

WEB SITE: CLARA HERITAGE SOCIETY

Project Report



TU856

Web Development

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Declaration

I hereby declare that the work described in this dissertation is, except where otherwise stated, entirely my own work and has not been submitted as an exercise for a degree at this or any other university.

Signed:

Aaron Baggot

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C22716399

10th December 2022

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Introduction

Building a website is a very important aspect of any business, charity, or organisation. As part of the web development module of the computer science programme this report takes you through the steps involved in scoping and designing a website for Clara Heritage Society. Designing a website for a community group enables the group to communicate with the broader public. When constructing this website for the Clara Heritage Society I considered several design options and layouts and worked with individuals directly involved in the Clara Heritage Society but who themselves had no experience of constructing material relating to social media. There were two important asks by the society, the website must be user friendly and easily edited by a society member.

The aim of the assignment is to demonstrate the build of a user-friendly purpose-built website capable of depicting what the society is about and able to facilitate online membership when published. Weekly logs were drafted which are attached in the Appendix.

Problem Description

Having explored a few proposals that required a web page, the Heritage Society seemed like a community group that had thought through several ideas and were both ready to engage in a website process. The more information I heard about the work of the Heritage Society it did seem like it could benefit from the development of a website. At the initial meeting with the society, the committee outlined the purpose of the website, the required pages, the typology of content and the areas they'd like to include on the website. This allowed for the initial development of the raw website (Low Fidelity Prototype) and further meetings enabled the fine tuning.

The website offers readers an opportunity to learn about the town of Clara's heritage. It displays the heritage of the town under a number of key categories using a dropdown menu as illustrated in image 1.

- *Industrial*: a very important aspect of the towns heritage as Clara was an industrial town of significance in both regional and national terms.
- Natural: Clara's Bog is the best-preserved raised bog in Ireland and of grave importance both in terms of tourism and carbon sink, the webpage gives context to this. The Brosna River flows through the town and is the largest river in Offaly, it served the mill industry and has still got a myriad of working hydro engineering features on it. The Esker Hills also runs through the south of the town and house several beautiful walking trails the webpage features the videos demonstrating this.
- *Religious:* Clara like all towns in Offaly has considerable association with the Roman Catholic Church, Clara also had close ties with the Church of Ireland and the Quaker Church. The website Tells a little of Clara's religious past.
- *Culture:* A town with a rich culture in terms of music literature and sports all of which are featured on the website, with links to some videos of interest.

Traditions still hold strong in Clara and the website denotes some of these traditions including that of picking potatoes and some Christmas traditions.

- *Diaspora:* Like so many Irish towns Clara has natives who travelled across the globe and continue to hold value to their roots in Clara. The websites paid tribute to some of the diaspora and lets it be known that the current population of the town have not forgotten those who had to leave to make a life abroad but hold them in their thoughts.
- Architectural: A town built during the industrial revolution it has many buildings of renowned architectural interest, including some cottages with port low roofs. The town is subjected to an Architectural Conservation Area (ACA) and the details are on the website.

A functional aspect of the website is that it gives details about the Heritage Society and how to contact the society, it informs people of past and upcoming events and enables people to join and pay their membership fee online.



Image 1

The assumed ideal pattern of people who might use the website are people with an interest in Clara's heritage, this would include people who live in the town, and the diaspora. Another category of people expected to use the site would be both professionals and students, who may be researching any of the areas dealt with on the site.

A major difficulty solved by the creation of the site is the issue of membership. People will now be able to join online, and this is of particular interest for the diaspora. Another problem solved by the website is that the society will be able to record events online

for prosperity and it will be possible to access the heritage of the town in one specific place, rather than having to research a conglomeration of sites. Coupled with all the above the site will enable the society to plan a calendar of events for the year. The text font size gave difficulty during the testing stage on different sized screens. Therefore, the values were changed from px to rem.

Research

Offaly History, Shannon Heritage and Archology Ireland were websites researched as part of this project. They were considered to have similar content and layout envisaged and by the Clara's Heritage Society Committee.

1. Offaly History

The website most similar is Offaly History, it houses some information on the town of Clara's, but Offaly History does not specifically relate to Clara's Heritage.

Site content: Industrial Heritage Ireland provided some ideas in terms of layout and evolving content. Ireland's industrial heritage is continually being changed or destroyed. There has been a growing public awareness of Ireland's industrial heritage, as seen in several sites which have been restored or conserved by enthusiasts and are now open to the public as tourist and educational attractions. Although there is official recognition of the importance of our industrial heritage, statutory protection is still low, due in the main to a backlog of listing of industrial heritage structures.

