Software Requirements Specification

AFETBILGI

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Revision History

Name	Date	Reason For Changes	Version
SRS First Draft	March 20, 2023	Initial Commit	1.0.0
SRS Full Draft	Apr 20, 2023	Final Version	1.0.1

1.Introduction

1.1 Purpose of the system

The document is a Software Specification Requirements (SRS) of the website "afetbilgi". The website can be found at https://afetbilgi.com.

Afetbilgi.com is a website that is prepared by a group of Middle East Technical University students and graduate to verify important information in the fight against the 6 February Earthquake disaster and to deliver it to both disaster victims and those people and organizations who want to help.

The basic principles of the website are accuracy, speed and simplicity. The user is asked to provide only confirmed information and to work with us toprevent the spread of false information.

1.2 Scope

The scope of the system can be listed as follows:

- The website provides details about the active Hospitals in the districtsthose affected by the earthquake such as the location of the Hospital,telephone number, last time to be updated and the services that are provided.
- The website shows the available pharmacies in those areas affected by the earthquake such as, in which city and district the pharmacy islocated and a map for it.
- The System enables the user to look for a veterinary clink and provides detailed information about it such as name and phonenumber.
- The system provides details about safe gathering places in case ofearthquakes and evacuation points.
- The system enables the user for looking to temporary accommodation places with information such as location, addressand link for it.

- The system provides information about institutions announced toprovides transportation aid for those people affected by the earthquake such as validation date of the service.

- The system offers information about food distribution centers.
- The system provides information about blood donation places.

1.3 System Overview

1.3.1 System Perspective

Afetbilgi is not a part of a large-scale software system. However, it interacts with other services such as Social Media platforms (Twitter, Discord, etc.), Analytics tools etc. The system known as "Afetbilgi" cannot be subdivided into subsystems; however, it depends on several integrated services to operate efficiently. For example: it can be described as consisting of a front-end user interface and a back- end database or server. The website is designed to provide up-to- date information about natural disasters, donations, and available forms of assistance. The system design is simple for no experts with IT technologies. In another meaning, it does not need a high level of experience to deal with it. To access this information, users must visitthe ‘’afetbilgi.com’’ website, they can also download pdfs provided on the website.

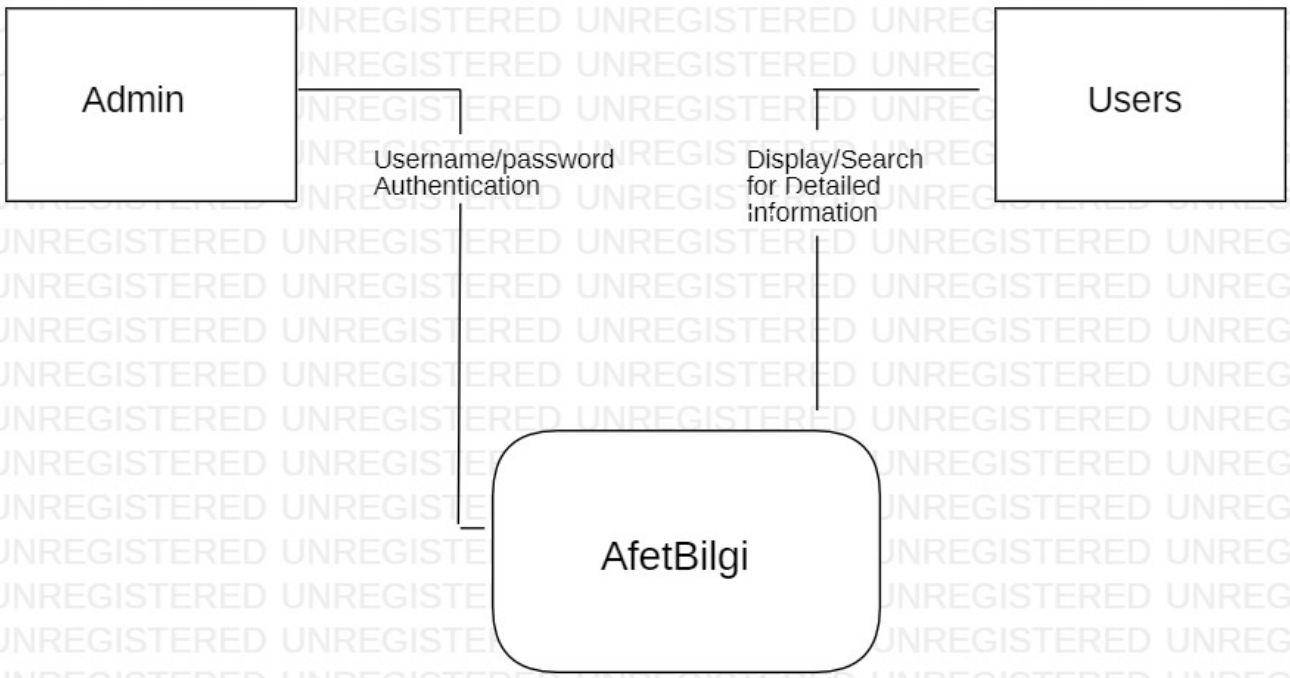

Figure1: Context Diagram

1.3.2 User Interfaces

The user Interface (UI) design is very simple and easy to navigate throughout the services system is provided. This simple design help users not to struggle with any type with effort and it does not require any kind ofhigh knowledge in IT technologies.

