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DEPARTMENT
OF COMPUTER ENGINEERING

CENG350 SOFTWARE REQUIREMENTS
SPECIFICATION
afetbilgi.com Project

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11/04/2023

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1. Introduction

1.1. Purpose of the System

The purpose of developing afetbilgi.com is to create a user-friendly platform that provides accurate and up-to-date information about natural disasters and emergency response procedures. The goal is to help individuals and organizations prepare for, respond to, and recover from disasters more efficiently and effectively. The system aims to address the information gap and communication challenges that often arise during disasters by providing a centralized platform where users can access relevant information and resources. The proposed system will contribute to meeting the business objectives of the organization by improving disaster preparedness and response, minimizing losses, and saving lives. The system will be designed to be easily accessible and user-friendly, allowing stakeholders to quickly and easily find the information they need during times of crisis.

1.2. Scope

The system provide users with various search options for emergency response and relief services. This includes searching for safe gathering places, temporary accommodation areas, evacuation points, transportation aids, food distribution centers, services outside disaster areas, gas stations, mobile toilets, and health services. The search feature will allow users to filter the search results based on location. The software will also provide users with real-time updates on the availability and status of each service. Additionally, the system will enable users to save and share their search results with others through various communication channels.

PDF Generator module allows users to generate PDF reports based on the data collected on the platform.

The Google Maps module is a key component of the proposed system for afetbilgi.com. It will allow users to view and interact with maps of the disaster area, as well as to search for specific locations, such as emergency gathering areas, safe gathering places, evacuation points, and temporary accommodation places. Overall, the search functionality of the software will assist users in finding essential services and resources during a disaster or emergency situation.

Amazon Web Services (AWS) is a cloud computing platform that provides a wide range of services to support the development, deployment, and management of applications in the cloud. The scope of AWS for afetbilgi.com includes the use of AWS services to host the application, store data, and provide other necessary functionalities. The use of AWS will enable the application to scale quickly and efficiently, ensure high availability, and provide reliable and secure services to users.

1.3. System Overview

1.3.1. System Perspective

afetbilgi.com is a website developed by a group of METU students and graduates to provide verified information related to disaster response efforts in Turkey. The system perspective of afetbilgi.com involves several main components, including data collection, data validation, and processing, user interface, integration with external entities, and disaster response. Data is collected from various sources, including social media, news outlets, and official government agencies, and is validated by data validators to ensure accuracy and reliability. The data is then processed and shared with people, which can be used to guide decision-making during disaster response efforts. The user interface provides a simple, fast, and user-friendly way for users to access information, including search functions and data visualization. The system integrates with external entities such as Google Maps and Amazon Web Services to provide additional functionality and support. Finally, the ultimate goal of the system is to support disaster response efforts by providing critical information to first responders and other stakeholders, including information on the location of victims, and the availability of resources.

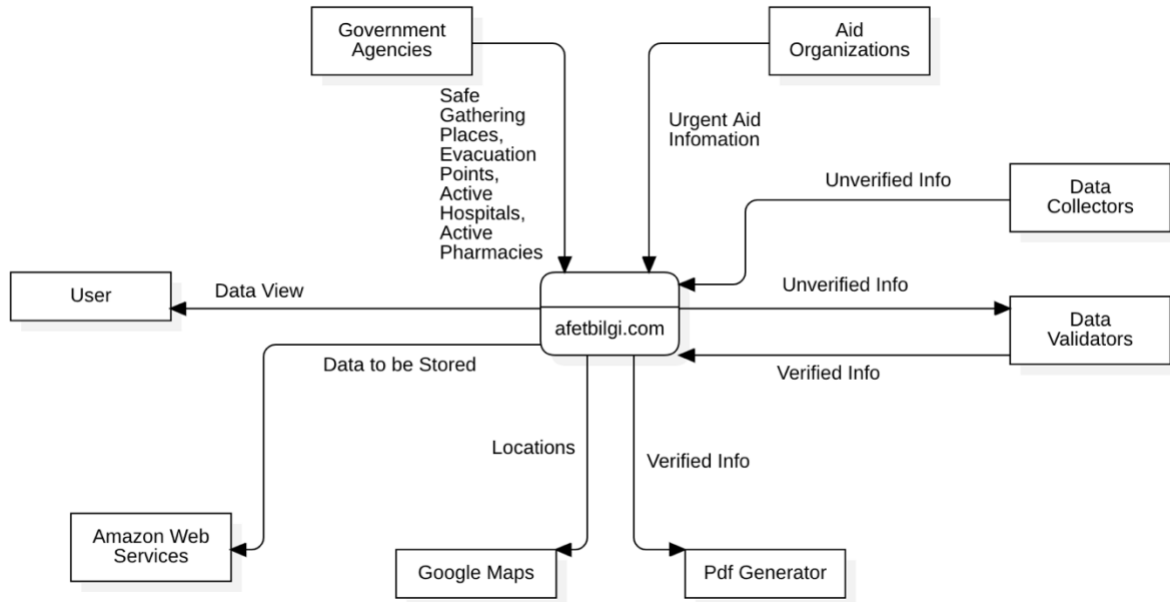


Figure 1: System Context Diagram

1.3.1.1. System Interfaces

afetbilgi.com relies on two types of interfaces: internal interfaces and external interfaces. Internal interfaces are designed to allow users to interact with the system by filtering information based on criteria such as location and specific needs. These interfaces are built into the system and enable users to quickly access the information they need in a user-friendly way. External interfaces, on the other hand, refer to the system's interaction with external entities such as Google Maps and PDF generator. Google Maps provides an additional layer of functionality by allowing users to view earthquake-related information on a map, while PDF files enable users to view, download and print the information in a portable and user-friendly format. These external interfaces enhance the system's functionality and usability, making it more effective in delivering critical information to users.

1.3.1.1.1. Hardware Interfaces

The hardware interface of afetbilgi.com primarily involves the use of servers and databases to store and manage data. All internal modules rely on these interfaces to process requests and data transmissions. To support this infrastructure, the system utilizes Amazon Web Services (AWS) for server and database structure.

1.3.1.1.2. Software Interfaces

The software interface of afetbilgi.com are mainly based on the React and TypeScript technologies (refer to Definitions part) used in its development, as well as the json files that are used to construct the system. In addition, it also uses Cloudflare for security and performance, a static website architecture for faster loading times, and Amazon Web Services for its server and database structure. These interfaces enable the website to provide a secure and reliable service to its users. Specifically, Cloudflare protects the website from cyberattacks, while the static website architecture allows for fast delivery of content without the need for server-side processing. AWS provides the necessary infrastructure for storing and processing the website's data, allowing for efficient retrieval of information by users.

1.3.1.1.3. Communication Interfaces

afetbilgi.com utilizes HTTP (Hypertext Transfer Protocol) as its communication protocol (refer to Definitions part). Additionally, the website uses Cloudflare as a content delivery network to enhance the speed and security of website. Cloudflare acts as a proxy server (refer to Definition part) and caches content to reduce the time it takes to load a page. The use of HTTP and Cloudflare in afetbilgi.com enables fast and secure communication between the client and the server, ensuring a smooth and reliable user experience.

1.3.1.1.4. Interfaces with Services

The system interacts with various services, including cloud services and Software as a Service (SaaS) solutions (refer to Definitions). The main cloud service used is AWS, which provides the hardware infrastructure for the system. Additionally, the system uses Cloudflare, which provides content delivery and security services. The system also interacts with various third-party APIs (refer to Definitions), including Google Maps and a PDF generator.

1.3.1.2. User Interfaces

afetbilgi.com has a simple and user-friendly design, making it easy for users to search for information by filtering results based on a city or specific needs. The information is related to emergency gathering areas, safe gathering places, evacuation points, temporary accommodation places, transportation aids, food distribution centers, location of gas stations, mobile toilets, crucial phone numbers, useful links, useful articles, active hospitals and pharmacies, and veterinarians. The user interfaces are designed to be accessed through any

web browser. In addition to that, it is designed to be responsive, which means it can be accessed on different devices with varying screen sizes, including desktops, laptops, tablets, and smartphones.

1.3.1.3. Memory Constraints

The system has a limited memory capacity for storing data and must be managed carefully to prevent performance issues. The amount of memory required depends on the amount of verified data. To ensure that the system operates within its memory constraints, the development team need to monitor memory usage and optimize the system as needed.

