SOFTWARE REQUIREMENTS SPECIFICATION

Afetbilgi.com

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Revision History

Revision	Date	Author(s)	Description
1.0.0	08.04.2023	M. , T.	SRS First Draft
1.1.0	24.04.2023	M. , T.	SRS Final Document

1 Introduction

1.1 Purpose of the System

The purpose of the system is help to people who are affected by the Pazarcık earthquake. The Afetbilgi.com project was developed shortly after the biggest influential disaster in the Turkish Republic for providing easy access to up-to-date data needed. The website has also official donation addresses for those who want to help individually. The project offers both online resources and offline PDFs for all current information. It is worth mentioning that while the city infrastructures and roads were unrecognizable, Afetbilgi.com had the foresight to add location and navigation and show key locations on the map.

1.2 Scope

The name of the project is Afetbilgi which is a combination of the two words disaster and information in the scope of this system, the website should benefit affected individuals and help in enhancing their life quality and chances to live during dangerous times.
The project is created for the sake of charity and its main goal of the system is to offer help to impacted individuals, through collecting information from various resources and delivering it to those who need it. The information show on Afetbilgi will be available only for cities affected by the earthquake in Turkey, and other countries like Syria will not be included.
The platform allows users to find the location of help places but cannot facilitate getting help through the platform. To make all necessary information available to people affected by the earthquake and people who want to help, the project requires a web based system for accessing data, a data collection and validation system, and a database and database parser.
To summaries, the scope of the Afetbilgi is to:

- The platform shall collect information from users and various other sources and present information in four different languages for people in need.
- The system requires a deployment system, a data collection and validation system, a database, and database parser.
- The platform will enable users to see all information on a map.
- The users shall be able to a PDF of all information.
- The goal is to make all necessary information available to people affected by the earthquake and people who want to help.

1.3 System Overview

1.3.1 System Perspective

Afetbilgi is a system built to deliver crucial information for individuals impacted by natural disasters easily and responsively. For the sake of easiness, the impacted individuals shall be able to access the information that they seek with minimal effort and input. So, the only information impacted individuals need to enter are their location and the type of service they need. The data that would be available on the platform shall be collected, formatted validated by several Data Collectors. The main source of data is the internet, videos, pictures, and volunteers who can send data to the Data Collectors. Volunteers shall see information about how to donate to help impacted individuals. The system shall use google maps API to share location information with impacted individuals and volunteers and to get the coordinates of various locations to show on the maps that contain all help facilities. The system context diagram is shown in figure 1.1.

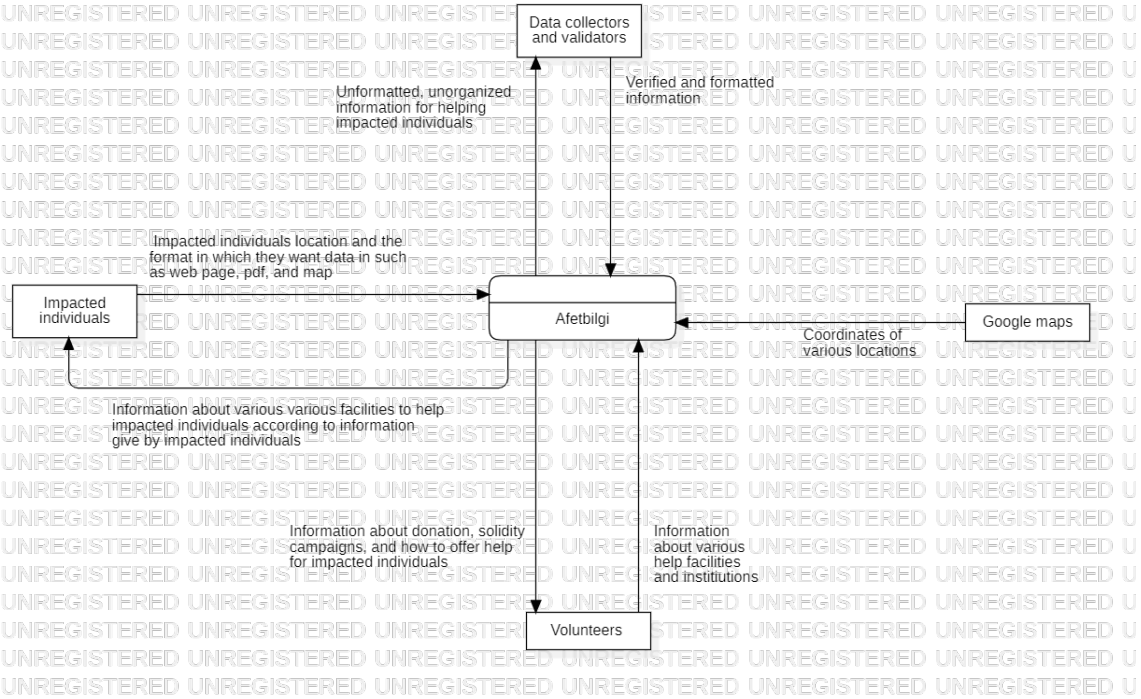

Figure 1.1: System Context Diagram for Afetbilgi

1.3.1.1 System Interfaces

Backend interface (Afetbilgi.com): This interface takes various HTTP/HTTPS requests with various parameters and sends the appropriately formatted web pages with the required information specified in the request. The API shall return the main page in case there are no inputs. The main pages shall include links to general functions of the system that would give various

information that would be specified later in detail. The API can accept city names or various other inputs to specify what shall be the content of the returned web page.
Backend interface (pdf.Afetbilgi.com): This interface shall send all the information available in Afetbilgi in pdf format. This interface takes no input from the users.
Backend interface (maps.Afetbilgi.com): This interface shall show all the information available in Afetbilgi on an interactive. The backend interface takes no inputs.
Data Validator: It shall be used to check the database after each update against a schema to check the validity of the data.
AWS API: AWS is for the deployment, storage, and backups of our software. AWS API is used to set up the software, update the database by calling Afetbilgi data parser API, validate data by calling the Data validator interface, generating pdf by calling pdf generator API.
Data Parser: It shall be used to parse new data and combine all parsed data in the new database.
pdf generator: It shall be used to generate pdf version of the whole date in the database.

1.3.1.2 User Interfaces

Main web pages: The Interface shall allow impacted individuals and volunteers to access information provided by the system. It shall allow users to specify the city and district for which they need to see the information. It shall also show links to all information and functions provided by the system.
Leaf web pages: This interface would list all the required information in a list format to make it as readable as possible for impacted individuals and volunteers.
Map View: This interface shall list all facilities on an interactive map. It shall also allow users to filter the facilities which they need to see. The map shall also show the current location of the users on it. It also shall let users take a screenshot of it to be stored locally on them.

1.3.1.3 Software Interfaces

Google sheets: Data collectors and validators use google Sheets as their main database in the process of collecting, formatting, and organizing data.
Google maps: The software shall be used for getting the coordinates of various locations to be shown on the interactive maps. It shall also allow for communicating various locations by sharing them using google maps API links.

1.3.1.4 Communication Interfaces

Afetbilgi utilizes HTTP/HTTPS protocols to receive various requests from the impacted individuals and volunteers.

1.3.1.5 Memory constraints

The memory needed to make use of the software is very small and it depends on the browser used to access the web page.

1.3.2 System Functions

You can find the System Functions in Table 1.2.

1.3.3 Stakeholder Characteristics

There are four main stakeholders for Afetbilgi project which are Impacted people, Volunteers, Data Collector and Validators and lastly Programmers.
Impacted people: Who are affected by earthquakes directly. They may have exposed the physical trauma, or damage or stayed under the debris as a result of a severe earthquake. They can be needed to available true sources, information, or teams for them to rescue.
Volunteers: They are groups or individuals who are eager to extend a hand. They can have a profession in a particular field, for instance, digger operators or medical doctors which can play a crucial role post-disaster. They may be desired to help personally to others and make a positive impact on professional societies.
Data Collectors and Validators: They are gathering and verifying information about emergency situations and phone numbers. They can communicate with nongovernmental organizations, government agencies, or other societies involved in disaster struggles. They can use various ways such as interviews to collect data and validate its accuracy.
Programmers: Who are responsible for developing the software and managing the website Afetbilgi.com. They are experienced in web development, database management, and programming languages. Their role is crucially important because they have to ensure the website is secure and current.

1.3.4 Limitations

There are several limitations that should be followed by Afetbilgi such as:

- For the sake of safety and security considerations Afetbilgi.com shall verify evert emergency aid notices comming for individuals
- Afetbilgi.com cannot behave like charity and cannot directly fund raise because it has no authority to do so.
- Afetbilgi shall be accessible through poor internet connect since impacted individuals may not have stable internet access
- Afetbilgi shall be up to date with all information displayed verified
- For the limitations that are sourced from other systems, lack information, and lack of reliability, Afetbilgi is not available at border countries.

Function	Summary
Get Map	Allow user to see map containing nearest aid locations.
Get PDF	Allow user to create PDF with current information to be able to use offline.
Change Language	Lets user change the language of website with 4 (Türkçe, English, Arabic,Kurdi) option.
Choose City	Lets user choose a city from Turkey, sorted with the emergency arrangement.
Get Emergency Gathering Areas	Asks user district and after asks user neighborhood and gives an address name and map location link.
Get Safe Gathering Places	Asks user to which city and after that gives safe places to convention.
Get Evacuation Points	Asks user to which city and after that gives evacuation areas.
Get Temporary Accommodation Places	Asks user to which city and after that gives hotels and places to stay. Also has quick links for holiday and special websites who provides places to stay in other cities.
Get Transportation Aid	Informs user to transportation facilities, details, website, verification dates and end date.
Get Food Distribution Center	Asks user to which city and state after that gives places for free food. Also has quick links for holiday and special websites who provides places to stay in other cities.
Get Services Outside the Disaster Area	Asks user to which city and shows health, item, psychosocial support, activities and job opportunities.
Get Gas Stations	Asks user to which city and state after that shows address of gas stations, map locations and phone numbers.
Get Mobile Toilets	Directs the user to twitter link and opens a tweet which includes mobile toilet addresses.
Get Crucial Phone Number	Gives user categories, unities, phone numbers and details for help.
Get Useful Links	Gives user different categories, names, and detailed links for help oriented websites.
Get Useful Articles	Gives user header, writer, and website links for beneficial texts.
Get Active Hospitals	Asks user to which city and informs the hospital addresses and shows active hospitals and gives detailed links.
Get Veterinarians	Asks user to which city and informs name, address, and phone number for Veterinary clinics. Also, more information on veterinaries with link.
Get Open Pharmacies	Asks user to which city and state informs name, address, location link on map and phone number.