Site layout: Offaly history website had a large header with a menu bar across the top giving links to the other pages. These pages included Subscription, Events and Contact. The idea of medium to large font was availed of for a user audience of a similar website. Offaly heritage home page illustrated in image 2 below.

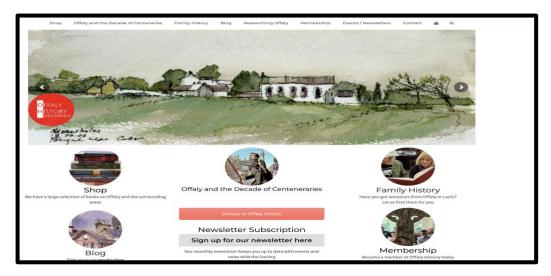


Image 2

2. Shannon Heritage.

Shannon Heritage (image 3) is one of Ireland's largest visitor experience operators which covers counties Clare, Limerick, Galway, and Dublin. This website is an is informational based for all age groups and cultures connected to attractions and visitor centres. I choose this website as I considered it to have similar users to Clara's Heritage website, its easily accessible for a wide variety of people and it's also a community engaged website.

Site Content: This website endeavours to conform to level Double-A of the World Wide Web Consortium (W3C). It states on the about page that it may be accessible within any browser.

The site was developed using standards-compliant HTML & CSS.

It meets a high standard of accepted guidelines for accessibility and usability. The navigation bar is positioned at the top of each page and has a link to return to previously viewed pages. This is important for non tech savey people for easy useability and accessibility.

Site Layout: There are plenty of written text in easily readable large font. Overall, the website is basic with not too much going on effects, flashing images etc, but very effective. This is something I thought I could implement on the website.

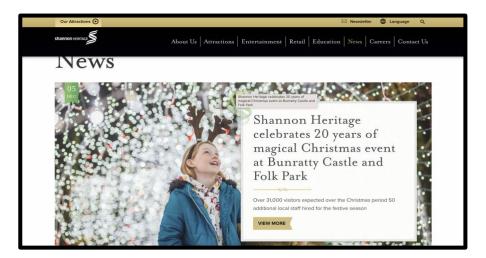


Image 3

https://www.shannonheritage.com/

3. Archaeology Ireland.

Archaeology Ireland (image 4) is a subscription-based website which has a monthly magazine issue and has been in production since 1997. Their website was a similar match to what I had envisioned as their users are aimed at both professional and non-professional readers. The website is informative for those interested in history, culture, and archaeology.

Site Content: It has a high volume of readers and well recognised subscription-based magazine. The users are drawn from the professions, archaeologists, architects, planners, and teachers, as well as large sections of the public. Their subscribers are already mostly members of local history societies which is of an audience similar to the what the website I wish to create. Also, attracting a user audience such as students with history and heritage interests including those who have emigrated abroad looking to keep up to date.

Site layout: The website layout is very simple with an easy to navigate menu at the top linking to all the pages. This is important when considering the audience, they hope to attract to the website. The colours, images and font make it an attractive site for reading and browsing. It also provides social media links to keep updated on events and activities. This is another idea taken to implement on the website.

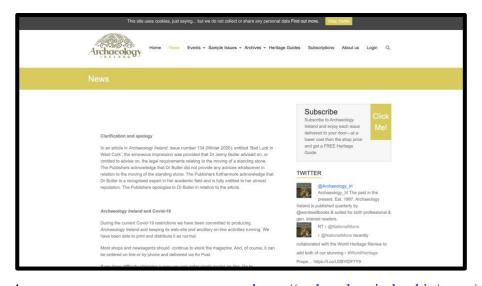


Image 4

https://archaeologyireland.ie/news/

Technology Selection and Site Architecture

The versions used in the design of the Clara Heritage Website was HTML 5 and CSS 3.

HTML CSS and JavaScript files were separated and kept within their assigned folders. Class selectors for easy use of CSS when styling, fonts and colours were used. Ids were also used when implementing JavaScript.

From the onset I made a boilerplate from previous assignments carried out during lab sessions. This had given me an insight of the type of responsive design needed for a functioning website. During the testing stage the header wasn't compatible with different devices, after testing out different values using vh, vw solved the problem with the header length being responsive with the website

Since this website is for a Heritage Society It is envisaged, the users would be dedicating time to read the information and therefore would be using large screens such as laptops, personal computers and tablets, iPads. A large screen website would be most suited to view the website as there is a lot of text, pictures and videos depicted. These were all taken into consideration during the design process.