1.3.2. System Functions

Function	Summary
Search for safe areas	Users can search for emergency gathering areas, safe gathering places, evacuation points, temporary accommodation places, and more.
Display map	Users can view a map of the disaster area, including safe areas, and other relevant information.
Request help	Users can request help for food, clothes, health etc.
Generate PDF reports	Users can generate PDF reports about emergency situations, including lists of safe areas, and other relevant information.
Provide real-time updates	Users can receive real-time updates about the availability of safe areas.
Offer donation options	Users can get information about to relief efforts through the platform.
Community forums	Enable users to offer support, and exchange information with others on Discord.
Provide crucial phone numbers	Users can get the phone numbers of emergency services, medical support, disaster relief organizations.
Language options	Users can use this website in English, Kurdish, Arabic and Turkish.
Search for services outside the disaster area	Users can get information about the services such as psychosocial support and business opportunity.

Table 1: Product Functions

1.3.3. Stakeholder Characteristics

There are three main users of afetbilgi.com. The first stakeholder group is the victims of natural disaster. These users may have limited access to information and resources during a disaster, and the system aims to provide them with essential information about crucial phone numbers, safe gathering places, and other critical services. These users may have limited technical expertise, so the system should be user-friendly, accessible and fast. The second stakeholder group is people who want to help, such as volunteers and aid organizations. These users may be looking for information on how to best assist victims, how to access and provide resources,

and how to coordinate with other groups. These users may have a range of technical expertise, from basic to advanced, so the system should be designed to accommodate various levels of knowledge. The third stakeholder group is data collectors and validators, , who are responsible for gathering and managing disaster-related information. These users may require access to more detailed data and analysis tools to help them make informed decisions about resource allocation and emergency response. They may have advanced technical expertise and require a more complex system.

1.3.4. Limitations

- **Regulatory requirements and policies:** afetbilgi.com is an open source software project, and it doesn't include any personal information. However, the system provides information that may affect people's life, so it must comply with all relevant laws, regulations, and policies related to emergency response and disaster management.
- **Hardware limitations:** The system shall be designed to work on devices with small screen sizes, which could affect the amount of information that can be displayed at once and the layout of the user interface. In addition to that, the slow internet speed due to the disaster can limit the system's ability to load pages and perform searches quickly. Therefore, the system shall be designed to be compatible with slow internet speeds and provide users with necessary information.
- **Interfaces to other applications:** The system shall be compatible with other applications, such as Google Maps or PDF generator.
- **Parallel operation:** The system's performance may be limited during times of high traffic or peak usage, such as during a disaster when many users may be accessing the site simultaneously. The system shall require appropriate scaling and load balancing mechanisms to ensure that it can handle an increased number of users during such times.
- **Audit functions:** There is no audit function on this system.
- **Control functions:** There is no control function on this system.
- **Higher-order language requirements:** The main system is constructed with json files. React and TypeScript is used for the website.
- **Signal handshake protocols:** The system uses TLS and HTTPS for communication.
- **Quality requirements:** Data collectors and validators check the information regularly. They must ensure that the information provided on the website is accurate, up-to-date, and reliable.
- **Criticality of the application:** The system can potentially impact the decision-making process of the users, including victims and people who want to help. As such, the system must be reliable and accessible at all times to ensure that users can access the information they need in a timely and accurate manner. Any failure or delay in the system can result in potential harm or loss to the users, making it essential to prioritize the criticality of the system in the development process.
- **Safety and security considerations:** As the website is providing crucial information about disaster areas and relief efforts, it is important to ensure that the data is not compromised or accessed by unauthorized parties. The website should be designed to mitigate security threats such as cyberattacks, hacking attempts, and unauthorized data access.

- **Physical/mental considerations:** afetbilgi.com may not be accessible to visually impaired individuals due to its current design and lack of accommodations for assistive technology.

1.4. Definitions

- **React:** A JavaScript library for building user interfaces.
- **TypeScript:** It is a superset of JavaScript that adds features to improve development experience.
- **HTTP (Hypertext Transfer Protocol):** It is a standar communication protocol used to transfer data between web servers and clients, such as web browsers.
- **Proxy Server:** It is an intermediary server that acts as a gateway between a client and the internet to provide additional security, privacy and control.
- **SaaS (Software as a Service):** It is a cloud computing model where software applications are provided by a third-party provider over the internet, allowing users to access the software and its features without the need for local installation or maintenance.
- **API (Application Programming Interface):** It is a set of protocols and tools for building software applications that allows different software systems to communicate and share data with each other.
- **TLS (Transport Layer Security):** It is a cryptographic protocol used to establish a secure communication channel between two computer systems, typically a web server and a web browser, to ensure the confidentiality and integrity of data transmitted over the internet.

2. References

This document is prepared with respect to IEEE 29148-2011 standard:

29148-2018 - ISO/IEC/IEEE International Standard - Systems and software engineering – Life cycle processes –Requirements engineering.

Other sources:

GitHub. (n.d.). GitHub Pages. Retrieved April 21, 2023, from <https://github.com/alpaylan/afetbilgi.com>

Amazon Web Services. (n.d.). What is AWS? Retrieved April 21, 2023, from <https://aws.amazon.com/tr/what-is-aws/>