Table 1.1: Impacted Individuals Functions

Get Digital Solidarity Campaigns	Gives user to official authorized earthquake aid campaign links to who wants to participate.
Get Monetary Donation Links	Gives user to charities earthquake links to who wants to participate.
Get Other Donation	Asks user to which city and inform names, sources and phone numbers to item assistance.
Get Kızılay Blood Donation Places	Directs the user to kanver.org link to website which shows the nearest places to suitable for giving blood.
Get Stem Cell Donation Points	Gives user the different city areas, address links and phone numbers for stem cell donations.
Get info about Afetbilgi	Gives user the informative text about the Afetbilgi.com and has e-mail, git-hub, Instagram and twitter links for communication.
Collect Data	Allows data collectors to collect and store data that would be helpful to help impacted people.
Organize Data	Allow data collectors and validators to organize data in appropriate format that would be verifiable.
Validate Data	Allow data collectors and validators to validate collected data.

Table 1.2: Volunteers and Data Collectors Functions

1.4 Definitions

- API: Application Programming Interface.
- AWS: Amazon Web Services.
- CDN: content delivery network
- Data Collectors and Validators: People working on collecting and validating data.
- Facilities: Any intuitions that offers help to impacted individual such as AFAD
- GitHub: Web-based version control and collaboration platform for software developers.
- HTTP/HTTPS: Hypertext Transfer Protocol/ Hypertext Transfer Protocol Secure.
- Impacted Individuals: People impacted by a natural crisis
- Volunteers: People offering help to impacted individuals

2 References

This SRS file is prepared with the light of information from IEEE 29148-2011 standard:

29148-2011 - ISO/IEC/IEEE International Standard - Systems and software engineering – Life cycle processes –Requirements engineering

Afetbilgi. (2023, February). Retrieved April 24, 2023, from https://www.Afetbilgi.com/

Alpaylan. (2023). Alpaylan/Afetbilgi.com. GitHub. Retrieved April 24, 2023, from https://github.com/alpaylan/Afetbilgi.com

3 Specific Requirements

3.1 External Interfaces

The external interface of the system shows the input and the output of the system. The Afetbilgi interface is organized in a tree-like structure. Which the user picks the city and type of information then access all information related to this city in a list view of the data items.

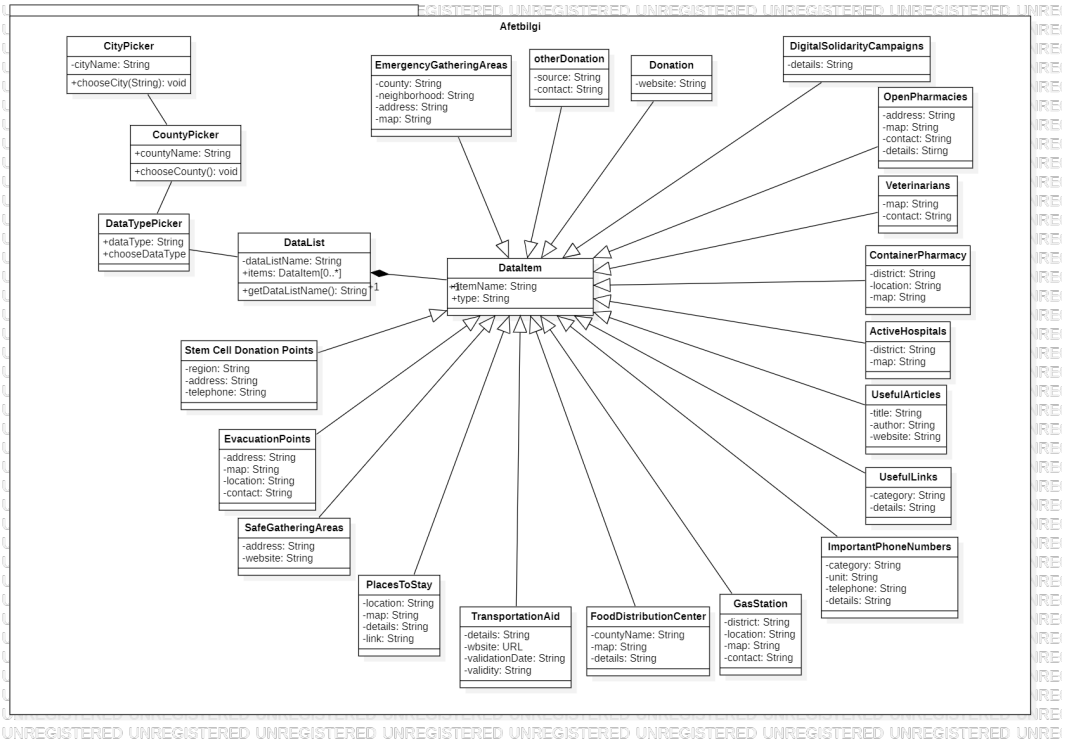

Figure 3.1: Class Diagram for External Interfaces

3.2 Functions

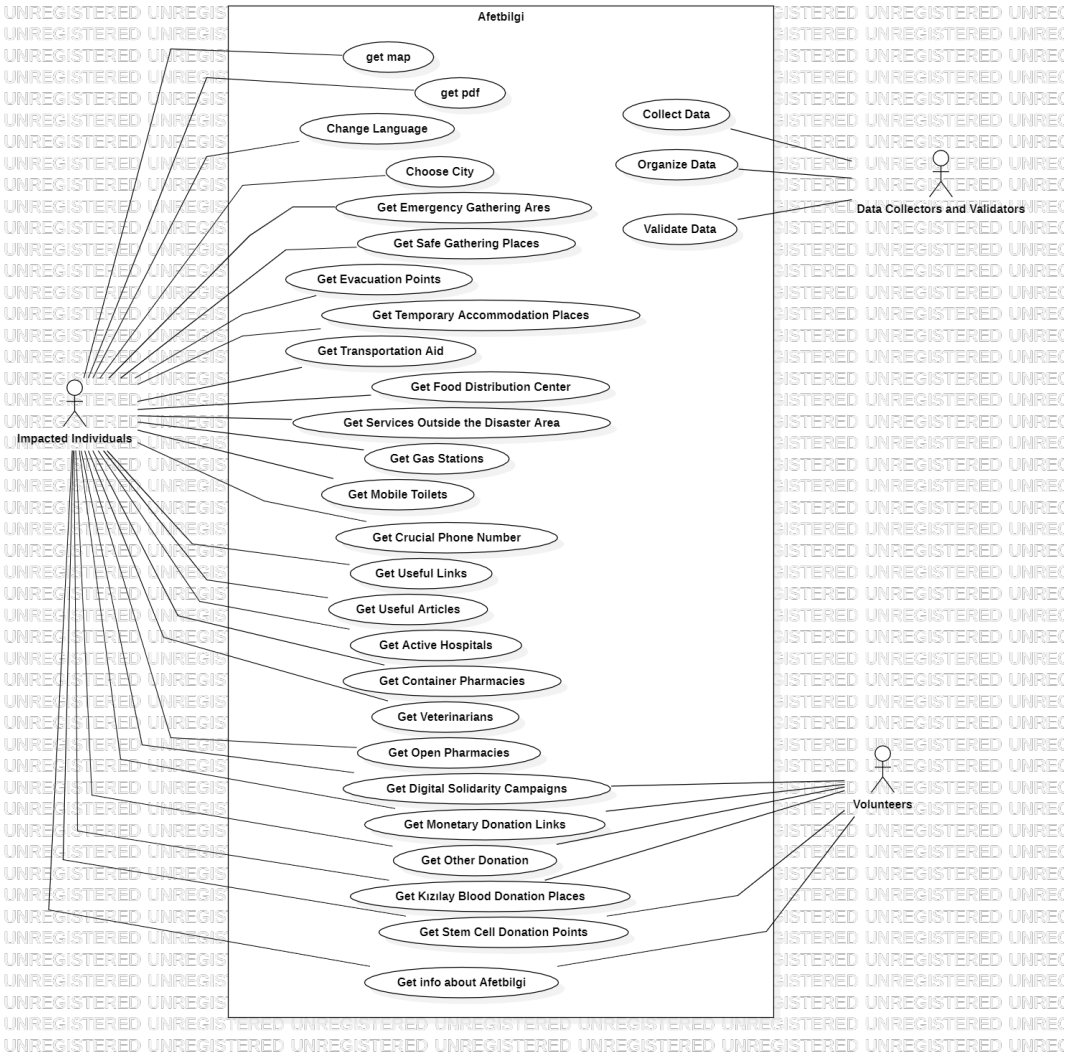

Figure 3.2: Use Case Diagram for Afetbilgi

Use-Case Name	Get Map
Actors	Impacted Individuals
Description	Allow user to see map containing nearest aid locations.
Data	-
Preconditions	People have Internet connection to allow the to get the interactive map
Stimulus	Select the map icon in the web page or send it a HTTP/HTTPS GET request
Basic Flow	**Step 1** - An impacted individual accesses Afetbilgi.com **Step 2** - choose the map option **Step 3** - allow the system to access user current location **Step 4** - generate a map the contains nearest aid locations
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	People have a map of the surrounding aid facilities

Table 3.1: Get Map Function

Use-Case Name	Get PDF
Actors	Impacted individuals
Description	Impacted individuals can get a PDF containing all information about various aid facilities to be available offline
Data	-
Preconditions	-
Stimulus	Select the PDF icon in the web page or send it a HTTP/HTTPS GET request
Basic Flow	**Step 1** - An impacted individual chooses PDF option **Step 2** - The system asks the impacted individual about the city **Step 3** - The system sends information in PDF format about the selected city
Alternative Flow #1	**Step 3** -Ths system sends information in PDF format about all cities in case the city is not specified
Alternative Flow #2	-
Exception Flow	-
Post Conditions	An impacted individual has a PDF containing information about near help locations

