



Web Development

(Ludlow HomeCare website)

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1. SUMMARY

The following is a proposal of a development/improvement of the Ludlow Homecare website. Our goal is to better understand the point of view of its customers and throughout it to create a persona which has been used to design the website and its features focusing on sales increase and clearer visibility of the company's brand.

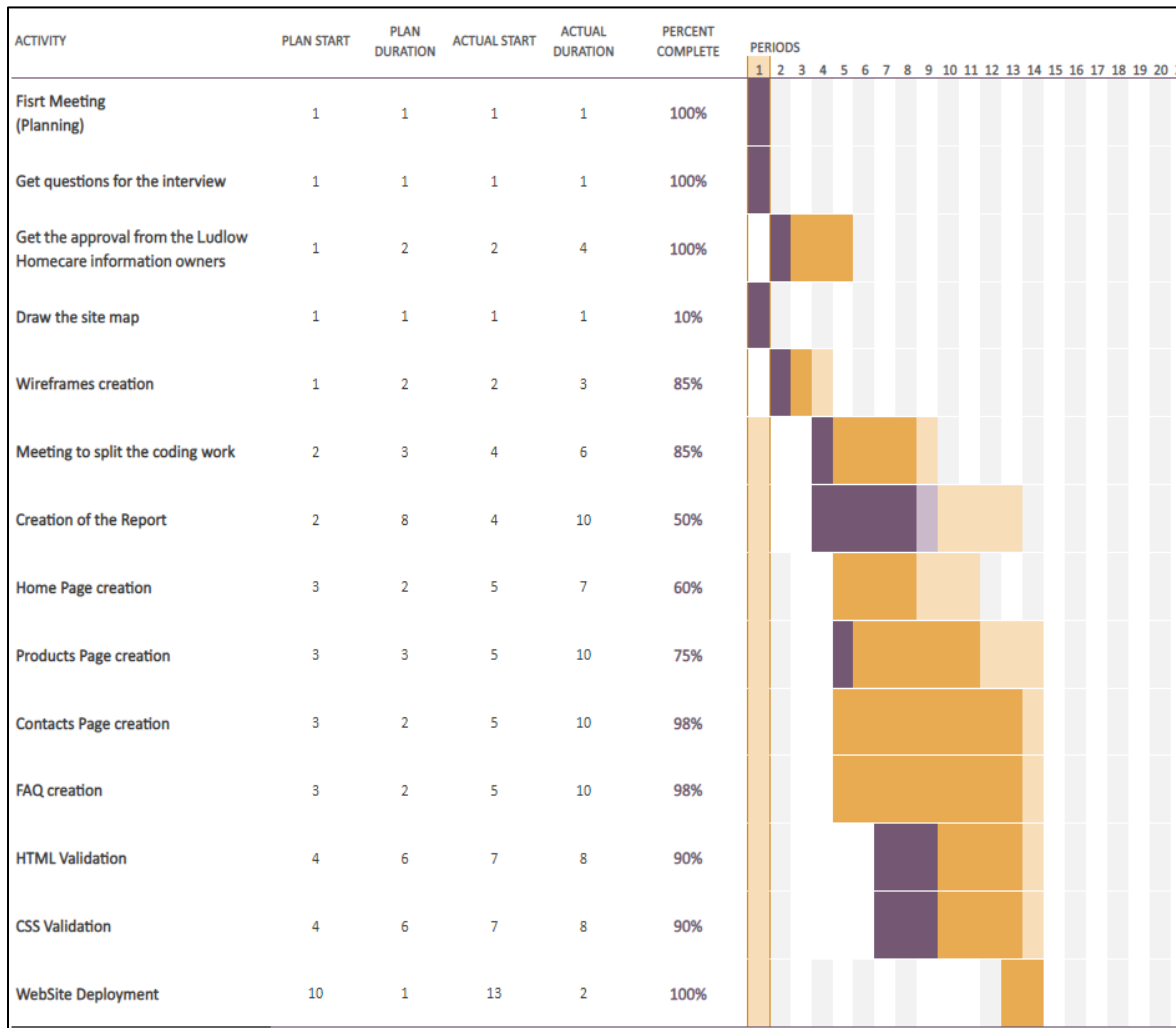
The project involves the creation of the website based on the following technologies such as HTML5, CSS3, JavaScript, JQuery and Bootstrap. Furthermore, it has been hosted on a free host called 000webhost (<https://www.000webhost.com/>).

Testing has been done in 3 stages, being split in code validation by W3Cx, features validation and the final test which includes the firsts two, plus the online access when the website is found hosted and available online.

This website could lead to future projects involving extensive development, implementing different features which are to come.

URL: <https://ludlowhomecare-uk.000webhostapp.com/>

2. PROJECT MANAGEMENT



3. INTERVIEWS

3.1 Interview 1

Interviewer: Esteban Araujo-Fervenza

Interviewee: Lia Duggan

Esteban: Our project involves a website, a real website, called Ludlow Homecare. It's just like Woodies, furniture, garden and hardware shop. They want more interactivity, and they want to attract more customers to the website. So, I have few questions for you. The first one is how do you see yourself as a as a user of technology? A more standard user of technology, an expert or something in between?