3. Specific Requirements

3.1. External Interfaces

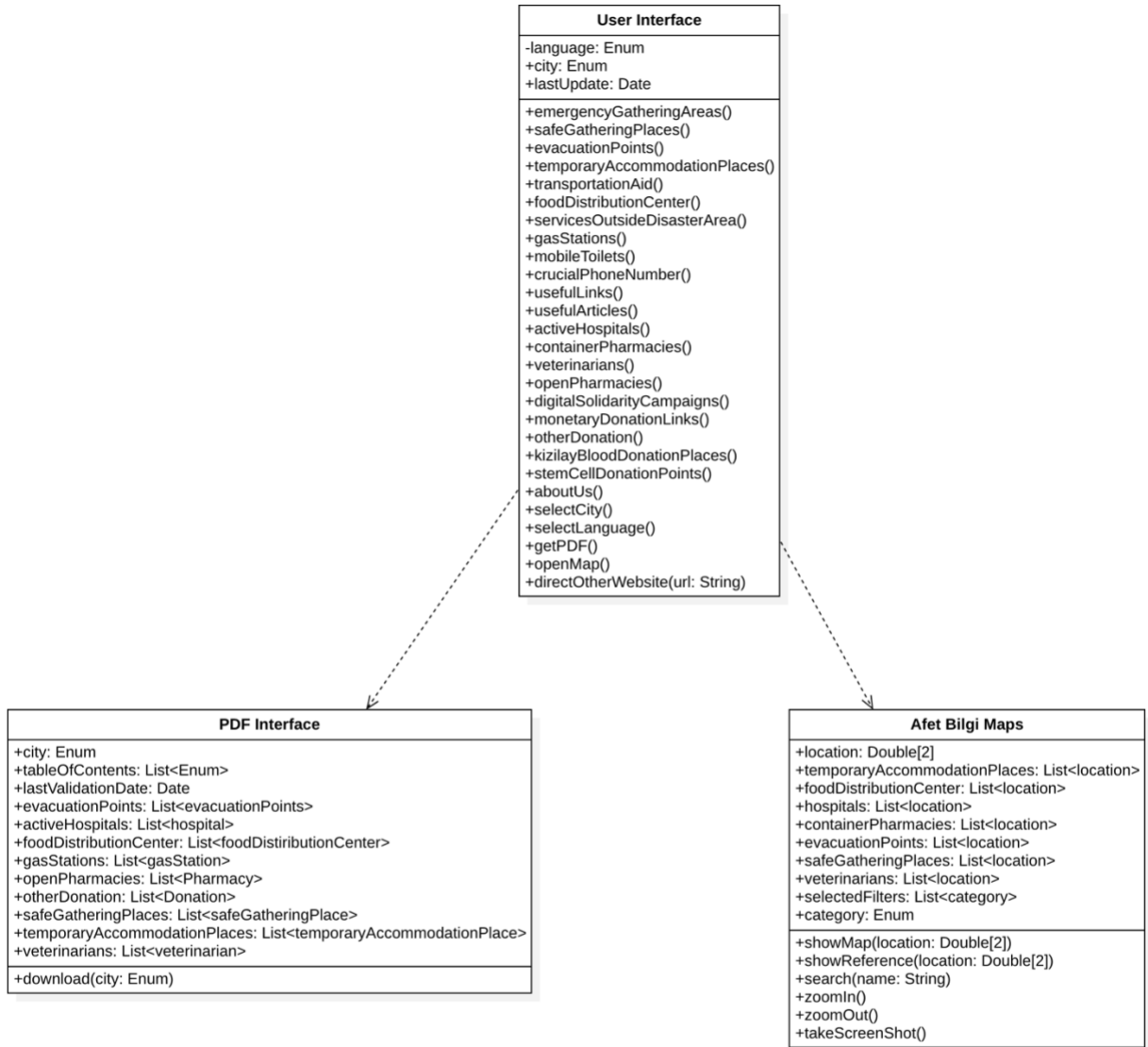


Figure 2: External Interfaces Class Diagram

3.2. Functions

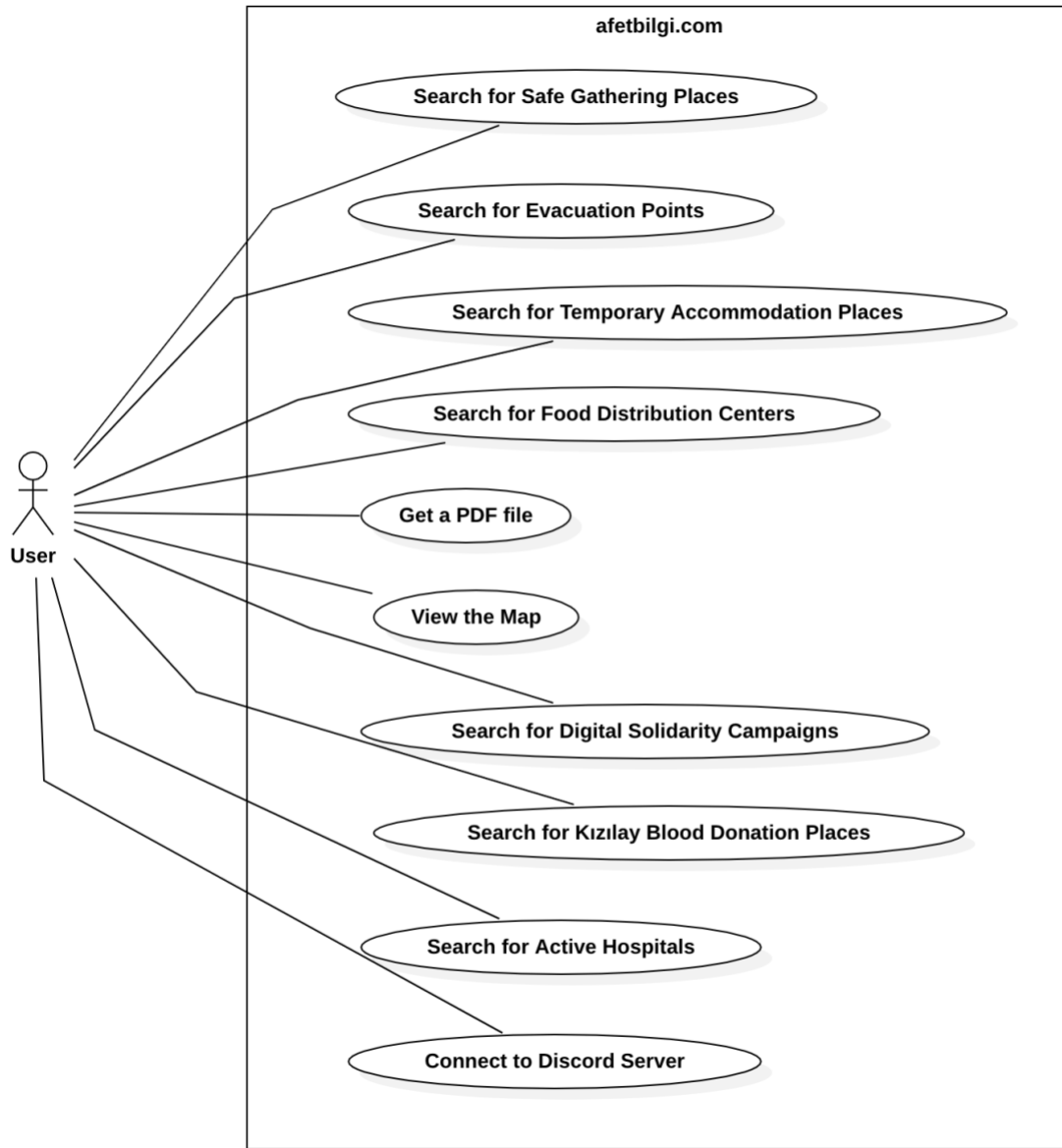


Figure 3: Use Case Diagram

Use-Case Name	Search for safe gathering places
Actors	User
Description	User search for safe gathering places filtered by a city.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com

	Step 2: User clicks Safe Gathering Places Button Step 3: User chooses the city s/he looking for Step 4: Safe Gathering Places are listed
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can get the address of the place, or visit the reference website

Table 2: Search for Safe Gathering Places

Use-Case Name	Search for evacuation points
Actors	User
Description	User search for evacuation points filtered by a city.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Evacuation Points Button Step 3: User chooses the city s/he looking for Step 4: Evacuation Points are listed
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can get the address of the place, can see the location on map, and get contact phone numbers.

Table 3: Search for Evacuation Points

Use-Case Name	Search for temporary accommodation places
Actors	User
Description	User search for temporary accommodation places filtered by a city.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Temporary Accommodation Places Button Step 3: User chooses the city s/he looking for Step 4: Temporary accommodation places are listed
Alternative Flow #1	Step 1: User enter the afetbilgi.com Step 2: User clicks Temporary Accommodation Places Button Step 3: User can see other sources that provide temporary accommodation
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see the location on map, and can visit the website of provider.

Table 4: Search for Temporary Accommodation Places

Use-Case Name	Search for food distribution centers
Actors	User
Description	User search for food distribution centers filtered by a city and a county.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Food Distribution Center Button Step 3: User chooses the city s/he is looking for Step 4: User chooses the countys/he is looking for Step 5: Food distribution centers are listed
Alternative Flow #1	Step 1: User enters the afetbilgi.com Step 2: User clicks Food Distribution Center Button Step 3: User can access the websites of food distributors
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see the location on map, and visit the website of distributor, or visit the website that contains detailed information.

Table 5: Search for Food Distribution Center

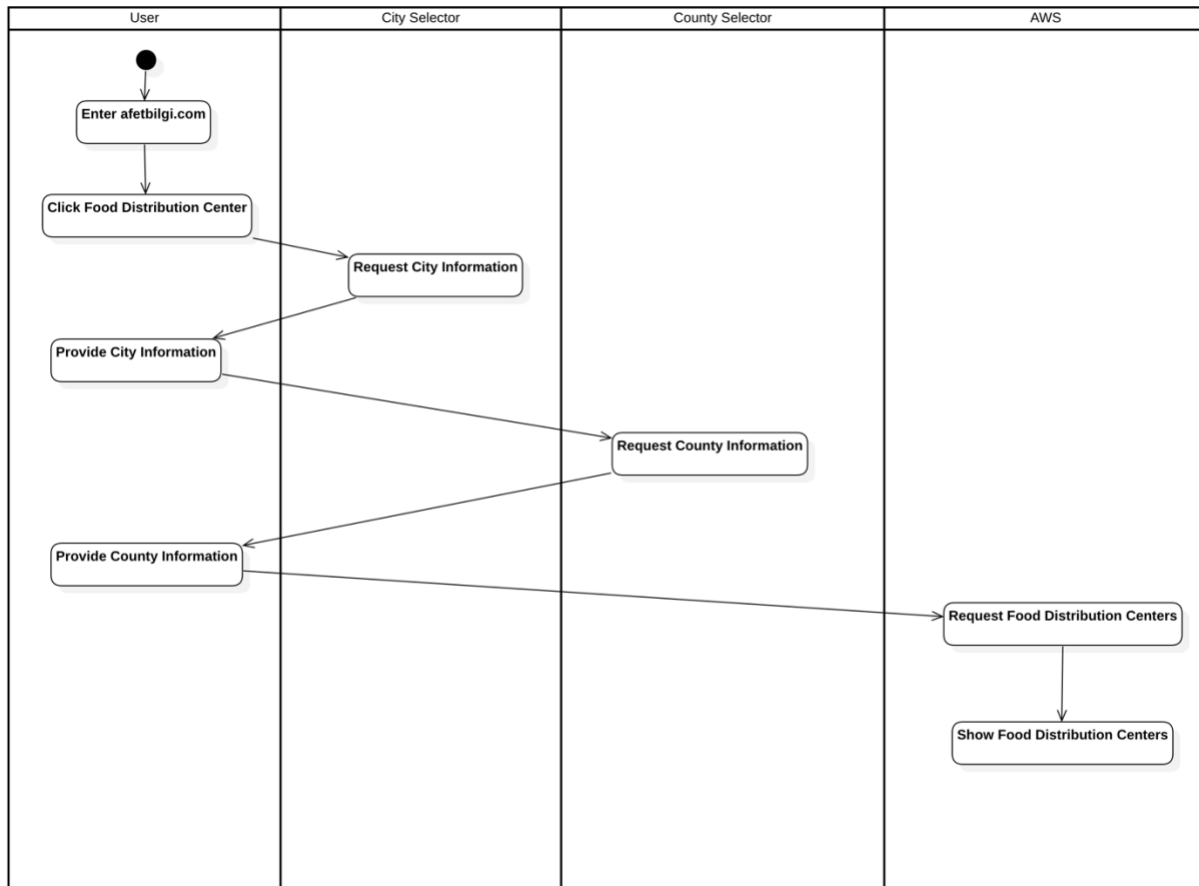


Figure 4: Activity Diagram of Search for Food Distribution Center

Use-Case Name	Get PDF
Actors	User
Description	User gets PDF file for detailed information.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks PDF Button Step 3: User chooses the city s/he looking for Step 4: Detailed PDF is generated
Alternative Flow #1	Step 1: User enter the afetbilgi.com Step 2: User clicks PDF Button Step 3: User chooses all cities Step 4: Detailed PDF is generated
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see all the information related to the cities and categories in a PDF file. The file can be downloaded.

