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COMPUTER ENGINEERING DEPARTMENT

Project Report

Innovative System Design and Development I

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Friendly Gas

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Abstract

Our project is a website about fuel prices. Fuel is one of the most used things in our time and our aim is that the people who use it can be very beneficial for their personal economy if they use our project. Gasoline is an expensive fuel due to the conditions of its source. Most of the gas stations in our world have different prices due to the brand value. Our aim is to create a website that allows you to find the cheapest or best quality option of the gas station in seconds, based on the data we will receive from all fuel stations when you enter our site, according to the range entered by the user.

Öz

Projemiz yakıt fiyatlarıyla alakalı bir web sitesidir. Yakıt, çağımızda en çok kullanılan şeylerden biridir ve amacımız, onu kullanan insanların projemizi kullanmaları halinde kişisel ekonomileri için oldukça faydalı olabilmesidir. Benzin, kaynağına ilişkin şartlar nedeniyle pahalı bir yakıttır. Dünyamızda benzin istasyonlarının çoğu, marka değerinden dolayı farklı fiyatlara sahiptir. Amacımız, sitemize girdiğinizde, tüm akaryakıt istasyonlarından alacağımız verilere dayanarak, kullanıcının girdiği aralığa göre hangi benzin istasyonunun en ucuz veya en kaliteli seçeneği saniyeler içinde bulmanızı sağlayan bir internet sitesi oluşturmaktır.

1. Introduction

1.1.Problem Statement

The main problem of the project is to provide a solution where people can find a place where they can buy cheaper fuel quickly and effectively due to the constantly increasing and constantly changing fuel prices around the world.

With this solution, people will be able to buy cheaper fuel and this solution will benefit people economically.

1.2.Background or Related Work

The fuel problems we mentioned in the Problem Statement cause great economic damage to people. With the "Friendly Gas" project we will develop, we aim to help people economically.

1.3.Solution Statement

With this project, which we aim to develop for those who do not have a lot of budget to spare for people's fuel expenditures due to the increasing economic difficulties today, we are helping people's budgets more.

2. Literature Review

2.1. Abstract

In today's world everything is digital what we eat what we buy what we want people do everything on digital platforms and our grup while we were looking for the projects for our 407 and 408 classes we just think why isn't there anything about gas prices or for the saving about the road you choose with the most efficient and most cheapest way. After we think that we started to researching about applications or websites that includes these types of features. After our researching stage we didn't found anything special about these features and we decided to go with the website which we will create and includes these features in our project.

2.2. Introduction

This section is to introduce the main subject of the project.Firstly all details about the application will be given details in here after the things we use in this project which we learn in the studies we learned and projects which we did and finally we will give information about similar apps or websites which we have found while we are searching for the project.In

todays Turkey gas prices are a valid problem for every person living in our country and we think for a solution about that unfortunately not an exact solution.Our website will be creating most cheap and effective road for the places you will go but in todays world it will be shown the most expensive and different quality gas prices between every gas station and brand.

2.3.Friendly Gas Concept

Nowadays, internet is used effectively to reach all kinds of commercial commodities. It is also possible to reach the address of any place at the same time over the internet. It is becoming more and more important to find a place where any commercial commodity is sold more cheaply on the internet and to have information about how to get there. Nowadays, when traveling from one place to another, digital maps are used electronically with mobile devices or fixed devices instead of using printed maps as in the past. When a travel map is created from one geographical location to another geographical location using internet-based information, it is possible to obtain digital information about the businesses on the road route of this digital map. For example, a person who wants to go to Çankaya University from where the parliament is in Ankara encounters multiple alternative routes when he/she wants to benefit from digital maps. While choosing the university way, alternatives such as the shortest way, the fastest way, the most economical way are available today. The main purpose of this project is to provide the user with the opportunity to make a choice by showing the locations of the gas stations on the alternative routes obtained digitally on the routes. the user has the chance to see the price lists at the gas station and choose the most suitable one for himself while making his choice.

2.3.1.Concept Of “Friendly” In Consumer Transaction

2.3.1.1.Relationship Between User Interface And User

People now work with computers directly. A field of science called human-computer interaction (HCI) is undergoing research. HCI calls for the collaboration of numerous scientific disciplines (computer, ergonomics, psychology, mechanical, graphic, and social). A user interface is how users communicate with a computer system (UI). Stone et al. [1] have conducted a thorough study on user interface. In our daily lives, computers play a very significant role. Almost every day, either by us or by systems for us, we use computer apps in some capacity. The component of the computer system that the user interacts with is called the user interface. Depending on the

systems and purposes for which they are employed, computer-based systems have different user interfaces and methods of interaction. For instance, consumers frequently press buttons on digital timepieces. These buttons allow you to set the time or activate the stopwatch function. with the oven screens used in modern kitchens. The cooking time can be set via touch controls or a digital display. When working with computers, tools like the keyboard and mouse are utilized to facilitate interaction. Therefore, each user interface is unique. Every one of these technologies can either be simple or complex for consumers to use, depending on how the interface is designed. The user interface described by Stone et al. [1] will be closely evaluated, and information on new advancements and research in this area will be gathered.