Lia: As a user of technology?

Esteban: Yes.

Lia: I'm an expert.

Esteban: An expert. So you like suing PCs and tablets?

Lia: Yeah. Yeah. I like interacting with things on screens.

Esteban: Do you own a mobile device? more than one?

Lia: I own more than one mobile device.

Esteban: Phones and tablets?

Lia: Yes, Yes.

Esteban: What would you use the most often when surfing the web your phone or a PC?

Lia: PC, most often.

Esteban: When buying... do you buy things online?

Lia: I do buy things online.

Esteban: Would you use more your PC than a mobile device or the other way around?

Lia: Around equal amounts.

Esteban: Okay, equal amounts.

Esteban: Would you buy home appliances for furniture online?

Lia: I would buy both online. Considering what we what options we have now (COVID). Yes, I would buy both online.

Esteban: Yeah. So, would you prefer to buy it online or go to the shop?

Lia: Furniture I prefer to go on the shop for sure. For home appliances, I prefer to do that online.

Esteban: The next one is related to this last question. For things like like bathroom or kitchenware, where would you go online? or to the shops? Things like small bathroom cabinet or pots, pans, etc.

Lia: You know what? I bought some stuff online recently. So, I guess I say online, okay.

Esteban: Now. So when paying for your purchases do you trusts methods like PayPal?

Lia: I trust PayPal to pay, but I prefer not to.

Esteban: You prefer not to. Do you prefer to pay by credit card?

Lia: Yes.

Esteban: Okay. When looking to buy hardware(tools) would you see the website as a personal tool or as a work tool? The website.

Lia: I don't understand the question.

Esteban: I think what he meant with this question (Jose Carlos) is if you would use our (Homecare) website for personal use or for work?

Lia: Ahh, Let's say it's for work.

Esteban: Okay. You own a plumbing business?

Lia: My partner does own a plumbing service and does he buy his tools online.

Esteban: Okay. He buys online...

Lia: (laughs). It is often the case when you are self-employed.

Esteban: Okay. Eh.. do you mind ads in the page with deals and discounts whether they are related to your search or not?

Lia: Ads are part of the website. I don't mind that.

Esteban: Don't mind that. Do you find them annoying?

Lia: Yes definitely. I use an ad blocker.

Esteban: You use an ad, blocker that's "good". From your point of view what is the most important functionality for a website? For an e-commerce website, search engines, filters, catalogues...?

Lia: I usually type, I use filters, I don't usually scroll through the screen.

Esteban: Do you have anything in mind to improve a standard e-commerce website? I could be a something of a pet peeve you see in sites like Amazon.com.

Lia: I think they would be better if they got rid of the "See also" and show other products that other people bought.

Esteban: You don't like them when they are too pushy.

Lia: (laughs) No, I don't.

Esteban: Related to this question how do you feel if the "See also" showed products that combined with your current selection and bought as a package would offer a better price?

Lia: If it is related, I don't mind so much.

Esteban: Okie dokie, thank you very much for your time. I'll stop the recording now.

3.2 Interview 2

Interviewer: Jose Carlos Kuzolitz Garcia

Interviewee: Arthur Ryan

Jose Carlos: Arthur, I'll start by introducing you to our business Project. This is related to a Tool Shop like Woodies. At the moment, we'd like to bring to it more interactivity and implement e-commerce. Currently, the website has a landing page with standard information. So, our goal is to improve sales bringing more customer on.

Jose Carlos: First of all, how old are you?

Arthur: 47 years old.

Jose Carlos: What is your background about tools? Do you fix thing by yourself at home or you just outsource it?

Arthur: If it is electrical or plumbing, I outsource it. But if it paints or body repair I do it myself.

Jose Carlos: Going to the website, do you usually buy online?

Arthur: Yes, I do a lot of shopping online.

Jose Carlos: Would you buy hardware online?

Arthur: I have, yes, Screwfix is a good website. It's a sub serial of a UK company. They trade, but they also sell to customers. They also have parts to be delivered

Jose Carlos: How do you see yourself? As a standard user in technology, an expert or somewhere in between?

Arthur: Intermediate. I suppose.

Jose Carlos: Bringing it over to your current experience as an online buyer. How do you feel of Ads informing you of great deals or discounts which may or may not be related to what you are looking for?

Arthur: All the time, I hate. I would stop going to the website. But they are just upselling. If someone is not a 100% confirmed to buy a drill for example. It could change his mind.

Jose Carlos: how do you feel about combined ads at the checkout page?

Arthur: It's not bad. But I just go to the website with a plan I don't go to it just browsing. So, 90% of the time i wouldn't buy it. Our house is very big, so there's nothing more annoying of stepping over something you bought and never user.

Jose Carlos: What do you like the most on the ecommerce websites?

Arthur: I'd say reminding people that this is secure. Because not always is. I though this is something to be good to point out. Good colour scheme easy searchability for sure. Loyalty discounts.

Jose Carlos: What device do you usually use when buying online?