Table 3.2: Get PDF Function

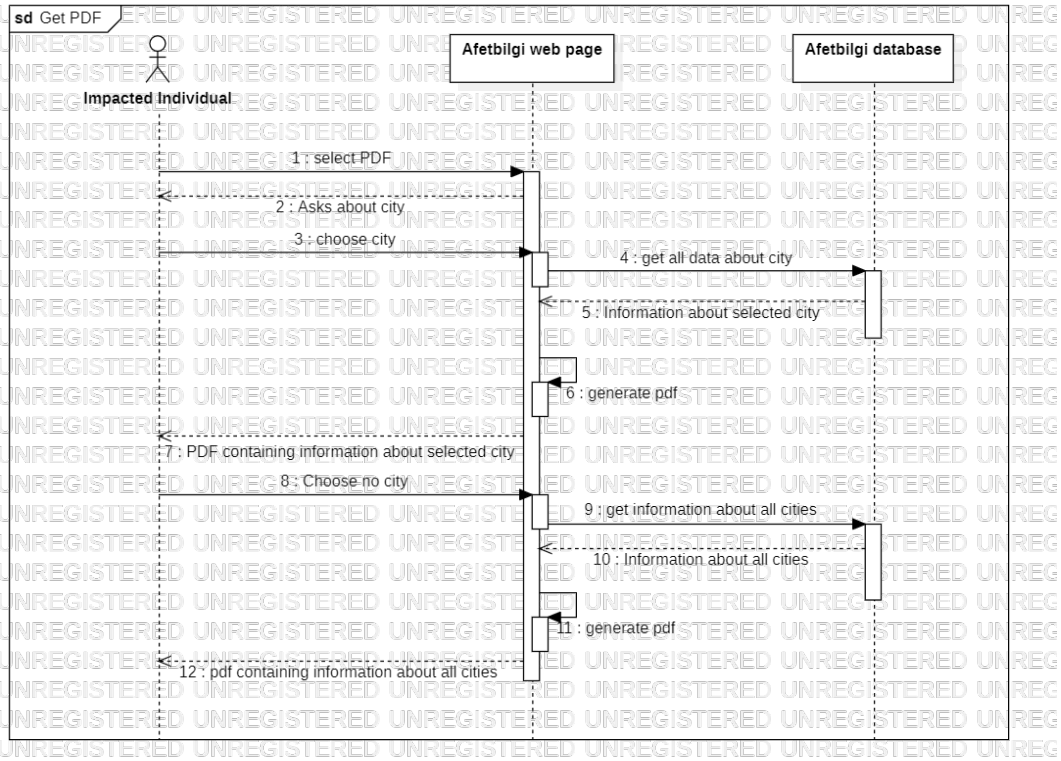

Figure 3.3: Sequence Diagram for Get PDF Function

Use-Case Name	Change Language
Actors	Impacted individuals and Volunteers
Description	Allows users to change the language of website to one of 4 options
Data	Türkçe, English, Arabic, Kurdi
Preconditions	-
Stimulus	Select the language button in the web page
Basic Flow	**Step 1** - An impacted individual accesses Afetbilgi.com **Step 2** - Choose the language option **Step 3** - Afetbilgi changes the language.
Alternative Flow #1	**Step 3** - Afetbilgi continues same language
Alternative Flow #2	-
Exception Flow	-
Post Conditions	The system language change to the specified language

Table 3.3: Change Language Function

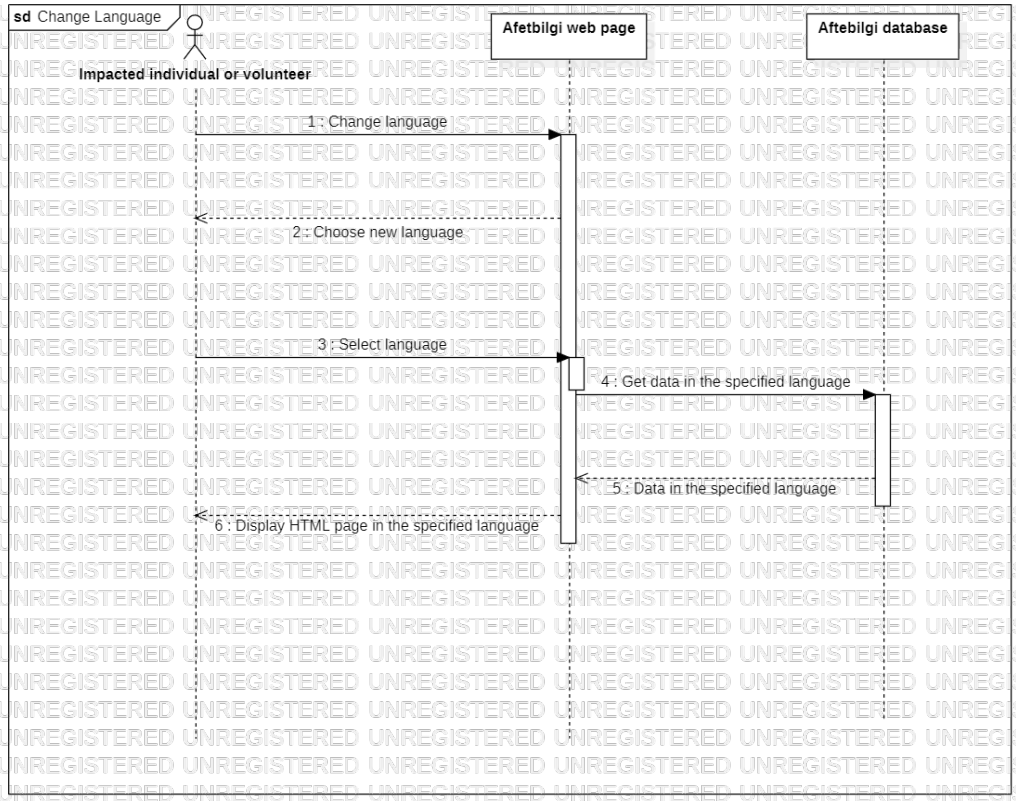

Figure 3.4: Sequence Diagram for Change Language Function

Use-Case Name	Choose City
Actors	Impacted individuals
Description	Lets user choose a city from Turkey, sorted with the emergency arrangement.
Data	The list of cities in Turkey
Preconditions	-
Stimulus	Impacted individuals can change the main HTMl page with choosing city
Basic Flow	**Step 1** - During website, website shows main page **Step 2** - Individual changes the city **Step 3** - Afetbilgi processes some functions change **Step 4** - Afetbilgi specialized with chosen city information.
Alternative Flow #1	**Step 2** Individual doesn't change main page **Step 3** - Afetbilgi does not change city.
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Functions has changed by chosen city

Table 3.4: Choose City Function

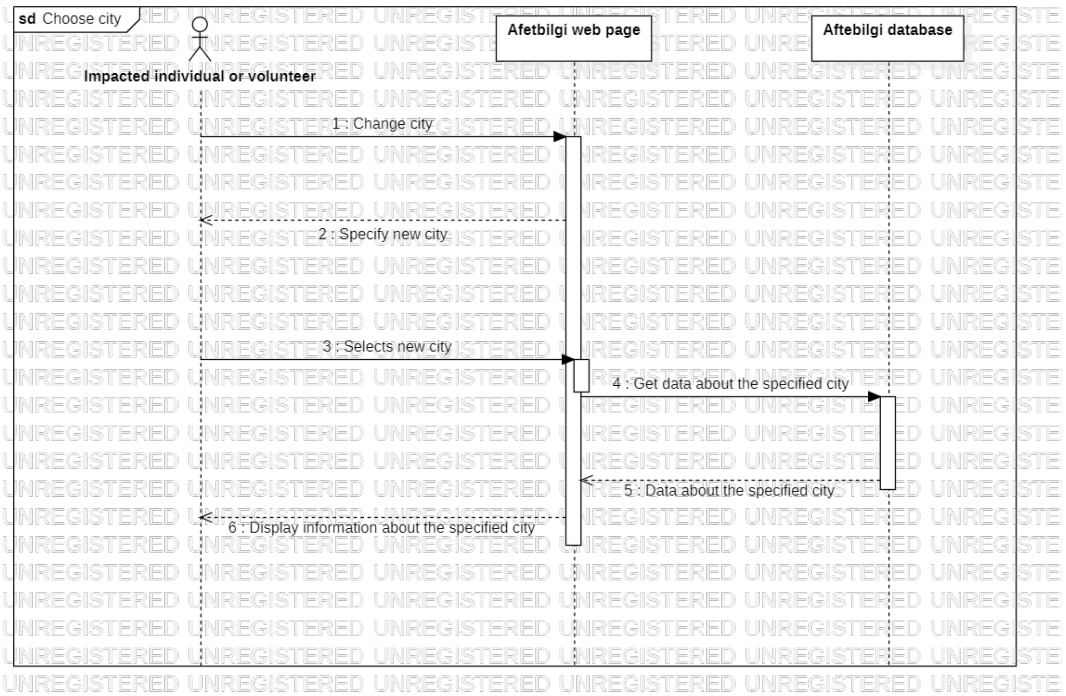

Figure 3.5: Sequence Diagram for Choose City Function

Use-Case Name	Get Emergency Gathering Areas
Actors	Impacted Individuals
Description	Gives an address name and map location link.
Data	Current district and neighborhood
Preconditions	District and street of Hatay
Stimulus	Impacted Individuals can change the main HTML page with changing
Basic Flow	**Step 1** - An Impacted Individuals can touch with Afetbilgi **Step 2** - Afetbilgi processes **Step 3** - Afetbilgi finds processed information for only Hatay
Alternative Flow #1	**Step 3** - If Altinözü, it asks you to which street then the information.
Alternative Flow #2	**Step 3** - If Defne, it asks you to which street then the information.
Exception Flow	**Step 1** - If there is not any touch white color is displayed.
Post Conditions	The street gathering place information continues as individual wants