2.3.1.2.Minimum User Interference

Numerous concerns may arise when discussing the Principles of Universal Design, however in this case, Butler's [2] points will be taken into account. The design should be practical and appealing to people of various abilities, according to The Principles of Universal Design. A wide range of individual preferences and capabilities should be supported by the design. Regardless of the user's background, education, linguistic abilities, or degree of focus right now, the design should be simple to use. Regardless of the user's sensory capabilities or the surrounding environment, the design should be able to effectively communicate the required information to the user. The design should reduce the risks and unfavorable effects of unintentional or unwanted acts. It should be possible to utilize the design effectively, comfortably, and with little fatigue. The proper size and space should be provided for approach, access, manipulation, and use regardless of the user's body size, posture, or mobility [1].

2.3.2.Location Information

The Global Positioning System (GPS) is a network of satellites in orbit around the planet that transmits signals from which GPS devices may deduce latitude and longitude. The global positioning system (GPS) has made it reasonably easy and straightforward to locate practically any object on the surface of the globe. In their publications on electronic mapping, Erle et al. [3] have carefully explored the global positioning system in particular. A constellation of twenty-four satellites called the GPS system orbits the planet in various locations and broadcasts time signals all the time. Planet-based GPS devices (such as mobile devices, car navigation systems, and

mobile phones) receive signals from at least three of the twenty-four satellites in orbit around the earth and use this information to triangulate the location of any object on Earth to calculate its position. The geographic coordinate system (GCS) is used by all GPS-enabled devices to pinpoint their exact location. The United States Department of Defense created the GPS system initially for military use, but eventually GPS expanded beyond exclusively military use to include a wide range of commercial and scientific applications. Campbell and co. He looked at how to leverage this problem in web-based pages in his work on Geographic Information Systems. The popularity of online mapping tools and apps, as well as the growth of GIS, demonstrate the explanations for maps, how they are used, and the changes they bring. When considered in this perspective, the expansion and application of dynamic maps stand out as a subject worth researching. If one wants to put it simply, dynamic maps are just interchangeable or interactive representations of the earth. Given the popularity of dynamic mapping, it relates more to the manner in which modern maps are given to map users than to the content of the maps themselves. Reference and topical maps can both be dynamic in nature, and these maps may now be an essential part of any GIS. The main benefit of dynamic maps today is that they are available to more and more people, not only GIS experts. Even if users wanted to, printed maps contained characteristics and elements they could not or would not modify. Dynamic maps, however, nearly always invite user participation, and in some cases this interaction is required, in contrast to these printed maps. Users can interact with maps by zooming in or out to change the scale or visible area, choosing which features or layers to add or delete, or even beginning and stopping a map animation. Numerous GIS and Web technologies can be used to create dynamic maps.

2.3.2.1.Need for Location Information

Online route finding services, which are widely used today, have fundamentally revolutionized the task of plotting travel routes for users. Instead of annoying users in a boring and perhaps wrong way, it easily explains directions to their location via phone or email. In such matters, the driver of the car connected to the Internet can simply not only look at it, but also create his route. The purely practical utility of such a tool has been the main driving force behind the development of most online, consumer-oriented mapping services. Practical utility is the main driving force in this

area. However, in mapping and the use of this mapping, the facts are a little different. It is extremely difficult to give all the details on the map on the route created to go from one point to another point. Roads and their names and information about them carries special importance in traditional mapping within the scope of information that can travel, whereas in digital mapping in a moving vehicle speeding in the background and it will not be easy to read the articles. In contrast, when online maps are examined, we come across every detail of a route, the fact that it is often put on the wrong scale. this means that shorter extensions at the beginning and end of a route are often lost compared to longer extensions in the middle.

In addition, it follows the traditional "road atlas" paradigm. online map services, the map of which may be relevant when planning a route, in this way, the situation of adding all kinds of information in route planning is even worse than useless. Nowadays, drivers of cars are usually the same person who looks at the map and studies navigation at the same time. In this case, the driver of the car needs to take a brief look at the planned map and then continue driving. It will create a danger for the driver to look at the map prepared for a long time.

2.3.2.2.Workplace Information of Fixed Places

One of the important elements in the Friendly gas project is that the location information of the gas stations is taken over different mapping systems and this information is used. these information of stationary gas stations, which have received up-to-date information, must also be updated during their use on the website. the use of information obtained about the geographical locations of commercial enterprises on different websites also brings with it the problem of obtaining permission from these enterprises. although the use of this information of gas stations increases their commercial visibility, this is something requested by these stations, but they will still have to take this issue into account legally. location information in this project and up-to-date monitoring of gas prices in the enterprise are being tried to be provided interactively by users using the website.

2.3.3.Consumer Relationship with Friendly Gas Consept

The main purpose here is for the user to share their own information (such as location, price, gas purchased) on the web page while searching or after searching. A good marketing strategy will also be needed to direct the user to share this information. One of the methods that can be used to obtain this is to share the picture of the gas payment receipt with the site. With these methods, both the current location and working condition of the gas station and the gas prices are transferred to the site database.

2.4. Similar Works

2.4.1. GEICO

The main purpose of GEICO is to provide insurance on people's vehicles, homes, goods, boats and businesses. In addition, according to the location you enter (only America), it lists the gas prices of the gas stations around that location.

2.4.2. AAA Gas Prices

The AAA Gas Price lists the average gasoline prices in the states to people living in the United States. In addition, it is a site that shares news about gasoline in America.