CSS is a styling aspect used across websites to make them look stylistically superior. The colour gradients were also considered as it would be more responsive keeping the gradient colours or transitions using similar greens (solid green: #04680c), light green (#0bcf39) and brown (#e4bf9d). These colours were chosen as they signify nature colours and compliment this website as it was designed with that intention. Having received numerous forms of communication through meetings, email, and phone calls in relation to information, subscription, and membership forms. The only solution for a responsive website is to test it on various browsers. Google chrome, Firefox and Safari were used throughout the design which gave an idea of its responsiveness. After plenty of trial and error all the photos were resized using a free online source, uploaded, and styled with border and effects using CSS.

In discussion with family and friends on possible ideas for a website the one that stood out and I veered towards is the idea of a website about my hometown and its heritage. There is already a heritage committee in place, but they didn't have a website. They have a Facebook page with ample information and photos which may be used for the development of the web site.

With this information I decided to approach a member of the committee to see if developing a website is something they'd be open to exploring. The committee viewed my proposal favourably and agreed they would be open to viewing a sample website. Viewing the videos assigned to the Computer Science class and analysing the ask within the brief. A draft Prototype was started. Image 5 demonstrates the boilerplate and the number of pages needed to set up the website. A test page was constructed which will be used to implement any changes without making any errors affecting the whole website.

From the onset the responsiveness on different size screens was checked using inspect. This gave ideas of sizes and values that are compatible across most screens. W3C CSS and HTML Validator was also used to check any errors that occurred. The hover was used throughout which changes colour when the user hover over the link. These links included connections to social media sites (YouTube and Facebook) and external links as instructed by the committee. Unordered and ordered lists attributes were used

Table formed listing local services. During the testing stage font size was changed from px to rem for compatibility with different screen sizes. Another addition was styling each page button the user had visited for better navigation as illustrated in image 6.

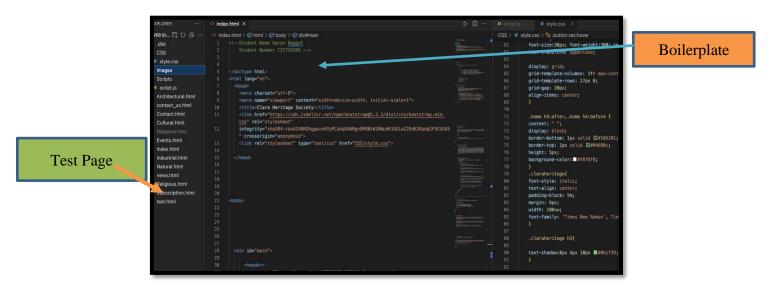


Image 5



Image 6

JavaScript Functionality

JavaScript was used to implement the user login validation on the Home page which required Email, First name, Surname, Password and Address. See image 7. The design process of this website was undertaken with consideration given to the various range of users expected to frequent the website, without doubt it's important to make it easily accessible to everyone. A decision to implement a choice of light or dark mode using JavaScript as illustrated in Image 8 would support the vision of broadening the spectrum of accessibility.

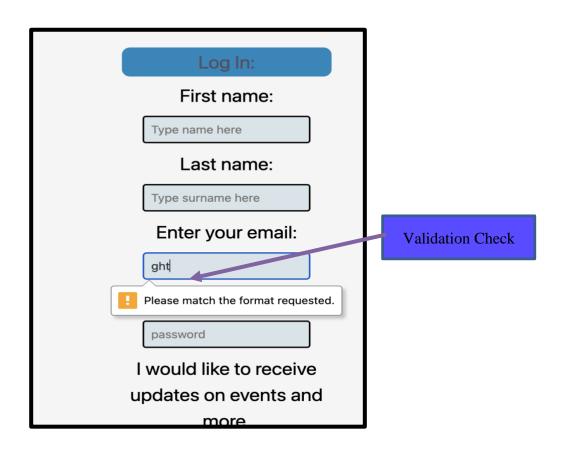


Image 7

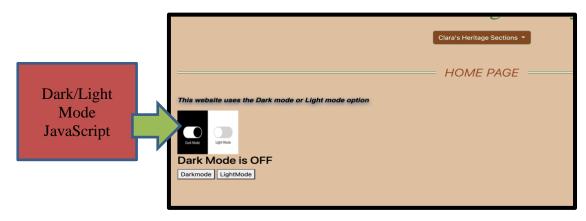


Image 8

Another JavaScript feature implemented is a text graphic feature that change colour from Green to Red controlled by the user as shown in images 9 and 10.

