FUEL4U

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National College of Ireland
4th year Technology Management – Business Analysis

SECTION 1

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- Suspending a student from college for a specified time.

- Expelling a student from college.

- Prohibiting a student from sitting any examination or assessment.

- The imposition of a fine.

- The requirement that a student to attend additional or other lectures or courses or undertake additional academic work.

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1. Requirements elicitation and analysis planning

1.1 Introduction

Fuel4U is a website that is aimed at all brackets of people who possess a vehicle powered by fuel or electricity and people who are looking for cheaper fuel. The inspiration behind this website came shortly after the Budget 2022 were it was announced that prices of diesel and petrol would increase due to the increased price of carbon tax to 7.50 euro per ton, this in turn adds approximately 2 cent per liter for petrol and 2.5 cent per liter for diesel, however these prices differ based on different service stations and a lot of other factors. This website displays and compares prices of fuel in any area required by the user in Ireland and directs the user to their chosen option.

These increases in prices are always inevitable year after year as the government's aim is to get as many people driving electric cars as possible, this government demand pushed this website to accommodate electric car users and hybrid users with another feature – where electric car chargers are located and directs them to their nearest or their selected electric car charger point.

1.2 Business need

A website with the standard of deliverables that Fuel4U offers has never been developed as it would undoubtedly be largely popular in society as people are always looking for possible ways to save money.

Prices of petrol and diesel are always inevitably going to increase meaning the demand for finding places that provide them cheaper / cheapest is going to hit a high level and with the expectancy of a lot of people turning to electric cars in the near future, it will benefit users who may need to charge their car.

What this website has to offer is distinctive and unique and it is believed the area it addresses has a lot of potential in terms of ways to save money and cut costs to customers.

Technologies that are planned on being used on the development side of things is WordPress to display the design and the layout of the website and sometime in the future a potential user account feature meaning a database would need to be linked. Due to the current reaction of truck drivers and their protests the issue

around expensive fuel has grown ever so high inevitably leading to more people again choosing electric cars.

The Russian invasion of Ukraine has led to Russia bumping up their prices of oils and fuels which in turn has impacted the fuel prices in Ireland dramatically with the prices of both petrol and diesel exceeding 2 euros per liter in the last few weeks, the government have responded by cutting the excise duty taxes to make the fuel more affordable for society.

Pumps.ie and the Meath county council pages were analyzed to gain an understanding on what is currently offered to road users in terms of petrol and diesel prices and electric car charger points.

1.3 Business case

It was decided to develop this application after other websites and other applications were analyzed prior to the budget 2022 with the following being taken into account after analyzing.
- Do the other websites offer the same or similar information to Fuel4U.
- Is the user interface easy to access, easy to use and simple in terms of reading and gathering information from.
- Where is the data extracted from and who is responsible for updating the prices of fuel.

In terms of profit, it was decided that this website would be developed and given to the public for free and will be nonprofitable. This website isn't only made to benefit the people who actually buy the fuel, it will benefit or impact companies who supply fuel based on the price they charge. This will mean independently owned service stations will gain footfall and popularity as its reported that they have a lower price as opposed to the bigger organizations who run services nationally. A premium version is a potential option wherein users subscribe to the service and gain access to benefits at a fixed price per month.

For the input side of things, there are multiple approaches and ideas that have been taken into account with three honorable mentions, 1. Having users update prices of fuel at service stations when they visit, 2. Using Pumps.ie to extract this information onto Fuel4U and 3. Having real time updates installed into some service stations.

Another possibility is attempting to strike a somewhat partnership with a service station chain of garages to inform users of Fuel4U of fuel prices only in their chain

however this would cut the whole prospect of supplying users with the cheapest options around their location.

1.4 Stakeholder list

1) Service stations
2) Diesel car users
3) Petrol car users
4) Electric car users
5) Business analyst
6) Project manager
7) Developer
8) Government
9) Car dealerships
10) Independent fuel providers

1.5 Requirements Elicitation Techniques

1.5.1 Survey

How the survey will be constructed:

The survey will be made using the Google forms software and will be answered using the link supplied by Google forms.

Participants in the survey:

Drivers of different types of vehicles

- Drivers who use diesel vehicles and frequently purchase it.
- Drivers who utilize petrol vehicles and frequently purchase it.
- Current and potential drivers of electric cars.
- People looking to change the type of car they use.

Dissemination:

This survey will be made available to its target market in two different manners:

1) The link of the survey is shared using different forms of social media, some of which include Instagram and Facebook.
2) The link of the survey will be directly sent to friends, relatives, service stations and dealerships.

A third potential option has circulated, with paperback surveys being distributed throughout service stations and given to customers for feedback however the accessibility of answers will become much more complex and it was decided that the process of it being filled out digitally would be more efficient.

Objectives:

The survey and all of its answers will provide invaluable information into:

1) Who would be interested in using this website.
2) Helping to come up with necessary requirements for the website.
3) How many people are pleased / displeased with current fuel prices.
4) If people are willing to travel further to save more.
5) The move to electric cars.

Questions:

Q1: What type of car do you drive?

- Petrol
- Diesel
- Other

Q2: What are your thoughts with current prices of the fuel you use?

- Too expensive
- Perfect / near perfect price
- Too cheap

Q3: Would you be interested in a website that compares prices of fuel in different places to show you the cheapest option

- Definitely
- More than likely
- Maybe
- More than likely not
- Definitely not

Q4: Would you travel slightly further to get cheaper fuel?

- Yes
- No
- Maybe

Q5: Which service station do you usually buy your fuel off?

- Circle K
- AppleGreen
- Maxol
- Independently owned stations

Q6: Which tend to be the cheapest?

- Circle K
- AppleGreen
- Maxol
- Independently owned stations

Q7: Are you aware of any other applications that compare fuel prices?

- Yes
- No

Q8: How likely are you to move to an electric car in the near future?

- Definitely will be
- Most likely
- Likely
- Not likely
- Not likely at all

Q9: If, you drive an electric car would a e car charger locator come in useful and would you use it?

- Definitely
- Maybe
- No

Q10: With the comparison of fuel prices, would a map feature to direct you to the cheapest place have good use?

- Yes
- Possibly
- Maybe
- Probably not

- No

Q11: On a scale of 1 to 5, with 5 being very beneficial to 1 being not beneficial, how beneficial do you think this website sounds to society?

- 1
- 2
- 3
- 4
- 5

1.5.2 Interviews

Interview 1:

Participants:

An employee in a large fuel service station.

Location:

The interview ideally will be held in person in the service station offices however due to Covid complications it may be needed to take place virtually on Microsoft teams or zoom.

Date and time:

Thursday the 7th of April, 2022

Objective:

To gain and understand a service station workers point of view about the differences in fuel prices over the year, how they have noticed that customers have reacted in terms of how much more or less they spend per visit. To get their perspective on Fuel4U and how they think it will benefit or impact their place of work, to gain their approval on the website and to try gain more requirements or even features based off of the interview.

Potential Questions:

Q1: Based off of the budget 2022 announcement on the increase on carbon tax, how have you noticed the difference it has caused based on how many customers visit and how much per visit customers tend to spend?

Q2: Based off what I have told you about Fuel4U and its features, do you think overall it is a beneficial website to society and what effect do you imagine it will have on your respected place of work?

Q3: Judging on the features outlined for Fuel4U, do you approve of the overall idea of the website and what recommendations or suggestions do you have going forward for Fuel4U?

Q4: Do you think in the near future, that we will see the government issuing harsher taxes on petrol and diesel cars in their attempt to convert everyone to an electric car?

Interview 2:

Participants:

An owner of an electric vehicle.

Location:

Based on Covid-19 restrictions it will be taken place virtually via Microsoft teams or Zoom.

Date and time:

Saturday the 16th April, 2022.

Objective:

To gain an understanding on an electric car owners perspective on fuel prices, how much they are growing year after year, why they use an electric car, the advantages and disadvantages of using an electric car, how they find the overall running of the car in terms of cost, how they think Fuel4U will benefit themselves and other electric car users and their thoughts on how many electric car chargers there are that can be used by the general public.

Q1: Based on the current fuel prices and the increases on them year after year, what is your perspective and did this factor of driving a fuel ran car influence your decision to drive an electric one?

Q2: Are you happy using an electric car, what do you think are the pros and the con of driving one in terms of cost, speed and reliability and would you recommend driving electric to another individual?

Q3: Based off how Fuel4U caters to electric car users, in your opinion do you reckon they will find this website useful and do you believe it will be popular amongst electric car users?

Q4: Are you content with the current amount of electric car chargers that are available to the general public? Or do you believe their needs to be a bigger emphasis on more being constructed?

Interview 3:

Participants:

A senior sales executive in a respected car dealership.

Location:

In the executive's office in the dealership.

Date and time:

Monday the 25th of April, 2022

Objective:

To speak openly with someone in the business who has large experience in selling petrol, diesel and electric cars. To ultimately gain their respected perspective on the potential of Fuel4U whilst also noting their thoughts on the current prices of fuel, the impact it has had on the sale of different cars and how it has impacted their business.

Q1: Based off the features and the deliverables of Fuel4U and what it has to offer, do you think that there is a usage for such a service in today's market? Also what suggestions do you believe will improve the features?

Q2: With prices rising per liter of both types of fuel, what is your perspective on the prices and wat impact has it made on the business in your dealership?

Q3: Has their been a significant increase in the purchases of electric cars? And if so why may that be / not be.

Q4: Do you believe that the pricing of fuel will decrease whether its via government cutting taxes or the pricing of the actual substances being imported?

1.5.3 SWOT Analysis

What is a SWOT Analysis

A SWOT analysis is a technique used to measure the strengths, the weaknesses, the opportunities and the threats of your company or its component(s). It can be used for multiple purposes some of which include being able to plan and prepare for the future by building on weaknesses and strengths, analyzing what competitors do better and looking for ways to top them and examining threats and preparing for them in necessary manners. (BABOK, 2009)

How will the SWOT analysis be made

The SWOT Analysis will be constructed using venngage.com, which is a website used to build and design different types of graphs, reports and analyzations. It will entail the 4 headings in a colorful and informative manner so as the objectives can be fulfilled easily.

Objectives

1) To analyze the four headings in the analysis and look for ways to better them (Weaknesses) or jump at them (Opportunities).
2) To be able to form more requirements based off the analysis.
3) To compare and contrast Fuel4U to competitors.
4) To look for different and unique deliverables to offer to reach a larger target market.

1.5.4 Brainstorming

Why Brainstorming:

Brainstorming was chosen as one of the techniques as it allows you to hear and collect information using multiple perspectives, the session will contain different stakeholders all giving their opinion and feedback on different features and requirements of Fuel4U.

Objective:

To gather multiple stakeholders together for brainstorming sessions to discuss and think of better ways and ideas to improve Fuel4U and its features, to gain feedback on current requirements whilst also thinking of and discussing new ones whilst all in all discussing the best way for Fuel4U to function and to be utilized by society. Other perspectives besides my own will undoubtedly be invaluable to this project in terms of it reaching a high standard and a high potential.

Also another objective from this brainstorming session is to get clarification on which approach should be taken in terms of how the prices of all of these service stations are inputted to the website, whether it be user input or whether a real time update approach would be more efficient or any other alternative.

Who will take part?

I want this session to include of people based around the industries at play, the car industry and the academic industry, The people who will take part will be:

a) A senior sales executive at a car dealership.
b) A road user with a full license of up to 20+ years.
c) A student or a lecturer from NCI.

I personally believe that a involvement from all of these sources will lead to nothing but good and invaluable inputs as they are all experienced / inexperienced users in the sections I want them to provide an input for.

Location:

Based on restrictions at the time the session could possibly be virtually, if not it will take place at an open office space in County Meath.

Date and time:

TBD, sometime in early 2022.