Table 3.5: Get Emergency Gathering Areas Function

Use-Case Name	Get Safe Gathering Places
Actors	Impacted Individuals
Description	Gives gives safe places to convention and map location link.
Data	Current city only
Preconditions	1 City of 8
Stimulus	Impacted Individuals can change the main HTML page with changing
Basic Flow	**Step 1** - An Impacted Individuals can touch with Afetbilgi **Step 2** - Afetbilgi processes **Step 3** - Afetbilgi finds processed information for only Hatay
Alternative Flow #1	**Step 3** - If Adana, it shows you to which address and then the information.
Alternative Flow #2	**Step 3** - If Adıyaman, it shows you to which address and then the information.
Exception Flow	**Step 1** - If there is not any touch white color is displayed.
Post Conditions	The safe convention place information continues as individual wants

Table 3.6: Get Safe Gathering Places Function

Use-Case Name	Get Evacuation Points
Actors	Impacted Individuals
Description	Gives user to which city and after that gives evacuation areas and map location link.
Data	Current city only
Preconditions	1 City of 9
Stimulus	Impacted Individuals can change the main HTML page with changing
Basic Flow	**Step 1** - An Impacted Individuals can touch with Afetbilgi **Step 2** - Afetbilgi processes **Step 3** - Afetbilgi finds processed information for selected City
Alternative Flow #1	**Step 3** - If Kahramanmaraş, it shows you to which address and then the information.
Alternative Flow #2	**Step 3** - If Hatay, it shows you to which address and then the information.
Exception Flow	-
Post Conditions	The safe convention place information updates as individual wants

Table 3.7: Get Evacuation Points Function

Use-Case Name	Get Temporary Accommodation Places
Actors	Impacted Individuals
Description	Afetbilgi user to which city and after that gives hotels and places to stay. Also has quick links for holiday and special websites who provides places to stay in other cities.
Data	Information from the city you choose
Preconditions	Available cities
Stimulus	-
Basic Flow	**Step 1** - An Impacted Individuals can touch with Afetbilgi **Step 2** - Afetbilgi processes **Step 3** - Afetbilgi finds processed information for selected City
Alternative Flow #1	**Step 4** If Artvin, it shows you to which address and then the information.
Alternative Flow #2	**Step 4** - If Batman, it shows you to which address and then the information.
Exception Flow	-
Post Conditions	The information updated day-by-day

Table 3.8: Get Temporary Accommodation Places Function

Use-Case Name	Get Transportation Aid
Actors	Impacted Individuals
Description	Informs user to transportation facilities, details, website, verification dates and end date.
Data	The companies that provides free transportation
Preconditions	-
Stimulus	
Basic Flow	**Step 1** - An Impacted Individuals can touch with Afetbilgi **Step 2** - Afetbilgi processes **Step 3** - Afetbilgi finds transportation options information for each routes
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	The information updated currently for timely information about routes and companies

Table 3.9: Get Transportation Aid Function

Use-Case Name	Get Food Distribution Center
Actors	Impacted Individuals
Description	Asks impacted people to which city and state after that gives places for free food. Also has quick links for holiday and special websites who provides places to stay in other cities.
Data	City and District information
Preconditions	-
Stimulus	The user selects Get food distribution center button
Basic Flow	**Step 1** - Food distribution center option is selected from website **Step 2** - City is selected from alternatives **Step 3** - District is selected **Step 4** - Afetbilgi system shows the places for food
Alternative Flow #1	**Step 4** If Gaziantep, after selecting district it shows you to available places for food
Alternative Flow #2	**Step 4** If Mersin, Mersin has only district and otel which is available place for food
Exception Flow	-
Post Conditions	The places information updating regularly

Table 3.10: Get Food Distribution Center Function

Use-Case Name	Get Services Outside the Disaster Area
Actors	Impacted Individuals
Description	Afetbilgi asks user to which city and shows health, item, psychosocial support, activities and job opportunities.
Data	City
Preconditions	-
Stimulus	The user selects Get service outside the disaster area button
Basic Flow	**Step 1** - Get Services Outside the Disaster Area option is selected from website **Step 2** - City is selected from alternatives **Step 3** - Afetbilgi system shows the places for health, item, psychosocial support, activities and job opportunities
Alternative Flow #1	**Step 3** - If Kayseri, Afetbilgi shows the psychosocial support center address
Exception Flow	-
Post Conditions	The places information updating regularly

Table 3.11: Get Services Outside the Disaster Area Function

Use-Case Name	Get Gas Stations
Actors	Impacted Individuals
Description	This function should allow impacted individuals to gain access to gas stations in their district
Data	city and district information
Preconditions	-
Stimulus	The user choose gas stations option from the website
Basic Flow	**Step 1** - Gas station option is selected from the website **Step 2** - City is selected **Step 3** - district is selected **Step 4** - The system shows gas stations in the current district
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of gas stations in their district

Table 3.12: Get Gas Stations Function

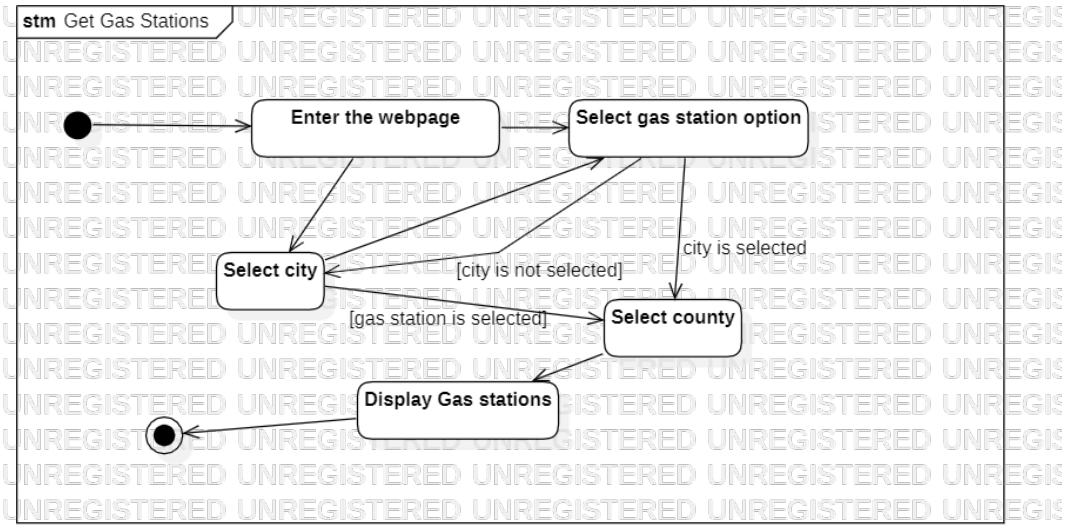

Figure 3.6: State Diagram for Get Gas Stations Function

Use-Case Name	Get Mobile Toilets
Actors	Impacted Individuals
Description	This function should allow impacted individuals to gain access to a list of available mobile toilets
Data	-
Preconditions	-
Stimulus	The user choose mobile option from the website
Basic Flow	**Step 1** - Mobile toilets option is selected from the website **Step 2** - The system shows a list of available mobile toilets
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of mobile toilets

Table 3.13: Get Mobile Toilets Function

Use-Case Name	Get Crucial Phone Numbers
Actors	Impacted Individuals
Description	This function allows impacted individuals to have access to a list of crucial institutions that would over them help
Data	-
Preconditions	-
Stimulus	The user choose Crucial Phone Numbers from the web page
Basic Flow	**Step 1** - Crucial Phone Numbers is selected from the website **Step 2** - The system shows a list of Phone Numbers
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of phone numbers of various institutions that would offer them help

Table 3.14: Get Crucial Phone Numbers Function

Use-Case Name	Get Useful Links
Actors	Impacted Individuals
Description	This function allows impacted individuals to have access to a list of links of the website of various institutions that would offer them help
Data	-
Preconditions	-
Stimulus	The user choose useful links option from the web page
Basic Flow	**Step 1** - useful links option is selected from the website **Step 2** - The system shows a list of links
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of HTTP/HTTPS links of institutions that would offer them help

Table 3.15: Get Useful Links Function

Use-Case Name	Get Useful Articles
Actors	Impacted Individuals and Volunteers
Description	This function lets Impacted Individuals and volunteers to have access to a list of articles about to behave properly in crisis and natural disasters.
Data	-
Preconditions	-
Stimulus	The user chooses Useful Articles from the web page
Basic Flow	**Step 1** - Useful Articles option is selected from the website **Step 2** - The system shows a list of Useful Articles
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals or volunteers have a list of Useful Articles

Table 3.16: Get Useful Articles Function

Use-Case Name	Get Active Hospitals
Actors	Impacted Individuals
Description	This function lets Impacted Individuals to have access to a list of container pharmacies.
Data	-
Preconditions	-
Stimulus	The user chooses Active Hospitals from the web page
Basic Flow	**Step 1** - Active Hospitals option is selected from the website **Step 2** - The system shows a list of Active Hospitals
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of active hospitals

Table 3.17: Get Active Hospitals Function

Use-Case Name	Get Container Pharmacies
Actors	Impacted Individuals
Description	This function lets Impacted Individuals to have access to a list of container pharmacies.
Data	-
Preconditions	-
Stimulus	The user chooses Container Pharmacies from the web page
Basic Flow	**Step 1** - Container Pharmacies option is selected from the website **Step 2** - The system shows a list of Container Pharmacies
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of Container Pharmacies

Table 3.18: Get Container Pharmacies Function

Use-Case Name	Get Veterinarians
Actors	Impacted Individuals
Description	This function lets Impacted Individuals to have access to a list of veterinarians.
Data	-
Preconditions	-
Stimulus	The user chooses Veterinarians from the web page
Basic Flow	**Step 1** - Veterinarians option is selected from the website **Step 2** - The city is selected from list of cities **Step 3** - The system shows a list of veterinarians in that city
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of veterinarians in their city

Table 3.19: Get Veterinarians Function

Use-Case Name	Get Open Pharmacies
Actors	Impacted Individuals
Description	This function lets Impacted Individuals to have access to a list of open pharmacies.
Data	-
Preconditions	-
Stimulus	The user chooses Open Pharmacies option from the web page
Basic Flow	**Step 1** - Open Pharmacies is selected from the website **Step 2** - The city is selected from list of cities **Step 3** - The county is selected from list of counties **Step 4** - The system shows a list of open pharmacies in that county
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals have a list of open pharmacies in their county