2.4.3. To Compare Other Projects

	Live Location	More Than One Country	Station Gas Price	Gas News	Price Calculator
Friendly Gas	X	X	X	-	-
AAA Gas Price	-	-	-	X	X
GEICO	-	-	X	-	-

2.5. Tools

2.5.1. React

The most popular JavaScript library for UI development is React. Facebook created the tool's components, which were then made available as open source JavaScript in 2013. Large corporations like Netflix, American Express, WhatsApp, and Instagram

use the simple-to-use application React. The technology, which focuses on effectively accomplishing UI chores, is simple to understand after a few days of use.

2.5.1.1.What Is The React?

The concept was introduced by XHP in 2011, and 6 months later the React tool was made public. By gaining popularity day by day, it has grown to become one of the most popular libraries today. The library has outperformed rivals like Angular and Vue JS, which are also used to build SPA. In contrast to this, it also takes care of the hidden components of websites by offering database and form validation.
JavaScript or JSX can be used to create React applications, but JSX is typically preferred. This is because creating user interfaces in JavaScript is more challenging. React, a component-based front-end toolkit in charge of the application's view layer, offers developers many benefits.

2.5.2.Java

Java was created by Sun Microsystems and initially made available in 1995. Java is an object-oriented, class-based programming language with many applications. Java is a programming language that may be used to create and run applications. The end user can also get Java for free and use it to run software.

2.5.2.1.What Does Java Do?

The data that is currently available estimates that there are around 9 million Java developers worldwide. It is possible to develop practically any type of network application using this programming language. In this manner, Java develops becoming a universal standard for the creation and dissemination of games, web-based content, mobile and embedded applications, and corporate software. Java allows for the rapid development and simple deployment of applications and services. Today, Java is utilized across a wide range of devices, including laptops, servers, supercomputers, mobile phones, gaming consoles, and the Internet. The usage statistics for Java are provided below, and using this data, we can also respond to the question of what Java is beneficial for:

- 97% of corporate desktops have Java
- There are 9 million Java developers worldwide
- It is among the first choices of application developers.
- It's on nearly 3 billion mobile phones
- 5 billion Java cards are used
- Used on 125 million TVs
- Top 5 OEMs using Java ME
- All Blu-ray disc players use Java

3. Software Requirements Specification

3.1. Introduction

3.1.1. Purpose

These documents for SRS explains how can you implement the datas which you will take from another websites and Google API for the map and navigation.What are the beyond on this implementation action and which software requirements we will need for the implement these datas and informations for our project.After all these actions how can we meet that informations and the service we want to give the customers and requirements for this meeting.

3.1.2. Scope Of The Project

The goal of this project is giving people a chance to do travel with a cheaper opportunities or if they want better opportunities , changes for the every person needs.With this goal we want the achieve the most reliable economic situations before they starting to travel and how much are they gonna spent on this travel and how can we take this price to a lowest price or a better quality and most higher price however the customers want.Our application just shows the different options for our customers and there is only thing left for our customers just picking the route.

3.1.3.Glossary

TERM	DEFINITION
Navigation	Navigation is the system that enables us to reach the destination in the shortest and fastest way. Thus, even if we have never been to an address before, we can easily reach an address without asking for the address and without getting lost.
GOOGLE API	The Google Ads API lets developers build applications that interact directly with the Google Ads server. With these applications, advertisers and third parties can more efficiently and creatively manage their large or complex Google Ads accounts and campaigns.
Gas Types	We typically see three types of gas at your local gas station. They're distinguished by their octane rating, which serves as a measure of a fuel’s stability. The higher the octane rating, the greater the pressure the fuel can withstand.
Gas Brands	Gas brands is a term for different supplier for the gas types and these suppliers prices or gas types can be different about the places where gas

TERM	DEFINITION
	stations are or where they can supply their gas.
FAQ	List of questions that people often ask about a particular product or site on the internet and the answers to the questions.

3.2. Overall Description

3.2.1.Product Perspective

In our time when the internet is used intensively, almost every need can be done from the internet. While using the internet, whether it is a shopping, daily data or how to reach any place, it is useful from internet sites. When accessing any website, the desired information can be accessed in a very short time by entering a few data suitable for the purpose. Today, when commercial competition is intense, individuals want to find cheaper places to buy the things they want via the internet.

Within the scope of this project, the main purpose is to provide visual information that will enable the user to find the most suitable place for the price of a particular product. The site within the scope of the project is gasoline or diesel, which is the basic need of transportation, which is one of the most widely used commercial needs today. The abundance of vehicles for both commercial and individual use and the constant need for fuel of these vehicles make the need for information about fuel prices permanent.

The need to know the price of the fuel needs of individuals will increase the interest in platforms that will provide this information, as well as websites. The need for such websites also requires the storage of commercial information and their instant use. Today, fuel prices are under the control and control of the administration and the free market does not have the opportunity to change these

prices too much. However, vehicle users want to know even these differences, which are small in this area where the price fluctuation in the market is very low. The main purpose of this project is to provide the user's economic benefit by presenting these prices, which are slightly different in fuel prices, to the user's information. As with many products, consumers have brand loyalty or preference for choosing the most suitable petroleum product for themselves in petroleum products. Petroleum products of the brand can be sold at different prices. With this project, it is aimed that consumers with brand loyalty will also use this website. This website is based on the idea of providing the intended data as soon as possible with very little need to enter information. The user will be able to see the sales prices of petroleum products on his route without the need for any other data entry after entering the destination by allowing him to use his own location.

3.2.2.Product Functions

In order to access this website, the user will first search by entering the site name information from the web browser and click on the link that comes as a result of the search to access the site.

After accessing the site, the site will automatically send the user a request for permission to use the data information.