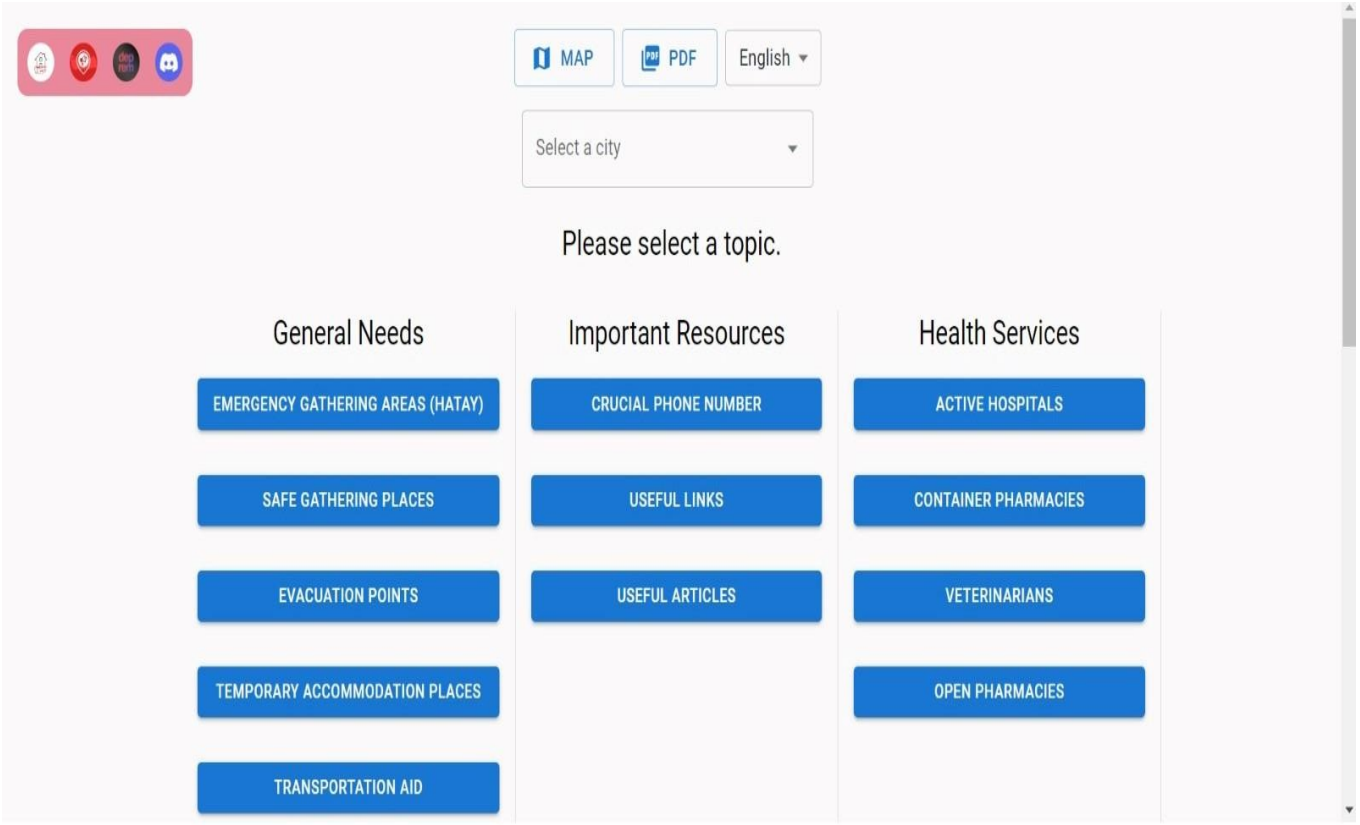

Figure2: AfetBilgi Website Home Page UI

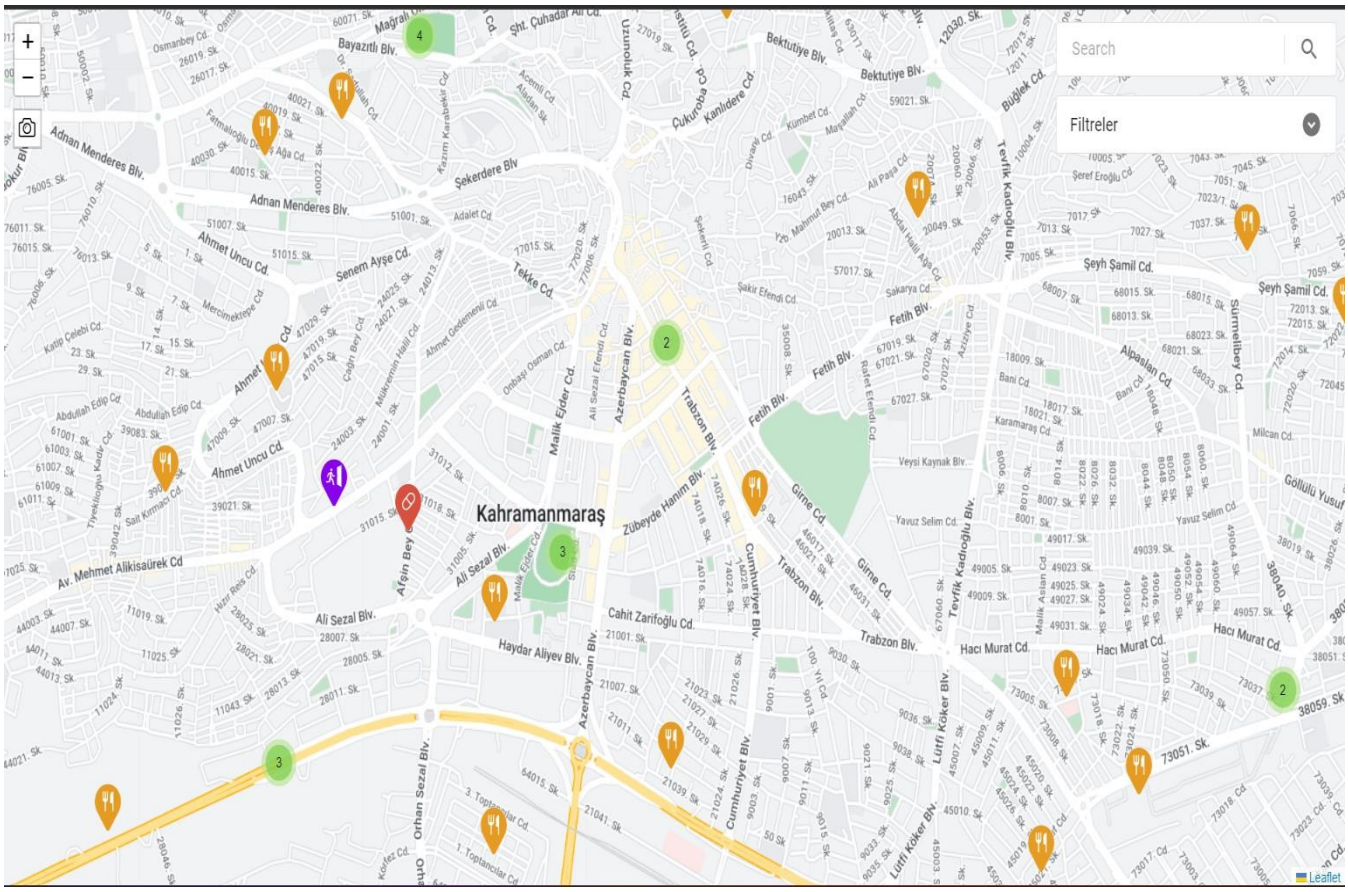

Figure3: Afetbilgi map UI

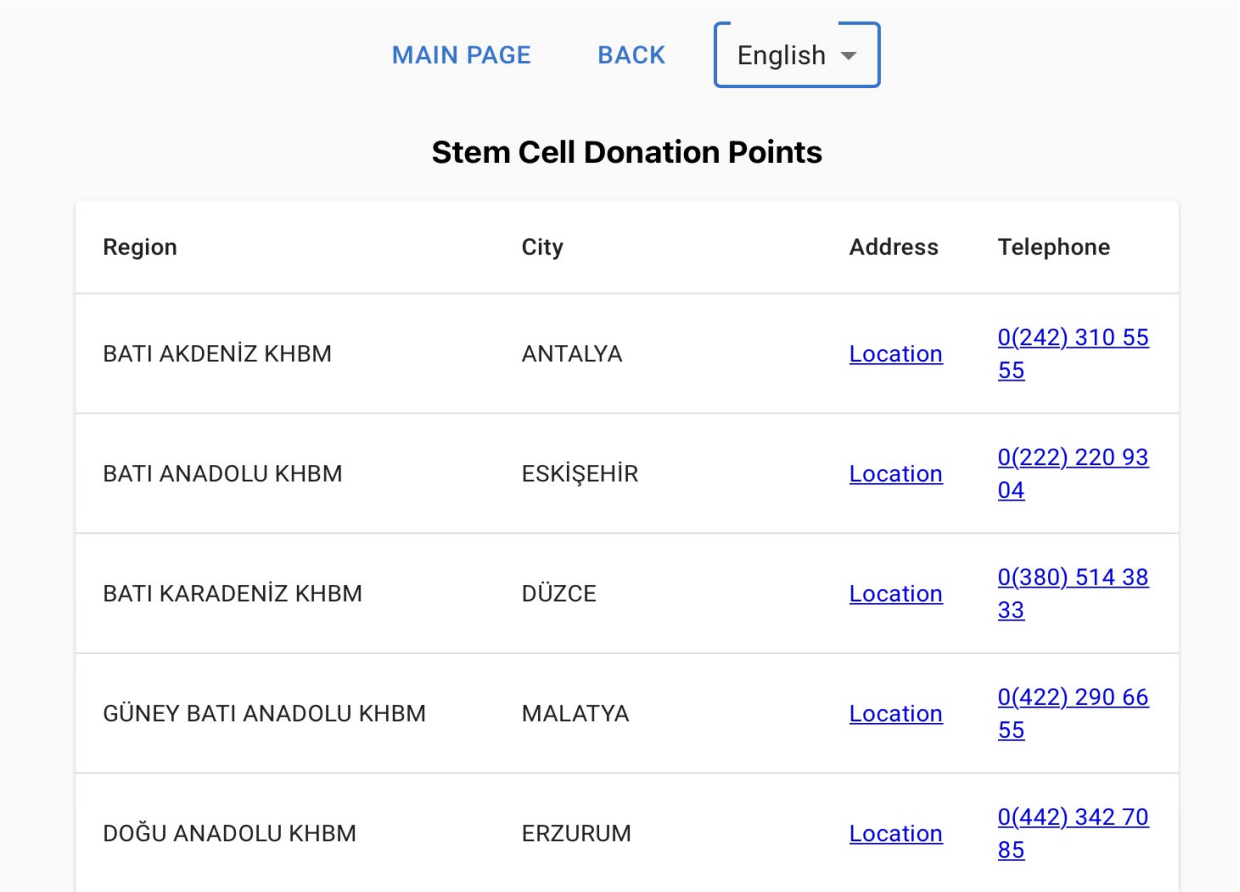

Figure4: Stem Cell Donation Points page UI

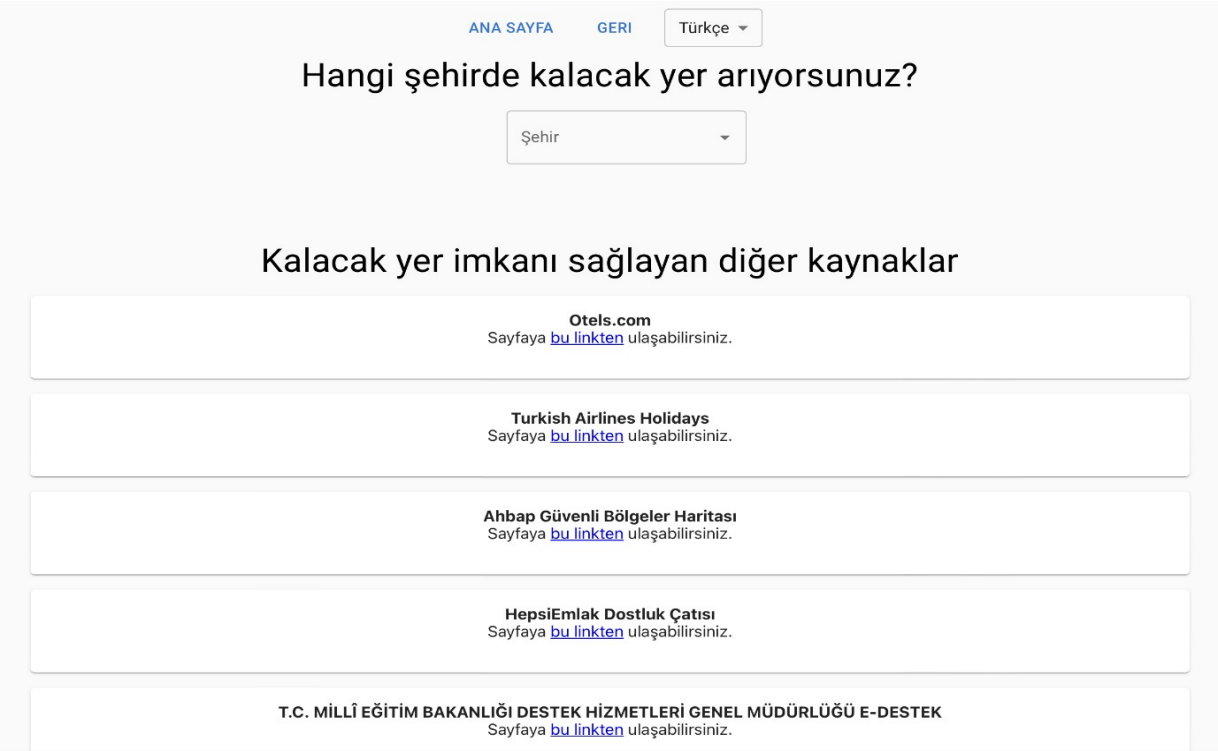

Figure5: UI of Temporary Accommodation places in Turkish

1.3.3 System Functions

Function	Description
Emergency Gathering Areas	to get details about safe gathering areas ina specific region.
Map	The user can get a location of different places (e.g. Safe gathering areas,)
PDF	to select one of the cities affected by the earthquake and get more in deep details about the evacuation points, food distribution center, safe gathering places and temporary accommodation places.
Translator	to enable the user to use the website in different languages. The available languages are Turkish, English, Arabic and Kurdi.
City Name	to enable the user to select the city in order to get information about it.
Main Page	to enable the user to return back to themain page of the website.
View Evacuation Points	to enable the user to view the evacuation points in a specific city.
View Transportation Aid	It views institutions which announced to provide transportation aid to those people affected by the earthquake.
View Gas Stations	to view gas stations that are available in each city.
View Crucial Phone Number	It views important phone numbers categorized in different sections such as Police, ambulance and hospitals.
View Useful Links	to view some useful links based on category, name and details.
View Active Hospitals	to view name, district and location for active hospitals.
View Container Pharmacies	to view information about available pharmacies such as city and district they are located.
View Digital Solidarity Campaigns	The user can find details of digital solidarity campaigns and links also are provided.
View Kizilay Blood Donation Places	The user can find donation points according to each city, district and history.
View Stem Cell Donation Points	to view some stem cell donation points such as region, address and telephone.

Table1: System Functions

1.3.3 User Characteristics

The website can be used by anyone who has access to the Internet. However,system users can be classified into four parts:

- **Normal Users**: People who want to get informed about updates,help places etc. in earthquake affected places. Those can also becalled general users. System is designed very simple, so users don't need to have high technical knowledge, skills.

- **Researchers**: Researchers can access the website to obtain earthquake or disaster management information required foracademic research or observation.

- **System Admins**: A system admin is responsible for arranging database of the system, working over system errors, managing theback end of the system, creating, and enforcing security patches and viewing system logs. They should have enough technical skills to make sure that the system runs as expected. They also have theauthority to change system-wide settings. In addition to that they can authenticate or reauthenticate the users.

- **Super Admin:** A super admin is a system admin that canauthenticate or reauthenticate the system admins.

1.3.3 System Limitations