Table 3.20: Get Open Pharmacies Function

Use-Case Name	Get Digital Solidarity Campaigns
Actors	Volunteers
Description	This function lets volunteers to have access to a list of Digital Solidarity Campaigns.
Data	-
Preconditions	-
Stimulus	The user chooses Digital Solidarity Campaigns option from the web page
Basic Flow	**Step 1** - Digital Solidarity Campaigns is selected from the website **Step 2** - The system shows a list of Digital Solidarity Campaigns
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Volunteers have a list of Digital Solidarity Campaigns

Table 3.21: Get Digital Solidarity Campaigns Function

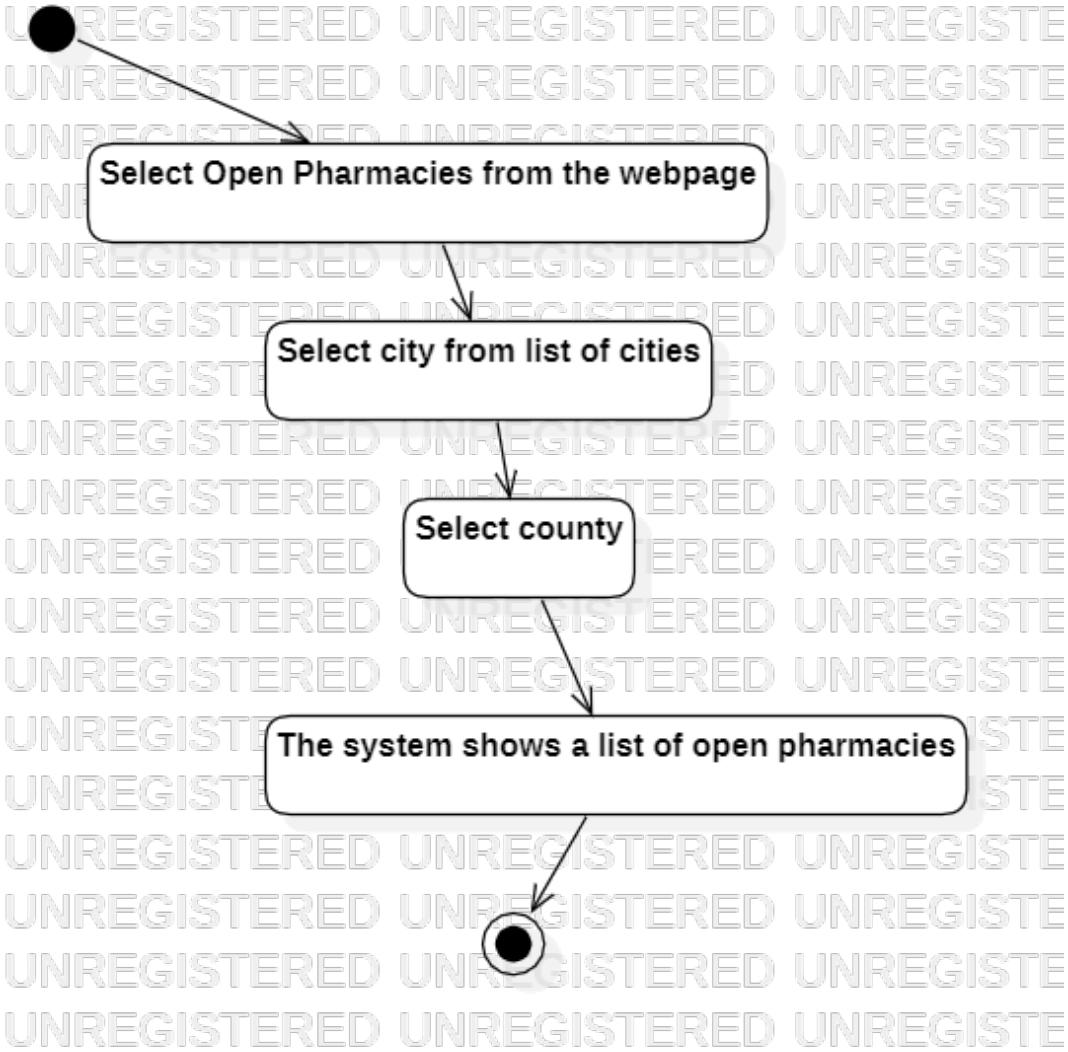

Figure 3.7: Activity Diagram for Get Open Pharmacies

Use-Case Name	Get Monetary Donation Links
Actors	Volunteers
Description	This function lets volunteers to have access to a list of Monetary Donation Links.
Data	-
Preconditions	-
Stimulus	The user chooses Monetary Donation option from the web page
Basic Flow	**Step 1** - Monetary Donation option is selected from the website **Step 2** - The system shows a list of donation places
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Volunteers have a list of Monetary Donation plaes and their links

Table 3.22: Get Monetary Donation Links Function

Use-Case Name	Get Other Donations
Actors	Volunteers
Description	This function lets volunteers to have access to a list of various donation places that can not be classified under other categories.
Data	-
Preconditions	-
Stimulus	The user chooses other donations option from the web page
Basic Flow	**Step 1** - other donations option is selected from the website **Step 2** - The system shows a list of donation places
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	volunteers have a list of donation places

Table 3.23: Get Other Donations Function

Use-Case Name	Get Kızılay Blood Donation Places
Actors	Volunteers
Description	This function let volunteers have a list of Kızılay Blood Donation Places
Data	-
Preconditions	-
Stimulus	The user selects Kızılay Blood Donation Places option from the web page
Basic Flow	**Step 1** - Kızılay Blood Donation Places option is selected from the website **Step 2** - The system shows a list of Kızılay Blood Donation Places option
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	volunteers have a list of Kızılay Blood Donation Places option

Table 3.24: Get Kızılay Blood Donation Places Function

Use-Case Name	Get Stem Cell Donation Points
Actors	Volunteers
Description	This function allows volunteers to have a list of information such as location and contact for stem cell donation points
Data	-
Preconditions	-
Stimulus	The user selects Stem Cell Donation Points option from the web page
Basic Flow	**Step 1** - stem cell donation points option is selected from the website **Step 2** - The system shows a list of stem cell donation points
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	volunteers have a list of stem cell donatino points

Table 3.25: Get Stem Cell Donation Points Function

Use-Case Name	Get Info About Afetbilgi
Actors	Impacted Individuals and volunteers
Description	This function allows impacted individuals and volunteers to have access to information and Afetbilgi and their contact information
Data	-
Preconditions	-
Stimulus	The user chooses About/Contact option from the web page
Basic Flow	**Step 1** - About/Contact option is selected from the website **Step 2** - The system shows information about Afetbilgi
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Impacted individuals or volunteers have various information about Afetbilgi

Table 3.26: Get Info About Afetbilgi Function

Use-Case Name	Collect and Store Data
Actors	Data collectors and validators
Description	This use case is to make it easier for data collectors and validators to collect that would be helpful for impacted individuals
Data	-
Preconditions	-
Stimulus	-
Basic Flow	**Step 1** - collect data option is chosen **Step 2** - The system guides data collectors to various resources that would help them
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Data collectors and valiators have a data that that would be helpful for impacted individuals

Table 3.27: Collect and Store Data Function

Use-Case Name	Organize Data
Actors	Data collectors and validators
Description	This use case is to make it easier for data collectors and validators to organize date and put it in a verifiable format
Data	-
Preconditions	-
Stimulus	-
Basic Flow	**Step 1** - organize data option is chosen **Step 2** - The system guides data collectors to various way in which they can organize collected data
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Data collectors and valiators have a data that is put in a verifiable format

Table 3.28: Organize Data Function

Use-Case Name	Verify Data
Actors	Data collectors and validators
Description	This use case is to make it easier for data collectors and validators to verify collected data
Data	-
Preconditions	-
Stimulus	-
Basic Flow	**Step 1** - verify data option is chosen **Step 2** - The system guides data collectors to various way in which they can verify collected data
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	Data collectors and valiators have a data that is verified and can be put online for people to access

Table 3.29: Verify Data Function

3.3 Usability Requirements

- A person may enter the website without having any tech knowledge.
- The organization of data displayed by Afetbilgi shall be simple.
- An impacted individual shall be able to create PDF for offline usage.
- An impacted individual shall be able to see all information displayed on a map.
- An impacted individual shall be able to access data related to the city or county of interest
- The Afetbilgi project shall regularly updated to be able to offer valid information.

3.4 Performance Requirements

- The Afetbilgi information can be shared through an API easily with other applications.
- All functions in Afetbilgi shall be accessible when internet connection is lost.
- The Afetbilgi can be consider your location to route your city and district selection directly.
- The Afetbilgi shall have minimal response time
- The Afetbilgi shall work fine with 2G and 3G internet speeds
- The Afetbilgi shall handle concurrent access as efficient as possible.
- Afetbilgi CDN to deliver content faster.

3.5 Logical Database Requirements

- Afetbilgi is mainly a software constructed to server critical information to affected individuals. It requires special well organized database since the whole aim of the project is to offer data.
- Afetbilgi needs to hold data about many different entities such as: cities, emergency gathering areas, evacuation points, accommodation places, transport aid, food distribution center, gas stations, mobile toilets, and many other entities.
- The detailed description of the database is shown in figure 3.6