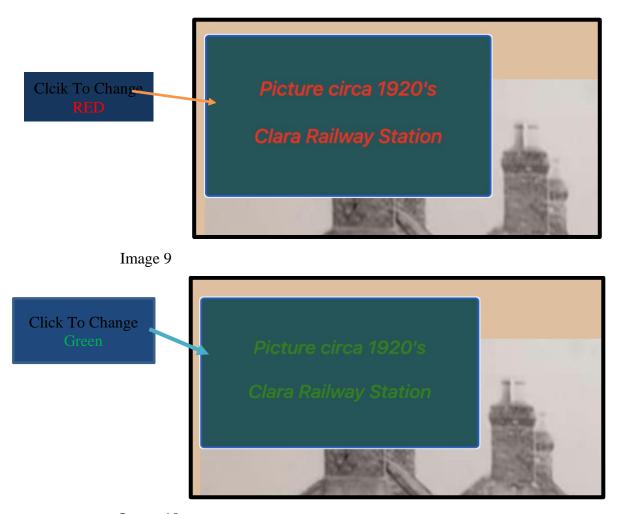


Image 10

Image 11 shows the JavaScript code for a Clock inserted in the News page using the function myTimer().

```
function myTimer() {

let myVar = setInterval(myTimer, 2000);

let showClock = new Date();

document.getElementById("clock").innerHTML = showClock.toLocaleTimeString();
}
```

Image 11

A live weather widget (image 12) was added for the user to have an idea of weather conditions if deciding to go on a walking trail and an attractive digital clock using JavaScript.



Image 12

Low Fidelity Prototype

A Lo-Fidelity prototype was used in the early process of developing the website to describe the content and layout for the members of the Heritage Society committee. The images below show the drawings or sketches used to capture the general idea and the structural design of the website. Which gives an overview of the structure and visual appearance of the content. This is a cheap and quick way of designing the structure as there wasn't much of a timeframe given for final completion. These designs were emailed to the committee which gave them an idea of what the result or layout should look like, and they could then request what images and text to be included.

During this stage the type of users were considered throughout. Text used was easy legible with the expectation of users to be mostly adults with interests of nature, buildings landscapes, organised nature walks and tours.

The audience this website is aimed towards must be simplistic with not too much flashing images or transitions. Sometimes the simple things work best if it flows properly.

The layout was consistent on every page and section using a light background colour which works with light and dark mode using a beige colour code #e4bf9d. The overall min height 100vh and width 100vw with padding of a value 1em. The main Header heading was a large heading <h1> and font family serif font size 2rem – 4rem for headings with the heading text aligned to the centre. Margins around the pictures were set at 2% when text was aligned around the images. Padding used on some of the embedded sections iframe, map and live weather forecast. Below are the low fidelity prototype sketches of each page on the website. (Images 13 – 18).

Home Page and News Page.

Dock Light Brown Mode: Head lagge Background.	P Change, nows, excel, Sheesiption To he. L. Ur. layis/sign up the News
Text - Easy rend / Medium - Longe Junior L Click Gran/Red. Drop down section About Section.	Weather section Dock/Isahl Mode.
healing hogla Section. - Validation. Second image	Extens!. Init Rith. India. Text/Ins Alga heft. Digital Clock Text Ins Alga Right
About section	About section Live weather App-