Brainstorm guidelines:

  I.   Mobile phones must be switched off or on airplane mode for the duration of this session.
  II.   Participants must keep the information stated in the session confidential unless with another member.
  III. All members of the session must arrive at least 10 minutes prior to the start time to avoid any late starts to the session.
  IV.   All participants must honor each other and let each other speak.
  V.   Each member can speak when it is the right time for them to speak.
  VI.   Everyone must have some sort of involvement.
  VII. Judgement or malicious behavior of any sort will not be tolerated.

1.5.5 Prototype:

Objective:

The objective of developing a nun functional website in the early stages of the project was to be able to show myself and different stakeholders a somewhat similar visual representation of what the end product will look like and how it will cater to the requirements, this was carried out to be able to analyze how the website currently looks, analyze what's good about it and what needs small change, analyze parts with good potential that can be added on and analyze what parts of the prototype are to be scrapped.

How will it be created:

The first draft and round of wireframes will be created using hand sketches on paper and secondly will furtherly move onto making an online prototype showcasing the hand sketched wireframes using the software WordPress.

Note: the hand sketches and the actual online prototype will be different and will contain different features and ideologies based on how realistic the hand sketched wireframes are and how simple they are to intertwine onto WordPress.

Participants:

The business analyst.

A potential user of the app.

A senior sales executive working in a car dealership.

2. Requirements elicitation results:

2.1 Survey results:

The survey was conducted using google forms with the purpose of the survey being to collect insights and opinions on Fuel4 u and on ways it can improve from multiple different people of different ages, road experiences and what vehicles they use and their opinions on different current issues with fuel prices, different service stations and also an insight to how they will utilize electric cars in the future.

The following questions were asked to gather numerous perspectives on Fuel4U and what requirements could be added / were necessary:

Q1 –

What type of car do you drive?
21 responses

Q2 –
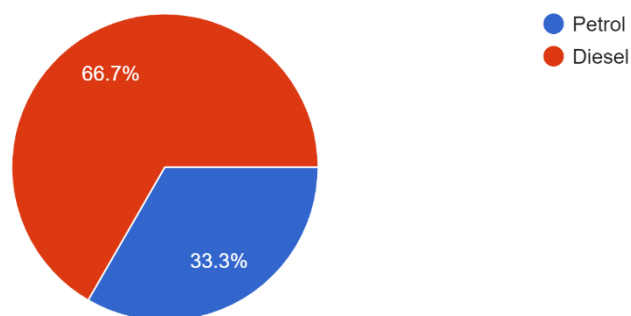
What are your thoughts on the current prices on the fuel you use, if applicable?
21 responses
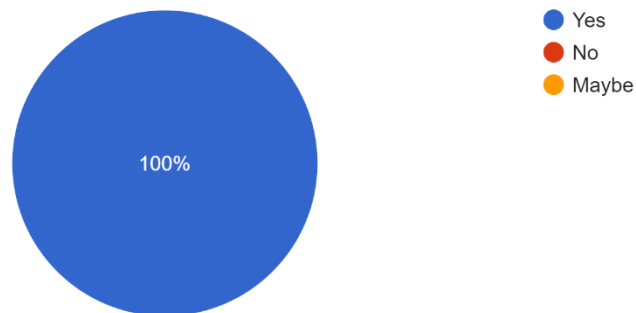

- Too expensive
- Expensive but affordable
- Perfect price
- Cheap

95.2%

Q3 –
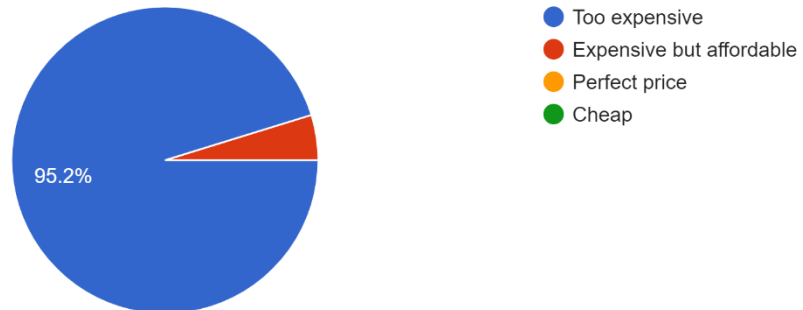
Would you be interested in a service which compares different prices of fuel to showcase the cheapest options?
21 responses

- Yes
- No
- Maybe

100%

Q4 -

What features would you like to see?

13 responses

Filter by location

Any app that could show you a map with current fuel prices of different places would be unreal. A nice option might be that you can select just diesel prices or just petrol prices depending on your car.

proximity and price

Comparison between garages around

Price comparisons

Map locator, possibly reviews of the petrol stations to ensure they are legit

Maybe show special offers in the garages as well?

Cheapest garage and directions to it

What features would you like to see?

13 responses

Price comparisons

Map locator, possibly reviews of the petrol stations to ensure they are legit

Maybe show special offers in the garages as well?

Cheapest garage and directions to it

map

Map to show wheee cheapest fuel stations are

Map with cheapest fuel locations

Fuel price and fuel quality

The distance it is to cheaper fuel and also the average cos of the fuel for the journey to these other garages

Q5 –

Would you travel slightly further to get cheaper fuel?

21 responses

- Yes
- No
- Maybe

33.3%

66.7%
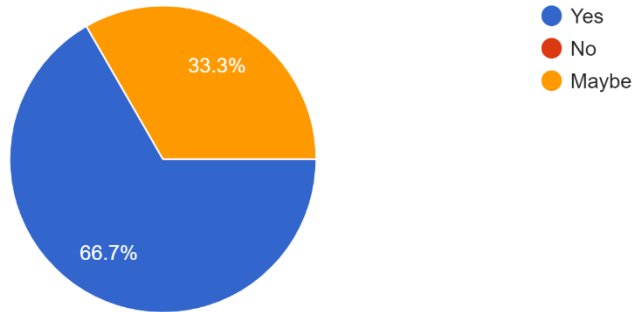
Q6 –

Which service station do you usually use for fuel?

21 responses

- AppleGreen
- Circle K
- Maxol

52.4%

42.9%
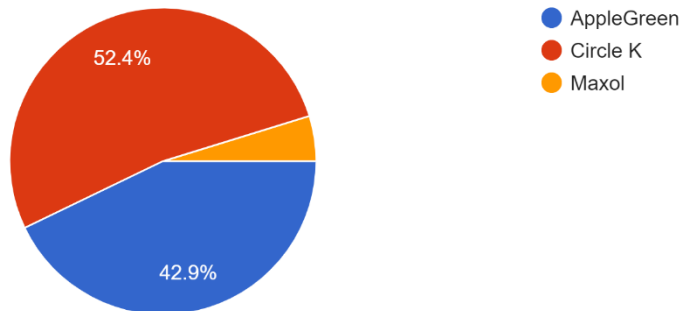
Q7 –

Which tend to be the cheapest?
19 responses
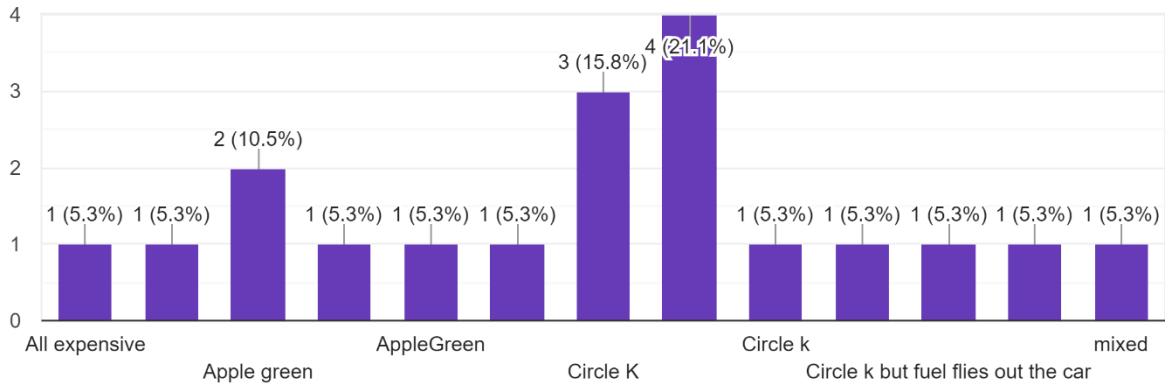
Q8 -

Are you aware of any other services that offer the same features as FUel4U?
21 responses

- Yes
- No

100%
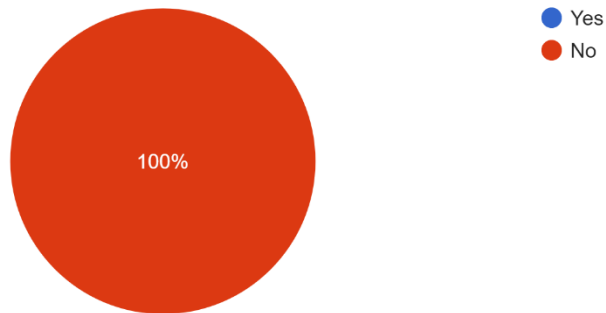
Q9 –

How likely are you to purchase an electric car in the near future?

21 responses
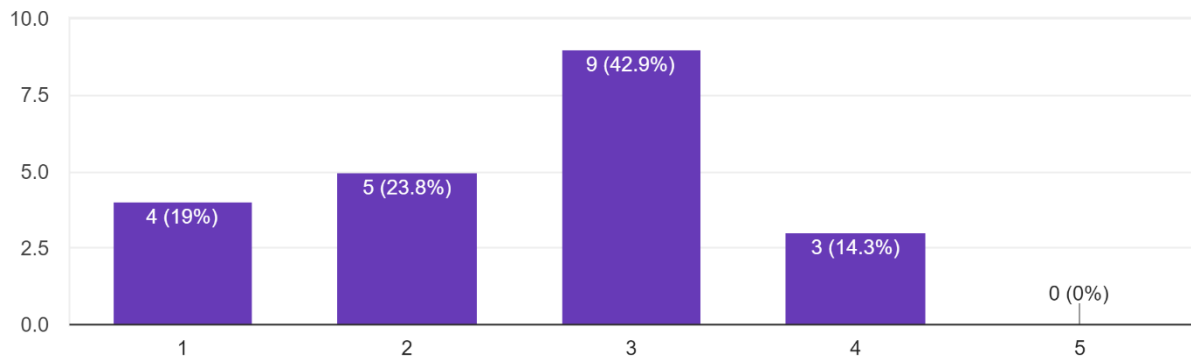
Q10 –

Would an e car charger locator be of use if so?