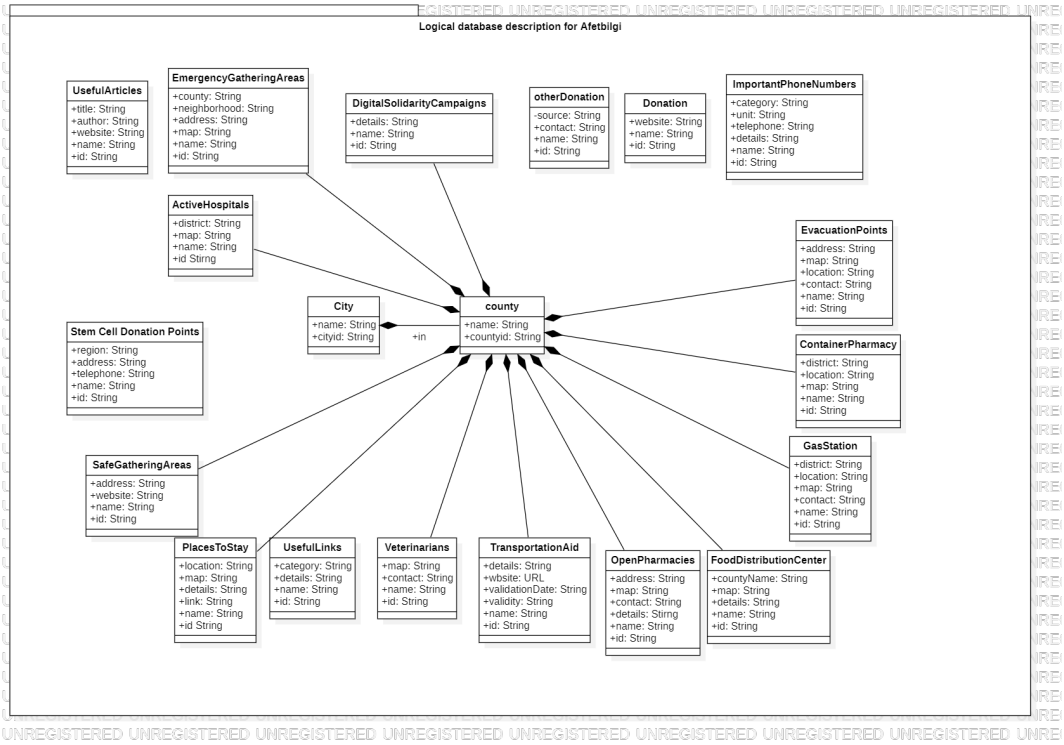

Figure 3.8: Class Diagram for Logical Database

3.6 Design Constraints

Afetbilgi is a website made for helping impacted individuals. The website may need to adhere to regional laws on data storage and processing, location accessing, and content limitations. The system shall be offered with several language to suitable for impacted individuals with various backgrounds. The time allocated for development, design, and testing shall be limited by the project's timetable, which could be necessary to the usage of rapid development techniques

or the prioritization of exclusive features for the initial release. Web standards like HTML, CSS, and Javascript should be followed by the platform to ensure interoperability with various browsers and devices.

3.7 System Attributes

3.7.1 Reliability

- In case of low or lost internet connection, user can continue to reach all data from least updated.
- Provides stable connection even under strong demand conditions.

3.7.2 Availability

- After entering the website, Afetbilgi shall leads you to best possible options due to your location
- Afetbilgi website must be accessible most of the time.
- Afetbilgi shall aim for load balancing and scaling to deal with huge demand during emergency situations.

3.7.3 Security

- Regularly security checks and updates to catch misinformation.
- Data shall be kept in encrypted format to prevent unwanted accesses

3.7.4 Maintainability

- Website design and structure shall be easily understood by new developers The website shall be updated regularly for better operation.

3.7.5 Portability

- Afetbilgi has a cross-platform compatibility, website has designed to work in every operating system, web browsers and all devices.

3.8 Supporting Information

Afetbilgi aims to efficiently offer trust worthy information for people affect by crisis in Turkey. The project is open-source website and the software parts are coded by students and graduates. Additionally, the project scheme is clearly explained on Github. Anybody has a technical knowledge shall be able to contribute easily to this project developments.

4 Suggestions to Improve the Existing System

4.1 System Perspective

There are suggestions and improvements to the original context diagram of Afetbilgi which would advance the website. The improved context diagram is demonstrated on figure 4.1

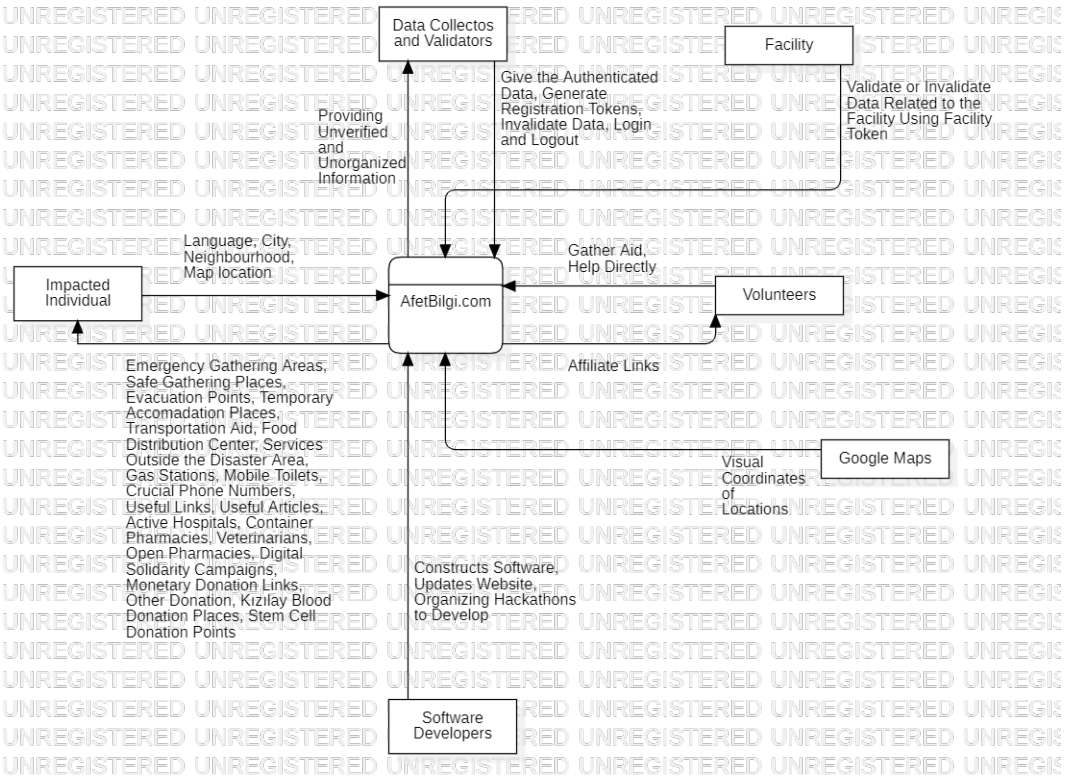

Figure 4.1: Context Diagram for Improved Afetbilgi

- **Impacted Individual:** Person who affected from earthquake uses Afetbilgi to reach most current information in a one website.
- **Data Collectors and Validators:** People who gets the data from different resources chooses the data for validate or invalidate and distribute registration tokens for facilities.

- **Facilities:** Institutions such as Afad, Ahbab or Kızılay to validate released data using facility token.
- **Volunteers:** People who are willing to help the disease directly or with an organization.
- **Google Maps:** Provides maps web application for people the simplify the understanding of sources.
- **Software Developers:** People who developed the software and updates regularly the website. Also they organize hackathons for finding new ideas to improve.

4.1.1 System Interfaces

Backend interface (Afetbilgi.com): Add enchanced API tahat would allow other software to interact with Afetbilgi for data extraction purposes. This API shall have various endpoints and parameters for various types of data stored at Afetbilgi database.
Backend interface (png.Afetbilgi.com): This interface can be used to get information about near facilities to the current location of the impacted individual and return it PNG format.
Backend interface (maps.Afetbilgi.com): This interface can also give road direction for users for not losing time with other applications.

4.1.2 User Interfaces

Main web pages: The main web page style can be enhanced by the usage of some CSS styles for enhance the readability for the data displayed on the webpage.
Leaf web pages: We can style the leaf web pages by using some CSS styles for enhanced user experience.
Map View: For better user experience, the way connecting is a current location of the user to the target facility shall be highlighted in the map view to save time and efforts of impacted individuals.

4.1.3 Software Interfaces

Google maps: In addtition to location data, we shall extract more data related to description of various facilities and them to our database.

4.2 External Interfaces

There are several additions to the original external interface of Afetbilgi which would increase the functionality of the system. The improved external interface is shown in figure 4.2. In figure 4.2 facilities indicate various institution and organizations that are helping people in crisis.