- **Language Limitation:** The website is only available for some certain languages, which could not be accessibility to non-native speakers whoare seeking information about the earthquake and might need some help**.**

- **Inaccurate Information:** The website does not show enough informationfor some services, which leads to deliver incomplete details for victims who need some kind of help.

- **Limited Feedback:** The website has limited feedback mechanisms, whichcould limit its ability to receive input and suggestions from users and improve its content and services.

- **Limited Resources:** The website may be operated by a small team with limited resources, which could limit its ability to provide comprehensiveinformation and services.

- **Regulatory Policies:** The System should keep the data encrypted andprotect the privacy laws.

- **Hardware Limitations**: There is no such limitations.

- **Interfaces to Other Applications**: Afetbilgi website should be compatiblewith web browsers.

- **Parallel operation**: Parallelization is one of the main parts of the website.System can serve multiple users at the same time and a user can function multiple processes.

- **Audit functions**: There is no audit functions in Afetbilgi website. Thoseare done in third party websites.

- **Control functions**: The Afetbilgi website is fully in the control of IT staff / Admins and some privileges are required.

- **Higher-order Language Requirements**: The website is written mainly intypescript, but python, JavaScript are also used for development.

- **Signal Handshake Protocols**: HTTPS protocol should be used for sendingand receiving related information between server and client. It is required for safe data transfer.

- **Quality requirements**: The website should be updated with recentinformation by the IT staff. So, the Reliability is most important requirement of the system.

- **Criticality of the application:** Failures in the system can cause serious problems for earthquake victims. It is better that

  Safety and security considerations: System doesn't require sensitive and essential information about users. But the protection should be providedby the IT staff.

- **Physical/mental considerations**: The website has easy-to-use interface,so that anyone who has access to Internet can use it simply.

- **Limitations that are sourced from other systems**: There is no suchlimitation.

1.4 Definitions

- DB, Database.
- IEEE, Institute of Electrical and Electronics Engineers.
- UI, User Interface.

2. References

- **This document is prepared with respect to IEEE 29148 2018-11 standard**:
  29148 2018-11 - ISO/IEC/IEEE International Standard - Systems and software engineering – Life cycle processes – Requirements engineering
- **Sparx Systems website**, https://sparxsystems.com/ to create diagrams.
- **Git-hub resource of Afetbilgi:** https://github.com/alpaylan/afetbilgi.com

3. Specific Requirements

3.1 External Interfaces Verification

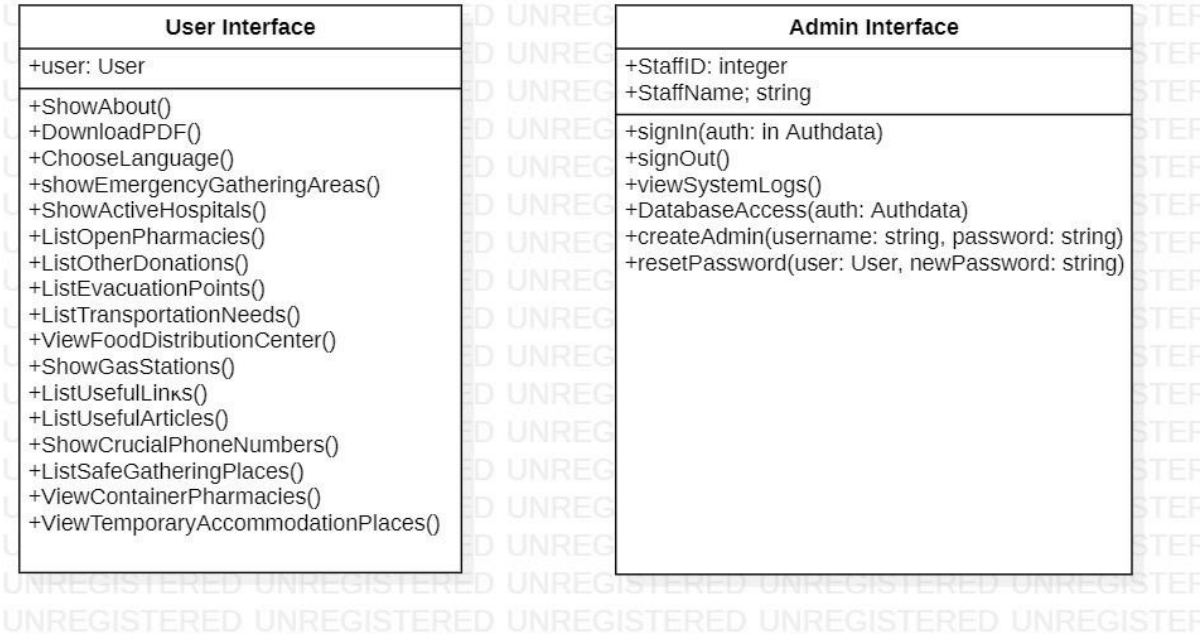

Figure 6: External Interfaces Class Diagram

- **Administrative Interface**: In this interface, super admins can view system logs, access to the database, and create new admins to accessthe website administration.

- **User Interface**: In this interface, users have the ability to get informationfrom the system.