Image 13

Events Page and Subscription Page

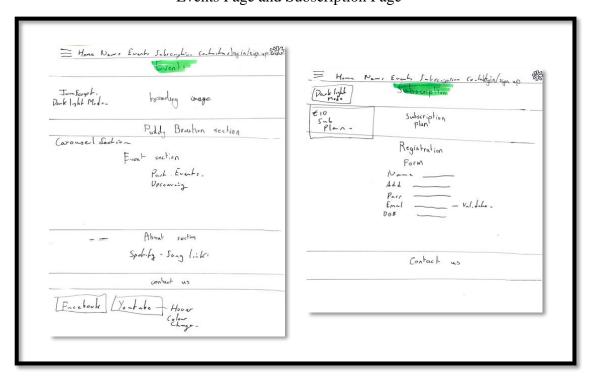


Image 14

Contact Us and Industrial Section

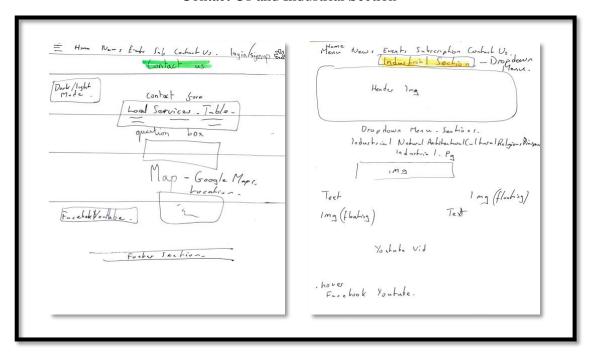


Image 15

Natural Section and Architectural Section

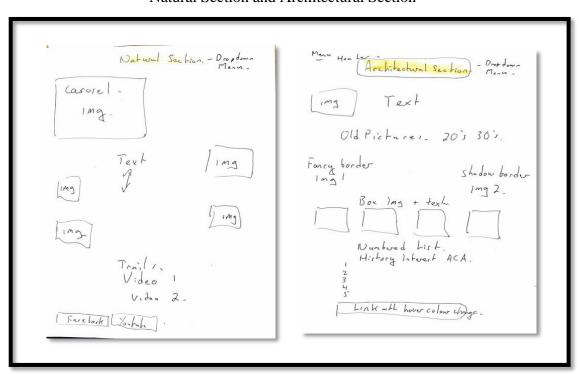


Image 16

Cultural Section and Religious Section

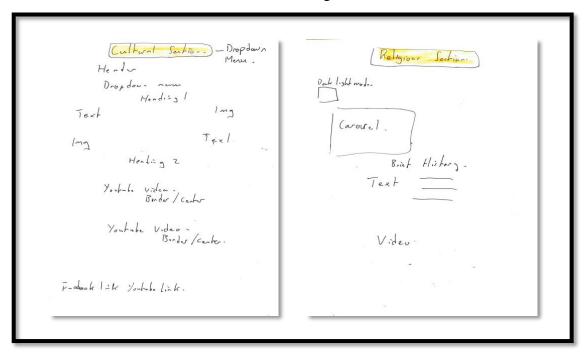


Image 17

Diaspora Section

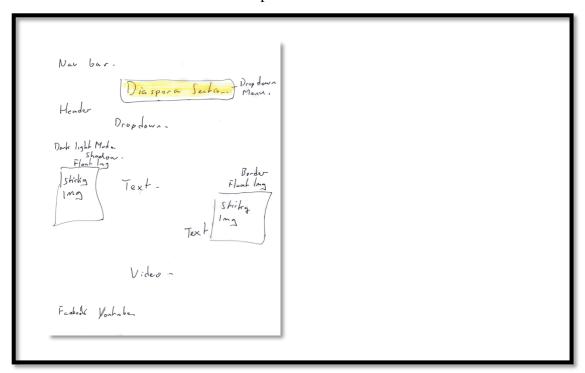


Image 18

Development Plan

Within the development plan for this website the CCS was integral to the changes and the evolving nature of this website. Each section had a section heading (/*Home Section Page*/) name in CSS so it was easy to find when making changes to fonts styling and positioning. CSS was kept simple and reused font and styling across all pages within the website. Although fonts and styling were similar and kept consistent, advanced functionality was implemented throughout. This website was continuously reviewed by peers and the society itself. Considering their feedback changes took place continuously. Some of the development stages included developing a form.

Different types of forms were explored, consideration was given to what fields were needed, how a subscription information is gathered and processed as well as signing up to receive notification of events and activities.

Five pages were initially set up Home, News, Events, Subscription and Contact Us. On each page text was inserted with corresponding images. The next stage was aligning the information to make it visual appealing to the user. At this stage input from the Heritage Society on their views were considered. This is when they requested that I include sections from a dropdown menu including Architectural, Cultural, Industrial, Natural, Religious and Diaspora. I had set up a test page which was for testing any new additions before implementing on the actual pages. This was very useful for the subscription form as it caused problems from the onset. The same process was used to test the subscription form, the learning from inserting the dropdown menu functionality was very useful here.

At this stage I notice the size of the paged headings needed to be increase and the menu bar moved to the top of the page (see image 18). Ecstatically this made a huge difference, when moving through the pages I notice there was a slight variation in font. Each font styled was viewed on CCS and amended where needed.