21 responses
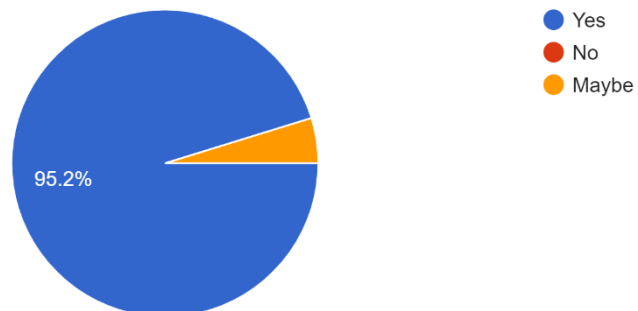
Q11 -

Would a map feature which directs you to cheaper service stations be of use?
21 responses

- ● Yes
- ● No
- ● Possibly

100%
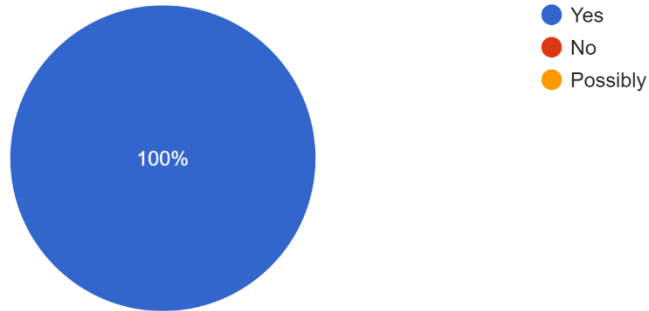
Q12 –

Do you think Fuel4U is beneficial to road users? 1 being very beneficial, 5 being not beneficial at all

20 responses
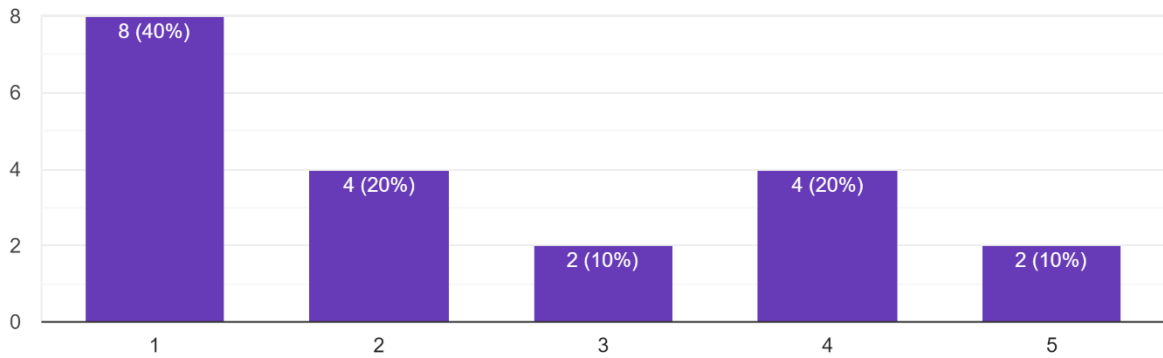
Survey conclusion:

The survey was sent out to multiple different people who are users of the road and who drive different types of vehicles. the survey was conducted to gain different road users insights on many different aspects of being a road user from perspectives on process of fuel to features they believe will benefit them.

The overall count of people who answered the majority of the questions was 21, this was a higher number than what initially aimed for with it being 15. This number gave me a perfect number of responses and gave me a valuable insight as to what Fuel4U will do good, what it will do bad and on what ways it can be improved.

Key points taken:

- The majority of people drive fuel powered cars mainly diesel.
- Everyone who answered the survey believes the prices of fuel are too expensive.
- Most people would travel slightly further to gain access to somewhat cheaper fuel.
- Circle K is the most used service station and also reported to be the cheapest service station with 52.4% of people stating they usually use Circle K for fuel and also 52.4% people stating it is the cheapest. (11 people)
- 100% stated that they are unaware of any other applications / services that offer the same services as Fuel4U.
- Over 50% are likely to purchase an electric car in the near future.
- 70% believe that Fuel4U is beneficial to road users.

Results of survey:

After consideration of results of the survey, the results showcase that there is a requirement for:

- A list feature showing cheapest to most expensive.
- A feature that lets you select petrol / diesel / electric to filter them options.
- A map feature to direct users to their required station / point.
- A feature stating the distance to the further options to show if the further journey will save money.
- Special offers in each service station.
- A fuel quality feature.
- A review section of each garage.
- A filter by location feature to cater to each users unique location.
- An electric car charger point feature to accommodate the popularity.
- A feedback feature on the website.
- A possible phone application form of Fuel4U.

2.2 Interview results:

Interview 1 results and conclusions

Q1: Based off of the budget 2022 announcement on the increase on carbon tax, how have you noticed the difference it has caused based on how many customers visit and how much per visit customers tend to spend?

- Since the increases in taxes and prices from the budget and the war, I have noticed that around the same amount of people do visit the store (AppleGreen, however I also notice that when people do purchase fuel it tends to be a less than before.

Q2: Based off what I have told you about Fuel4U and its features, do you think overall it is a beneficial website to society and what effect do you imagine it will have on your respected place of work?

- I believe that it will benefit road users, people always look to save money and ultimately this is what I hear Fuel4U will aid in doing.
- We (Applegreen) will probably lose business due to us having one of the highest fuel prices in the area.

Q3: Judging on the features outlined for Fuel4U, do you approve of the overall idea of the website and what recommendations or suggestions do you have going forward for Fuel4U?

- Yeah it seems a great idea and I think it will be popular and used by a lot.
- Accuracy in prices can be a problem so if you can find a way to address that it would be a great help. Also a fuel card service wherein premium customers obtain one to use.

Q4: Do you think in the near future, that we will see the government issuing harsher taxes on petrol and diesel cars in their attempt to convert everyone to an electric car?

- Yes I believe due to their demand of trying to get everyone to drive electric in the future they will impose harsher taxes and prices.

Conclusion:

I spoke to a sales assistant in a large fuel station chain, Applegreen. They have been working there for over a year so has seen the prices of fuel fluctuate.

Q1 – Gave me an insight to how their garage has been doing since prices plummeted and how much people spend since. This validates the need for Fuel4U and the features it has to offer.

No better way to confirm it by interviewing someone on the frontline of fuel.

Q2 – Showed me the usefulness of this application after I discussed the potential features with them and gave me an insight on to how it would affect their place of work.

Q3 – Gave me a valuable insight into what features they thought would add great value to the application.

A fuel card collaboration feature (Possibly virtual card) was raised and brought to my attention to add to the features. Would aid in saving customers more money and striking partnerships with chains which in turn could lead to a real time update feature which was also raised.

Premium customers were discussed for the app wherein they pay for the service and are granted a fuel card.

Q4 – Asked when the electric car feature was up in the air, this helped to confirm it and make it a must for Fuel4U. Also showed me the worrying future for fuel ran cars.

Interview 2 results and conclusions

Q1: Based on the current fuel prices and the increases on them year after year, what is your perspective and did this factor of driving a fuel ran car influence your decision to drive an electric one?

- The increasing prices are a push factor from a fuel car, they are already high enough and I anticipate them to go even higher.

- This was one of many factors, the fact that its cheaper to charge your car using electricity and the fact I can charge it in the perimeter of my own house as well.

Q2: Are you happy using an electric car, what do you think are the pros and the con of driving one in terms of cost, speed and reliability and would you recommend driving electric to another individual?

- Yeah they are great to use and I would recommend them to anyone, cost and reliability I'm extremely satisfied with but speed id be a bit less satisfied with. They seem to be slower than fuel ran cars.

Q3: Based off how Fuel4U will cater to electric car users, in your opinion do you reckon they will find this website useful and do you believe it will be popular amongst electric car users?

- Yes for sure, I have no current knowledge of other applications or websites that offer the same services and the ones I do are very limited and only show a few in a certain area that doesn't even direct you to it, so yes I believe it will have a large use for electric car users along with people looking to move to an electric / hybrid car.

Q4: Are you content with the current amount of electric car chargers that are available to the general public? Or do you believe their needs to be a bigger emphasis on more being constructed?

- No currently I am not, I believe that isn't enough and where there are some there is only a select few that are usually occupied (shopping centers etc.). I think that to keep up with the growing popularity more must be built.

Conclusion:

This interview was conducted purposely to get feedback and an opinion on the electric car charger feature, the interview took place with an owner of an electric car charger who has owned it for over two years.

Q1 – This showed me why people electric cars and why they are so popular, validating the e car charger feature.

Q2 – Satisfaction levels are high with electric cars in terms of cost meaning they will not go back to a fuel car in turn having a use for Fuel4U.

Q3 – Fully confirmed my decision to put the electric car charger feature into fuel4u and to tie it in with the mapping feature to direct users to it.

Q4 – I conducted this specific question to get an intake on the satisfaction with the amount of car chargers they are available to the general public as I believe if the satisfaction levels are low (which they are) I would use the platform I have with Fuel4U to make an appeal to the government to build more, so a petition / feedback feature would be added in wherein electric car users can give their valuable feedback and know it will be used to help them be catered to.

Interview 3 results and conclusions

Q1: Based off the features and the deliverables of Fuel4U and what it has to offer, do you think that there is a usage for such a service in today's market?

- Yes, due to there being little to no other applications or websites that offer similar features to Fuel4U, I personally believe that there is a massive gap for this in the market and it has great usability. I myself would find great usage from such a service.
- Having a real time update service for fuel prices would add lot of value to Fuel4U.

Q2: With prices rising per liter of both types of fuel, what is your perspective on the prices and what impact has it made on the business in your dealership?

- The increases in prices of fuels has undoubtedly had an impact on the dealership, it has made the value of electric cars rise, petrol and diesel cars have also increased in value due to their not being a lot of cars widely available.
- In terms of what I think about the prices of fuels going up, I believe it will continue to rise which in turn will add value to your service, but also it will impact drivers young and old immensely.

Q3: Has there been a significant increase in the purchases of electric cars? And if so why may that be / not be.

- Yes there has been (an increase) and a massive one at that, this is due to a number of reasons ranging from the current prices of fuel to the time edging closer to petrol and diesel cars being banned of the roads. (2030)
- Hybrids are also gaining popularity due to its split usage of fuel and electric.

Q4: Do you believe that the pricing of fuel will decrease whether its via government cutting taxes or the pricing of the actual substances being imported?

- I believe eventually the price to import it will go down after everything going on (Ukraine) boils down and gets resolved.
- However, I believe the government will continue to impose higher percentages of taxes on fuels ultimately making it more and more expensive.

Conclusion:

The interview conducted with this senior sales member of staff in a dealership added nothing but good value in the importance and the validation of features for Fuel4U.

Q1 – Stated the importance of a service like fuel4us in todays market, due to it being unique and due to fuel prices increasing year after year, also liked the application and stated it had great usability in today's market.

Validated and was impressed with the features offered however would be more impressed with a real time update on fuel prices.

Q2 – Spoke about the prices of fuels from their perspective and their dealerships perspective stating the impact it has had on their dealership and the impact it has on drivers.

This again showed me the value Fuel4U would add in the market due to the fuel prices being high.

Q3 – Gave me an insight into the value that electric cars impose in today's vehicles market with electric vehicles gaining more and more popularity ad time goes on, stated the reasons as to why the value is going up.

This validated the electric car charger feature that is offered in Fuel4U, this insight to the value of electric vehicles showed the importance of the electric car charger feature being added in.

Also gave a valuable look at the growing popularity of hybrid cars.

Q4 – Their opinion on whether prices of fuels will increase or decrease showed me the value of fuel4u for the long run, as they believe the prices will continue to increase this shows the longevity Fuel4U possesses.

Requirements outcomes from interviews :

Real time updates feature to ensure fuel prices are 100% accurate at all times.

The electric car charger feature to accommodate electric vehicle drivers.