3.2 Functions

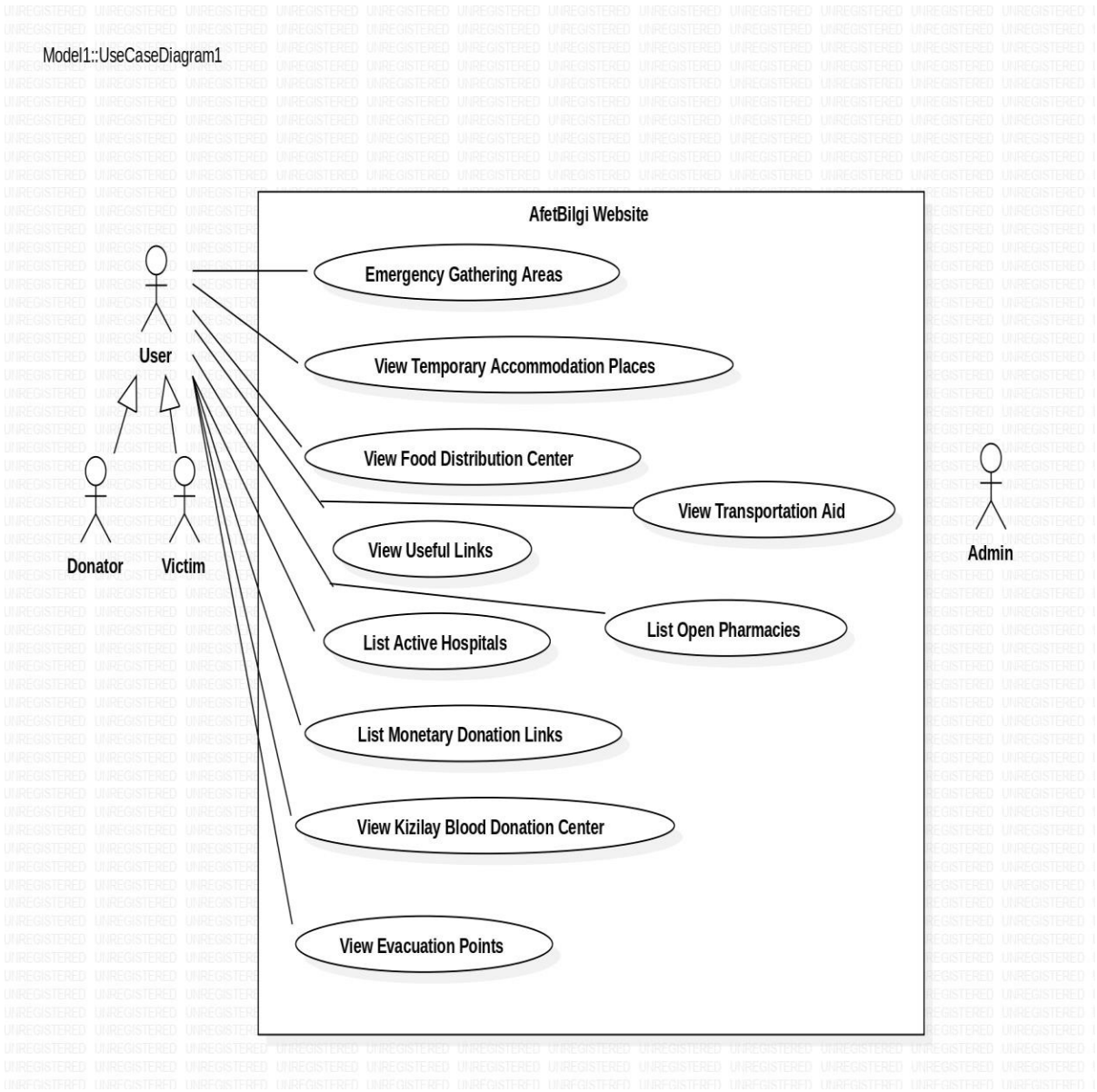

Figure 7: Use Case Diagram for Afetbilig Website

Table2: Use Case1

Use Case No	1
Use Case Name	Emergency Gathering Areas
Actors	Users
Description	User finds a designated safe location for people to gather during an emergency for each city.
Preconditions	-
Postconditions	Relevant Safe Gathering Areas are successfully listed
Basic Flow	**Step1**: User opens the website **Step2**: User clicks Emergency Gathering Areas **Step2**: User selects county (if required) **Step3**: User selects neighborhood (if required) **Step4**: System lists safe gathering areas
Exceptions/Alternative Flow:	None

Table3: Use Case2

Use Case No	2
Use Case Name	Temporary Accommodation Places
Actors	Users
Description	People whose homes have been damaged or destroyed by earthquakes can find locations of places that provide temporary accommodation
Preconditions	-
Postconditions	Relevant information about places to stay in selected region is shown
Basic Flow	**Step1**: User clicks temporary accommodation places **Step2**: User selects the city that s/he is looking for place **Step3**: System lists the places to stay in selected city
Exceptions/**Alternative Flow:**	**Step2**: System lists additional resources for finding temporary accommodation

Table4: Use Case3

Use Case No	3
Use Case Name	Food Distribution Center
Actors	Users
Description	Users can find food distribution centers for each city
Preconditions	-
Postconditions	User can successfully see detailed information about places that provide Free Food Delivery to people.
Basic Flow	**Step1**: User clicks food distribution center **Step2**: User selects the city that s/he is looking for place **Step3**: User selects the county **Step4**: System lists the places for free food delivery
Exceptions/**Alternative Flow:**	**Step2**: System lists additional resources for finding free food delivery places in general

Table5: Use Case4

Use Case No	4
Use Case Name	Mobile Toilets
Actors	Users
Description	User view the provided mobile toilets in affected area. System redirects user to social media(twitter) post which include related information about mobile toilets.
Preconditions	None
Postconditions	Detailed information of mobile toilets is shown in directed website.
Basic Flow	**Step1**: User clicks mobile toilets **Step2**: System redirects user to another website with info about mobile toilets
Exceptions/**Alternative Flow:**	None

Table6: Use Case5

Use Case No	5
Use Case Name	Useful Links
Actors	Users
Description	Users can access links for schools, hospitals, emergency needs and so on. Those are mostly public institutions that people can donate, and victims can contact.
Preconditions	-
Postconditions	Links of important web sites are listed by the system.
Basic Flow	**Step1**: User clicks the useful links **Step2**: System lists web sites of important institutions
Exceptions/**Alternative Flow:**	None

Table7: Use Case6

Use Case No	6
Use Case Name	Active Hospitals
Actors	Users
Description	System provides real-time information about the status and availability of hospitals
Preconditions	-
Postconditions	Relevant information about healthcare services listed by system
Basic Flow	**Step1**: User clicks the Active Hospitals **Step2**: User selects city **Step3**: System lists active HealthCare Services
Exceptions/Alternative Flow:	**Step2**: System lists Active Hospitals in general

Table8: Use Case7

Use Case No	7
Use Case Name	Veterinarians
Actors	Users
Description	Users can access information related to animal health, veterinary clinics where they can get free help
Preconditions	-
Postconditions	A record of veterinarians shown
Basic Flow	**Step1**: User clicks the Veterinarians **Step2**: User selects city **Step3**: System lists active Veterinary clinics
Exceptions/Alternative Flow:	**Step2**: System lists Active Veterinarians in general

Table9: Use Case8

Use Case No	8
Use Case Name	Monetary Donation Links
Actors	Users
Description	Users can access links to donate money to organizations that provide aid to animals affected by earthquakes.
Preconditions	None
Postconditions	A list of links to donate money to organizations is displayed to the user.
Basic Flow	**Step1**: The user navigates to the "Monetary Donations" section **Step2**: The user selects an organization they want to donate to **Step3**: The system redirects the user to the donation page of the selected organization
Exceptions/Alternative Flow:	If the user does not select an organization in step 2, the system displays a list of organizations to donate to in general instead of for a specific organization.

Table10: Use Case9

Use Case No	9
Use Case Name	Other Donations
Actors	User
Description	Users can access information on how to donate non-monetary items, such as food, medicine, or supplies, to organizations that provide aid to animals affected by earthquakes.
Preconditions	None
Postconditions	A list of instructions and contact information for organizations is displayed to the user.
Basic Flow	**Step1**: User clicks “Other Donations” section **Step2**: User Selects the city they want to donate **Step3**: User selects an organization they want to donate to **Step4**: The system displays instructions on how to donate the selected item to the selected organization, including contact information and drop-off locations.
Exceptions/Alternative Flow:	If the user does not select an organization in step 3, the system displays a list of organizations to donate to in general instead of for a specific organization.

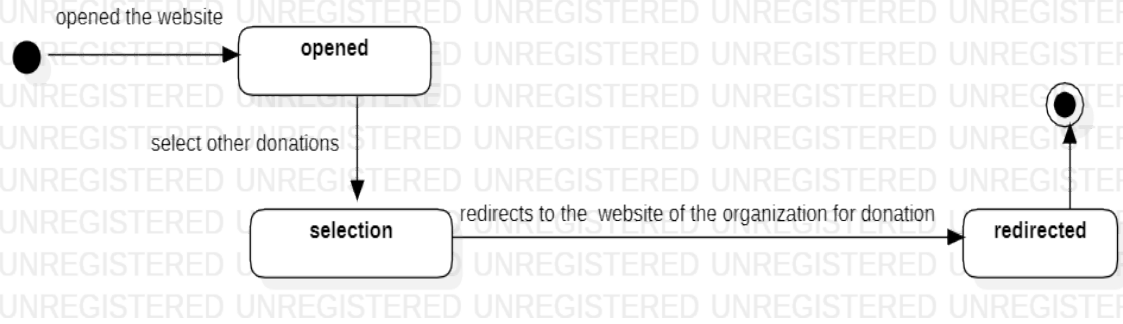

Figure 8: State diagram odf “Other donations” function

Table11: Use Case10

Use Case No	10
Use Case Name	KIZILAY Blood Donation Places
Actors	Users
Description	Users can access information on KIZILAY blood donation places and schedules to donate blood
Preconditions	None
Postconditions	A list of KIZILAY blood donation places and schedules is displayed to the user.
Basic Flow	**Step1**: The user clicks on the "KIZILAY Blood Donation Places" link **Step2**: System redirects user to “KIZILAY” website **Step3**: The user can select a location from the list and view the corresponding schedule for blood donation **Step4**: The user can access information about the requirements and procedure for blood donation
Exceptions/Alternative Flow:	If the user does not select a location in step 3 the system displays a list of all KIZILAY blood donation places and schedules instead of for a specific location.