The use of positioning properties was implemented mostly, these were the case when using sticky images and absolute needed to work well for the type of design I was looking to implement. The essential positioning allowed the placing HTML element where wanted. At the beginning I noticed overlapping and this was due too many elements for example on the Diaspora page the sticky value was used, there was a lot of text and would suit the user for scrolling.

Bootstrap, lecture examples and lab exercises were ideal for developing this website within a short timeframe and implementing some attractive features which provided some pre-made elements (such as styled buttons). A grid system was used which has 12 units distributed into columns and rows seeing the website as a grid and its easily display elements according to the screen size.

The site was created through a collaborative process between the designer and the committee. There were several meetings to trash out the function and purpose of the website, this gave a greater understanding of what was required. There was ongoing communication between the designer, the communications officer, and the Facebook page operator of the society. This enabled content to be developed. The continued interaction through email proved very helpful and before anything was completed it was sent to the Chair for approval. Working with the committee in its entirety proved difficult. However, once it was narrowed down to a subgroup consisting of three main people it became very easy to work, the development flowed more seamlessly.

Once the core of the website was developed several demonstrations with the committee were undertaken these were helpful as some of the members were not very technologically literate but could point out where the site was not user friendly, and this allowed for adjustments. Following the setting up of the form, random people within the community were asked to evaluate the site and provide feedback, this would help in ensuring the site was appealing to a broad demographic of the public.

The process worked well once the initial confusion settled, and it was understood what could and what could not be created within the website development. Also meeting the requirements of this assignment.

Image 19 illustrates the main headings and the header image used in early development and agreed upon with the committee.



Image 19

Testing Plan

To inspect the website the process of right-clicking on the page and selecting inspect displayed the compatibility with phones, iPad, laptop, and home pcs. Various browsers were also checked for compatibility the results showed a slight difference, but this did not impact significantly or a cause for concern.

HTML validation testing was implemented to ensure the code and syntax were used correctly. After many adjustments, the clean code looked and performed better. I used validator w3.org by uploading html file and gave errors which were not too concerning yet needed to be altered and fixed accordingly. These included img element must have an alt attribute. Under certain conditions, a section lacked a heading which gave a warning rather than an error.

Then CSS validation was carried out using w3c validator to upload the files, which gave 7 errors which were also fixable and not too concerning. They included vertical align and max height value set at auto. Font size set at bold. These were simple mistakes and show the importance of a testing plan before completion of the website. The images below show different screenshots used for the testing plan.

Having tested the CSS all, the attributes were grouped together to make it easier to make changes in the future especially when the project will be handed over to the Heritage society to make future additions and changes. The resizing of browsers was implemented whenever new changes were being made to any of the pages.

After using the validation, I was able to rectify the errors as illustrated in image 26. During the testing plan some elements did not work when initalising JavaScript after several changes and attempts such as a validation on the subscription section so it done using CSS and HTML.