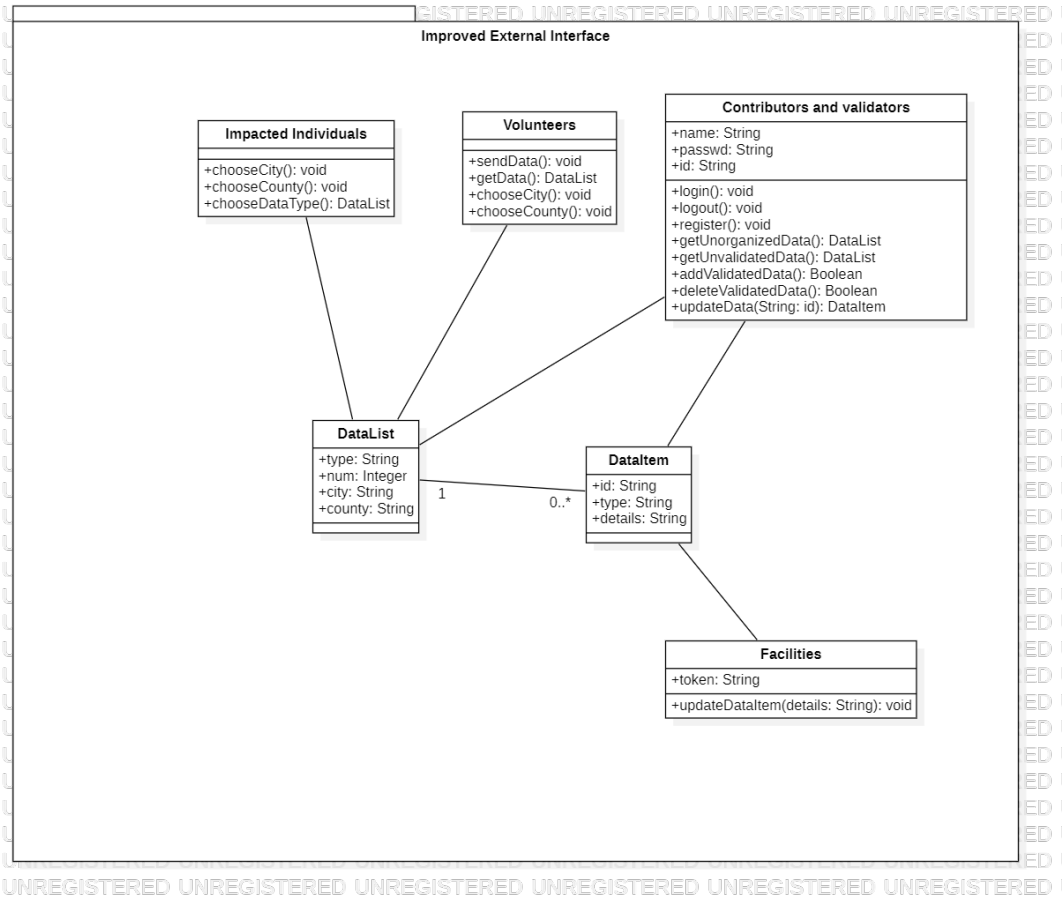

Figure 4.2: Class Diagram for Improved External Interfaces

4.3 Functions

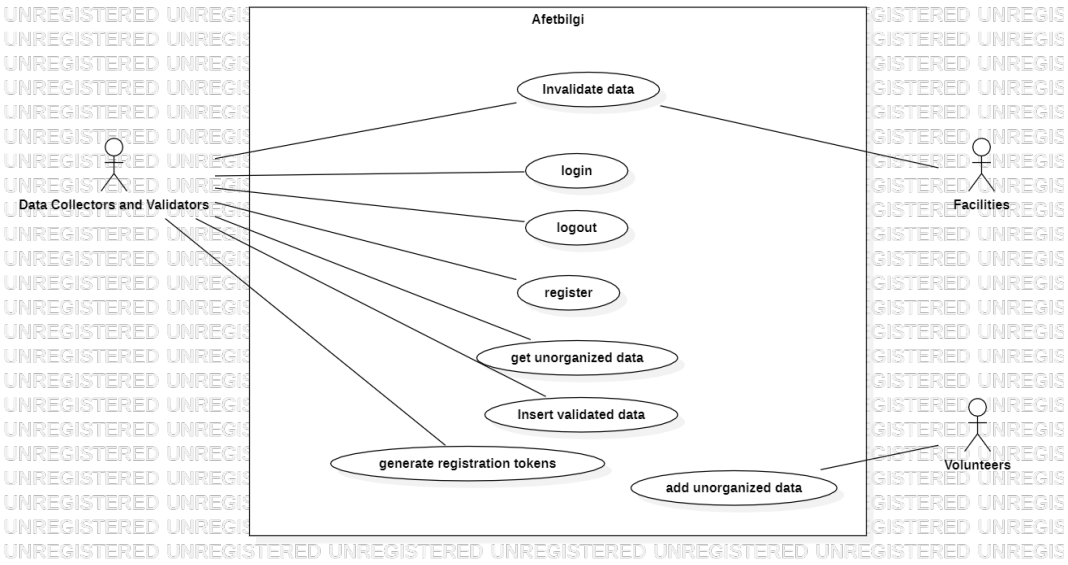

Figure 4.3: Use Case Diagram for Improved Afetbilgi

Use-Case Name	Insert Helpful Data
Actors	volunteers
Description	Allow volunteers to get a form in which they can send information to the system.
Data	- The data may include various help facilities such as hospitals and similar facilities or any other form of data that maybe of use
Preconditions	volunteers with helpful data
Stimulus	a volunteer choosing to insert data to the system
Basic Flow	**Step 1** - A volunteer picks the volunteer option for the starting page **Step 2** - choose the send data options **Step 3** - fill the interactive from with the data **Step 4** - submit the data to the system
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	new unorganized data item is added to the system

Table 4.1: Insert Helpful Data Function

Use-Case Name	Get Unorganized Data
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator to get a list of unorganized data items submitted by volunteers.
Data	-
Preconditions	- the contributor must be logged into the system
Stimulus	a contributor chooses to get list of unorganized data
Basic Flow	**Step 1** - A contributor selects get unorganized command **Step 2** - A Data Collectors can specifies the type and format of data **Step 3** - The system returns a list with the required specifications
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A contributor have a list of unorganized data

Table 4.2: Get Unorganized Data Function

Use-Case Name	Login
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator login into the system.
Data	-
Preconditions	- the contributor must have an account
Stimulus	a contributor chooses to login into the system
Basic Flow	**Step 1** - A contributor selects login **Step 2** - A Data Collectors enters his username and password **Step 2** - The system check the username and password in the database **Step 3** - The system logs the contributor in
Alternative Flow #1	**Step 3** - The system rejects the login attempt
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A logged in contributor

Table 4.3: Login Function

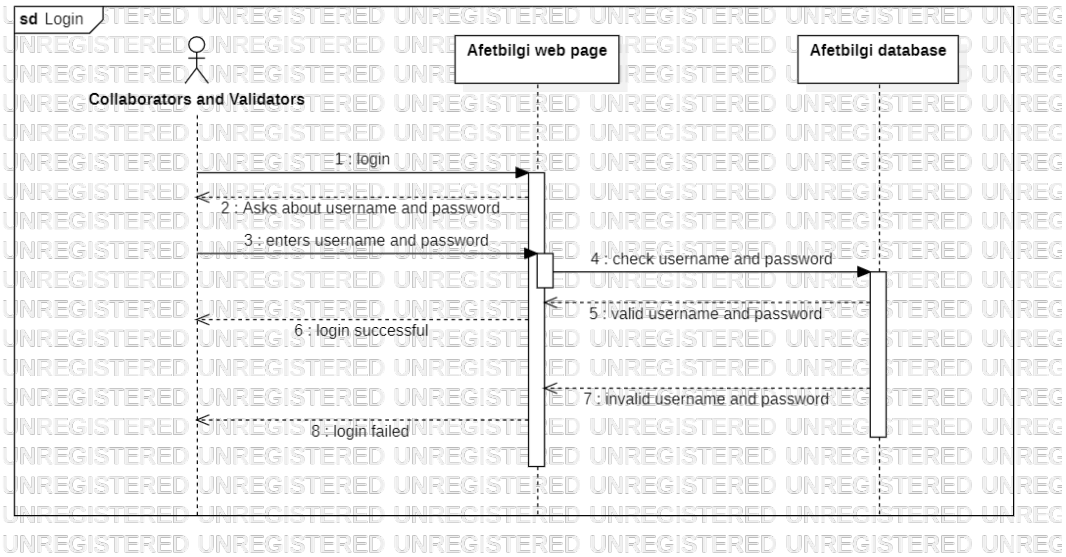

Figure 4.4: Sequence Diagram for Login

Use-Case Name	Register
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator to be registered in the system.
Data	- username, password, registration token, personal info.
Preconditions	- the contributor must have a token to be able to register into the system
Stimulus	a new contributor chooses to register
Basic Flow	**Step 1** - A contributor selects register option **Step 2** - contributor enters registration information such as username and password **Step 3** - contributor enters the registration token **Step 4** - system checks the registration token **Step 5** - System removes the token from the database **Step 6** - the system generates a new account for the new contributor
Alternative Flow #1	- **Step 5** - The system refuses the registration since the token is not in the database
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A new account is generated for the new contributor

Table 4.4: Register Function

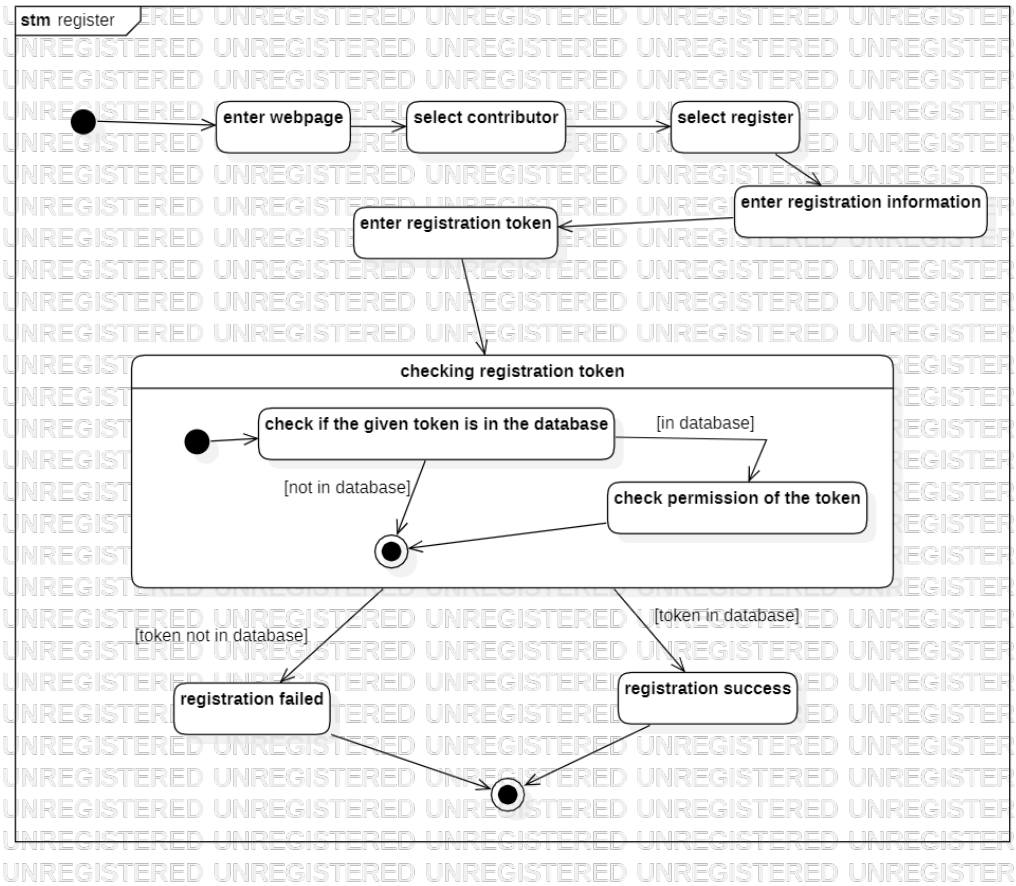

Figure 4.5: State Diagram for Register

Use-Case Name	Generate Registration Token
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator to generate registration token.
Data	-
Preconditions	- contributor must have the permission to generate registration token
Stimulus	a contributor selects to generate registration token
Basic Flow	**Step 1** - A contributor with proper permissions logs into the system **Step 2** - contributor selects generate registration token **Step 3** - the system generates a one time token to be used for registration
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A registration token is generated