Arthur: 90% desktop and 10% phone. Usually, IOS.

Arthur: Thank you so much.

Jose Carlos: Thank you so much, bye.

3.3 Interview 3

Interviewer: Samsom Mihreteab

Interviewee: Colin Muley

Samsom: Can we start with Introducing your yourself?

Colin: My name is Colin Mulvey, I am 34 years old. I live in Cork. I work at Medtech company Stryker in Cork, we made medical device.

Samsom: How do you see yourself a standard user of technology, an expert one or somewhere in between?

Colin: In between, I have an interest in technology, I like technology gut I don't spend a lot of money baying every gadget.

Samsom: What device do you use when buying online?

Colin: Mostly my phone.

Samsom: Do you usually buy things online?

Colin: Not very often, definitely since the pandemic I kind find myself buying a lot online. But you know I like to shop local. Let's say If I knew there is a grader centre close to me or home store, that us is local has a website I probably use their website.

Samsom: Do you feel comfortable buying staff directly from the website or do you prefer using PayPal or other methods?

Colin: Generally, once I the padlock on the address bar, I be fairly trusting. If I never heard the website, I might see for review online. You know but if the place has a good reputation, I could be comfortable enough to use my credit card.

Samsom: If you needed to by a specific tool, let's say to fix something at home. Would you look up for it online, or you would rather be going personally to a physical shop?

Colin: Properly go to the shop but you know maybe if I don't know what I want I want I have to do my research online but if I see what I want and in local store I probably buy it online, If not I will go to the shop.

Samsom: As you are currently experience as an online buyer. Would you prefer to have Ads informing you about great Deals and Discounts of products which may or may not be related to what you are looking for at the moment?

Colin: I don't like a lot of popups, on a website you know, if I am trying to scroll and got popups you know saying great deal or Signup for our this. But if there is a section that say great deal, I properly check that out. But I don't like that when the up is in your face.

Samsom: That is one the things that frustrates you(popups), But in general what will frustrate you while using a website?

Colin: If things are difficult to find. If it is not easy. You know if I am looking for something and is not easy to navigate the website. It should be different sections for what I am looking for, making easy to find things. You know easy to checkout, like not trying to make you signup or lots of steeps to checkout just make quick and easy.

Samsom: So, would you prefer to buy things without signup? Because some company they don't allow people to buy without signing Up and others would assign as a guest. Would you prefer to use as a guest?

Colin: You know I like the option because if I know, if is a store where I can go back there and buy things, I will probably sign up. But something where I know that I probably buy one thing, I don't want to sign up. There should be an option to skip.

Samsom: Overall, of your point of view, what functionality most important, when you frequently using the website or any other e-commerce website, when you buying staff?

Colin: I like pictures. I like to see pictures of what I trying to buy. If there is no picture or only one picture. I like to get good idea of what I am getting.

Samsom: Do you have any idea that an e-commerce website to look better or more effective?

Colin: No not really, just easy to navigate, not too many popups, I am happy.

Samsom: What do you think about filter?

Colin: I always try to filter with price I want to see what is most expensive, the least expensive and what is my price range of what I am looking to spend. I can see go from there and decide which one I want to buy. Maybe if it's technology, my say I want to get the best one I can afford, but if it is something maybe cheaper, I may just say look the cheapest option. Yeah, I probably filter by price more than anything.

Samsom: From the start of selecting a product until the end of the buying process. How do you feel if the website presented you other products that combined with your current purchase could get you a better deal? I know you don't like popups.

Colin: It doesn't necessarily have to be a popup, I mean If I select something and as I am scrolling down like to check out, there might say people frequently buy those other products. I like that one, it could be useful sometimes to scroll through, but I don't like something popup stop me scrolling and click to close it and start scrolling again. You know that could be frustrating, I think. It is easier If I can see it in the screen and then it is my choice, whether to scroll pass to it or if I want to have to look through, if there is something that I want to get.

Samsom: I think I have asked every question and I am happy with the answers. If there is anything you want to add?

Colin: I am good, I am happy too.

Samsom: Thanks Colin.

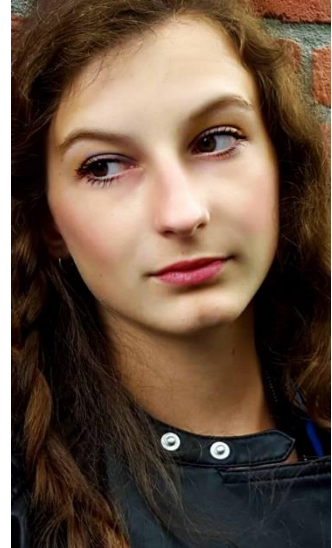
4. PERSONA

Name: Nualla Malone.

Age: 32.

Job Title: Solicitor.

Location: Hereford, UK



Background

Nualla moved to the UK with her husband and two kids. Nualla works as a solicitor in a Hereford law firm. They got a mortgage and own their house where they live. She thinks the house must adapt to the changes in the family. Her and her partner are usually busy at work and taking care of the family and uses technology to facilitate some time-consuming activities like shopping. She likes browsing local online shops rather than driving around.