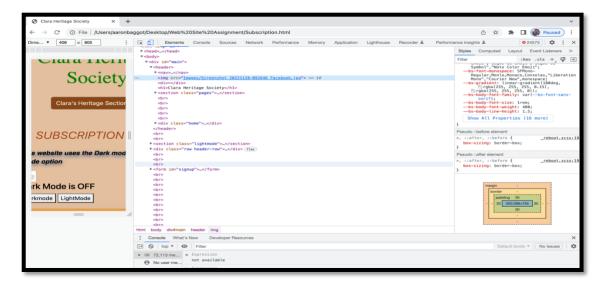


Image 20

```
Clara Heritage Society

Clara
```

Image 21



Image 22

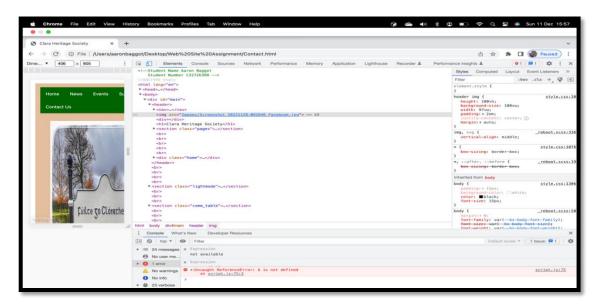


Image 23

HTML Validation Errors

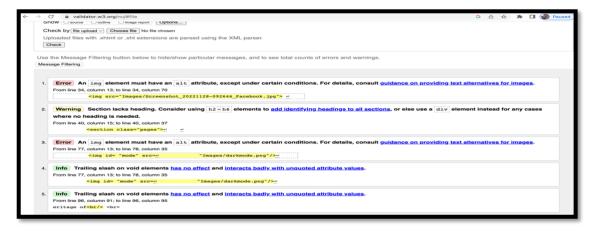


Image 24



Image 25

CSS Validation Errors



Image 26

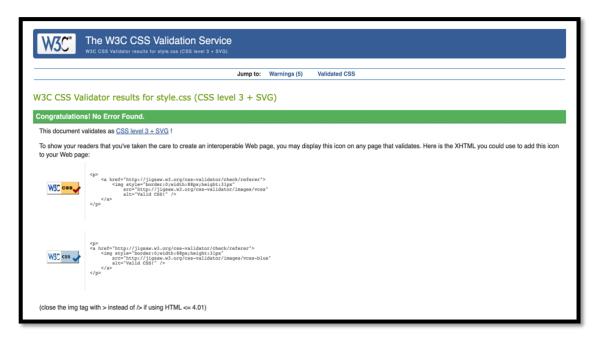


Image 27

Site Evaluation

In terms of evaluating user experience, it is difficult to define rigid rules and there is no fool proof way to ensure that the user experience works. I considered Heuristics evaluation by Jacob Nielson; He makes a valid point to make sure there is a match between the system and the real world. To establish my own evaluation process and follow best practice guidance, members of the heritage society with varying degrees of ability and interest in technology were first asked to use and examine the site and provide feedback. While this was very useful it was related to people who all had an inherent interest in heritage and it was important to access people with little to no interest in heritage to ascertain how their experience would be, and if they used the website might they be drawn in. This was done by asking the committee to pick a demographic of people with interest, some interest, and no interest in heritage and ascertain their thoughts on the site. The feedback from this exercise proved to be the most valuable and evoked considerable tweaking of the site.

The following feedback points were given:

- The direction pointers in the carousel were not visible by the user
- Original navigation bar in the header section was too low down
- Border around the weather app was correct with the theme throughout
- Text in some sections didn't meet criteria needed to be simple and plain text
- Colour change when hovering over links

Overall, the user found the website easily accessible and efficient. The text, colour scheme and font size were satisfactory. The colours used were consistent throughout each page. JavaScript was used for validation form giving feedback to the user if a field wasn't filled in correctly in the home page. Another aspect used was recognition rather than recall whereby the user has the option to come back and recognise how to go back to main page. Each page illustrates the page the user is on and a tab bar to access any of the main pages. Flexibility and Efficiency text well known help user with messages in particular errors. Terms and conditions are something which will be added by the Heritage society afterwards as they will be accepting payments online.

Deployment

I signed up to infinity free (image 28) which offers free web hosting with impressive marketing of unlimited disk space, bandwidth, and domain hosting. It allows hosting of as many files needed on the account server, which gives the opportunity of as many viewers visiting the site and any amount of available primary web addresses. With permission from the Heritage Society the web site will go online image 29.

The main techniques used for Search Engine Optimisation (SEO) were focus on the user experience, targeted keywords in the correct place. Developing relevant links. Keeping the site responsive and efficient. The metadata is important as it is the first thing the user sees which influences whether they click onto the website. Improving existing content and adding missing subtopics.



Image 28

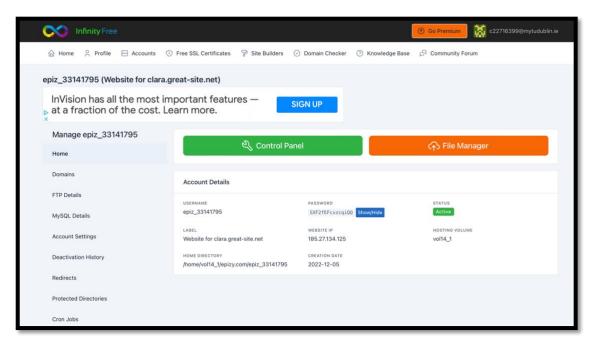


Image 29

Conclusion

Having completed this assignment it is clear that an important aspect of designing a website is drafting a plan and note the most important features.