Table 4.5: Generate Registration Token Function

Use-Case Name	Logout
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator logout.
Data	-
Preconditions	- the contributor must have an account and logged into the system
Stimulus	a contributor chooses to logout
Basic Flow	**Step 1** - A contributor selects logout **Step 2** - The system logs the contributor out
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A logged out contributor

Table 4.6: Logout Function

Use-Case Name	Insert Validated Data
Actors	Data Collectors and validators
Description	Allow Data Collectors and validator to insert validated data into the system.
Data	-
Preconditions	- the contributor must have valid data to be inserted into the system
Stimulus	A contributor selects to insert validated data
Basic Flow	**Step 1** - A contributor chooses insert validated data option **Step 2** - Contributor selects the type of data to be inserted **Step 3** - The adds the new data to the validated data base
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A new data is added to the system

Table 4.7: Insert Validated Data Function

Use-Case Name	Invalidate Data
Actors	Data Collectors and validators or facilities
Description	Allow Data Collectors, validator, and facilities to invalidate a piece of information.
Data	-
Preconditions	a piece of information becomes unvalid
Stimulus	A contributor or a facility selects to invalidate data
Basic Flow	**Step 1** - A contributor logs in the system **Step 2** - Contributor selects the piece of data **Step 3** - Contributor invalidate the piece of data **Step 4** - The change is reflected in the database
Alternative Flow #1	**Step 1** - A facility logs in the system using token **Step 2** - A facility selects the information to be invalidated **Step 3** - The change is reflected in the database
Alternative Flow #2	-
Exception Flow	-
Post Conditions	A piece of information is invalidated in the system

Table 4.8: Invalidate Data Function

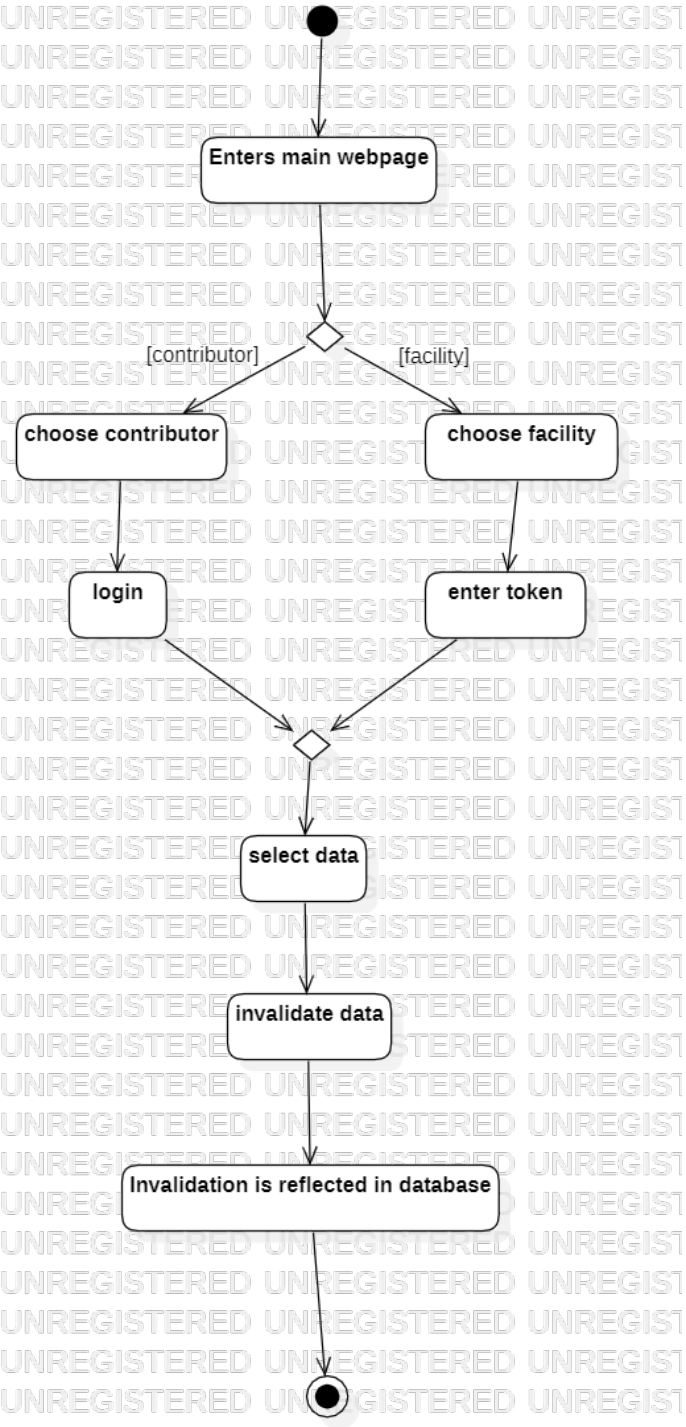

Figure 4.6: Activity Diagram for Invalidate Data

4.4 Usability Requirements

- Emergency gathering areas are just for 'Hatay' and only exist in mainpage. They can add for other cities too.
- Other neighbour countries who affected from earthquake can be added to the website.
- We should add pictures and stories of people in the earthquake to create emotional connection with the victims of the earthquake which would invoke people to donate more.
- Hotels, mosques, place for clothes, locations of water shall be available.
- User shall see information related to them by specifying their intended use when accessing the web-page.
- Construct an interface for people who receive information and validate that information.
- Interface for various services such as hospitals, restaurants, hotels to register their information in the system.
- Making the one who enters the system chooses her/his identity to show appropriate information.
- Search facility should be added to the system.

4.5 Performance Requirements

- For impacted individuals interface the system shall work on poor internet connections such as 2G and 3G connections.
- The website shall be usable even if internet connection is week or lost
- The website shall be accessible within 5 seconds on 2G internet connection.
- Afetbilgi shall handle at least 50000 users concurrently without performance. problems.
- The average load time for Afetbilgi shall be less than 1 second for 90% of the users

4.6 Logical Database Requirements

- A new facility entity is added to store data related to various facilities
- Data Collectors and validators entity is added to the database to store information about them.
- Authentication information such as tokens is added to stored be database
- The detailed description of the database is shown in figure 4.7

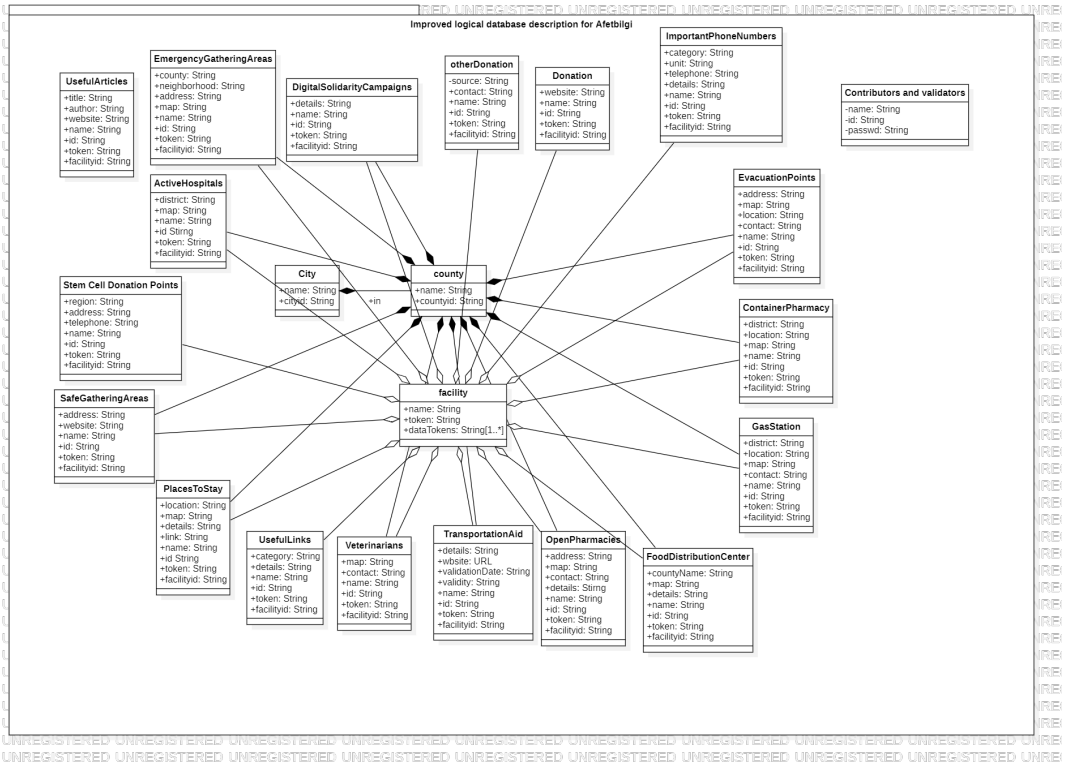

Figure 4.7: Class Diagram for Improved Logical Database

4.7 Design Constraints

Afetbilgi.com should be an easily available platform for disaster information that caters to a wide audience. To improve this, emphasis must be placed on creating a user-friendly website that functions well across a range of platforms and browsers, supports many languages, and is accessible to all people. By linking to external data sources, the platform should deliver current and accurate information. It should also be flexible enough to allow for modification and expansion. Priority should also be given to security and data protection. It's critical to take budget, time, and resource availability into account while selecting the technology stack and development strategy to make sure the platform achieves its objectives while staying within project restrictions.

4.8 System Attributes

4.8.1 Reliability

- To maintain the codebase's dependability and identify potential problems early, automated testing and continuous integration can be used.
- In case of system failures, implementing data backup and recovery strategies to minimize the risk of data loss and ensure quick recovery.

4.8.2 Availability

- Develop monitoring and alerting mechanisms to quickly detect and address any downtime or performance issues.

4.8.3 Security

- Often conduct security audits and vulnerability assessments to identify and address potential security risks.

4.8.4 Maintainability

- Support community contributions and collaboration by maintaining an active presence on Github, providing clear contribution guidelines, and responding to issues and pull requests in a timely manner.

4.8.5 Portability

- Continuously test the platform with several number of devices, operating systems, and browsers to identify and resolve portability issues.

4.9 Supporting Information

Afetbilgi, can help not only for just Pazarcik earthquake but also all other severe earthquake all around the world with multiple languages support. This shall be the next requirments fo the software. Hackathons shall be organized once or twice in a year to gather ideas from which further development can be conducted to the system.