Goals

She wants to make a home of her recently bought house.

Frustrations

When websites bombard her with ads of things she does not need. She understands the need for ads in some places, and can understand upselling, up to a point.

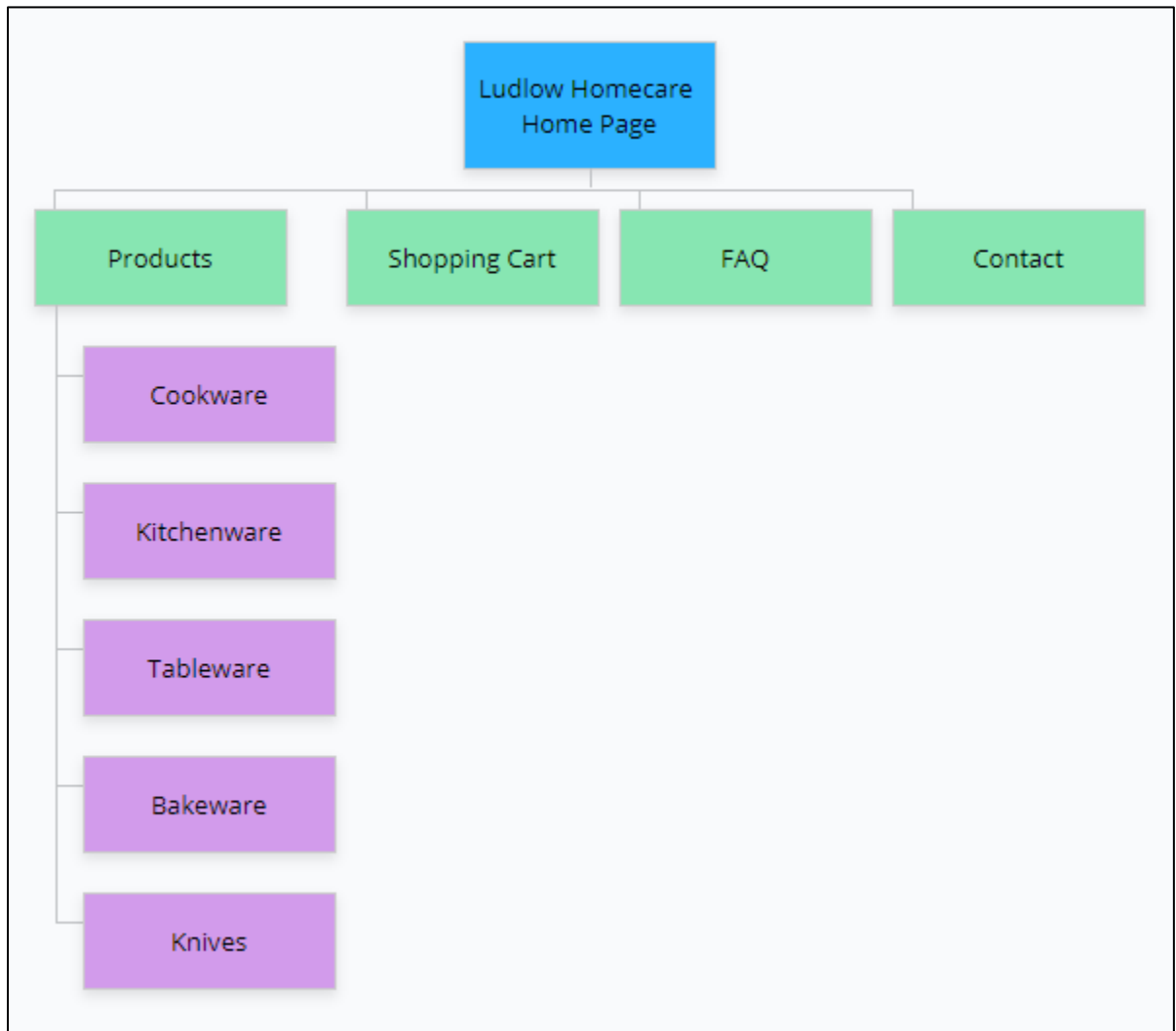
Current Feelings

Nualla's time is divided between home and work and does not have time to do things twice. When that happens, she stresses out. She uses technology for convenience mainly, buying smaller tools and other equipment online and only bigger buys like furniture require visit to the store.

Technology Knowledge

She owns and uses laptops, smartphones and a tablet. She considers herself a competent internet and pc user and feels comfortable interacting with things on screens.