Table 6: Get PDF

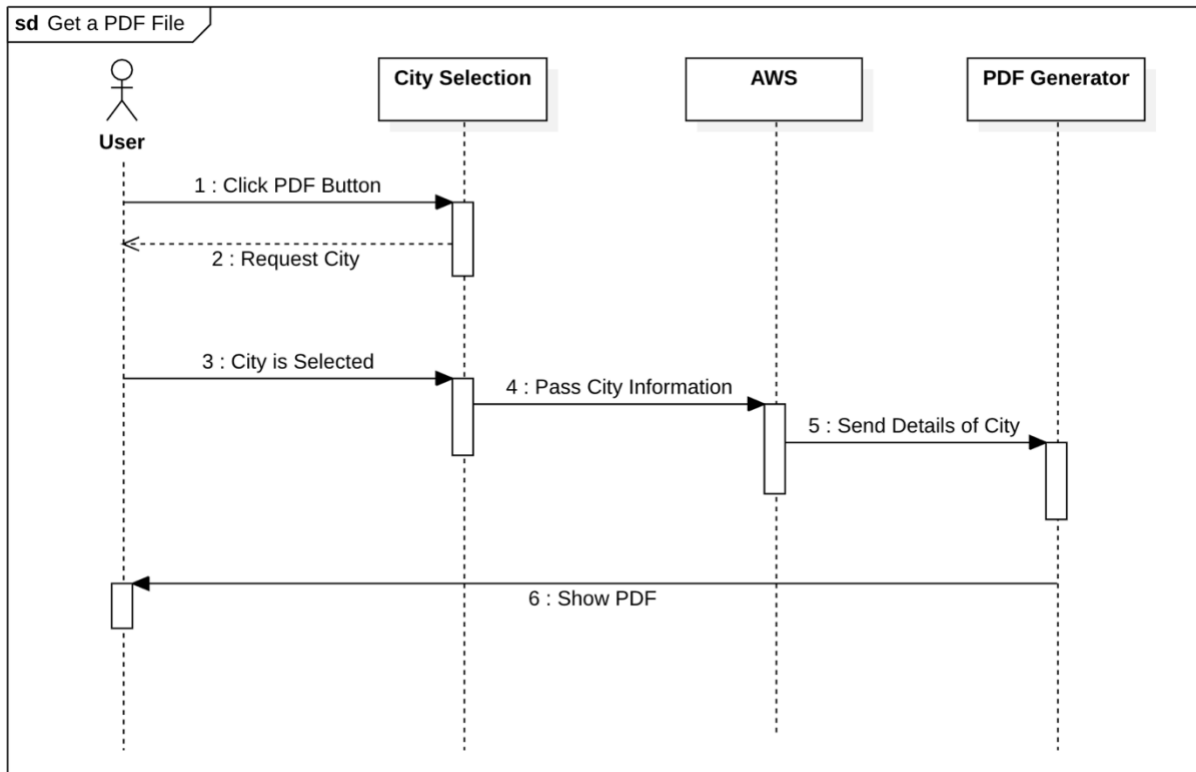


Figure 5: Sequence Diagram of Get a PDF File Use Case

Use-Case Name	View the Map
Actors	User
Description	User can see all information such as safe gathering places, evacuation point etc. on map view.
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Map Button Step 3: User can see Map view Step 4: User can filter the view
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see all the information related to categories in a map view. Also, it can get the location of any place on Google Maps.

Table 7: View the Map

Use-Case Name	Find digital solidarity campaigns
Actors	User
Description	User can access the websites of solidarity campaigns .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Digital Solidarity Campaigns Button Step 3: User can see the links of campaigns
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can visit the websites of the campaigns and donate or help.

Table 8: Find Digital Solidarity Campaigns

Use-Case Name	Search for Kızılay Blood Donation Places
Actors	User
Description	User can see the blood donation places .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Kızılay Blood Donation Places Button Step 3: User is directed to Kızılay's website.
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see the places on Kızılay's website.

Table 9: Search for Kızılay Blood Donation Places

Use-Case Name	Search for active hospitals
Actors	User
Description	User can see active hospitals, and get their location .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Active Hospitals Button Step 3: User choose a city. Step 4: Active hospitals are listed
Alternative Flow #1	Step 1: User enters the afetbilgi.com Step 2: User clicks Active Hospitals Button Step 3: User is directed to a Google Document
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see hospitals' address and see their services.

Table 10: Search for Active Hospitals

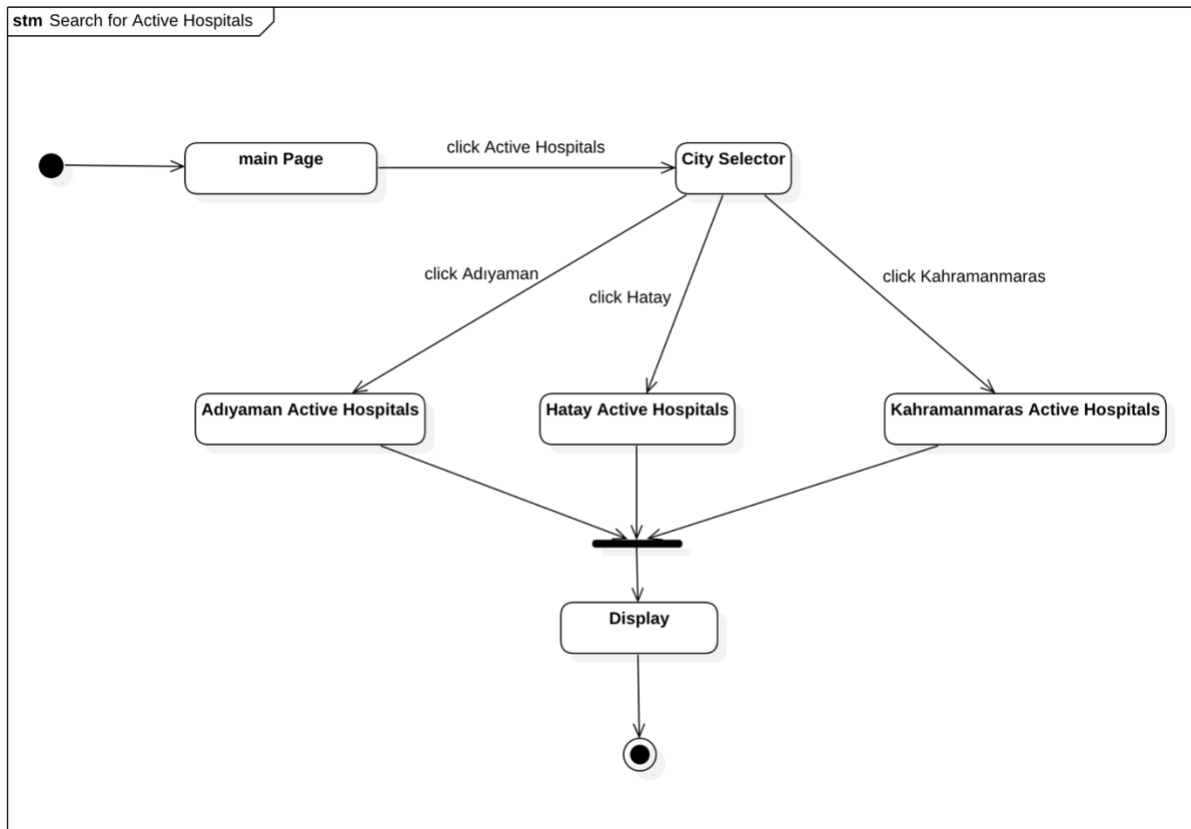


Figure 6: State Diagram of Active Hospitals

Use-Case Name	Connect to Discord Server
Actors	User
Description	User can connect to Discord server and help other developers .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Discord Button Step 3: User is directed to Discord's website. Step 4: User join the channel
Alternative Flow #1	-
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can communicate with other developers of afetbilgi.com, and help them.