The website must be user friendly and easily edited by a society member. This was achieved using Visual Studio Code to compile all the code together from HTML, JavaScript, and CSS. The stages taken were a description of the website and the content taking into consideration the types of users. Several websites were researched which formed ideas and a sample layout with a responsive design. A low Fidelity Prototype was created to describe the content and layout for the Clara Heritage Society. It was then taken to the development and testing stage which included validation and cross browser compatibility. Finally, the website was evaluated by various users from different tech capabilities and deployed on a free web hosting domain Infinityfree.

Personal Learning Gained:

The task of researching, compiling, and sourcing the requirements for this assignment has provided tremendous learning opportunity. It has provided knowledge and understanding of the importance in following the recommendations and functionality between different core technologies HTML and CSS when building a website. How each are different, HTML is the markup language and CSS the visual and aural for styling. The importance of a user-friendly site to attract the revisiting of users to the website. This was achieved from the lab exercises and lecture notes.

The knowledge around resolving problems, analysing faults, using appropriate diagnostic tools and resources when investigating and verify findings, implementing and testing the solution how to compile across a network.



There is already a heritage committee in place, but they don't have a website. They have a

website is something they'd be open to exploring. The committee viewed my proposal

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Web Dev 1 Weekly Project Report - Week 2

Full Name Student Number:

Aaron Baggot. C22716399 TU856 Monday 7th November 2022. Sunday 11th December 2022. Date Started: Target Date:

Summary:

This week I explored various web pages, lecture notes, videos and laboratory assignments which will help in the initial stages of the development process of the website. Contact was made directly with a member of the committee who will forward images which may be used and published in the website.

This week the work completed included:

- Familiarised myself with Bootstrap by trying out different ideas and creating several web pages with different functionalities.
- Linking the web pages for using html and CSS.
- Presented to the committee different web pages, dropdown menus, sign-up forms and membership payment area.
- Organised a folder for the website following the required instructions which included Images, CSS, Scripts and HTML. Separation of concerns.
- Selected text for the title and dropdown menus and explored various types of font.
- Explored using a slider for the Images.
- Embedded a map and real time weather update



Web Dev 1 Weekly Project Report – Week 3

Full Name : Aaron Baggot. **Student Number:** C22716399 TU856

Date Started: Monday 7th November 2022. **Target Date:** Sunday 11th December 2022.

Summary:

The web development assignment this week met with some difficulties including an irresponsive bootstrap and JavaScript. Therefore, it was decided to restart the project from the beginning. There has been a lot of communication with the Heritage committee on some of the content they wish to have on the website i.e., Subscription, videos, photos, fonts, and colours. I carried out watching some more online videos and looked at similar websites for resources and ideas.

JavaScript is something I need to familiarise myself with more.



Web Dev 1 Weekly Project Report – Week 4

Full Name : Aaron Baggot.
Student Number: C22716399 TU856

Date Started: Monday 7th November 2022. **Target Date:** Sunday 11th December 2022.

Summary:

This week having completed the overall structure of the website, dropdown menus, videos, text, audio, sticky images, carousel etc. There was plenty of contact through email with the Heritage Society committee on developing a design to meet their criteria including the placement of text, videos, images. The testing phase was implemented and I started the writing up of the overall final report. I explored ideas on how best to create Javascript from lecture notes and online resources adding my own knowledge from learning gained. Thesse ideas included a small digital clock, dark or light mode option and validation on the log in form. A test page was created before any additions made to the original website taking into consideration the expected audience for the website.

I signed up to a free web hosting site "infinityfree.net" where I will host the website on completion.

The testing phase included:

- Responsive website on most platforms including Google, Firefox, Safari
- Checking the font size, colours and font-family type for legible reading by the user on every page
- Editing and wraping of text using for user friendly reading so it flows properly throughout
- A table with local services was added to the contact page using element
- User validation form implementing JavaScript
- Grouped all CSS elements with there allocated pages for easy access and future changes



Web Dev 1 Weekly Project Report – Week 5

Full Name : *Aaron Baggot.* **Student Number:** C22716399 TU856

Date Started: Monday 7th November 2022. **Target Date:** Sunday 11th December 2022.

Summary:

The web development assignment this week included the testing, site evaluation, final development, and project report writeup. This was implemented by inviting some of the Heritage Society and random people to use the website and get their opinions. I did a lot of error checking, spelling checks, colours, fonts etc. Also, implementing some JavaScript caused a few issues which after trial and error were resolved. Deployment by signing up to infinityfree which is a free host for the website.

- Writing up the Final Report
- JavaScript implementation
- Error checking
- Site Evaluation
- Deployment