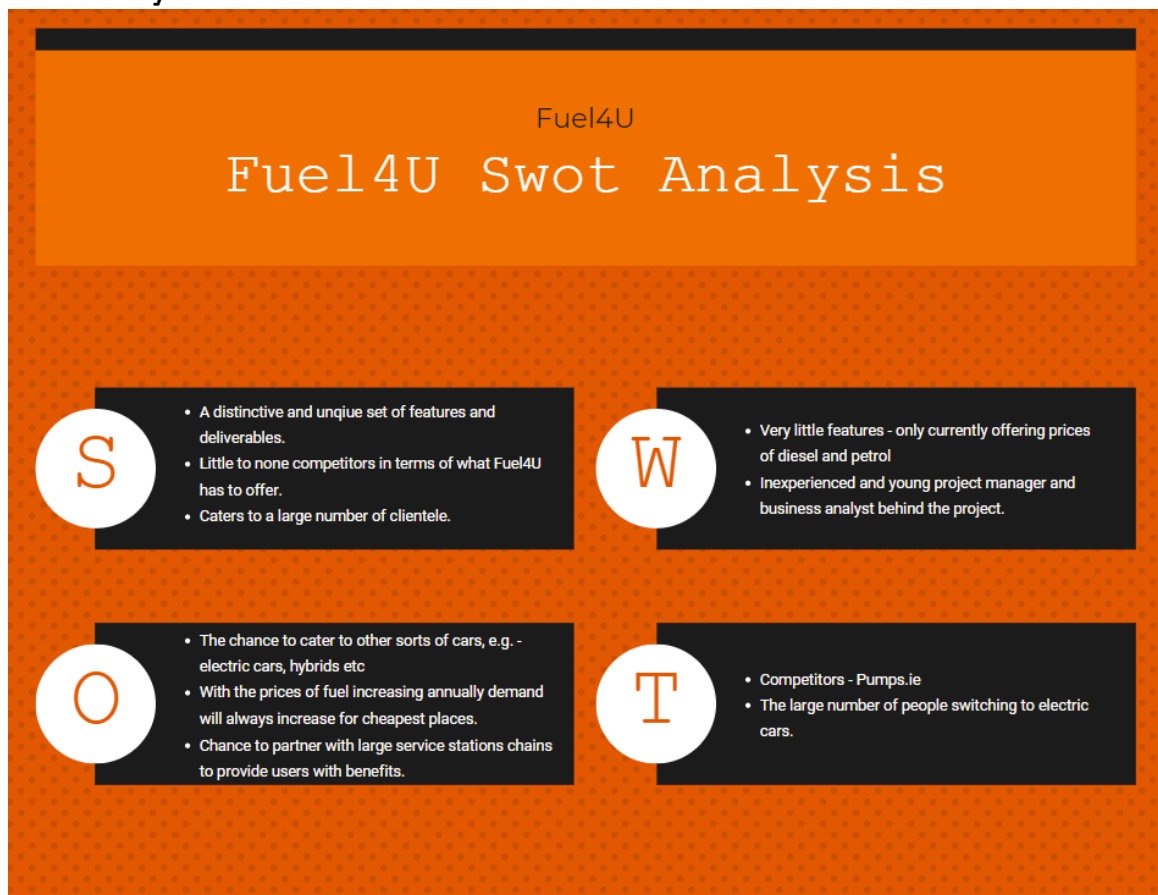Cover all / most of the service stations in Ireland.

Have all electric car chargers in Ireland displayed on the application.

Include a section which showcases the benefits of owning / purchasing a hybrid car.

Have a feedback section to aid in catering to road users.

Map function for service stations and also for electric car chargers.

2.3 SWOT Analysis results:

SWOT Analysis conclusion:

This analysis was created and thought out early (Early November, 2021) when the project idea was basic and simple, when the only feature proposed was the differentiation in fuel prices and displaying which places offered cheaper fuels then others. What the analysis gave me was that more features needed to be thought of and offered to users.

After analyzing the threats and the weaknesses, the decision to try to turn some of them into opportunities or strengths was key to part of this analysis. Based off of this, I then chose to add the electric car charger feature based off the "The large number of people switching to electric cars" threat, wherein users get directed to the nearest or their electric car charger of choice by using a brand new thought out map feature which also guided users to their selected service stations as opposed to having to leave the app and utilize a different maps application whilst catering to electric car users as well.

Analyzing competitors was another topic this SWOT Analysis raised to the surface and it made me find Pumps.ie, which offer somewhat similar features to Fuel4U and I went to

work on ways to better this website and landed on better functionality, more simplistic, better design and ease of use.

Results of the SWOT Analysis:

The SWOT Analysis showcased that the following requirements are needed:

- A feature dedicated to other road users such as electric cars / hybrid cars etc.
- A map feature to guide and direct users to their requested location.
- A home page stating the overall ideology of behind Fuel4U.
- To provide simple features.
- To have good functionality on all devices.
- Good design that's easy to see and is appealing.
- To make the website as easy as possible to use.
- The requirement to make a possible newsletter / update feature where users are prompted with the latest updates on fuel prices / electric car updates.
- The requirement to possibly to form a partnership with a service station brand in turn offering users of Fuel4U with promotions, incentives or discounts.

2.4 Brainstorming results:

The brainstorming sessions were carried out over a small period of time with multiple different parties, these parties included:

a) A senior sales executive at a car dealership.
b) A road user with a full license of up to 20+ years.
c) A student from NCI.

The session took place on Saturday 12th march 2022 to ensure all parties involved were free to participate.

The session was a complete success for fuel4U and for it going forward, the sessions aided in requirements being gathered from respectable sources of people who have a lot of knowledge and experience for when it comes to many different types of cars and also a source from someone who could give Fuel4U beneficial directions from an academic source.

The session took place at an open office space in Meath, originally it was planned to be carried out virtually, however due to the easing of restrictions in late January I decided that the output of the session would be more valuable and efficient if we all gathered in person.

All of the rules that had to be abided by were stated at the start of the session and after this the session commenced, and I am happy to report that no rules were broken whatsoever.

The session lasted a total of one hour from 12 midday till 1pm, wherein everyone was delegated 10 minutes to speak, then 20 minutes at the end was delegated to collaborate and combine points and feedback. Whiteboard was in use for all to use to be able to further explain points they wanted to make, multiple pages and notebooks also were present and were used throughout the session.

All ideas were encouraged and promoted to enable everyone being able to speak their mind in what was determined a no judgement zone.

Brainstorming session:

The senior sales executive added great experience and insight to this session, due to their knowledge in the car industry, made great points about what would be of use and what would not.

Key points from the Senior sales executive:

- Validated and was impressed by the electric car feature, believes that it will have massive usage in future, same with fuel feature.
- Concern over the non-existent features catered to hybrid cars.
- Would like if a news feature was added in, to showcase current news to do with everything to do with the road.
- Discussed the simplicity of the website with all parties and stressing its importance as a lot of experienced road users wouldn't be too skilled with technology.
- Search feature will be handy to navigate quickly to users required point.
- Possible feature advertising car dealerships with different offers was proposed.

The road user with 20+ years' experience also added great knowledge and insight due to their long experience of being on the road, agreed with senior sales executive on most things.

Key points from the road user:

- Liked the concept of the cheapest service stations, has seen fuel prices at all levels over their years of driving and stated it would have always came in useful.
- Electric car charger feature would be of no use, believes fuel powered cars are superior.
- A voice navigation option would add great depth to aid people who are actually driving. (Fuel4U tells users using voice different options and alternatives in their area, users can select by speaking back.)
- Always keep simple design even when new features are added.
- Keep website simple not too many features added in.
- No advertisement sections to aid in simplicity.

The student from NCI has little to no road experience, this was an extremely valuable perspective as not only is it catered to experienced users, I wanted an opinion from someone with little to no experience and knowledge, in agreement with the other two but made some unique and valuable points from an academic point of view.

Key points from the student:

- Doesn't like the free option, believes users should be charged to utilize the service.
- Concerns about marketing, use collaboration to advertise.
- Great usage, however no feature to accommodate new road users (simple feature explaining fuel prices and how to use fuel pumps and electric car chargers)
- Likes the feedback feature, used to gain valuable feedback to improve service.

Results from the brainstorming session:

After analyzing the brainstorming session the following requirements were gathered using the brainstorming session:

- Feedback page
- Cheapest service stations feature
- Electric car feature
- Simplistic design for website
- Search feature
- Contact us feature
- Map feature
- Premium feature

2.5 Prototyping results:

Wire frames set 1:
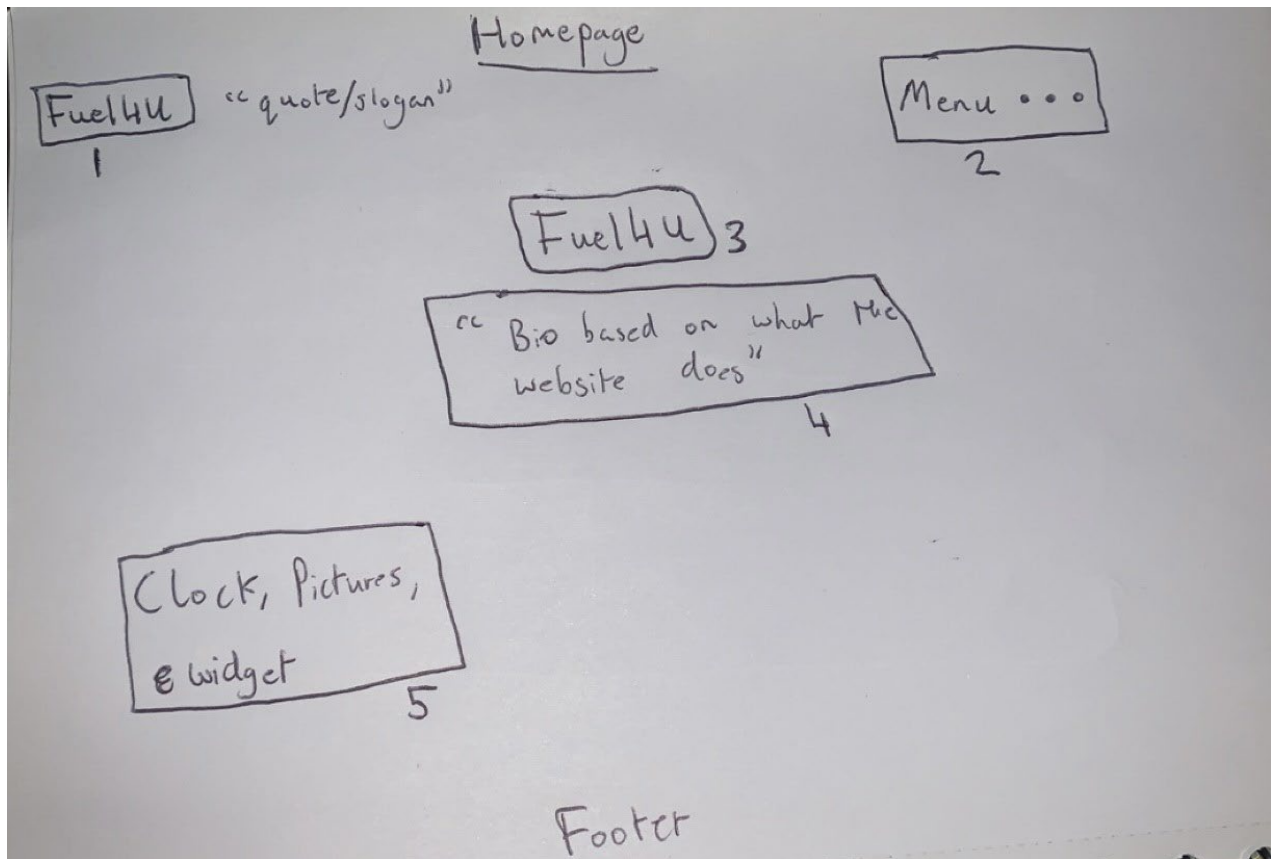
Homepage:

Is the main and home page of the website were users start their experience and may allocate back to it if needs be. The main aim of the user interface is to be a simple looking website to make it as easy to use as possible for the user.