Table 11: Connect to Discord Server

3.3. Usability Requirements

The usability of afetbilgi.com shall be of utmost importance given the potentially stressful and emergency situations in which it may be used. The system shall be designed to be easy to use for all types of users, particularly victims who may not have advanced technical expertise. Also, the system shall have clear and simple language that can be easily understood under stressful conditions. The system shall also prioritize speed and efficiency of access, with a focus on minimizing any delays or barriers to obtaining critical information. To address the potential issue of limited Internet access in disaster areas, the system should also include a feature for generating PDFs that users can download and print for offline use. Additionally, the system shall be designed with flexibility and scalability in mind, to ensure that it can adapt to future disasters and changing contexts of use. The system shall be evaluated against objective measures of effectiveness, trustworthy information, with an emphasis on ensuring that the system does not cause harm or further distress to users in any way.

3.4. Performance Requirements

The website functions shall work effectively and efficiently, even in peak workload conditions. It is expected to handle a large amount of disaster-related information for all cities in Türkiye, such as emergency contact information, location of disaster shelters, availability of medical facilities, and updates on the disaster situation.. The system should be able to support a minimum of 100 simultaneous users and process 95% of transactions in less than 2 seconds. The website should be optimized to function with a slow internet connection, given that disaster areas may have limited internet access.

3.5. Logical Database Requirements

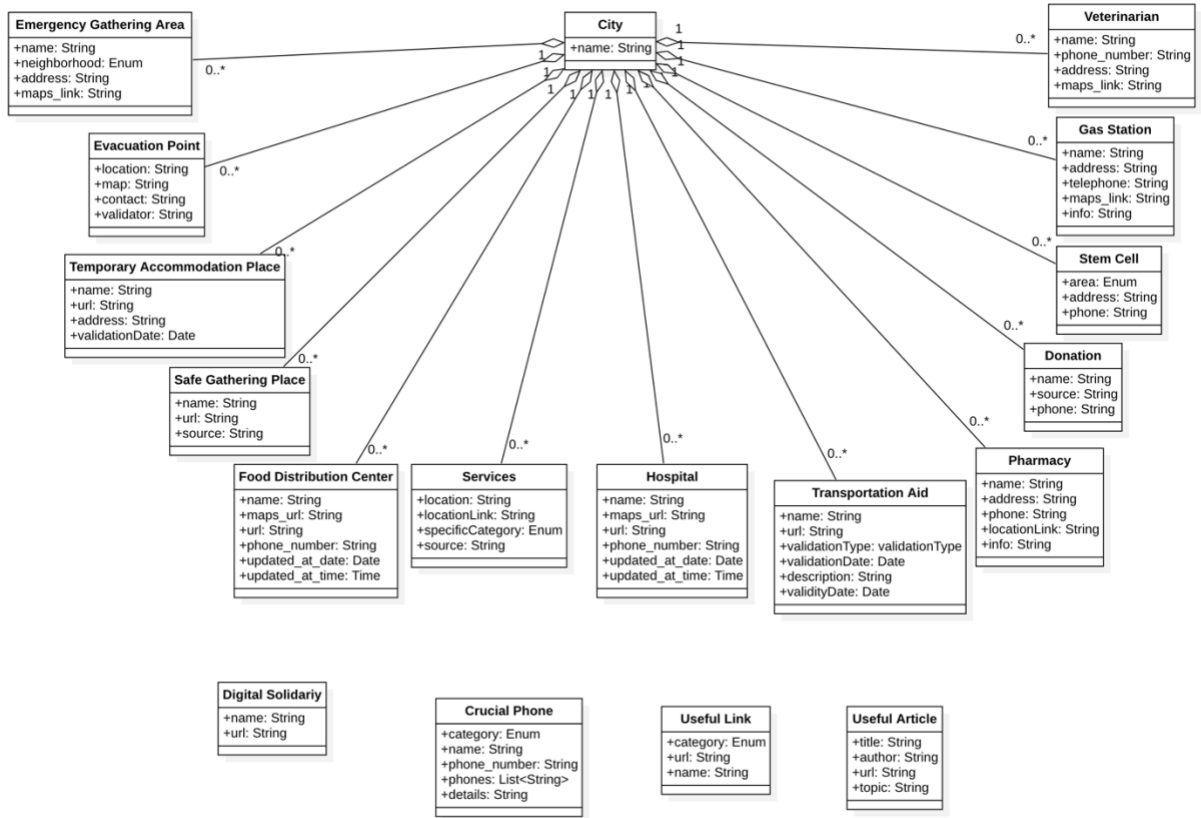


Figure 7: Logical Database Requirements Class Diagram

- The logical database must support searching and querying of records based on city.
- Emergency gathering area, temporary accommodation poin, food distribution center, services, hospital, transportation aid, pharmacy, donation, stem cell, gas station, veterinarian, safe gathering places and evacuation points should be linked to the relevant city records and should include details as attributes.

3.6. Design Constraints

The design of the system must comply with external standards and regulatory requirements. Data security is a critical concern, as the information provided on the website has the potential to affect people's lives. The system must ensure that all sensitive data is encrypted during transmission and storage. Additionally, the system must be designed to be compatible with commonly used web browsers. The system must adhere to all relevant regulations and guidelines set by the government and disaster management agencies.

3.7. System Attributes

a) Reliability

- The system shall be able to recover from failures, errors or system crashes within 10 minutes.
- The software system shall use Data Validator Action to ensure that data and information is accurate and consistent.
- The system shall be designed to handle high levels of traffic and usage to prevent any system overload or downtime.
- The system shall have AWS backup mechanism to ensure that data is not lost in the event of a system failure or crash.

b) Availability

- The system should have redundant components to ensure availability. This can include redundant servers, databases.
- The system should have the ability to restart automatically in case of a failure.
- The system should have a mechanism to recover from failures.

c) Security

- The system shall utilize cryptographic techniques to protect sensitive information.
- Communications between some areas of the program shall be restricted to prevent unauthorized access.
- The system should have proper access controls in place to prevent unauthorized access to the JSON files, as they contain sensitive information that should only be accessible to authorized users.

d) Maintainability

- The software should be modularized to allow for easy maintenance and updates. Different components of the software should be separate and distinct, with well-defined interfaces and dependencies.
- The software should be well-documented to allow for easy understanding and maintenance. This includes not only the code itself, but also documentation for installation, configuration, and operation.
- The code should be written in a way that is easy to read and understand. This includes following coding conventions and standards, using clear and descriptive variable and function names, and avoiding overly complex code.
- The software should be designed with scalability in mind, to allow for future growth and expansion. The software should be able to handle increasing amounts of data and traffic without requiring significant changes or rewrites.
- The software should be designed to be compatible with a wide range of platforms, operating systems, and web browsers, to ensure that it can be easily maintained and updated in different environments.

e) Portability

- The use of a particular operating system should be avoided to ensure that the website can be easily ported to different platforms.
- The use of a proven portable language should be considered to ensure that the website can be easily ported to different platforms.
- The percentage of elements with host-dependent code should be minimized to ensure the website can be easily ported to different platforms.
- The percentage of code that is host-dependent should also be minimized to ensure the website can be easily ported to different platforms.
- The use of a particular compiler or language subset should be avoided to ensure that the website can be easily ported to different platforms.

3.8. Supporting Information

The main problem to be solved by afetbilgi.com is to provide a reliable and user-friendly platform for users to access accurate and up-to-date information related to natural disasters in Türkiye. The software aims to facilitate quick and effective response to such events by providing users with timely and relevant information.

4. Suggestions to Improve the Existing System

- A possible improvement for afetbilgi.com could be the addition of a "Request Help" section, which would allow users to input their phone number, address, and the type of assistance they require. This information could then be verified by data validators before being forwarded to Help Requests. This feature would enhance the system's ability to facilitate communication between those in need of help and the authorities.
- A suggestion for improving afetbilgi.com could be to add a PDF reader for users with disabilities. This feature would enable these users to access important information and resources in a format that is accessible to them. Also, the voice record can be downloaded.
- As a suggestion for afetbilgi.com, a "Help Requests" section can be added to the website to make it easier for people and authorities to see who needs help. This section can display the requests made through the "Request Help" section and provide information such as the type of help needed, location, and contact information. It can also allow users to filter requests based on location and type of help needed to provide a better overview of the situation.
- A suggestion to improve afetbilgi.com would be to include a section where users can view the available markets in a specific area. This can help people locate nearby markets. Additionally, the section could include information on the opening and closing times of the markets to ensure that users are aware of their operating hours.
- It would be helpful to include a feature on the website that allows users to check the status of electricity in a specific region. This information could be obtained from official sources such as the local electricity distribution company or government agencies. Providing this

information to users would help them better plan for emergencies and take necessary actions to ensure their safety.