After allowing the user to follow his current location as long as he is on the site page, the site will open a section asking the user for the type of fuel, depending on his preference, and the user will be able to select one or more fuel types in this section.

After this choice of the user, the site will open a window with the fuel brands that this user may prefer, and the user can mark the fuel brand that he/she prefers and that he/she constantly uses, or one or more brands that he/she may prefer.

If the user does not mark any brand, it will be considered that all brands have been selected. After these stages, if the user's location is centered on the map and the place he wants to go is entered, if no place is entered in this direction, the prices of the fuel stations and their products within a hundred kilometers of each direction will be seen on the map.

3.2.3.Overview Requirements

- To use this website, users must have access to a computer, Tablet or a phone and those devices to the Internet.
- Users do not need to be registered to enter the site.
- In order to use this site in the most effective way, the user must know English.
- The user's location information must be turned on when using the site and must allow sharing this location information with the site.
- The user must enter the address of the place they want to go to the site
- User can select fuel type
- The user can select the preferred brand

3.2.4.Constraints

- The accessibility and usability of websites and web applications for older people are not exist
- For the people who has hearing or vision declines, there are no transcripts, captions, and low background sound.
- Updating of fuel prices with instant change in data warehouses of rapid current change.

3.3. Requirements Specification

3.3.1.Interface Requirements

3.3.1.1.User Interfaces

The user interface of the system is easy to use and understand. The user interface is the website we designed to show gas prices and the location of the gas station. When the user logs in to the page, after entering the maps location, he will be able to see the price of the most suitable gas station on the route he will go. Thus, the user will have the opportunity to see the lower gasoline price.

3.3.1.2.Hardware Interfaces

Our web system can be accessed via computers, mobile devices and tablets. In order to use our site, the location information must be accessible on the user's device. Computers, mobile devices and tablets must or should have hardware that provides location information.

3.3.1.3.Software Interfaces

Since our system is a website, the data required for the system will be automatically provided by the GOOGLE API by using the necessary website tools. GOOGLE API is the APIs that Google provides to us to retrieve data from Google's applications or websites. The GOOGLE API will help us obtain maps, location and petrol station data that will be required on our site.

3.3.1.4.Communications Interfaces

Although the system does not seem very complicated because our system does not have many interfaces, the services running on the back of the system are of great importance. Because these services take part in almost all the functioning of the system. If one of these services fails, interaction with the user may also be problematic.

3.3.2.Detailed Description of Functional Requirements

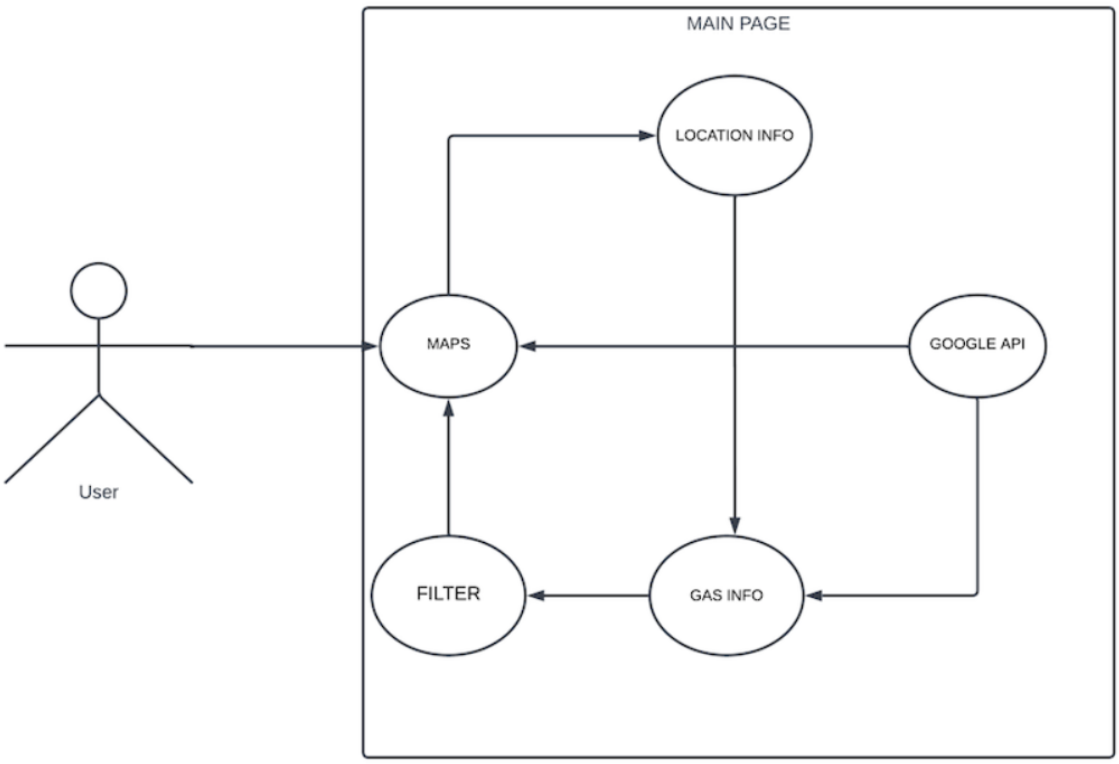
3.3.2.1.Use Case

USE CASE TITLE	**DESCRIPTION**
MAPS	Represents google map.
DEVICE	Represents the device that the user will access the website.
SELECT BRAND	It contains the brand from which the user will buy the gasoline.
FILTER	It helps the user to select the gasoline type and brand.