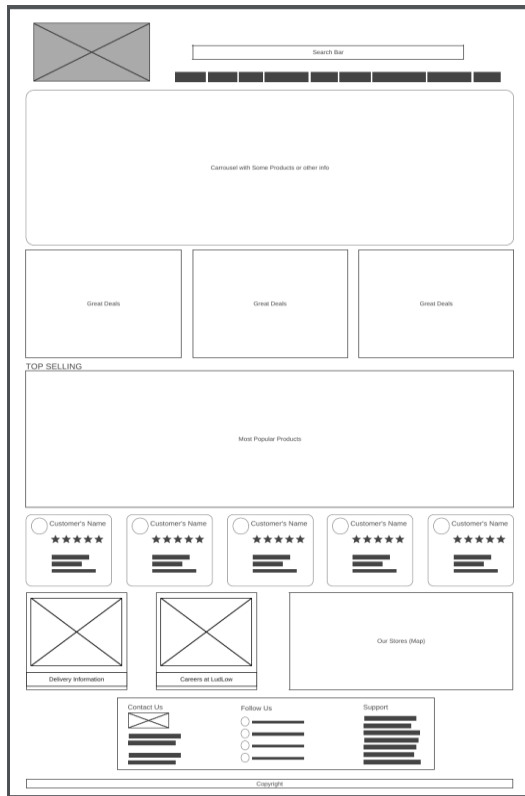
5. SITE MAP



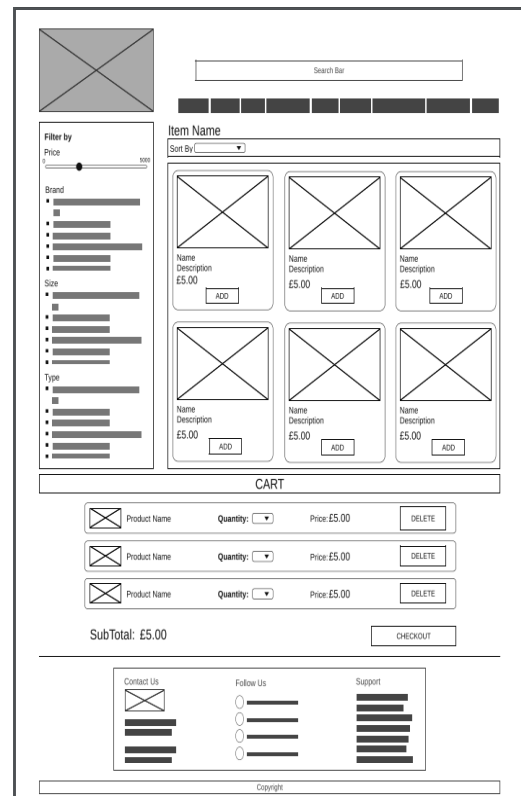
6. DESIGN (WIREFRAMES)


A Wireframe represents a low-fidelity design layout. Usually, it is a two-dimensional illustration of the website. And it has as a main goal to show the space allocation, content and intended features and behaviors.

Homepage



Products





CHECKOUT

Billing Address

First Name

Last Name

Email

Phone

Address

City

Country

Payment Method

☐ Credit / Debit Card
 ☐ PayPal

Cart

☐

Product Name

Quantity:

Price £5.00

x

☐

Product Name

Quantity:

Price £5.00

x

☐

Product Name

Quantity:

Price £5.00

x

Order Review


| Product | Quantity | SubTotal |
|--------------|----------|----------|
| Product name | 1 | £5.00 |
| Product name | 1 | £5.00 |
| Product name | 1 | £5.00 |

Total:

£15.00

PLACE AN ORDER

Contact Us



Follow Us

☐
☐
☐
☐

Support

Copyright

Header Bar

Search Bar

Navigation Links

Name

Phone

Email

Message

SEND

CONTACT DETAILS

MAP

AD5

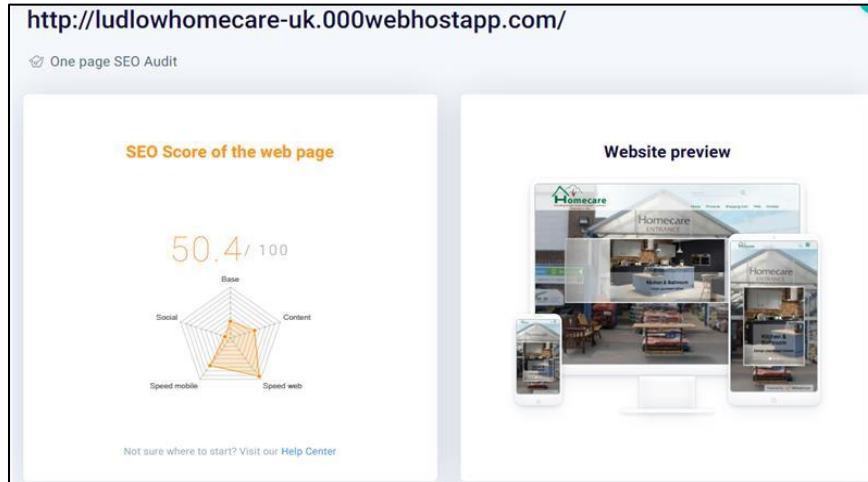
Footer Bar

Copyright

[illegible]

7. OPTIMIZATION

- The pictures in carousel were resized before being added to the page.
- In line script placed at the bottom of the document, just before the closing body tag.