4.1. System Perspective

Afetbilgi.com is an effective system that aims to provide accurate and reliable information related to disaster response efforts in Turkey. To further enhance the system, some suggestions have been made to improve its functionality. Firstly, adding a "Request Help" section can be useful, which will allow users to submit their information and needs. Secondly, a PDF reader can be added to assist disabled users. Thirdly, a "Help Requests" section can be added to enable people and authorities to see who needs help. Fourthly, users can be provided with information about available markets. Lastly, the system can be expanded to show the status of electricity in the region. Overall, the system's main components involve data collection, data validation, processing, user interface, integration with external entities, and disaster response, all aimed at supporting disaster response efforts by providing critical information to first responders and other stakeholders.

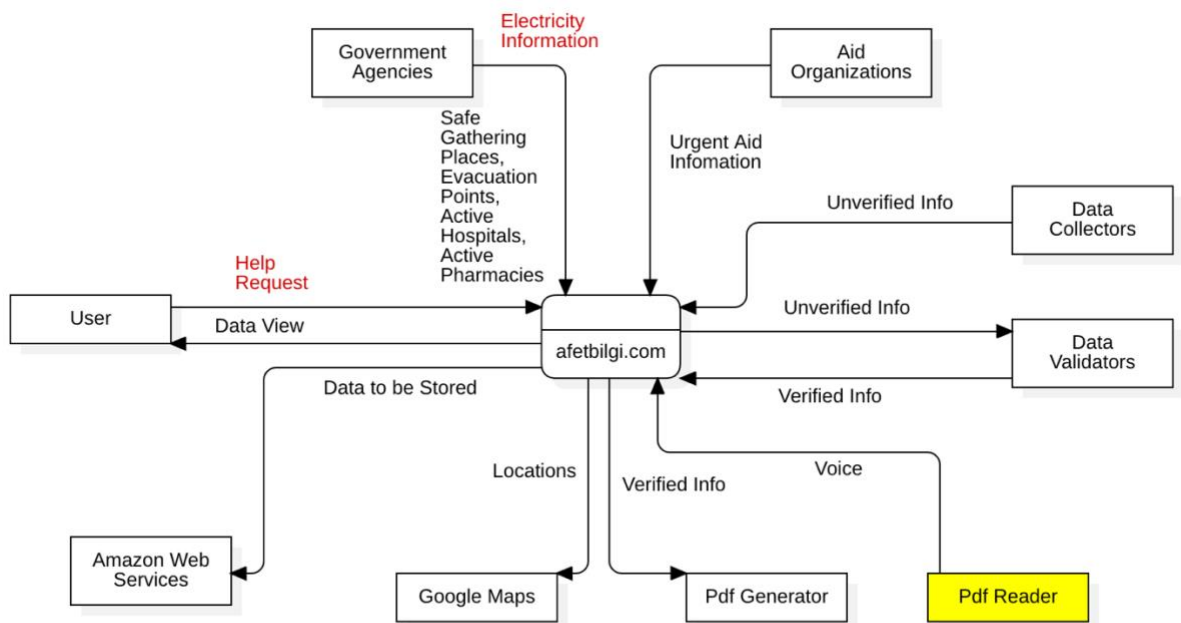


Figure 8: System Context Diagram with Suggestions

4.2. External Interfaces

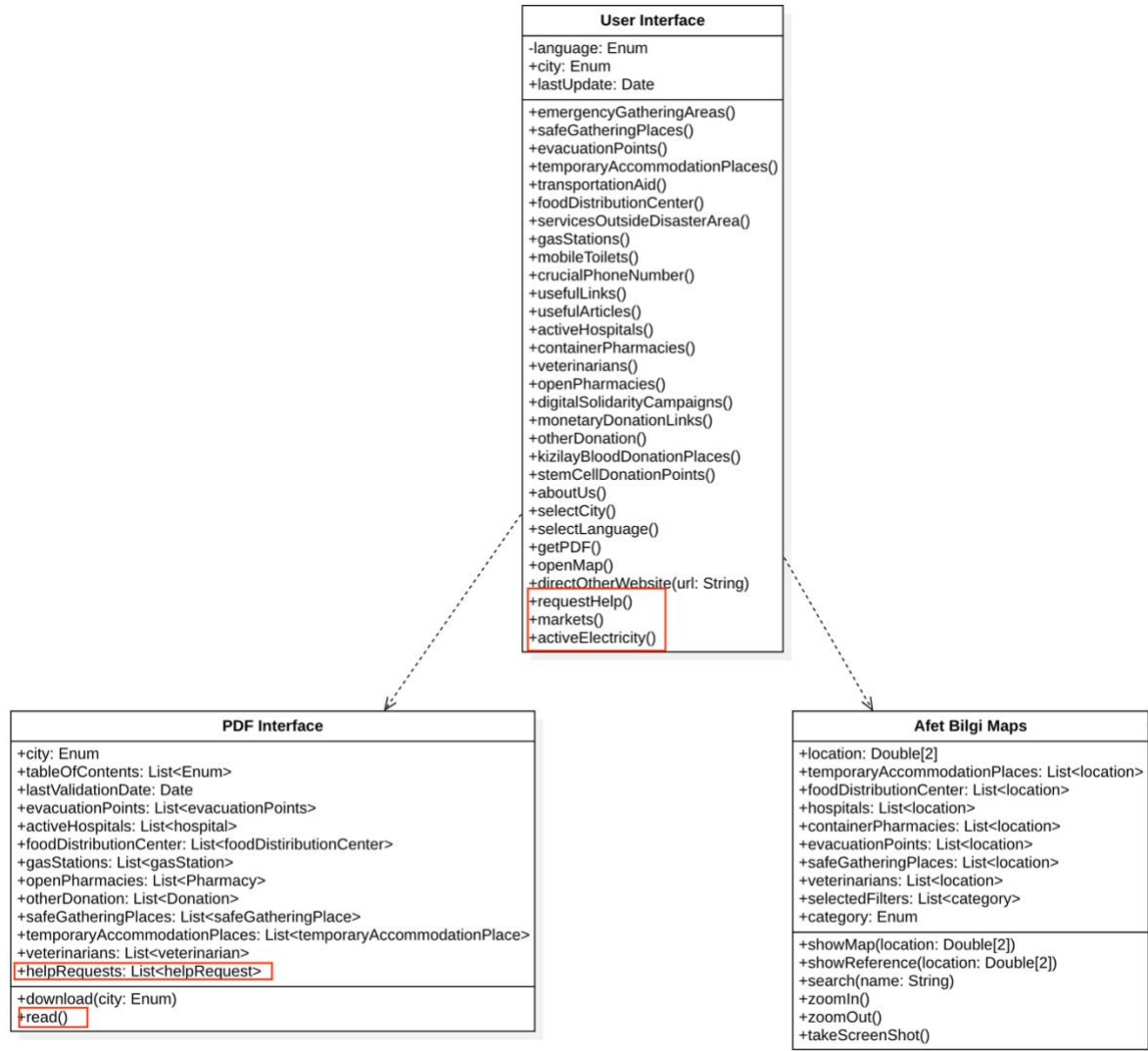


Figure 9: External Interfaces with Suggestions

- read() operation and helpRequests attribute are added on PDF Interface.
- requestHelp(), activeElectricity(), markets() operations are added on User Interface.

