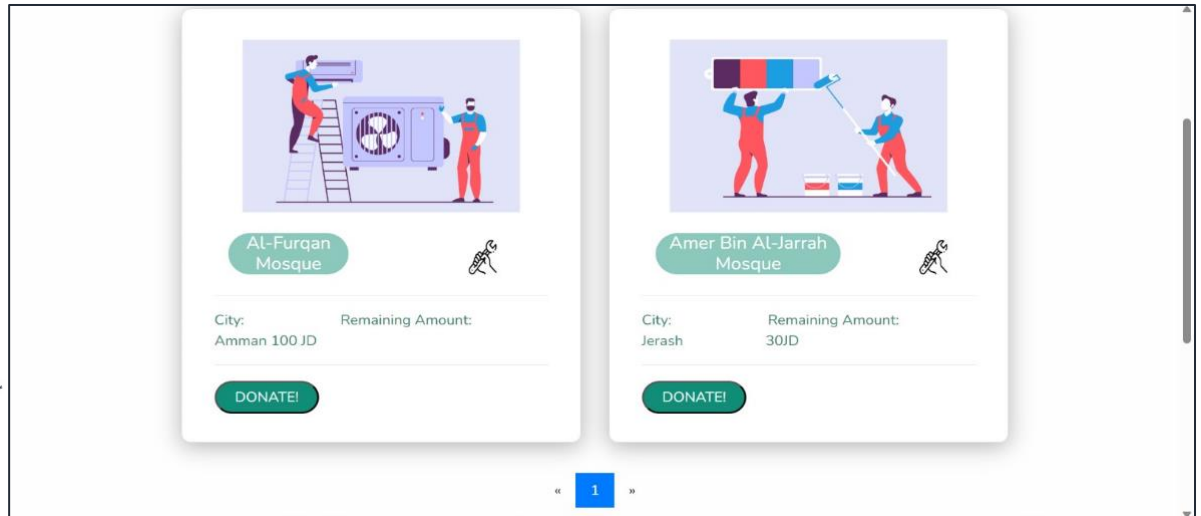
○ Yes!

Why do we contribute?

Be a volunteer to make your presence in this life more beautiful !

Our happiness begins within us, and the happiness in giving may exceed happiness in what others give us !

After completing the sign up process successfully, you can choose the type of program that you want to donate, for example, food parcels. This page will appear to you after clicking on its icon, The donor can choose the number of people he wants to donate for them the food parcel

After completing the sign up process successfully, you can choose the type of program that you want to donate, for example, mosque improvement This page will appear to you after clicking on its icon.

Ghaith · HOME PROGRAMS

(فِي بُيُوتٍ أَذِنَ اللَّهُ أَنْ تُرْفَعَ وَيُذْكَرَ فِيهَا اسْمُهُ يُسَبِّحُ لَهُ فِيهَا بِالْغُدُوِّ وَالآصَالِ رِجَالٌ لا تُلْهِيهِمْ تِجَارَةٌ وَلا بَيْعٌ عَنْ ذِكْرِ اللَّهِ وَإِقَامِ الصَّلاةِ وَإِيتَاءِ الزَّكَاةِ يَخَافُونَ يَوْماً تَتَقَلَّبُ فِيهِ الْقُلُوبُ وَالأَبْصَارُ)

Al-Furqan Mosque

Amer Bin Al-Jarrah Mosque

Al-Furqan Mosque

City:
Amman 100 JD

Remaining Amount:

DONATE!

Amer Bin Al-Jarrah Mosque

City:
Jerash

Remaining Amount:
30JD

DONATE!

« 1 »

When scrolling down on the same page, the donor can choose the mosque he wants to donate for

References

- Sommerville, Ian, Software engineering, 10th edition, 2015, Welly.
- Hudaib, Amjad, Lecture Notes of Advanced Software Engineering Course, Summer Semester, 2023.
- Chat GPT
- W3school
- Liquid
- CodePen

Appendix

Survey:

Questionnaire: we put out a google form to a group of people

Interview:

Interview: we gathered information and requirements from project lead to understand their needs and expectations for a software project. It involves asking questions and discussing various aspects of the project to ensure a clear understanding of the scope, requirements, and desired outcomes. The information collected during interviews serves as the foundation for designing and developing an effective.