| Optimization Steps (www.yslow.org) | Check |
|---|-------|
| 1. Avoid empty source "src" or hyperlink reference "href" | X |
| 2. Put scripts at the bottom | X |
| 3. Put stylesheets at the top | X |
| 4. Make JavaScript and CSS External | X |
| 5. Remove duplicate Scripts | X |
| 6. Reduce the Number of DOM Elements | X |
| 7. Do not scale Images in HTML Tool: https://resizeimage.net/ | X |
| 8. Make favicon.ico Small | X |

- **Minify JS Tool:** <https://www.crockford.com/jsmin.html>

This step was not considered as it would remove comments and “uglify” the code as shown below.

```

JSMIn does not obfuscate, but it does uglify.

Before:

// is.js
// (c) 2001 Douglas Crockford
// 2001 June 3

// is
// The 'is' object is used to identify the browser. Every browser edition
// identifies itself, but there is no standard way of doing it, and some of
// the identification is deceptive. This is because the authors of web
// browsers are liars. For example, Microsoft's IE browsers claim to be
// Mozilla 4. Netscape 6 claims to be version 5. This code is seriously
// wrongheaded and obsolete.

var is = {
  ie: navigator.appName == 'Microsoft Internet Explorer',
  java: navigator.javaEnabled(),
  ns: navigator.appName == 'Netscape',
  ua: navigator.userAgent.toLowerCase(),
  version: parseFloat(navigator.appVersion.substr(2)) ||
    parseFloat(navigator.appVersion),
  win: navigator.platform == 'Win32'
}

is.mac = is.ua.indexOf('mac') >= 0;
if (is.ua.indexOf('opera') >= 0) {
  is.ie = is.ns = false;
  is.opera = true;
}
if (is.ua.indexOf('gecko') >= 0) {
  is.ie = is.ns = false;
  is.gecko = true;
}

After:

var is={ie:navigator.appName=="Microsoft Internet Explorer",java:navigator.javaEnabled(),ns:navigator.appName=="Netscape",ua:navigator.userAgent.toLowerCase(),version:parseFloat(navigator.appVersion.substr(2))||parseFloat(navigator.appVersion),win:navigator.platform=="Win32"}
is.mac=is.ua.indexOf("mac")>=0;if(is.ua.indexOf("opera")>=0){is.ie=is.ns=false;is.opera=true;}if(is.ua.indexOf("gecko")>=0){is.ie=is.ns=false;is.gecko=true;}

```

- **Compressing Image:** (Tool: <https://www.img2go.com/>)

Images used were compressed to save loading times.

We compressed your file by 80.21%

The file is now 830.15 KB **164.26 KB**
Redo

| Your converted file | |
|---------------------------|-----------|
| MusselsPOST_1024x1024.png | 164.26 KB |

Cloud Upload
Download

Redo
Delete
Download ZIP File

- **GTmetrix performance tool:**

Test taken before the shopping cart and product page functionality were implemented.

<https://gtmetrix.com/reports/ludlowhomecare-uk.000webhostapp.com/YkMpPAZd/>

| GTmetrix Grade ? | | | Web Vitals ? | | |
|------------------|----------------------|--------------------|---------------|--------------|---------------|
| A | Performance ? 98% | Structure ? 95% | LCP ? 1.1s | TBT ? 0ms | CLS ? 0.08 |

Test taken after the shopping cart and product page functionality were implemented.

<https://gtmetrix.com/reports/ludlowhomecare-uk.000webhostapp.com/xowEedra/>

| GTmetrix Grade ? | | | Web Vitals ? | | |
|------------------|----------------------|--------------------|---------------|--------------|---------------|
| A | Performance ? 96% | Structure ? 84% | LCP ? 1.0s | TBT ? 0ms | CLS ? 0.06 |