4.3. Functions

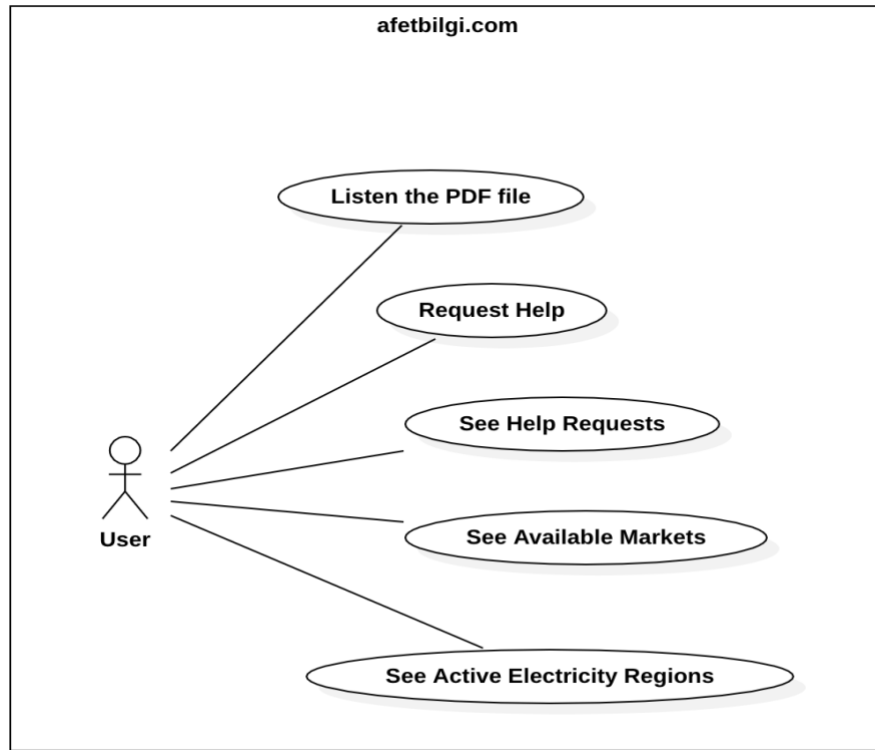


Figure 10: User Case Diagram with Suggestions

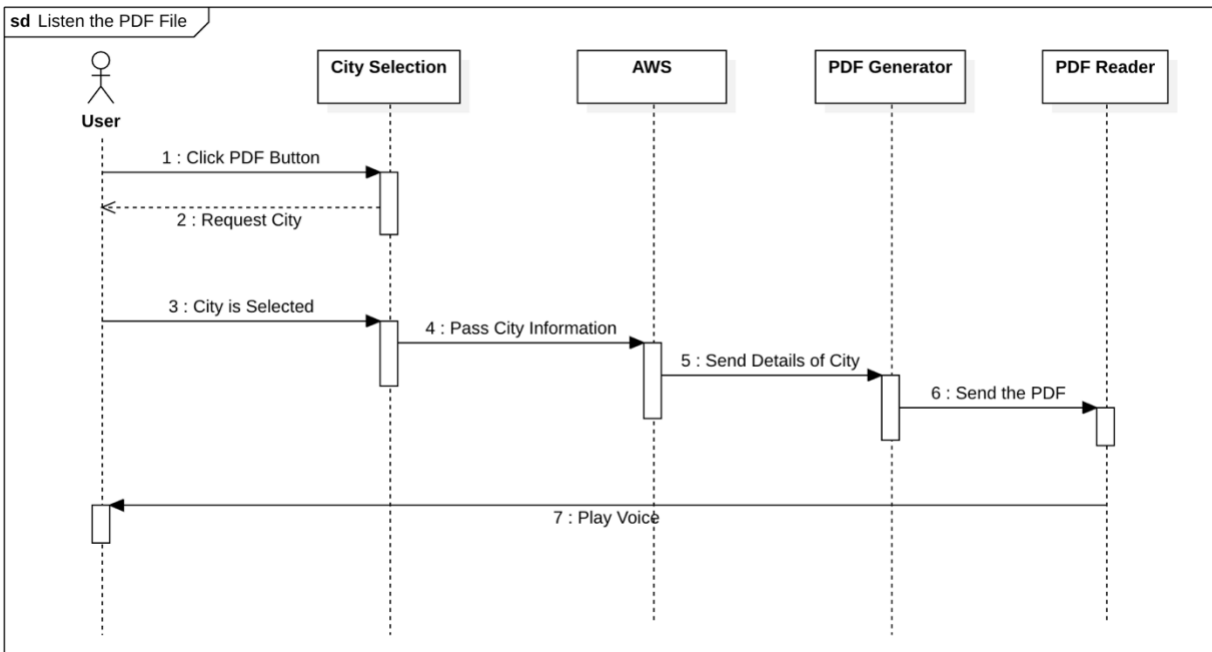


Figure 11: Sequence Diagram of Listen the PDF File

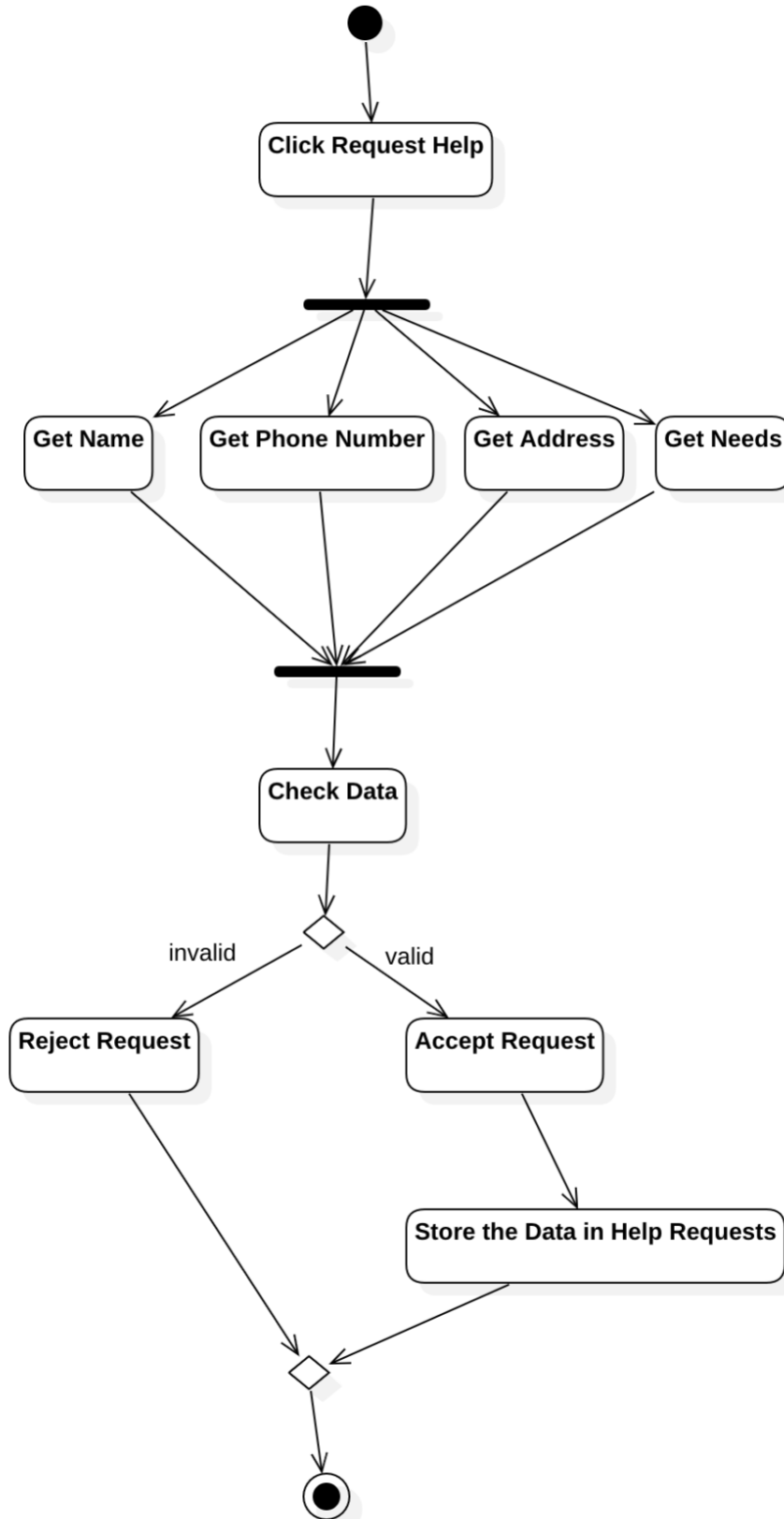


Figure 12: Activity Diagram of Request Help

Use-Case Name	See Help Requests
Actors	User
Description	User can help requests based on a county .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Help Requests Button Step 3: User choose a city. Step 4: User choose a county. Step 4: Help Requests are listed
Alternative Flow #1	Step 1: User enters the afetbilgi.com Step 2: User clicks Help Requests Button Step 3: User is directed to a Google Document
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see request details such as needs, name, phone number and address.

Table 12: See Help Requests

Use-Case Name	See Available Markets
Actors	User
Description	User can help requests based on a county .
Preconditions	User shall connect to Internet
Stimulus	User shall click to the button
Basic Flow	Step 1: User enters the afetbilgi.com Step 2: User clicks Available Markets Button Step 3: User choose a city. Step 4: User choose a county. Step 4: Available markets are listed
Alternative Flow #1	Step 1: User enters the afetbilgi.com Step 2: User clicks Available Markets Button Step 3: User is directed to a Google Document
Alternative Flow #2	-
Exception Flow	-
Post Conditions	User can see market details such as opening, closing hours, address and phone number.

