

# Development Documentation

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## Functional and Non-Functional Requirements

Functional Requirements (business needs)	Non-Functional Requirements (how the system should do things)
<ul style="list-style-type: none"><li>- user should be able to easily browse information about green energy products to help them gain interest in a product</li><li>- users should be able to alter and cancel their appointments so that they don't waste anyone's time when they are unavailable.</li><li>- users should be able to view their appointments so that they can be informed on when it is.</li><li>-users should be able to easily navigate the website no matter what limitations they may have (e.g colour blindness, parkinsons) by keeping the interface easy to understand.</li></ul>	<ul style="list-style-type: none"><li>- hash passwords using sha256 so that their passwords are kept as secure as possible</li><li>- proper encryption when moving data to ensure that if it is packet sniffed there's nothing worth stealing</li><li>- pages load in 2-5 seconds at most to keep a users attention so they don't choose to use another service</li><li>- system should be easy to use so users will choose it over other providers</li><li>- system should be adaptive to change to ensure that it can handle updates and changes that need to be made as time goes on</li><li>- system should be able to run on portable</li></ul>

	devices and on desktops to ensure that everyone can access it from the device they have.
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## Key Performance Indicators

There are different ways of monitoring the performance of a new system, this can be from:

- a rise in sales
- increased user account creation
- increased bookings
- increased referrals to new customers
- improved reviews on review platforms eg. trust pilot
- increased number of repeat visitors

These all help boost businesses, the system the customers have to use can make or break the success of a business. After building the new system Rolsa Technologies should see what is listed above. People like to not think so if systems are easy to use and effective to meet a user's needs then they will recommend it to others who have the same needs.

## User Acceptance Criteria

For users to be happy using the systems, they will require certain features to make them feel comfortable. This is crucial to retain customers attention when they are first loading up the website and when it comes to inputting their data into it. "Dodgy" looking webpages can deter users as they may think they will be infecting their systems with viruses and/or malware.

They will need:

- a typical nav bar (typical as in used on many webpages)
- clear instructions on where to input data.
- Accessibility (eg alt tags) to comply with WCAG and make the website reach a larger customer base.
- Fast loading times to retain customers attention, especially with the increase of short-form entertainment reducing consumers attention span.
- Able to view and alter booking so that they can check their appointment times and change them to suit their needs.

# Versioning

I will be working my solution into different versions, this will allow me to develop onto my code in an orderly manner to reduce confusion from doing so much at once.

## Version 1

What I plan to make:	What I made:	What Changed and why:
In version 1, I am planning to focus on the basics of what my system needs to function. This includes: <ul style="list-style-type: none"><li>• a functioning database – this is needed first as it is the backbone of the entire system</li><li>• registering and logging in users</li><li>• logging out users</li><li>• basic nav bar.</li></ul>	A functioning database  A login and logout system a sign up system a full nav bar	I didn't do any css and made all the files I will need for the later versions so I don't forget anything.  I chose not to do any css because the site is functioning as required and The site needs to be functional before it is pretty. I also fully fleshed out the nav bar instead of keeping it basic to ensure that it matches the design better.

## Evaluation

## Version 2

What I plan to make:	What I made:	What Changed and why:
In version 2, I am planning to add all the things the system must be able to do to have basic functionality as a booking system. This includes: <ul style="list-style-type: none"><li>• booking appointments</li><li>• cancelling appointments</li><li>• altering appointments</li><li>• an audit log</li></ul>	I made everything I planned too, although my audit log didn't exactly go as I had hoped and wouldn't function when put on the login page so it is missing off of there.	Not much changed from the plan because not much went wrong besides from the audit log on the login page. I did have to change how I did one function tho to a less efficient method as it wouldn't work as I had hoped which led to some changes in the database (eg original booking database being remade)

## ***Evaluation***

### **Version 3**

What I plan to make:	What I made:	What Changed and why:
In version 3, I am planning to add any extra features that will improve the users experience. This includes: <ul style="list-style-type: none"><li>• branding</li><li>• extra css</li><li>• carbon footprint calculator.</li></ul>	I added some more css to match the style of my design to the best of my ability aswell as ensuring that the website is meeting proper accessibility guidelines (eg WCAG) to ensure that all users can browse the website fairly.	I didn't add any additional branding or the carbon calculator. As for the branding, the company did not send or sign off on any of the branding and it would be a waste of valuable time if the client doesn't like it.  I didn't add the carbon calculator as I felt it was out of my depth for the project and I don't have enough knowledge on them to make one that would work as the client intended, which would again just be wasting valuable time that could be better used else where.

## ***Evaluation***

## **Limitations**

Due to the environment I have available there are certain things I will be doing that I wouldn't do in a professional development environment. For example,

When it comes to password hashing, I would use bcrypt or argon2 instead of the default to hash the password and I would encode both the username and password into an environment variable.

I would also just have my html in normally, outside of php but due to limits in my development environment I am using echo to output the html to the user as with the current dev environment I am using, I cannot guarantee that all the html will be printed out..

## Evaluation of Future Development

If I had more time and resources to add more to my code, I would add a settings page (page already created but not in use) that allows a user to change their account details, view audits etc Similar to being able to change or cancel appointments in the booking system.

I would also include ways to remove all your user data off of the system in compliance with the data protection act 2018 as you have the legal right to be forgotten. This would be behind a few confirmations and checks to ensure that someone else can't delete a users account.

To improve security I would make all users use 2 factor authentication when making accounts (email/ phone confirmation) to prevent bots spam making accounts and spamming appointments. Users should also have to confirm passwords on sign-up and changing them as shown in my design on a proper version to ensure their password is typed in correctly and to improve security.

I ensured that users had to input their address on signup as for a future development of the staff interface, they would need access to a users address so that they know where to go for the appointment. My current database which allows users to select a choice of services from database options also improves future options as staff members may not be qualified in doing all the services so they can only be selected for ones they can do based off of the database options.

To improve the css of future development, I would focus on ensuring that the webpage is accessible to those on mobile devices as many potential customers do not have computers in today's world and rely on mobile devices such as phones, tablets etc to view the web. Cutting them out would be major losses for Rolsa Technologies.

This also includes how users would view their company as a website that doesn't work on mobile devices makes the system look insecure, outdated and unprofessional when they are offering a professional service. This could cause great damage to rolsa's reputation online.