1. The name of the website accompanied with a homepage link on all pages to direct users back to the homepage.
2. The menu sidebar feature, Is used to help users navigate through the different pages. When clicked will prompt users with different selections based off the other page names.
3. Logo with the name Fuel4U as a center point on the page to give the page a sense of ownership and to make it identifiable.
4. A simple yet effective biography stating what the website offers and its objective to inform users what we offer and what they can expect from the rest of the website.
5. A appealing widget to give the website a sense of simplicity and to help users track time or other necessities.
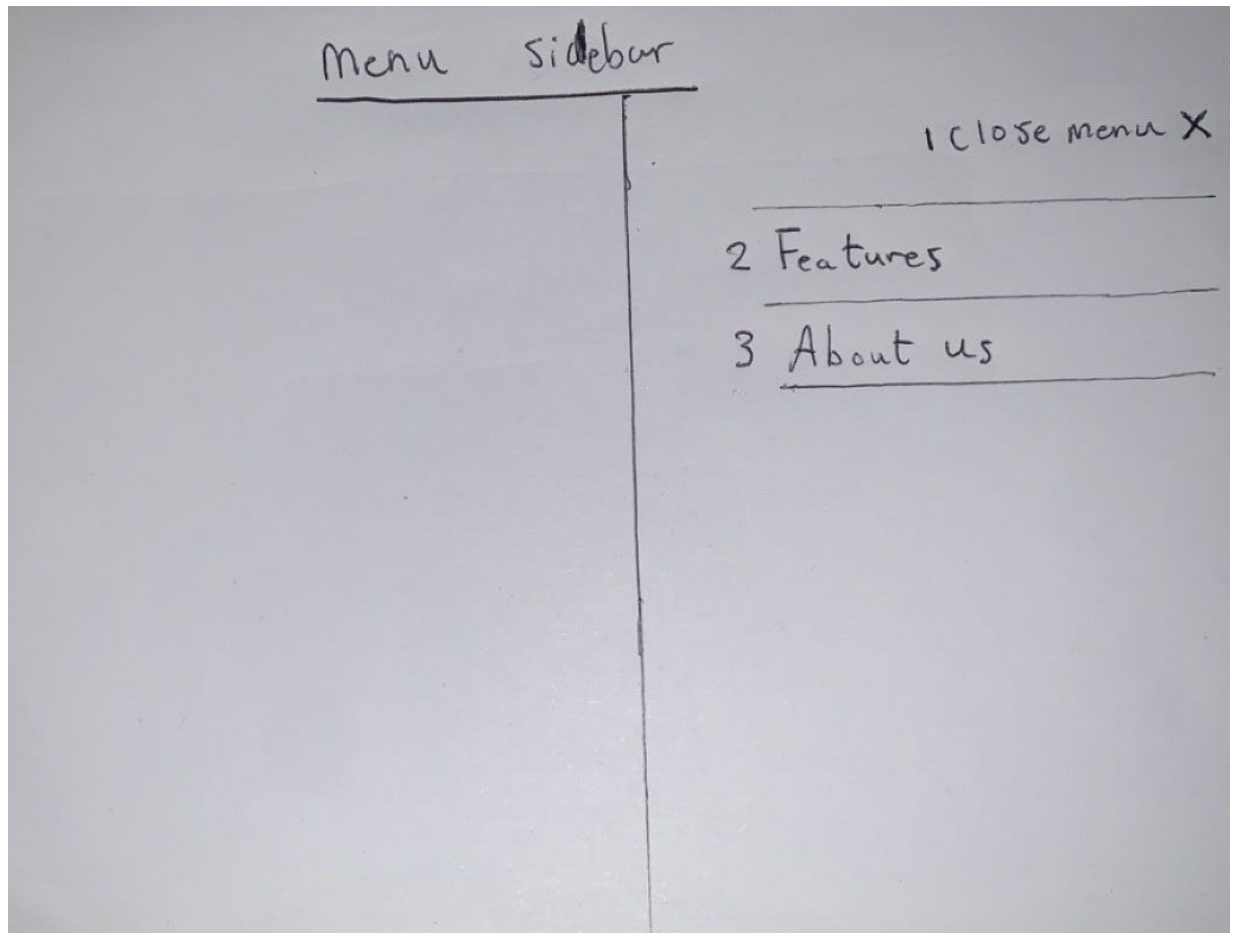
Menu function:

Utilized to showcase the other pages on the website to users whilst giving them the option to access them by clicking on the page of their choice. The main page that the user was on prior to accessing the menu function is still partially displayed on the left to ensure the user doesn't get lost.

1. The close menu function is made available to users to give the users a chance to return to the page they were on, a sliding animation carries this request out.
2. The features page is displayed here and accessible via a click, order of importance is taken into account for how the pages are displayed hence why features are on top.
3. The About us page is accessible from clicking this text and will direct the user here after the action takes place.
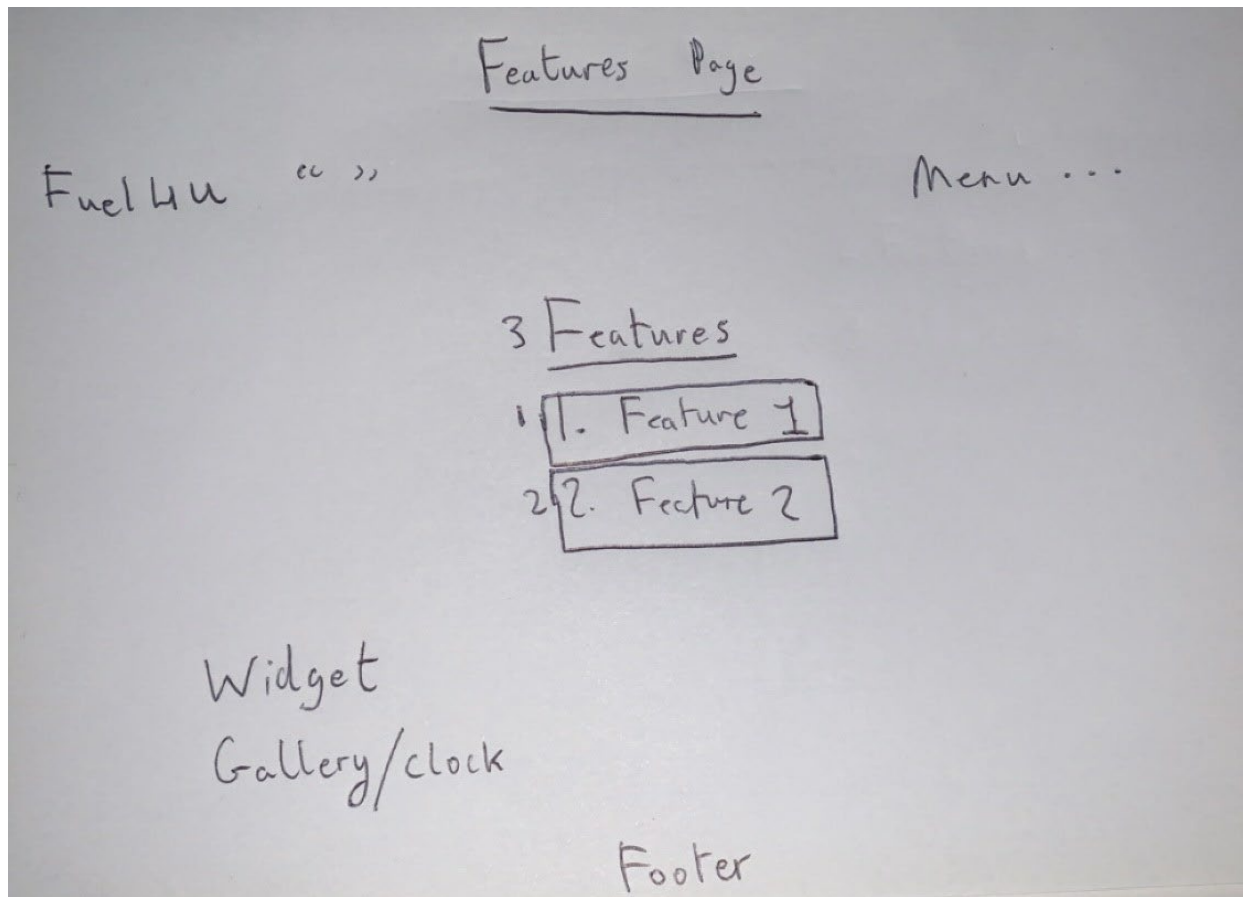
Features page:

This page is the page that states the features to the user and directs them to the features by the user pressing on their chosen feature they wish to utilize. It keeps the same layout and structure of the homepage to maintain simplicity for the website.

1. This represents feature number 1 and will direct the user to it when clicked. Will be the fuel comparison and map features.
2. This entails feature number 2 and what it has to offer, it is accessed by clicking. Will be the electric car charger locator feature.
3. Features is titled in a large and visually appealing manner to inform users of what they are doing.
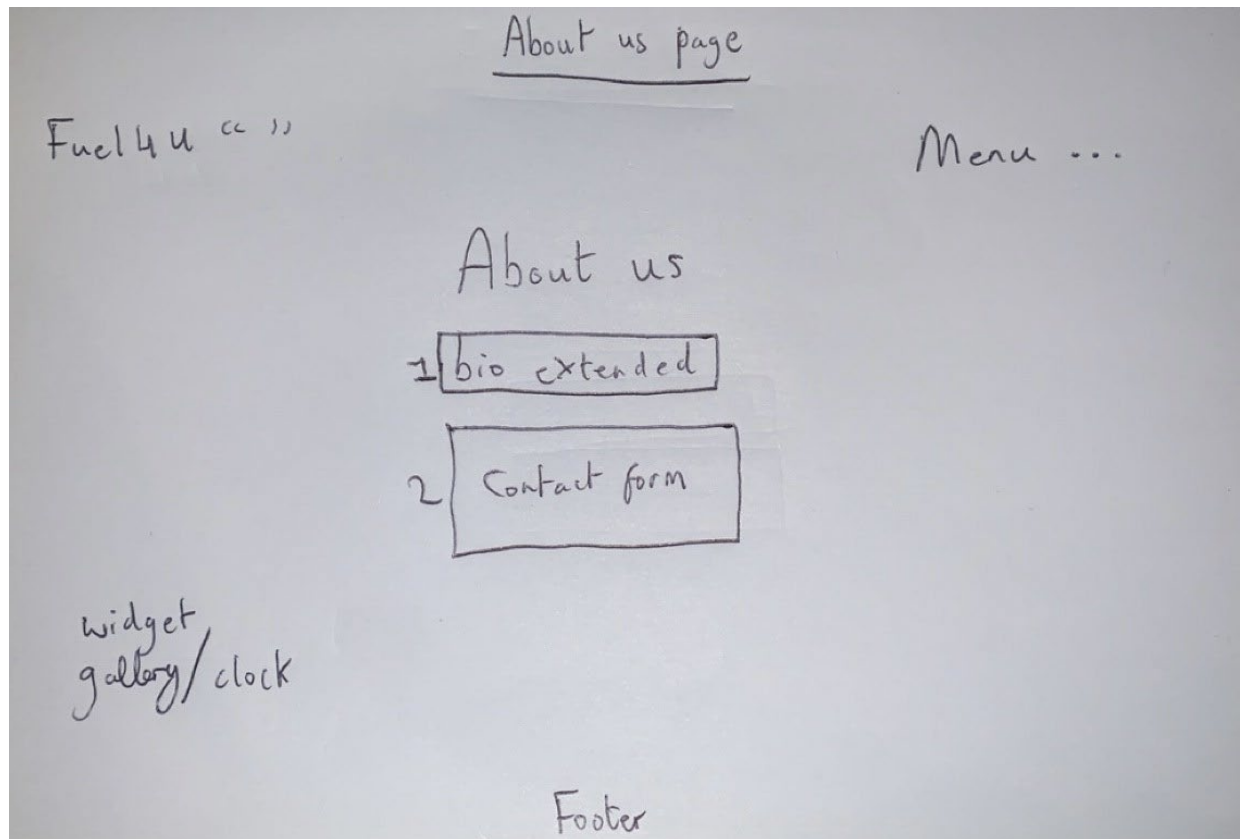
About us page:

A page dedicated to supplying users with an extended biography on what Fuel4U does, what the website is about and what Fuel4U offers. Also a contact form to be able to provide us with feedback to better our website or let us know what we are doing right.

This page is kept simple by keeping the same layout and design as seen on the other pages and the about us heading is displayed to be visually appealing and informative.