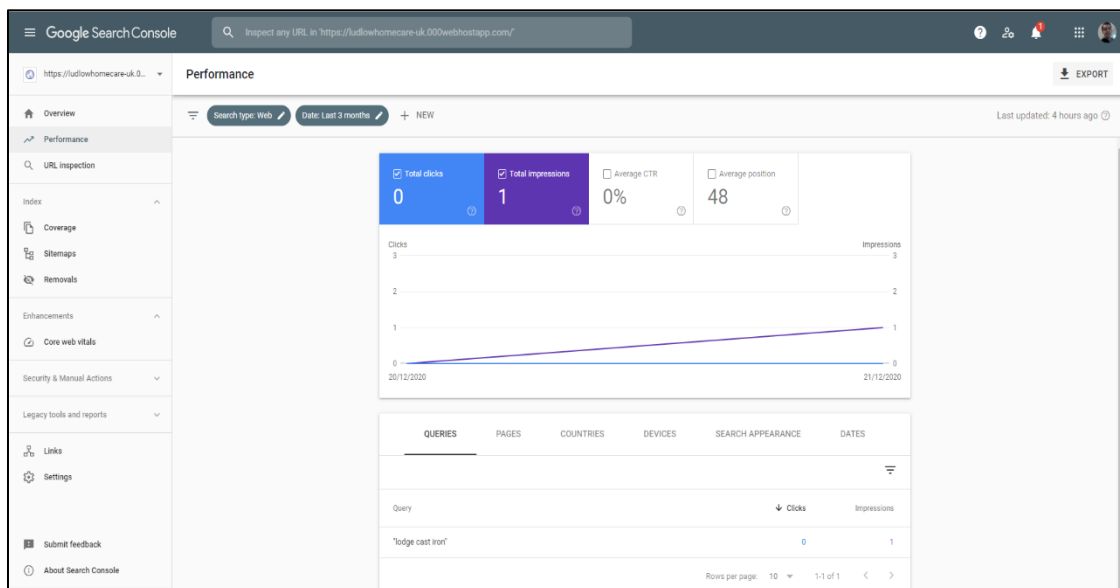
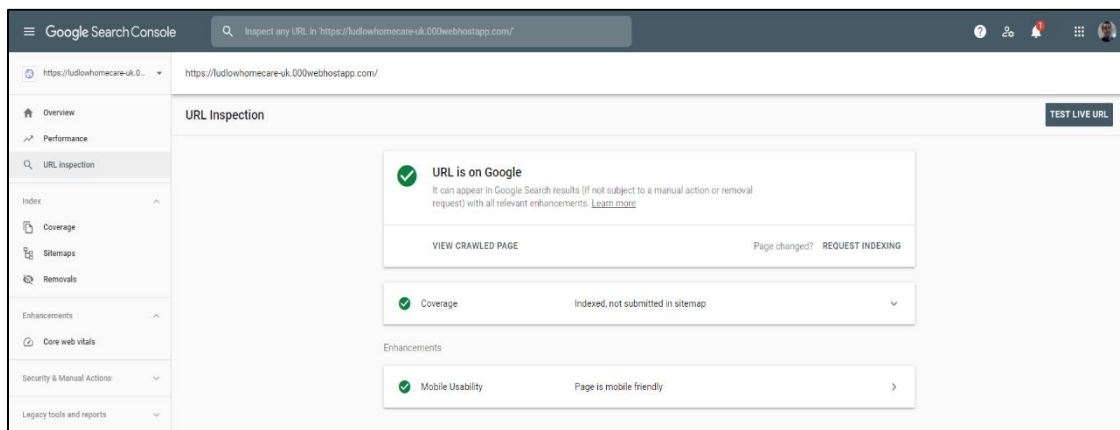
As more complexity was added to the page, the performance and structure suffered. Revision of the code is recommended to improve performance score. Specially if the plans to expand the shop are to go ahead.

8. SEARCH ENGINE OPTIMIZATION (SEO)

SEO is considered a process which is used to optimize, increase and improve the quality of a website, as well as its traffic. It is mainly focused on organic traffic.

This project counts with a tool called Google Search Console (<https://search.google.com/search-console/about>), which has a friendly user front-end and it is free for basic management.

By indexing the Ludlow Homecare website with this tool, the web site can easily be found in the first page on Google Search Website when searched by “ludlow homecare-uk host”.



9. HTML VALIDATION

We passed our pages through the validation. In the index page we found this error in the video player. We decided to keep the code as it was because it keeps the user from downloading the video file from the player.

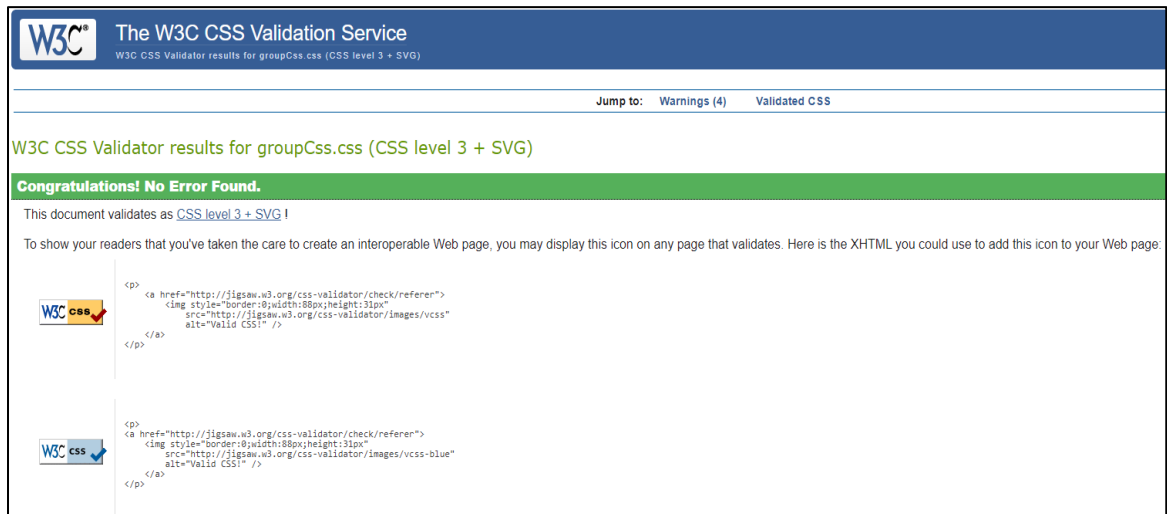
Used <https://validator.w3.org/> for html validation.