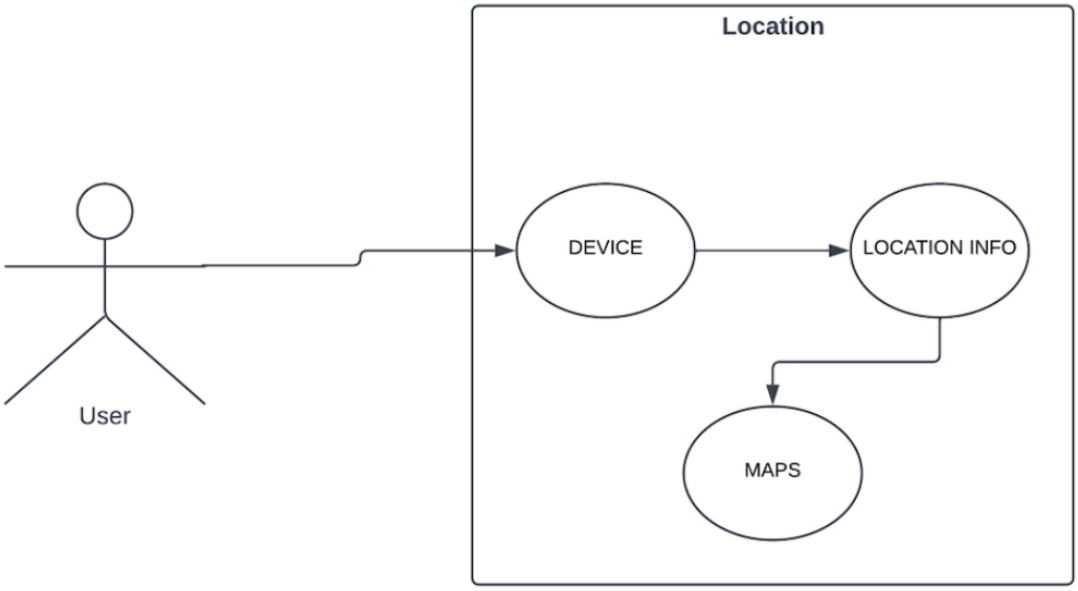
USE CASE TITLE	DESCRIPTION
SELECT FUEL TYPE	It contains the types of gasoline that the user will choose.
LOCATION INFO	Represents the location of the user.
GAS INFO	Represents gas prices and location of petrol stations.
GOOGLE API	Represents Google data.

3.3.2.2.Use Case Diagram

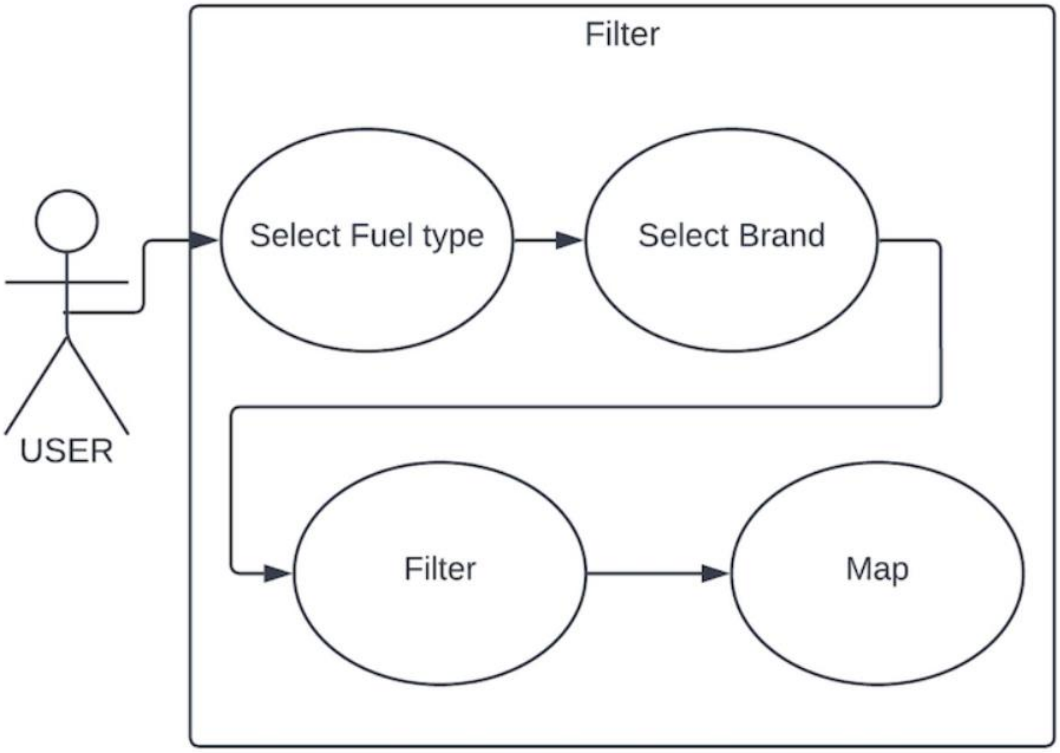
3.3.2.2.1.General Use Case Diagram



3.3.2.2.2.Location Use Case Diagram



3.3.2.2.3.Filter Use Case Diagram



3.3.2.3.Use Case Descriptions

3.3.2.3.1.Maps

Use Case Number	1
Use Case Name	Maps
Summary	Represents google map.
Actor	User, Google API
Trigger	It opens when the user enters the site.
Preconditions	The site must be opened.
Scenario	• It opens when the user enters the site. • Maps prompts the user for location information.
Exceptional Situations & Alternative Flows	• If the user does not enter the location information, she/he cannot access the gas information and the petrol station location.
Postconditions	The user has to enter location information on the map.