1. This part is dedicated to informing users a little extra in terms of what Fuel4U offers to them.
2. This features function is to provide the user with an easy way to give us feedback.
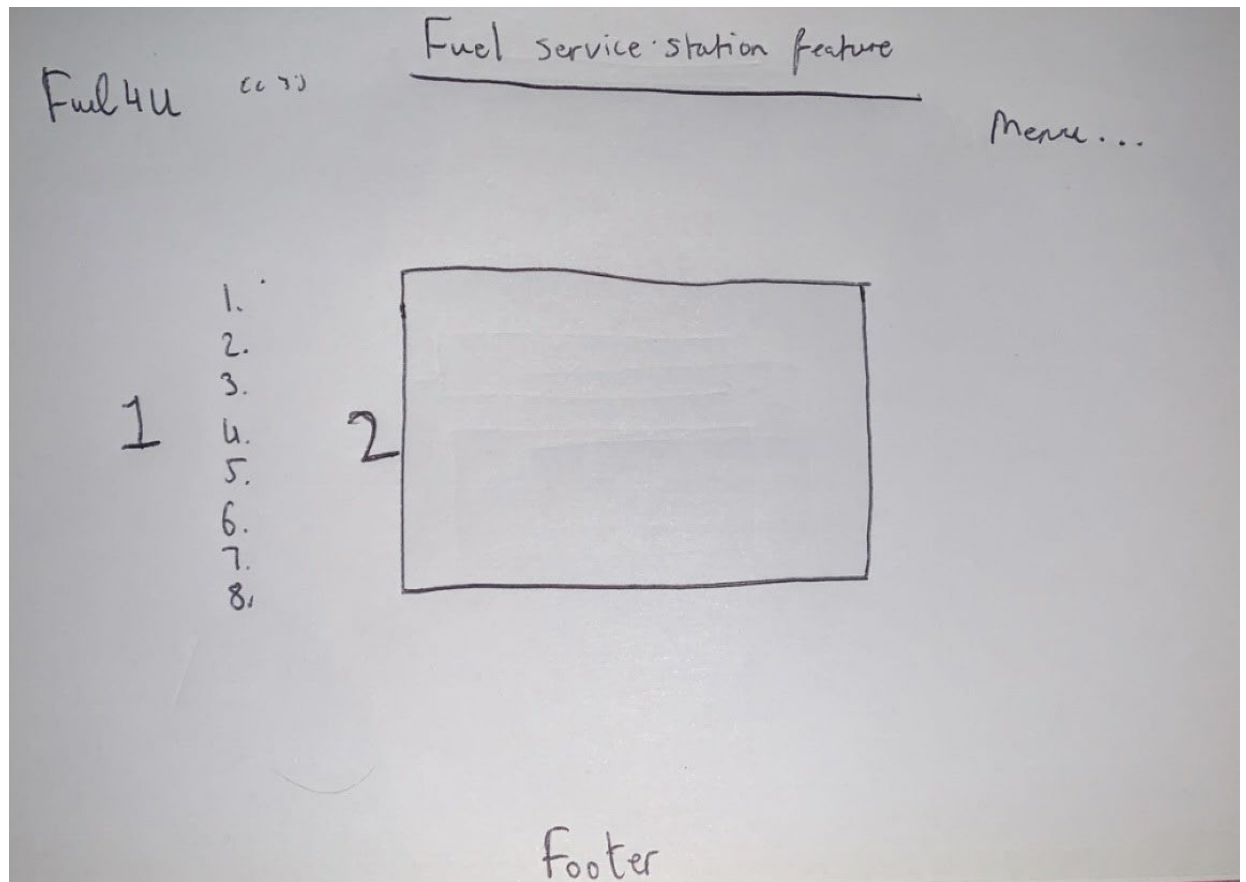
Fuel service station locator and comparison feature:

This is the user interface for the fuel service feature and this is responsible for lecturing the users with the cheapest service stations based on their current / selected location and directing the users to it based off whether the user wants to or not.

1. This list is in order based off the cheapest being 1 and the most expensive being 8, here the user can compare each one based off price and location and when they make their selection it brings them onto the next feature.
2. This feature is a map function which retrieves the users selection and their current location and finds the shortest way for them to get to their requested destination.
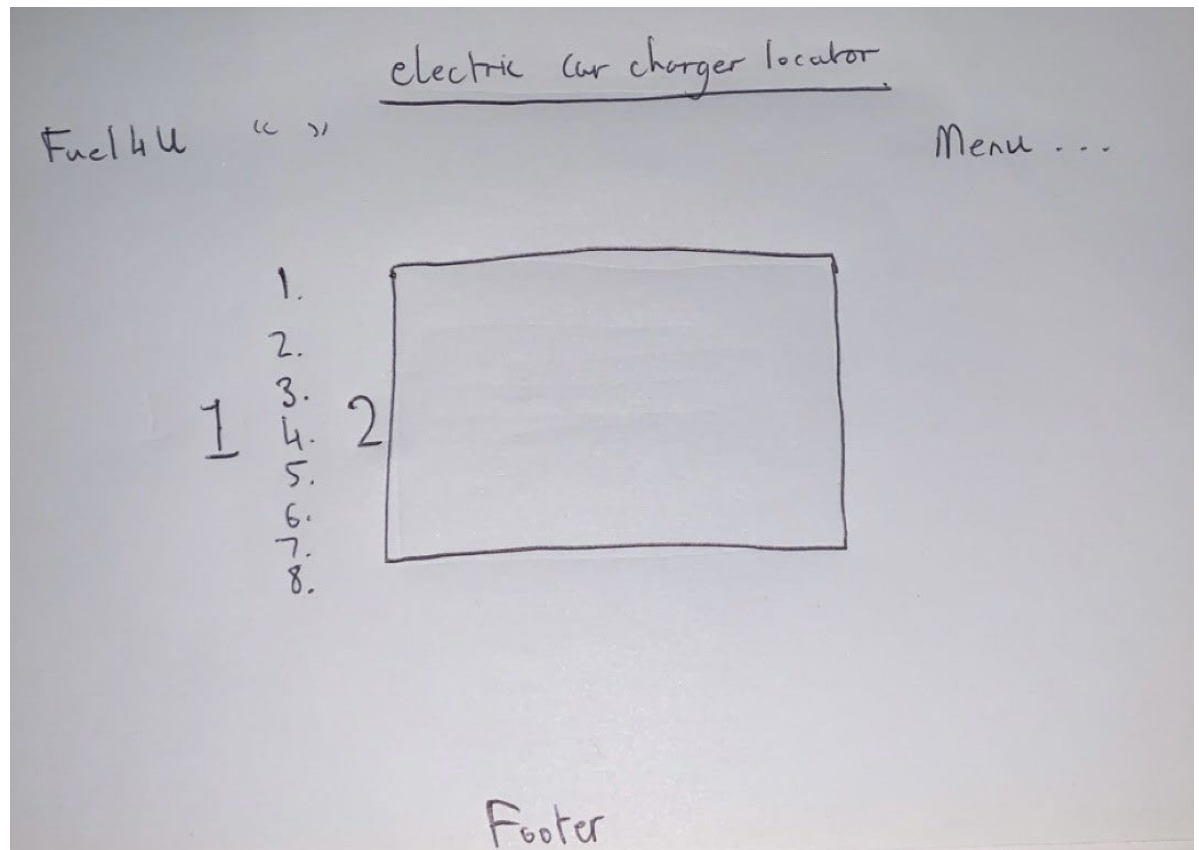
Electric car charger locator feature:

This page is responsible for supplying the electric car charger locator feature to users.

1. This list feature is responsible for displaying nearby electric car chargers in order of which is closest to the user wherein the user can select which option they like.
2. The map feature covers the directing the users to their chosen electric car charger from their current location at the time.

Protype first draft:

Home page:
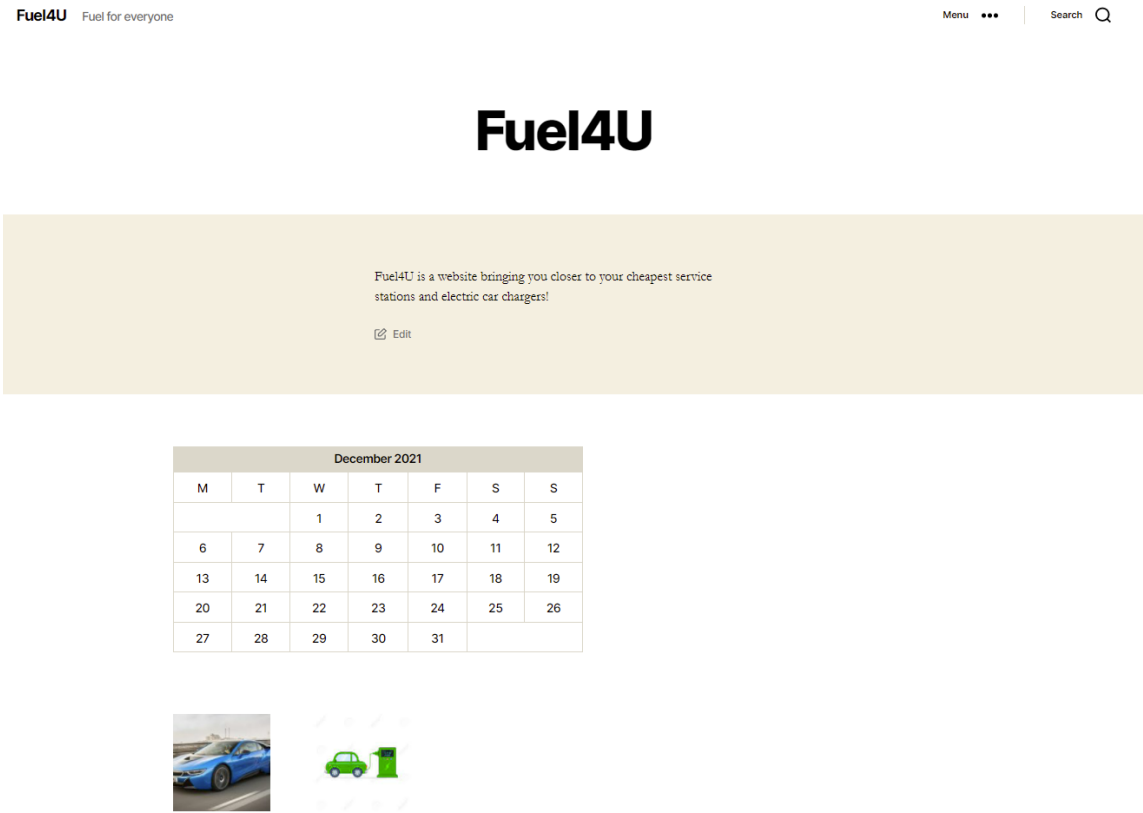
Menu function:
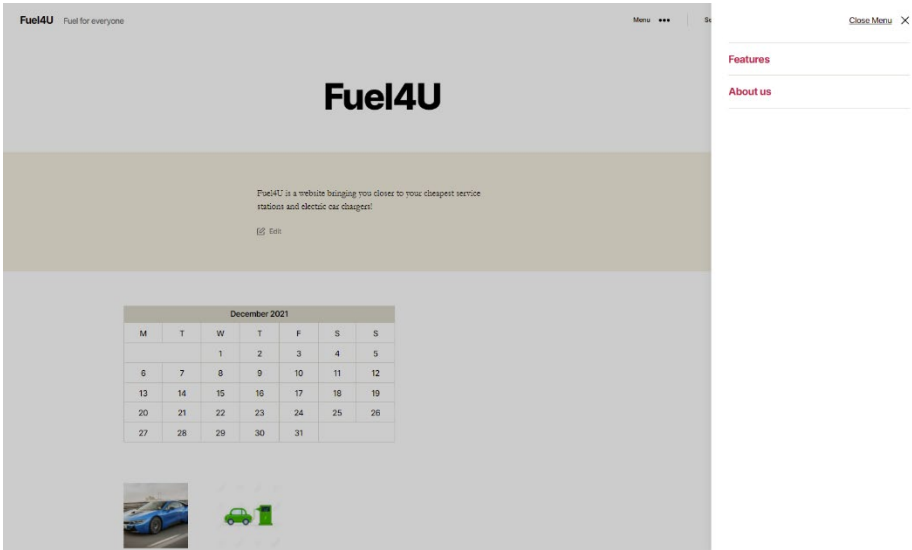
Feature page:

Features

1. Service stations near me
2. Electric car chargers near me

✎ Edit

	December 2021					
M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

About us page:

About us

Fuel4U is a website designed and catered to essentially save you money, whether its by directing you to a cheaper alternative fuel provider or getting you to your nearest electric car charger.