Table12: Use Case11

Use Case No	11
Use Case Name	About Us/Contact
Actors	Users
Description	Users can access information about the organization and how to contact them for inquiries, feedback, or other purposes.
Preconditions	None
Postconditions	The user is presented with information about the organization and how to contact them.
Basic Flow	**Step1**: The user clicks on the "About Us/Contact" link **Step2**: The system displays information about the organization, such as their mission, history, and team members **Step3:** The user can access the organization's contact information, such as their email address, phone number, or social media accounts, and use them to send inquiries, feedback, or other messages.
Exceptions/Alternative Flow:	None

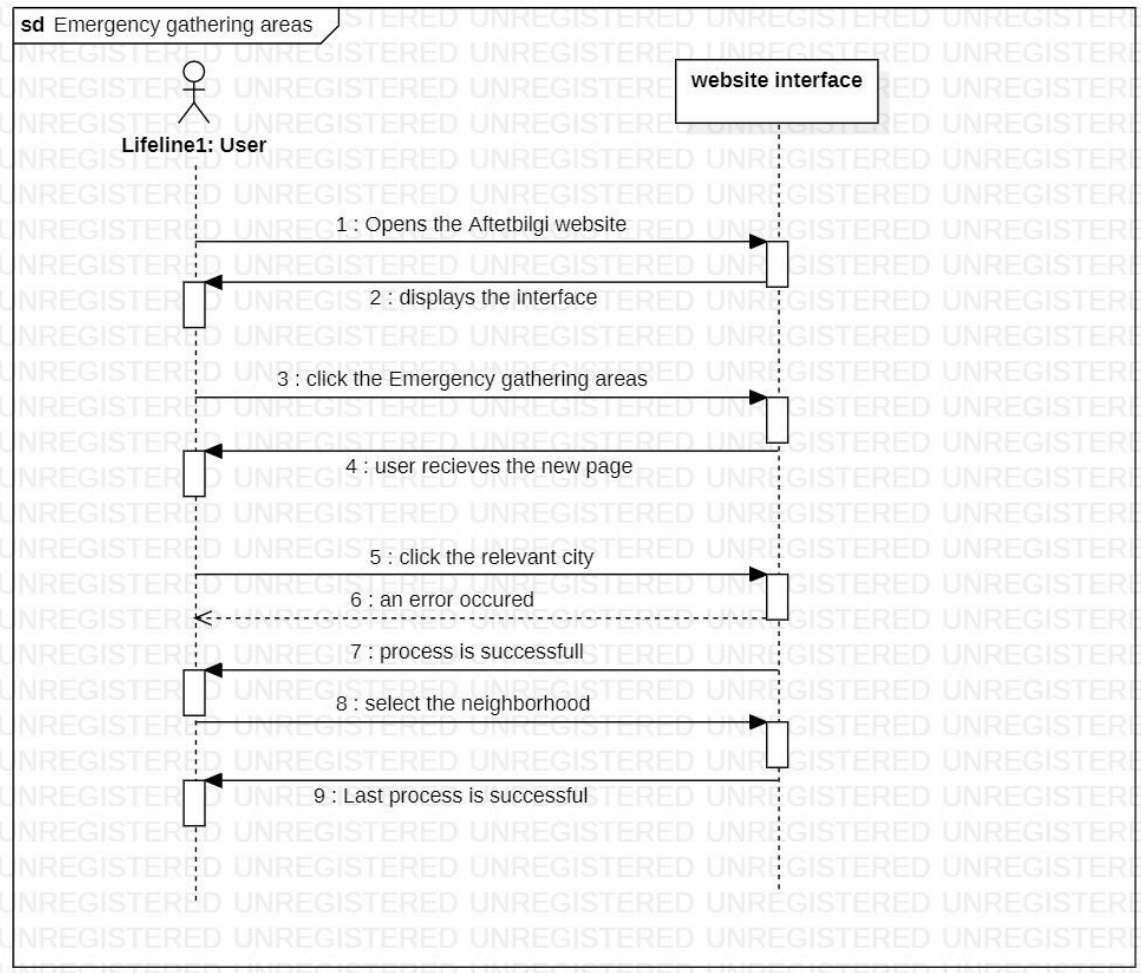

Figure 9: Sequence Diagram for Emergency Gathering Areas

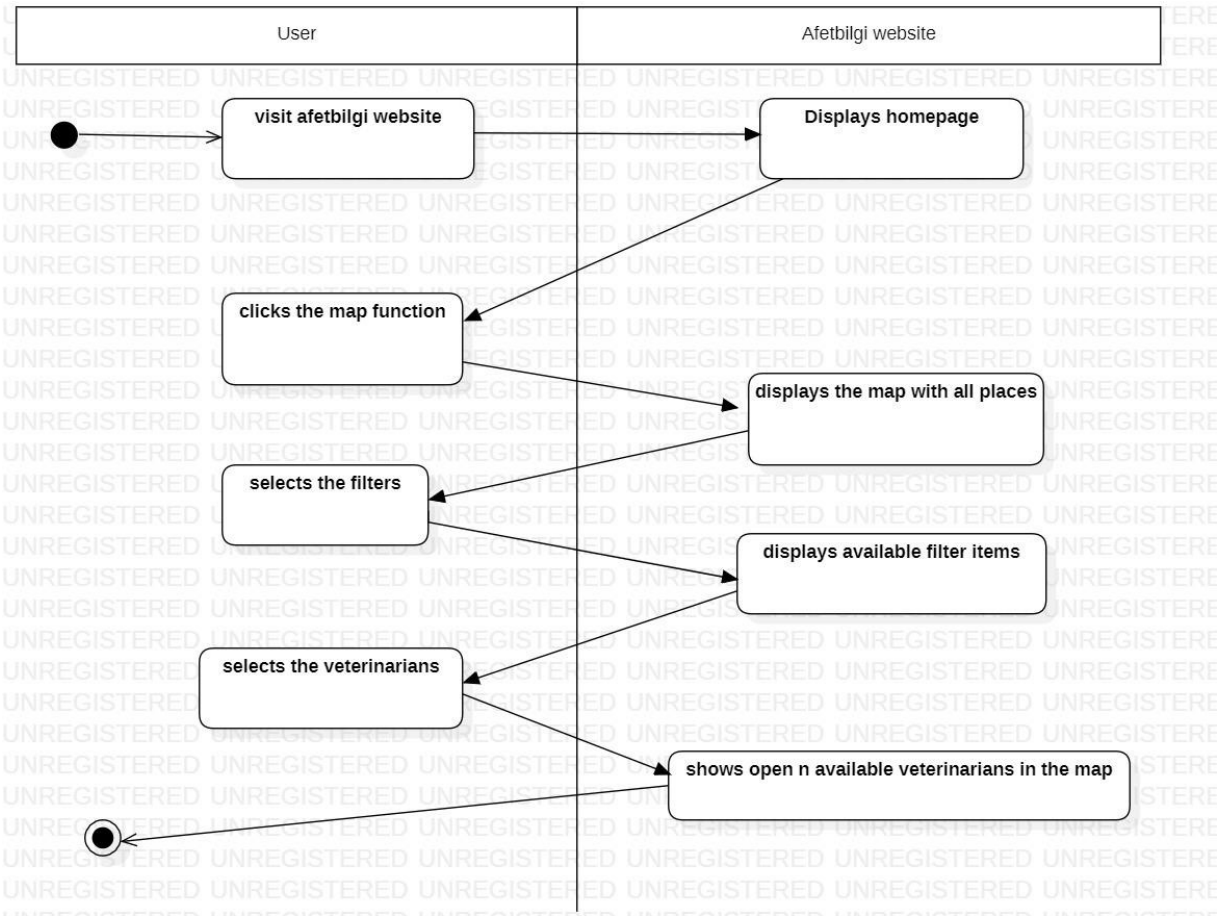

Figure 10: Activity Diagram for veterinarians in map fucntion

3.3 Usability Requirements

- Users shall be able to use all functions of Afetbilgi Website with thestable Internet connection.
- Users shall be able to easily switch to other pages, for example by usingmain page function they can return quickly to main page of the website.
- User shall be able to download pdfs without any danger, files should notcontain any malware (viruses, trojans, or ransomware).
- The System shall be able to provide users with reliable and recentinformation.

- The website should have user-friendly interface, so that everyone shallbe able to use it regardless of technical skills.

IT staff and Admins shall be able to access the codes easily and make changesor add new feature to the system**.**

3.4 Performance Requirements

- Multiple Users shall be able to use the website at the same time.
- Users shall be redirected to the third-party websites in less than 3seconds.
- Users shall be able to get response in less than a second.
- Users shall be able to download the files within 1-2 seconds.