3.3.2.3.2.Location Info

Use Case Number	2
Use Case Name	Location Info
Summary	Represents the location of the user.
Actor	User
Trigger	If the user allows location information.
Preconditions	The map is opened.
Scenario	• User's search for the cheapest gasoline. • If the user allows location information.
Exceptional Situations & Alternative Flows	• If the user does not enter the location information, they cannot see the gasoline prices.
Postconditions	If the user does not enter their location, the system will not work.

3.3.2.3.3.Gas Info

Use Case Number	3
Use Case Name	Gas Info
Summary	Represents gas prices and location of petrol stations.
Actor	User, Google API
Trigger	If the user enters the location information, the gas prices are reached.
Preconditions	Location information has been entered.
Scenario	• If the user enters the location information, the gas prices are reached. • Data is pulled from Google API.
Exceptional Situations & Alternative Flows	• Gasoline prices cannot be reached if Google API data cannot be pulled.
Postconditions	The user accesses the gas information.

3.3.2.3.4.Google API

Use Case Number	4
Use Case Name	Google API
Summary	Represents Google data.
Actor	User
Trigger	Asking for gas prices after the user enters the location information and loading the map.
Preconditions	Requesting gas information and map APIs.
Scenario	• Asking for gas prices after the user enters the location information and loading the map.
Exceptional Situations & Alternative Flows	• If the Google API does not work properly, the system will not work.
Postconditions	Uploading gas information and map.

3.3.2.3.5.Device

Use Case Number	5
Use Case Name	Device
Summary	Represents the device that the user will access the website.
Actor	User
Trigger	The user must use a device to access our website.
Preconditions	The device must have an internet connection.
Scenario	• The user connects to the internet and logs into the site.
Exceptional Situations & Alternative Flows	• If the user does not have internet access, they cannot access our site.
Postconditions	Generating location information

3.3.2.3.6.Select Brand

Use Case Number	6
Use Case Name	Select Brand
Summary	It contains the brand from which the user will buy the gasoline.
Actor	User
Trigger	Triggered after user selects petrol type.
Preconditions	The user must have entered the petrol type.
Scenario	• The user selects the petrol type. • The user must select the petrol station brand.
Exceptional Situations & Alternative Flows	• If the gasoline type is not selected, the brand selection cannot be reached.
Postconditions	According to the selected options, the information of gas stations is collected in the filter.

3.3.2.3.7.Filter

Use Case Number	7
Use Case Name	Filter
Summary	It helps the user to select the gasoline type and brand.
Actor	User
Trigger	Gasoline type and petrol station brand must be entered for triggering.
Preconditions	Gasoline type and brand must be entered..
Scenario	• The user selects the type of gasoline. • The user selects the type of brand. • The selected information is collected in the filter.
Exceptional Situations & Alternative Flows	• If the user does not enter the gasoline type and brand, the filter will not work.
Postconditions	The user reaches the petrol and brand he/she wants.

3.3.2.3.8.Select Fuel Type

Use Case Number	8
Use Case Name	Select Fuel Type
Summary	It contains the types of gasoline that the user will choose.
Actor	User
Trigger	The user wants to filter on the application according to certain criteria.
Preconditions	The user must be able to access the application.
Scenario	• The user accesses the application with the device they are using. • User selects fuel type.
Exceptional Situations & Alternative Flows	• If the user cannot access the application for any reason, he/she cannot access the gasoline type selection filter.
Postconditions	The user must finally select the brand for filtering.

4. Software Design Document

4.1. Introduction

4.1.1. Purpose

These files includes informations about how to create a new application with the collaboration of google maps and how to use navigation in your application and using that with full efficiency and this project have informations about the how can you pull informations on the other websites and how can you process the data and using it for your own application with a process of data and constantly updating the data's values.

4.1.1.1. Scope Of The Project

The purpose of our project's SDD documents is to explaining and giving detailed information about the main things and keywords which we will use to build our project and knowledge about how we will applicate them together.The more detail about will be given in the Glossary part.