10. CSS VALIDATION

This validation has been made by W3C (<https://jigsaw.w3.org/css-validator/>). The validation refers to check the Cascading Style in order to make sure that they follow with the CSS Standards set by the W3 Consortium.

groupCss.css



MobileView

 The W3C CSS Validation Service
W3C CSS Validator results for MobileView.css (CSS level 3 + SVG)


Jump to: Validated CSS

W3C CSS Validator results for MobileView.css (CSS level 3 + SVG)


Congratulations! No Error Found.

This document validates as **CSS level 3 + SVG** !

To show your readers that you've taken the care to create an interoperable Web page, you may display this icon on any page that validates. Here is the XHTML you could use to add this icon to your Web page:




```
<p>
  <a href="http://jigsaw.w3.org/css-validator/check/referer">
    
    </a>
  </p>
```



```
<p>
  <a href="http://jigsaw.w3.org/css-validator/check/referer">
    
    </a>
  </p>
```

URL Validation

This error is related to Bootstrap.main.css which we do not have any control about.

 The W3C CSS Validation Service
W3C CSS Validator results for https://ludlowhomecare-uk.000webhostapp.com/ (CSS level 3 + SVG)

Jump to: Errors (1) Warnings (223) Validated CSS

W3C CSS Validator results for https://ludlowhomecare-uk.000webhostapp.com/ (CSS level 3 + SVG)

Sorry! We found the following errors (1)

URL : <https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css>

5 Unknown error org.w3c.css.parser.analyzer.ParseException: Deprecated media feature "max-device-width". For guidance, see the Deprecated Media Features section in the current Media Queries specification.

11. TOOLS

JavaScript

It is a text-program language which is used to make websites interactive and it is fairly implemented to proceed with data validation.

JQuery

With JavaScript we can implement plenty of things. However, it can become super complex in case you have to think in all functions. This is where JQuery stands out.

JQuery is a fast library fulfilled with pre-built JavaScript features. Which provides you access to functions that helps to manipulate elements, create animations, validations in a simpler way.

Bootstrap

Bootstrap is a powerful CSS open-source framework which can be used to create modern websites. Besides, it also has pre-built features which can easily be implemented to the frond-end.

Font-Awesome Library

It is an open-source library and GPL friendly that can be used to customise the frond-end. It is focused on font and icon based on CSS.

Browsers: Chrome, Edge and Firefox

We mainly used Chrome for vialisation and screen testing (for mobile screens), the page was also tried on other browsers like firefox and an edge.

W3 Validator for HTML and CSS

An on-line automated tool to check for coding errors in the HTML and CSS documents.
URLs: <https://validator.w3.org/> and <https://jigsaw.w3.org/css-validator/>

SEO Checker Tool Extension for Chrome and GTMetrix

Extension for Chrome and an online service to help with page testing and optimisation.
URL: <https://gtmetrix.com/reports/ludlowhomecare-uk.000webhostapp.com/GVeVXAQa/>

Gitub

Github is a code repository which is used for a project management, in order to take the maximum of what collaboration and control version can be

(https://github.com/este78/groupJ_WebDesign)

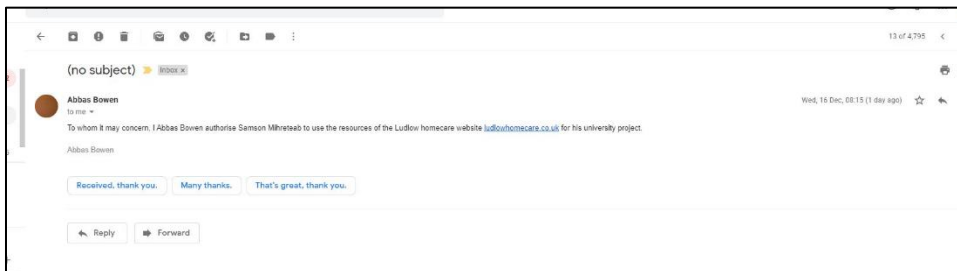
Online image resizing tool

Resizing images help speed up loading times.

URL: <https://resizeimage.net/>

12. LUDLOW HOMECARE AUTHORIZATION

This is the email which contains the authorization of the information's owner.



13. REFERENCES

Lecture notes from Cormac Dullaghan's Web Design module at NCI.

W3Schools - <https://www.w3schools.com/>

World Wide Web Consortium - <https://www.w3.org/>

OpenJS Foundation and jQuery contributors - <https://jquery.com/>

Bootstrap team with the help of its contributors - <https://getbootstrap.com/>

Google Search Central - <https://developers.google.com/search/docs/beginner/seo-starter-guide>

Code tutorials:

- Sticky menu tutorial:
<https://www.youtube.com/watch?v=UHSeFzIuv8&t=981s>
- JQuery tutorial:
[jQuery Validation Plugin: Simple Validation \(1/4\)](#)
- Shopping cart js tutorial:
https://www.youtube.com/watch?v=B20Getj_Zk4&list=PLD9SRxG6ST3HignjcXUX6w8RcT0_b5ihV