3.5 Logical Database Requirements

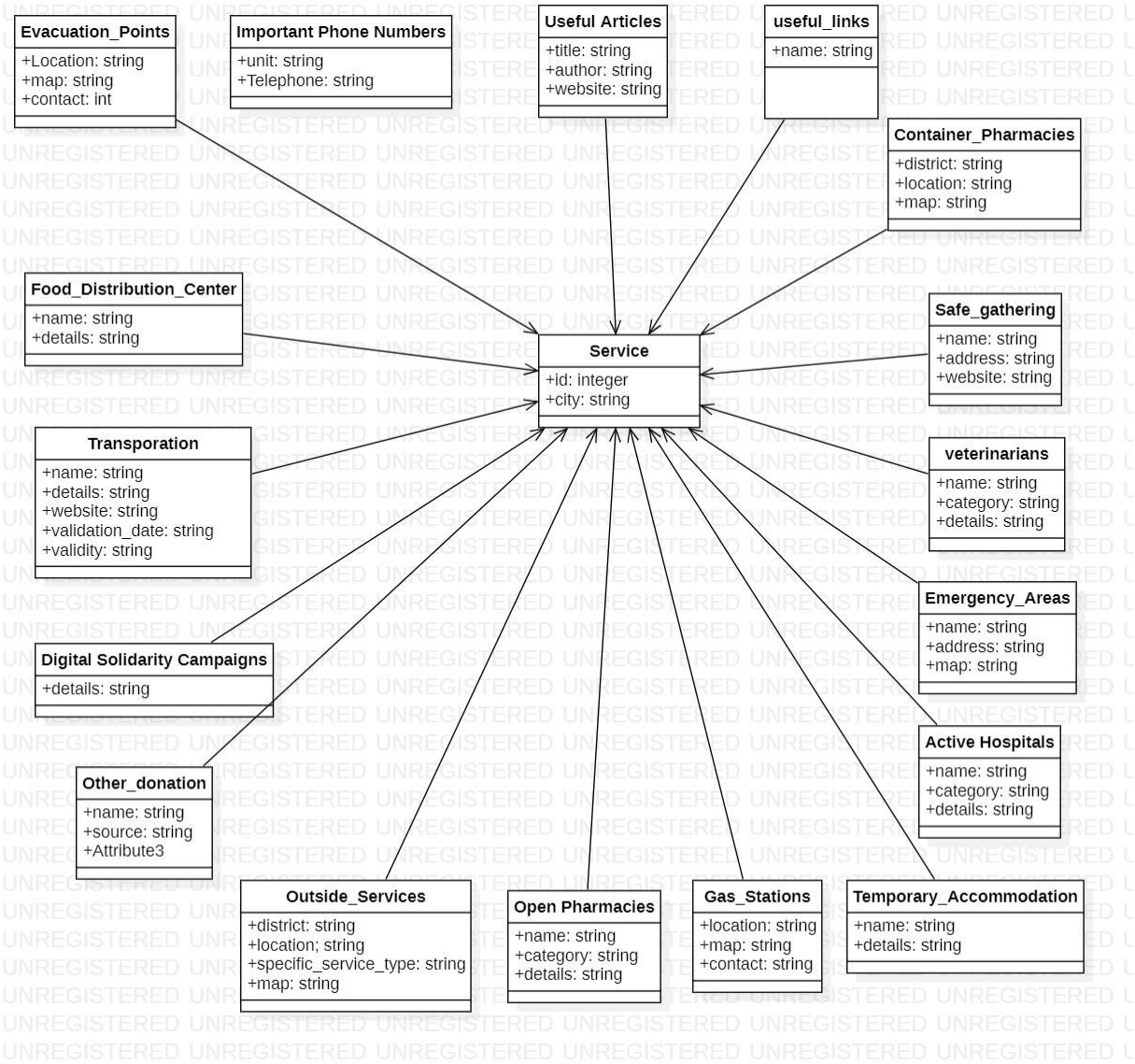

Figure 11: Logical Database Requirements

1. The database itself must be accessible only be the Super Admin.
2. The system Admin can define new users to database for Maintenancepurposes.
3. All system Admins can define new users to access to the System.
4. Every User has a unique ID as a primary key in User table.
5. Every Service has a unique ID as a primary key in Service table.

3.6 Design Constraints

The system is designed to deliver up-to-date information and details about theearthquake, a bunch of services for earthquake victims as well. These information and details are highly reliable and up-to-date to ensure trustiness between the user and the system.

3.7 System Attributes

The website is designed to offer up-to-date information and help for victims affected by the earthquake. Therefore, it is designed with careful considerationof several design constraints, including:

- **Reliability:** The website is intended to provide information and assistance to victims of the earthquake. Therefore, the system is loadquickly and function smoothly to ensure that users can access the information they need in a timely manner.

- **Availability:** The website is designed to be accessed by users at any timewithout any interruptions. It could be handling large amounts of traffic and nit be affected by server failures.

- **Clarity and Simplicity:** The website is designed with a clear and simple interface that is easy to navigate. Therefore, users are able to find the information they need quickly an easily, without having to dig through cluttered menus or confusing layouts.

- **Localization:** The website is designed to accommodate multiple languages and dialects, as the earthquake has occurred in an area with adiverse population.

- **Portability:** The website is optimized for mobile devices, as many users may be accessing the site from their smartphones or tablets.

- **Scalability:** The website is designed to scale up or down based on userdemand.

4 Suggestions to Improve the Existing System

4.1 System Perspective

I suggest to add a second party of users which is donators. It would be better to add it as they can communicate with the system from another perspective. Once they are added, they can make some donations to thevictims affected by the earthquake.

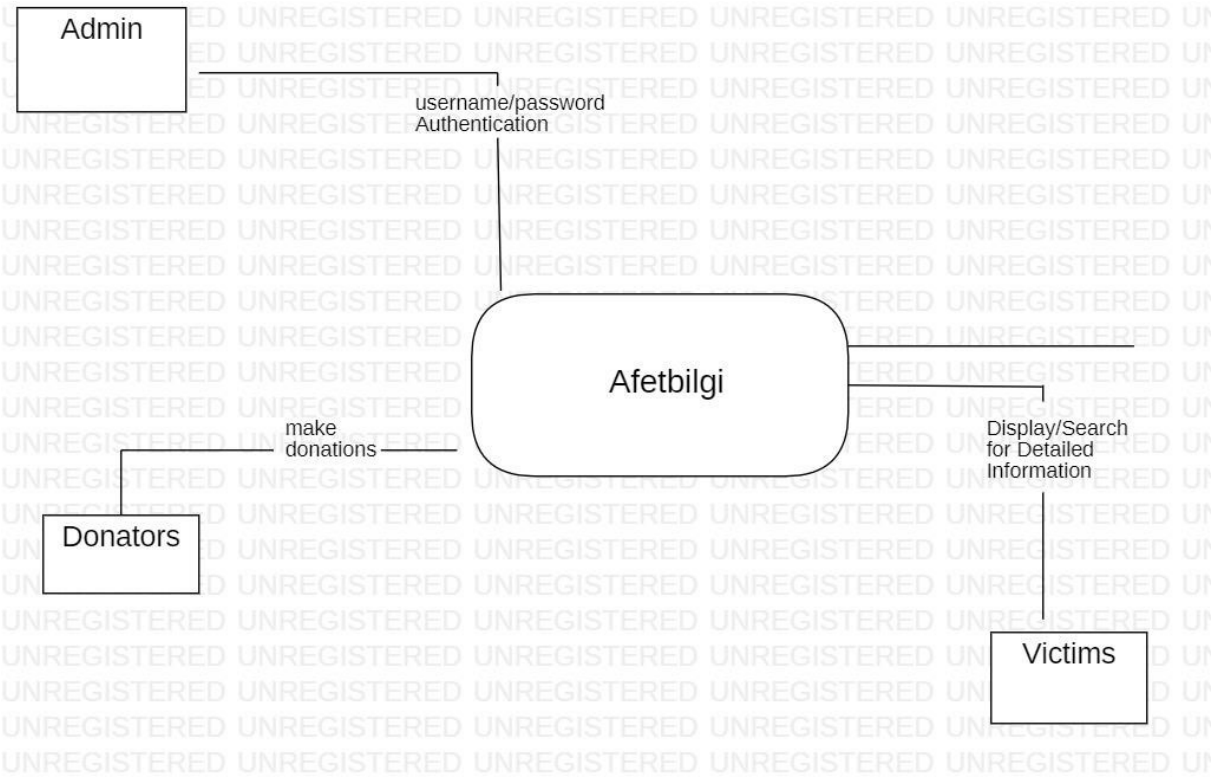

Figure12: Context Diagram Suggested

4.2 External Interfaces

I suggest adding login Interface which is dedicated for users of type "Donators". With their login and authentication, they can make some donations for victims as well as their interaction with the system would beeasily.