4.1.1.2. Glossary

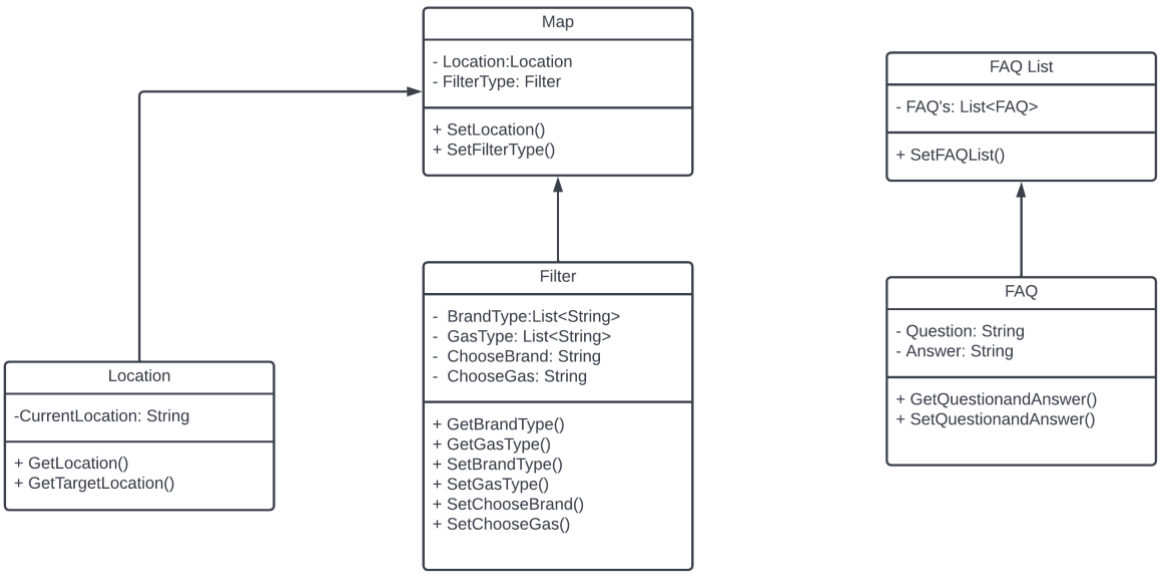
TERM	DEFINITION
Navigation	Navigation is the system that enables us to reach the destination in the shortest and fastest way. Thus, even if we have never been to an address before, we can easily reach an address without asking for the address and without getting lost.
GOOGLE API	The Google Ads API lets developers build applications that interact directly with the Google Ads server. With these applications, advertisers and third parties can more efficiently and creatively manage their large or complex Google Ads accounts and campaigns.
Gas Types	We typically see three types of gas at your local gas station. They're distinguished by their octane rating, which serves as a measure of a fuel's stability. The higher the octane rating, the greater the pressure the fuel can withstand.

TERM	DEFINITION
Gas Brands	Gas brands is a term for different supplier for the gas types and these suppliers prices or gas types can be different about the places where gas stations are or where they can supply their gas.
FAQ	List of questions that people often ask about a particular product or site on the internet and the answers to the questions.

4.2.Architecture Design

4.2.1.System Design Approach

4.2.1.1.Class Diagram



4.2.2.Architecture Design Of Application

4.2.2.1.Main Page

Summary: This page is used by users. The user sees the purpose of the site and what it is used for. The user can access the gas and frequently asked questions page through this page.

Actor: User

Basic Sequence:

- The user must have a device with an internet connection to access the site.
- The user can access the gas page and frequently asked questions page.
- The user can leave the site.

Exception: None

Post Conditions: None

4.2.2.2.Gas Page

Summary: The user can find the most suitable gas price on the route he will go. On this page, the user can select the type of gas and brand of gas station.

Actor: User

Basic Sequence:

- The user must have a device with an internet connection to use the page.
- The user must activate their location on their device connected to the internet.
- User can filter about gas after determining his route.

Exception:

- The user may not be able to find the gas station brand they want to buy gas.
- If the user does not open the instant location, the system will not work.

Post Conditions: The user accesses the desired information.

4.2.2.3.Frequently Asked Questions

Summary: The user accesses the answers to the questions generally asked for the system.

Actor: User

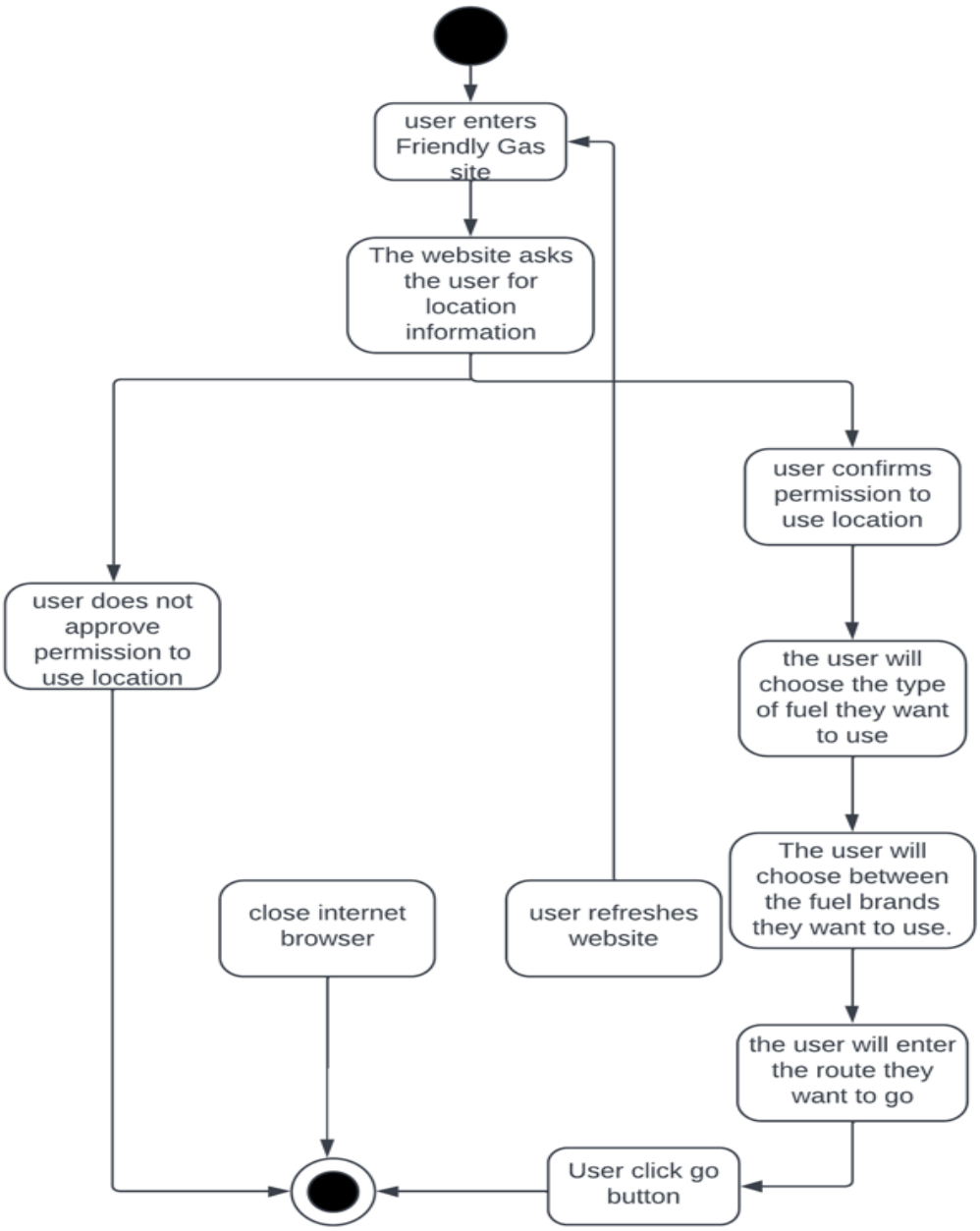
Basic Sequence:

- The user finds the necessary answers about the questions that can be asked.

Exception: None

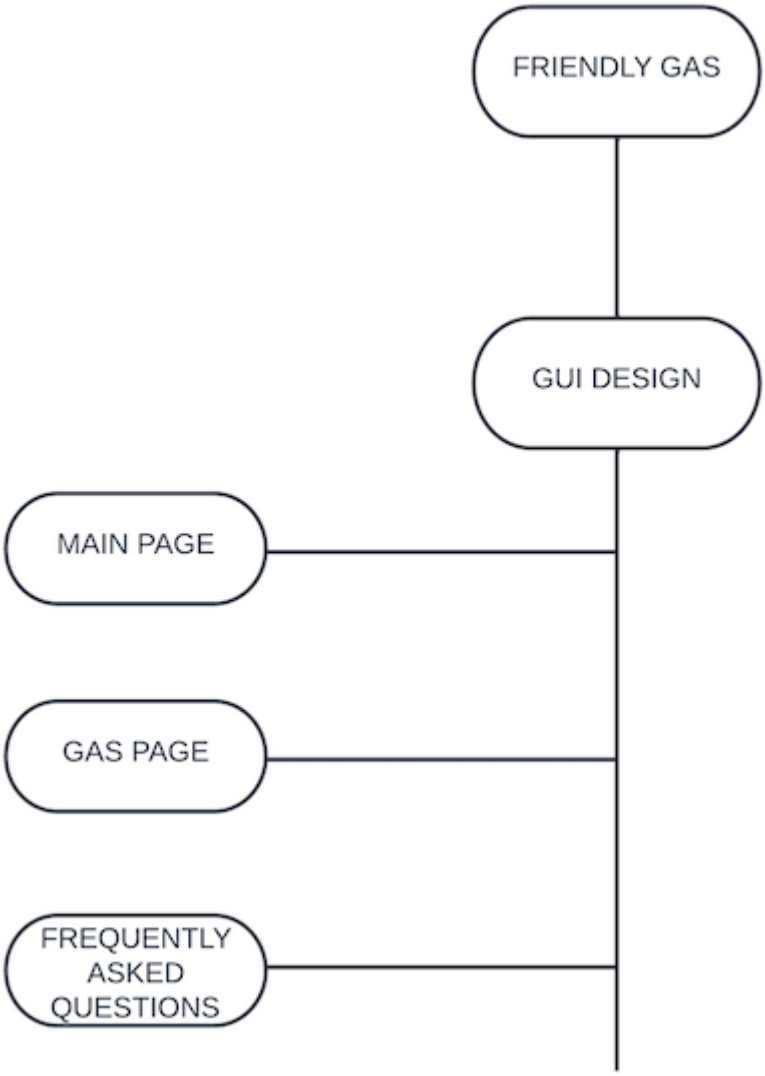
Post Condition: None

4.2.3.Activity Diagram



4.3. Use Case Realization

4.3.1. Brief Description Of Figure



The general scheme of our project is shown above.

4.3.1.1. Graphical User Interface (GUI)

GUI design represents the link between the actors and the system. There are three subsystems in GUI design. These are Main Page, Gas Page and Frequently Asked Questions. Main Page is the first page that the user will reach and its content includes general information of our site. Our Gas Page is the page that will help users find the most suitable gasoline they can buy on the route they go. In the Frequently Asked Questions, it is the page where users can find answers to questions that may be asked.

5. Conclusion

"Friendly Gas" is a website that allows people to find the cheapest fuel.

In our system, there is a filter where people can choose the fuel type and brand so that they can reach the cheapest fuel. People reach the cheapest fuel from the brands on their route after the gasoline type they choose.

Some of the advantages of our project are:

• Helping people to their economy

• To enable people to easily reach the cheapest fuel they want

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