Table 13: See Available Markets

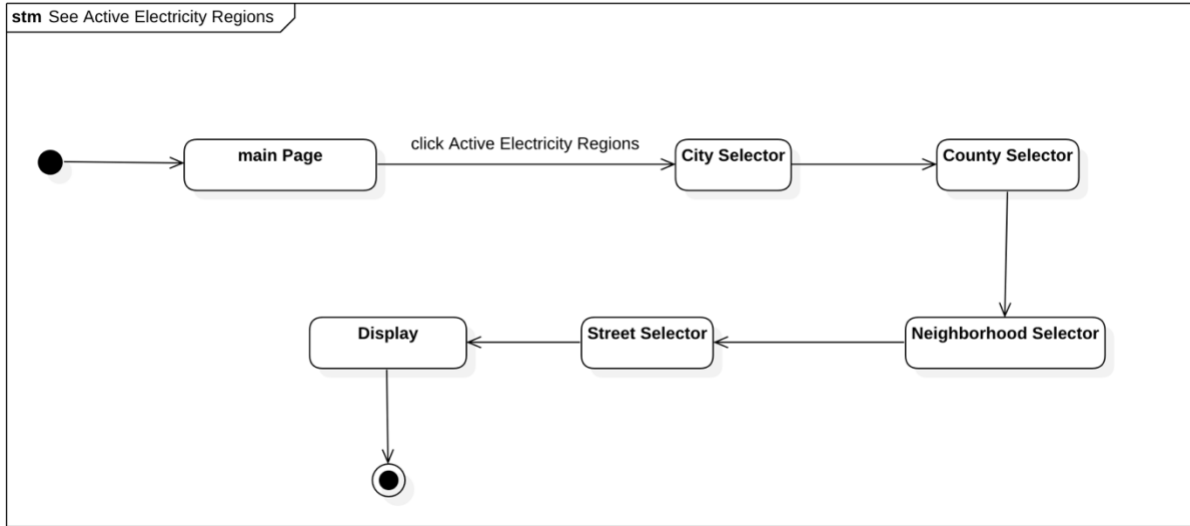


Figure 13: State Diagram of Active Electricity Regions

4.4. Usability Requirements

To ensure the usability of afetbilgi.com, the system should take into account the potential stress and emergency situations in which it may be used. The system should prioritize ease of use for all types of users, including victims with visually disabled people. Integrating the "Request Help" section can further improve the system's usability and aid in emergency situations. Data validators can verify the information provided by users and ensure the accuracy and reliability of the data. The "Help Requests" section can allow people and authorities to see who needs help, and users can see available markets and the availability of electricity in the region to help them make informed decisions during disaster response efforts. Finally, a PDF reader can also benefit disabled users by providing accessible information.

4.5. Performance Requirements

The website should be optimized to function with a slow internet connection, given that disaster areas may have limited internet access. The system should be able to support a minimum of 100 simultaneous users and process 95% of transactions in less than 2 seconds to ensure effectiveness and efficiency during peak workload conditions. In addition, some suggested features that may enhance the system's functionality and usability include a "Request Help" section for users to input information on their needs, a PDF reader for disabled users, a "Help Requests" section for people or authorities to see who needs help, a list of available markets, and information on the availability of electricity in the region.

4.6. Logical Database Requirements

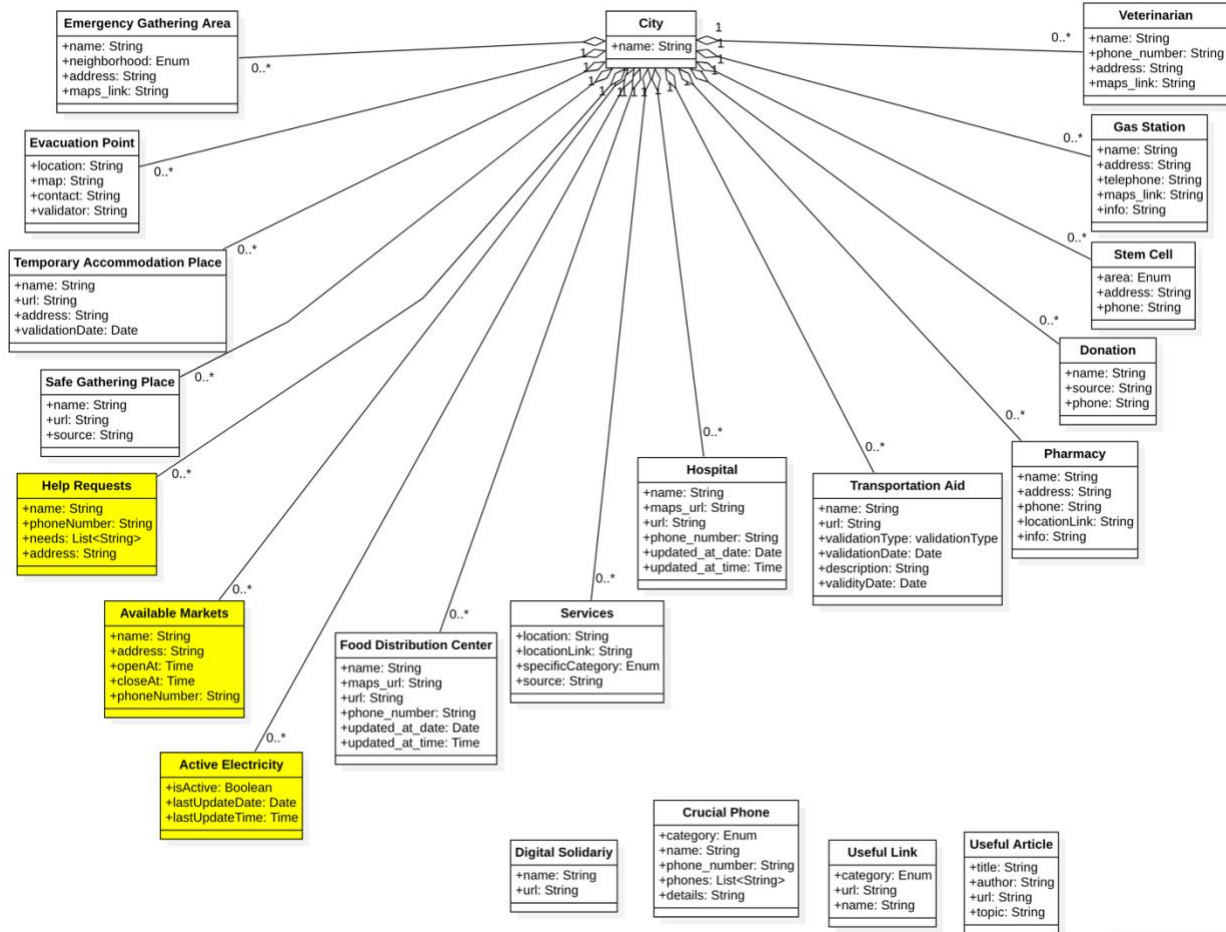


Figure 14: Logical Database Diagram with Suggestions

4.7. Design Constraints

The suggestions made for the website, such as the "Request Help" section, the PDF reader for disabled users, and the "Help Requests" section, must be designed and integrated into the system in a way that meets regulations set by the government.

4.8. System Attributes

a) Reliability

- To ensure the availability and reliability of the system, it shall be designed with a robust fault tolerance mechanism to recover from failures, errors, or system crashes within 10 minutes.
- The software system shall utilize Data Validator Action to validate and ensure the accuracy and consistency of all data and information processed by the system.

b) Availability

- The system should have redundant components, such as servers and databases, to ensure high availability and minimize downtime in case of a failure.

c) Security

- The system should have proper access controls in place to prevent unauthorized access to the JSON files, as they contain sensitive information that should only be accessible to authorized users. This can be achieved through proper authentication and authorization mechanisms, such as role-based access controls.

d) Maintainability

- The software shall be designed to be compatible with a wide range of platforms, operating systems, and web browsers, ensuring that it can be easily maintained and updated in different environments.
- The code shall be written in a clear and understandable way.

4.9. Supporting Information

Afetbilgi.com is a platform that aims to provide accurate and up-to-date information related to natural disasters in Türkiye. The website has been improved by adding new functionalities, such as a "Request Help" section, a PDF reader for users with disabilities, a "Help Requests" section, a market locator, and a feature to check the status of electricity in specific regions. The website is designed to be reliable and user-friendly.