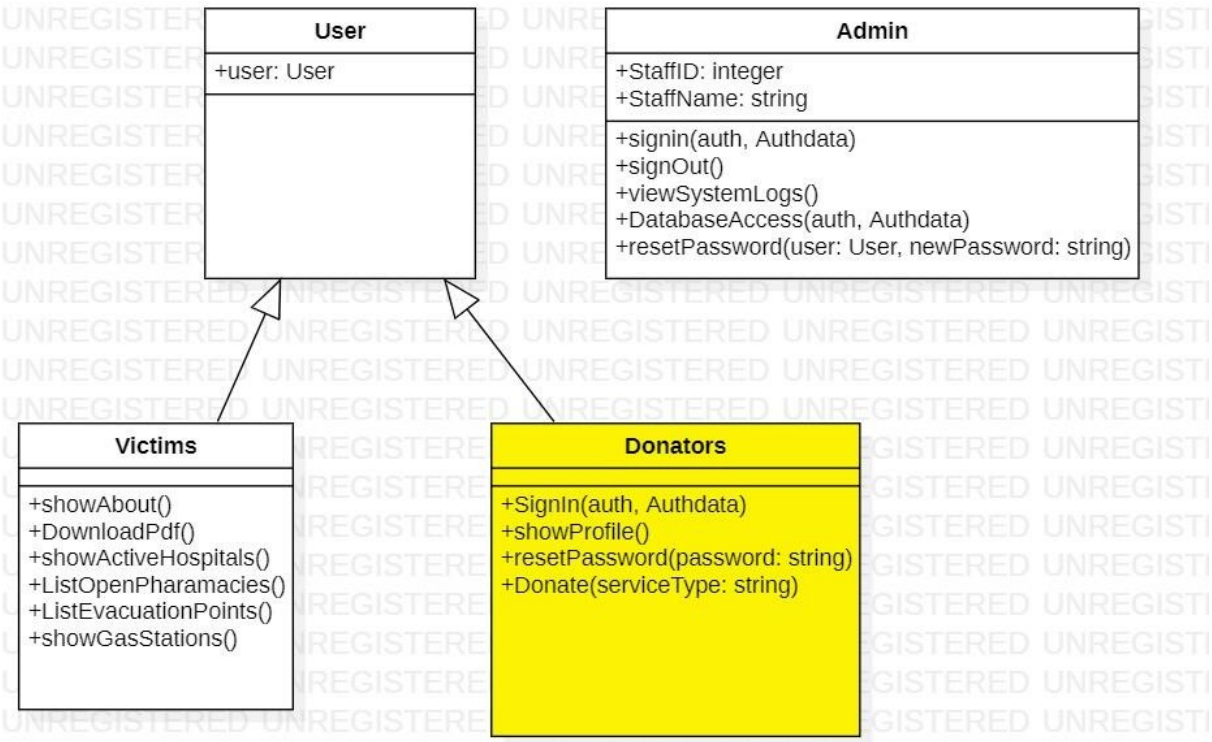

Figure 13: External Interface Class Diagram

4.3 Functions

Use Case No	1
Use Case Name	Sign-up
Actors	Users
Description	Users register to afetbilgi website
Preconditions	None
Postconditions	User account created successfully
Basic Flow	**Step1**: User opens the website **Step2**: User fill-in the required fields **Step3**: System checks and verifies the data entered **Step 4**: System saves the user account
Exceptions/Alternative Flow:	If the password doesn't match with password in the ''password verification'' field user can see the error message.

Table13: Suggested Use Case1

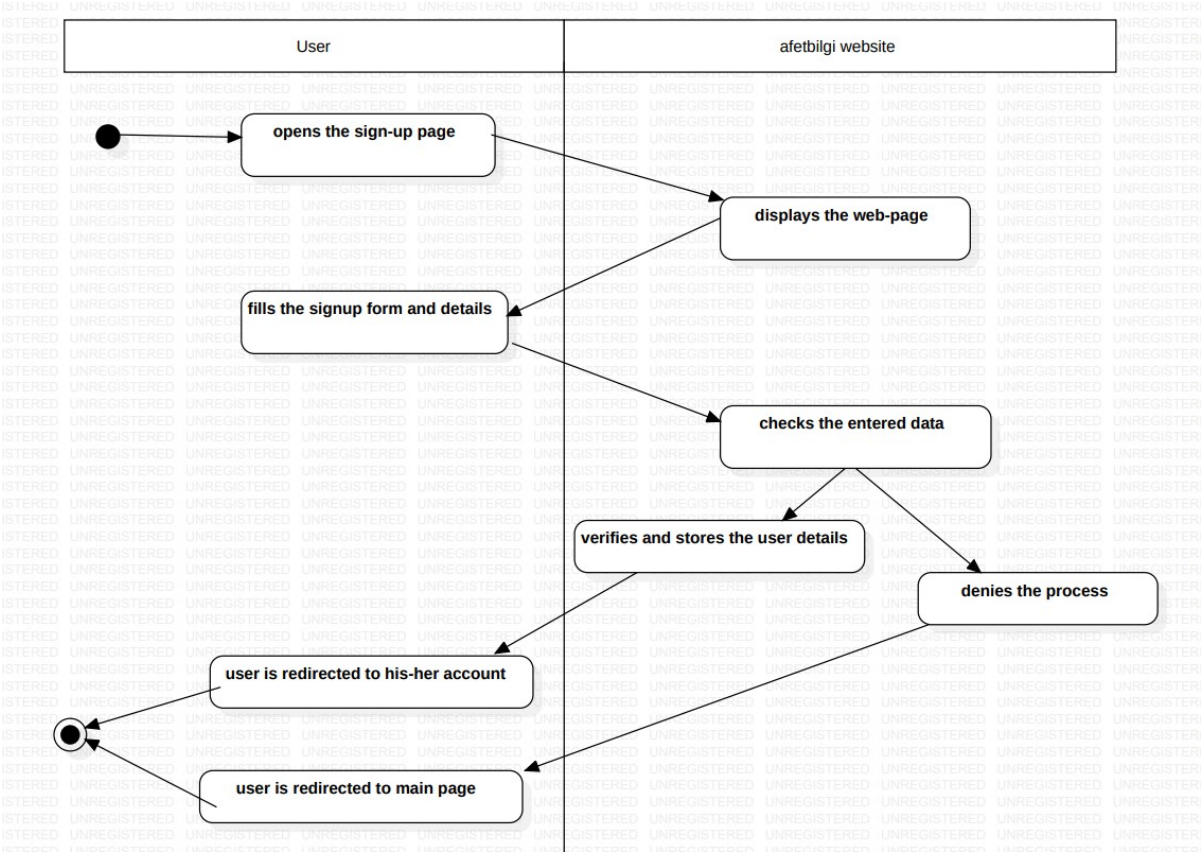

Figure 14: Activity diagram of “sign-up” function

Use Case No	2
Use Case Name	Log-in
Actors	Users
Description	Users log in to their account in afetbilgi
Preconditions	Users should be signed up
Postconditions	User successfully logged in to website
Basic Flow	**Step1**: User enters the username/email and password **Step 2:** System checks if the user exists and password is correct **Step 3:** System logs the user in to the website
Exceptions/Alternative Flow:	If the user does not exist in the system, the sign-up button should appear. If the password is wrong the password repair methods should appear. System should send mail for repairing the password

Table14: Suggested Use Case2

Use Case No	3
Use Case Name	Add payment method
Actors	Users
Description	Users can save the credit/debit card for easy donation
Preconditions	Users should be logged in
Postconditions	The payment method is successfully saved.
Basic Flow	**Step1:** User clicks the add payment method **Step 2:** User fills in the required fields about credit/debit card **Step 3:** System checks the validity of the payment method **Step 4**: System saves the payment method
Exceptions/Alternative Flow:	If a problem occurs in the step 3, user redirects to step 2 and can fill the form again

Table15: Suggested Use Case3

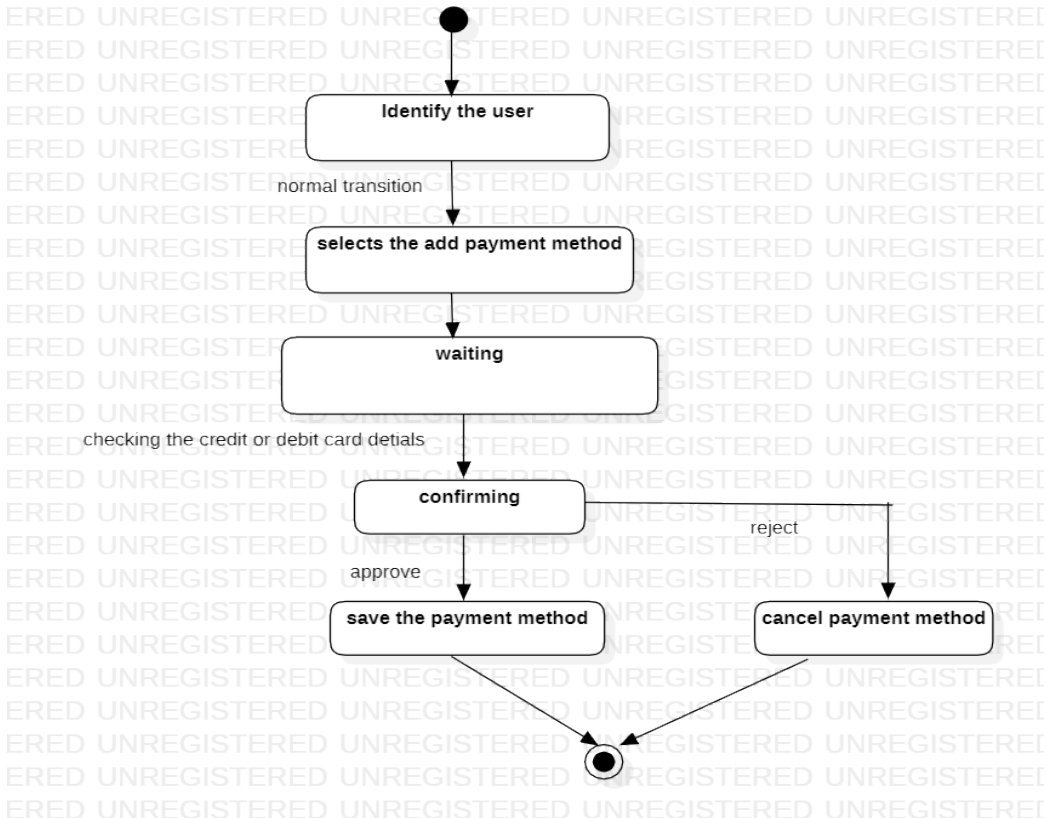

Figure 15: State diagram of "add payment" function

Use Case No	4
Use Case Name	Notifications
Actors	Users
Description	Users can get alerts and notifications about possible upcoming disasters
Preconditions	Users should be logged in
Postconditions	User successfully get informed
Basic Flow	**Step1:** User clicks the notifications section **Step 2**: System shows all notifications
Exceptions/Alternative Flow:	None

Table16: Suggested Use Case4

Use Case No	5
Use Case Name	Make Donation
Actors	Users
Description	Users can help financially for the victims
Preconditions	Users should be logged in
Postconditions	User successfully made donation
Basic Flow	**Step1**: User logs in to his/her account **Step2:** User clicks the make donation **Step 3:** User fills in the required fields, organization s/he wants to donate, amount, payment method... **Step 4:** System redirects the user to Bank system for the 3d code **Step 5**: System saves the made donation
Exceptions/Alternative Flow:	If the 3d secure code is not correct user or credit debit card do not have enough limit user get error message and returns to main page.