We cover everything with sustainability in terms of fuel and electricity in cars here on this site so look no further!

Your name

Your email

Subject

Your message (optional)

SUBMIT

✎ Edit

	December 2021					
M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Prototype and wireframes conclusion:

Based off the first hand sketched wireframes the features and the simplicity is there however after analyzing it with participants we came to the conclusion that more needs to be thought of and put in to make the website look more appealing, to offer more features and to add some more requirements. A few mentions were:

1) A requirement that takes the users car engine size into account when choosing the cheapest option and calculates based off distance and price of fuel at their selected location.
2) A requirement too show what else the service stations have to offer.
3) A contact us page with the contact form being moved there along with details on how to email and phone Fuel4U and having the about us page dedicated to the history of the project
4) To make the website look more car orientated as it's what it is aimed at.

The current prototype is simple and easy to use which is a key requirement for the usability for this website, however after analyzing it we again decided that more needs to be offered to users whether its them wanting to use Fuel4Us features or whether it is them just showing an interest in the overall project.

2.6 MSCW analysis

1. Map feature
2. Cheap – expensive sort list
3. Electric car charger feature
4. Simple design
5. Ease of use
6. Search function
7. Filter by location
8. Cover all service stations in Ireland
9. Cover all e car charger points in Ireland
10. Home page with ideology
11. About us page

Should have

1. Phone application version
2. Diesel / petrol / electric distinguish
3. Calculate longer journey average cost
4. Real time updates
5. Good functionality on all devices
6. Website being car orientated with design
7. Menu function

Could have

1. Fuel quality feature
2. Review of service stations
3. Collaboration with service station chains
4. Special offers in service stations
5. Premium version

Wont have

1. Hybrid car section showcasing benefits
2. Newsletter
3. Car engine size
4. Journey calculator

The Moscow analysis took place to analyze the many different requirements and to then categorize them into different headings based off importance to the website, the analysis gave me an insight as to which requirements Fuel4U 'must have', 'should have', 'could have' and 'won't have'. The analysis will aid in the carrying out of the IEEE requirements specification.

3.0 IEEE Requirement Specification

3.1 Introduction

Purpose:

The purpose behind the IEEE requirements specification document is to identify, state and list the many different functional requirements and also the non-functional requirements that are necessary in the completion of the Fuel4U service. It's also proposed these requirements meet with the needs of the website and that the end product meets all these requirements to ensure the application meets the standard and requirements set out by the functional and the non-functional requirements. Prior to completion to the requirements being listed, they will be reviewed to ensure it is up to the correct standard.

Scope:

Fuel4U will offer a service to road users in a new and simplistic way, with the main deliverable of it being to direct road users to the cheapest service stations to essentially save them money. With the prices of fuel always increasing the demand for a service like this grows, it will have great usability amongst society. Along with catering to fuel powered car users it also caters to electric car users with a map feature wherein the user can view a visual map display of their nearest electric car charger points and can choose which one they like and get directed directly to that point.

Based off the MSCW analysis, it will aid in determining which features and functionalities are in scope and which are out of scope.

Essentially what Fuel4U offers to road users is a way of finding cheaper fuel sources to society and I believe it's exactly what society is in need of.

3.2 Functional / Non-Functional requirements categorization

Requirements	(F) Functional	(NF) Non-Functional
Map	X	
Cheap sort list	X	
Electric charger point feature	X	
Simple design		X
Ease of use		X
Search function	X	
Filter location	X	
Cover all Ireland – service stations		X
Cover all Ireland – electric charger points		X
Home Page		X
About us page		X
Premium version		X
Phone application version		X
Car type distinguish	X	
Calculate journey feature	X	
Real time updates		X
Good functionality	X	
Website being car orientated		X
Fuel quality feature	X	
Review service stations section		X
Collaboration with service stations		X
Special offers in service stations		X
Menu function	X	

3.3 Functional Requirements

Functional requirement 1	
ID code:	FR1
Requirement title:	Map feature
Description:	The map feature will need to be able to be accessed for users to direct to their required destination. Whether it's a service station or an electric car charger point.
Where to find:	The map feature will be accessible under the 'features' section in the website.
Priority:	Must have.
Source:	Interviews, SWOT analysis, Survey, Brainstorming

Functional requirement 2	
ID code:	FR2
Requirement title:	Cheap – expensive sort list
Description:	This function will enable users to display the cheapest service stations around them, in a sorted manner from the cheapest to the most expensive.
Where to find:	This feature will be accessible to users when opening up the map feature and when filtering their location.
Priority:	Must have.
Source:	Survey, Brainstorming

Functional requirement 3	
ID code:	FR3
Requirement title:	Electric car charger feature
Description:	A unique option tied in with the 'map' feature wherein users can select that they only want electric car charger points displayed on their maps and can be directed to their desired point.
Where to find:	The electric car feature will be selectable on the right top corner of the map.
Priority:	Must have.
Source:	Interviews, SWOT analysis, Survey, Brainstorming

Functional requirement 4	
ID code:	FR4
Requirement title:	Search function
Description:	Enables users to navigate their way through the website freely, making it easier and quicker for users to find what they are looking to use.
Where to find:	The search bar will be present and usable on all pages and is located on the right top corner of the page.
Priority:	Must have.
Source:	Brainstorming

Functional requirement 5	
ID code:	FR5
Requirement title:	Filter location
Description:	The filter location feature will aid in finding specific results in a selected location based on what users input. 2, 5 and 10 kilometers options will be made available to select, also a customized radius will be made an option.
Where to find:	This will be present at the left top corner of the map, in a drop down menu format when selected.
Priority:	Must have.
Source:	Survey

Functional requirement 6	
ID code:	FR6
Requirement title:	Car type distinguish
Description:	This feature will cover the difference between diesel and petrol cars, displaying results based off the users input. E.g. – diesel selection only showcases diesel prices.
Where to find:	This function will be present above the map.
Priority:	Should have.
Source:	Survey

Functional requirement 7	
ID code:	FR7
Requirement title:	Journey calculator feature
Description:	A feature dedicated for people who are willing to travel further for cheaper fuel, after the input is in it will state if the user is better off in terms of saving money, on whether its worth the extra journey or not.
Where to find:	This feature will be accessible when selecting a service station on the map.
Priority:	Should have
Source:	Survey, Wireframes, Prototype

Functional requirement 8	
ID code:	FR8
Requirement title:	Good functionality
Description:	Good standard of functionality on all devices to aid in being able to navigate and utilize Fuel4U easily.
Where to find:	Will be present across all of the website.
Priority:	Should have
Source:	SWOT analysis

Functional requirement 9	
ID code:	FR9
Requirement title:	Fuel quality feature
Description:	A feature wherein users can see the star rating of fuel quality in selected service stations.
Where to find:	When a service station is selected, the star rating of the fuel quality will be present above the name and location.
Priority:	Could have
Source:	Survey

Functional requirement 10	
ID code:	FR10
Requirement title:	Menu function
Description:	A function dedicated to easy navigation, when this command is selected the user will be presented with different sections of the website to navigate to.
Where to find:	Located in the right top corner to the left of the search function.
Priority:	Must have.
Source:	Business analyst

3.4 Non-Functional requirements

Non-Functional requirement 1	
ID code:	NFR1
Requirement title:	Simple design
Description:	A requirement devoted to keeping the website simple to aid in the ease of use of the website.
Where to find:	Will be present throughout all aspects and sections of the website.
Priority:	Must have.
Source:	SWOT Analysis, Brainstorming

Non-Functional requirement 2	
ID code:	NFR2
Requirement title:	Ease of use
Description:	This requirement is to aid in users having a easier time utilizing the features on the website and being able to navigate through it with ease.
Where to find:	Will be evident across all pages and sections in the website.
Priority:	Must have.
Source:	SWOT Analysis, Brainstorming

Non-Functional requirement 3

ID code:	NFR3
Requirement title:	Cover all of Irelands service stations
Description:	This requirement devotes itself to covering all of the service stations in Ireland, to cater to everyone in the country and not just select areas.
Where to find:	Presented through the map function wherein users can view all service stations across the country.
Priority:	Must have.
Source:	Interviews

Non-Functional requirement 4

ID code:	NFR4
Requirement title:	Cover all of Irelands electric car charger points
Description:	Devoted to bringing users access to all electric car charger points all across Ireland.
Where to find:	Tied in within the map feature wherein users can view all point across Ireland.
Priority:	Must have.
Source:	Interviews

Non-Functional requirement 5

ID code:	FR5
Requirement title:	Home page
Description:	A home page of the website dedicated to being the center point of the website, where users can display different aspects of the service and navigate easily throughout the page. Accessible on the website by clicking the heading of the page.
Where to find:	Will be the page that is prompted to the user when they visit the website.
Priority:	Must have.
Source:	SWOT analysis

Non-Functional requirement 6	
ID code:	NFR6
Requirement title:	About us page
Description:	A page accessible through the website wherein users can essentially see everything to do with the service and what it has to offer, topped off with a feedback function.
Where to find:	Access through the menu function.
Priority:	Must have.
Source:	Brainstorming, Interviews, Wireframes, Prototype

Non-Functional requirement 7	
ID code:	FR7
Requirement title:	Phone application version
Description:	Developing a phone application version to cater to ease of use and to users who will be using their phone to access Fuel4U,
Where to find:	Will be made available on play store and app store where users will have to download the application to their device.
Priority:	Should have.
Source:	Survey

Non-Functional requirement 8	
ID code:	FR8
Requirement title:	Car orientated website
Description:	The website being designed in a way that caters to what the service is essentially catered to, car and road users. Designed using images and visuals of different cars and fuel orientated images.
Where to find:	Will be visually present throughout the full website with each page having different or similar designs.
Priority:	Should have.
Source:	Prototype, Wireframes

Non-Functional requirement 9

ID code:	NFR9
Requirement title:	Review section for service stations
Description:	A section underneath each unique service station, represented via a star rating and comments in chronological order underneath reviewing the service station. Gives users an insight into if prices there are usually low / high, offers etc.
Where to find:	Accessed when selecting an individual service station and visually represented underneath the selection.
Priority:	Could have
Source:	Survey

Non-Functional requirement 10

ID code:	NFR10
Requirement title:	Collaboration with service stations
Description:	A requirement which entails the need to collaborate with service station chains to aid in multiple amenities such as real time update fuel prices, offers on display through Fuel4U in service stations and potential incentives and discounts on offer to users of Fuel4U.
Where to find:	In the about us page, if collaborations are formed the organizations it has been formed with will be outlined on this page.
Priority:	Could have
Source:	SWOT Analysis

Non-Functional requirement 11

ID code:	NFR11
Requirement title:	Special offers for each unique service station
Description:	A feature dedicated to offering more to customers by showing what is on special offer in their selected store, caters to more than fuel needs.
Where to find:	Accessed when the user selects their service station of choice via the map feature.
Priority:	Could have.
Source:	Survey

Non-Functional requirement 12

ID code:	NFR12
Requirement title:	Premium version
Description:	A version offered to customers wherein they pay a monthly subscription free in return for premium features such as a possible discount on fuel, offers in different service stations etc.
Where to find:	Will be accessible by contacting us using the about us page.
Priority:	Could have.
Source:	Interviews, SWOT analysis, Survey, Brainstorming

4.0 References

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2022. [online] Available at: <https://www.meath.ie/council/council-services/roads-and-travel/parking/e-car-charge-points> [Accessed 1 May 2022].