Table17: Suggested Use Case4

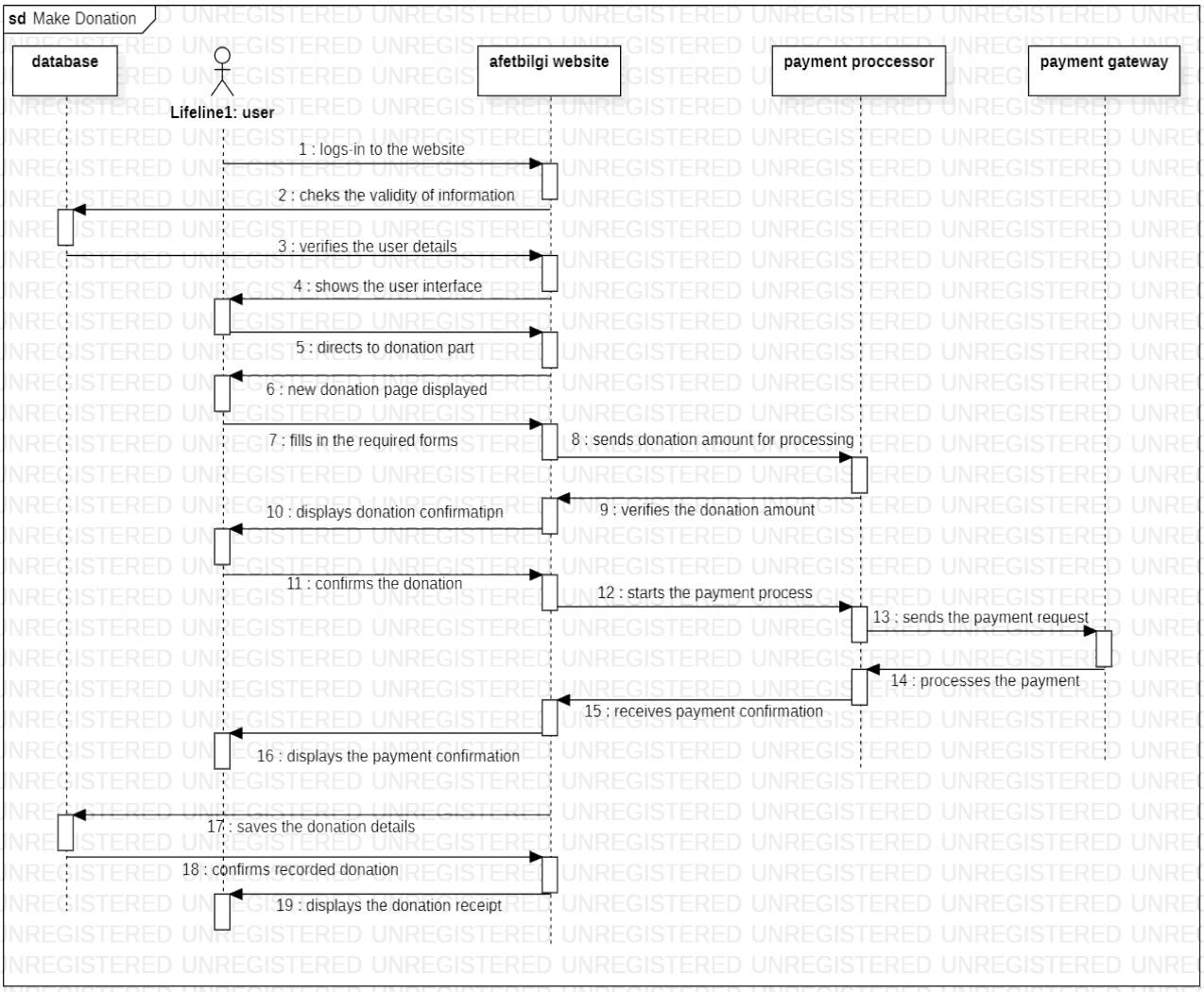

Figure 16: Sequence Diagram of "Make Donation" function

4.4 Usability Requirements

- User shall be able to Sign up with other accounts like Google, Facebook.
- Users shall be able to login the system in less than 5 seconds.
- Users shall be able to make donations easily and save payment methods for next donations.
- Users shall be able to change some information after signing up.
- User shall be able to undo any action within the website.

4.5 Performance Requirements

- System shall be able to secure, protect all information of users.
- System shall keep the passwords encrypted.
- Users shall not spend more than 30 seconds for sign-up.
- The website shall be optimized for each device type.

4.6 Logical Database Requirements

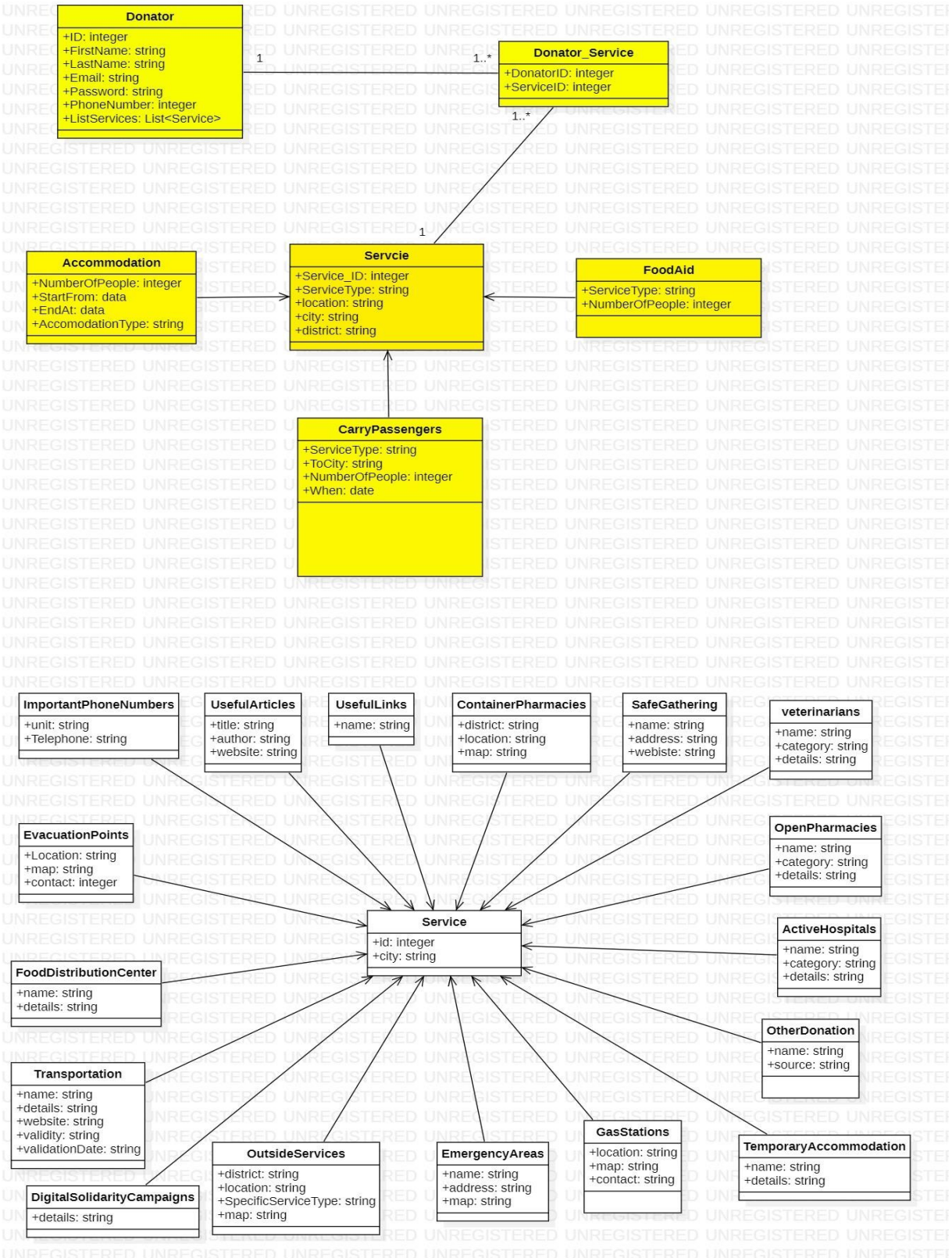

Figure 17: Logical Database Requirements

4.7 Design Constraints

System concerns to protect all private information of users such as their identity information, password, and other confidential data. These cannot beaccessed by anyone else from the users.

4.7 System Attributes

- **Security:** All stored data related to the customer shall be in hashed form.
- **Maintainability:** The codebase should follow best practices for code maintenance, including clear and consistent coding standards, versioncontrol, and regular updates.
- **Reliability:** The system should use reliable and trusted data sources to ensure that the information provided to the users is accurate and up to-date.