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5.0 Appendix

5.1 Project Proposal

5.1.1 Objectives

The main objective of my final year project is to prepare a highly detailed requirements specification document for a new website named Fuel4U, The objective will be carried out utilizing a wide range of potential stakeholders opinions and views.

For the actual website, Fuel4U will have multiple objectives. Some of these objectives include:

- To provide users with fuel prices at certain fuel service stations / garages and compare it to other places.
- To provide electric car users with a map feature that displays all of the current E-car chargers that can be used for free.
- To be able to determine the cost of fuel and how much the user will use getting to their desired destination. (Based off car engine size, route taken etc.)
- All in all to save users money and time by showing the cheapest and closest places to fuel / recharge their car.

The primary personal objective is to exceed any stakeholder expectations of my project and provide the best possible project I possibly can by having set deadlines for certain requirements and sticking to a schedule.

5.1.2 Background

After hearing the news from the budget 2022 of petrol going up by 2.1c and diesel going up 2.5c per liter, I decided to researched and look through the internet for any applications / websites that showed and compared the prices of petrol and diesel at different service stations. After not being able to find any really besides Pumps.ie, I decided to go ahead with the idea of bringing a high quality website that compares prices of petrol and diesel and offers many other features to users.

The popularity of driving cars is increasing year by year with younger and older people and everyone is always looking to save money on fuel so I came up with this idea to aid people who drive with this and as a full licensed driver myself I personally would find this project very useful.

I also decided that just having the feature of comparing fuel was too basic so I thought about two ideas and features that would benefit users with electric cars and users who need directions to their desired service station.

5.1.3 State of the Art

After doing some research I found the website Pumps.ie, which is a very basic and non-informative application that displays prices based off customer input which can lead to multiple problems.

My application will go above and beyond by having the e car chargers feature, the map feature and I hope to get in contact with potential garage chains to collaborate with the application where the application displays the prices of fuel in real time and not off of customer input. As I believe having customer input as the way to display information can lead to a lot of potential errors such as wrong or misleading information.

A distinctive application is the goal and one that's not like any others whatsoever, one that has a lot of potential going forward where new features can be easily added based off interior or exterior factors.

5.1.4 Technical Approach

My first task is to use carefully chosen requirements elicitation techniques to analyze stakeholders to be able to progress on with the project.

After coming up with the idea of the project, I then had to think about how I would create the website in a way that fits and is in line with all of the requirements. Using WordPress will be the way I will construct this website.

The steps for the completion of this project are as follows:

1. **Requirements collection:**
   This step will include meeting with numerous stakeholders and chatting about a number of different things such as who the project is catered towards, validate the features of the website and talk about anything extra that could be added in.

   Coming up with the best and most efficient requirements elicitation techniques for this project will be a massive step in the completion of this project too, some notable techniques include:
   1. Brainstorming
   2. Interviews
   3. Prototyping
   4. SWOT Analysis
   5. Surveys
   6. Document analysis
   7. Decision analysis

2. **Develop a prototype:**

   I would then go on to develop a prototype of the website and show the prototype to selected stakeholders to gather feedback to help with making the best possible website. Using their feedback to formulate extra requirements and features

3. **Developing the website:**

   One of the last steps is to develop the actual website using WordPress in line with the requirements gathered throughout the duration of the project. I aim to have this step completed sometime before the project showcase so that any changes can be made.

4. **Completing the documentation:**

   Completing all aspects of the documentation and tidying the documentation up when finished will be the final step in this project, all to a high standard.

5.1.5 Technical Details

To develop the website for this project I have decided to use WordPress. I have chosen to use WordPress as it has many attractive features.

Ease of use is one of these and is essential as I aim to focus mainly on the requirements and analysis side of this project so having WordPress to showcase this data will help a lot in the overall running of this project.

The customizable side of WordPress being up to the developed is another thing that attracted to me as I can customize the website in line with whatever way I'd like to.

Also the fact WordPress saves all of your progress automatically and that it can be accessed using any computer device is another reason I decided to go with it.

In terms of how I want my website to look and to be. I would like it to be very informative with ease of use and easily accessible.

5.1.6 Project Plan
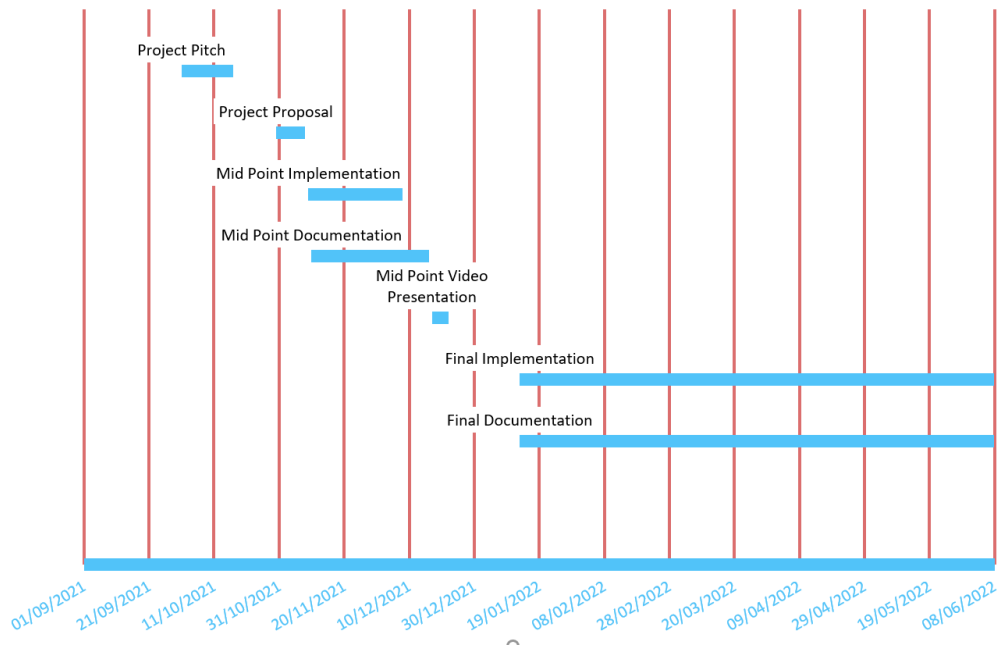
The above is a basic Gantt chart which will be updated with a lot more detail as time goes on throughout the duration of this project.

The majority of the work as seen above will be carried out after all of the midpoint uploads but by this time I aim to have:

1. Most of the requirements if not all identified.
2. To have all of the stakeholders analyzed and identified.
3. To have carried out some requirements elicitation techniques such as have held interviews with selected stakeholders.
4. Have a prototype finished for the website.

After having all of this completed and ready to go this will greatly aid the final stretch of work from the new year to the latter stages of the project.

5.1.7 Validation/Verification

In terms of how I will validate the user requirements is I will host a number of meetings and interviews with many different identified stakeholders and run through the list of requirements with them whilst taking in and utilizing their feedback to add more or alter the existing requirements.

6 Reflective diaries

6.1 October

Didn't tackle any of at the project and its early stages at all in September as I struggled with thinking of an idea so October was the month I formulated the idea for the project in the early stages of the month. With the Budget 2021 on October 13th, after I had seen the impact of prices of fuel due to the budget, this was what drove the idea behind the service of offering users a chance to see the cheapest service stations within their area.

After my idea got approved after I pitched the idea of the project, I was suggested to take a look at ways to offer more to users of the application as opposed to keeping it one dimensional and just offering fuel. This initially drove the idea to add in the electric car charger points through the same way service stations were on display.

Busy month with assignments and college work but managed to pitch the idea, get it approved and expand on its features. Met with my lecturer multiple times and has productive and insightful conversations.

Overall very happy with how the month ended in terms of how the project had came together and the potential I thought it had going forward also started on the project proposal which was due to be uploaded in November.

6.2 November

Was a month packed with a lot of college assignments and work, however in the early segments of the month of November, I was tasked with uploading the project proposal document. So for in terms of the project itself, I delegated the first week to finishing the proposal which I had started the previous month and perfecting it. Uploaded the document on the required date and from a project point of view little work was done in this month, just very small few opening bits of it including identifying stakeholders, the business case, business need and the introduction.

The rest of the month I mainly aimed and challenged myself to finish different assignments to a high standard meaning the main focus of this month after the proposal was on assignments.

I ended this month with the hopes of delegating much more time and effort on my project with the intention of stating all my requirements elicitation techniques and getting a select few of them, with the lingering thought of the impact the Covid-19 pandemic would have on fulfilling some of the techniques.

6.3 December

With the upload for the midpoint documentation due on the 21st December (later changed to 23rd December), I decided to get whatever assignments were due done and completed early on to delegate at least 12 days to carrying out the midpoint uploads. Due to their being no exams and most terminal assignments being due in January 2022, this enabled me to put full focus on my project.

With that being said, I completed the portions of my project I had planned to for the upload, I identified all elicitation techniques i wanted to carry out and then went out to fulfill two of them. The two being 1. Prototype and wireframes and 2. SWOT Analysis. Shortly after completing the necessary documentation for the midpoint upload, I proceeded to then create a presentation stating my progress and ambitions and completed my presentation via Microsoft teams. Consistent communication with my supervisor helped me a lot.

6.4 January

The bulk of this month was dedicated to completing terminal based assignments for various modules, in terms of the project nothing was advanced or completed or even started on.

Good news was announced for some techniques, sometime in mid-late January the easing of restrictions were announced in tune meaning I could complete the brainstorming and the different interviews in person as oppose to the original plan to complete them utilizing a virtual host. This was great news as I believe better work and better communication gets done in person.

The start of semester two commenced at the end of January meaning my studies were back underway after a hectic January with assignments.

6.5 February

With the restrictions eased I put a plan into motion of how and when I would carry out different techniques, and following this plan I contacted the necessary people to organize details. Again in terms of work actually done on the project again no advancements were made besides cleaning the documentation up, organizing it and adding in a table of contents.

Worked mainly on assignments and my studies in this month with my plan of action to fulfill the rest of the techniques in the following months.

6.6 March

March was when I began to carry out some elicitation techniques, with the 12th march 2022 being designated to hosting the brainstorming session. This session involved three different sources who I believed would all add value to the session. This enabled me to gather some essential requirements for the project. This was the main bulk of the work that was carried out alongside starting on the IEEE requirements specification.

This month had deadlines for different assignments so I had to delegate my time as appropriate to aid in efficiently completing a segment of the project whilst also completing the assignments.

6.7 April

April was a very productive month, I completed all of my terminal assignments for my modules essentially meaning all my other modules were completed and I also conducted three interviews in the space of this month. With the first taking place on the 7th, second took place on the 16th and the final one took place on the 25th. This enabled me to carry out more of the IEEE requirements specification.

Finishing college this month was a weight off the shoulders and it slowed me to put my full focus on finishing the project. Also it enabled me to have more free time to meet and chat with my supervisor about any concerns I had to do with the project.

6.8 May

The month of May was all project work as expected, I first carried out my last elicitation technique the survey and after completion which in turn allowed me to do my Moscow Analysis to aid in categorizing requirements. After this I then went on to finish the IEEE requirements specification. The poster for the showcase was completed shortly after I completed the documentation but for the documentation to be fully 'finished' in my eyes it took multiple read overs to ensure there was not any mistakes in terms of grammar and spelling and also to make sure the document looked presentable and visually appealing.

Spoke openly with my supervisor to ensure standards and approved of my ethics form, following a handful of meetings from April to May I was more than happy with the document and the work I had done.