COMPUTER SCIENCE

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1. Introduction

Every computer science candidate should have some form of digital presence in today's highly competitive online environment. In this project, I (Marcus Raymond Cummings) have focused on a developing a personal portfolio, so that he has a clearer demonstration of his technical capabilities and trajectory. The overall aim is to develop and create a digital portfolio that exhibits transferable soft skills and technical capability.

Target Audience:

The portfolio is developed specifically for hiring managers reviewing applications for a working student position. It provides a consolidated, standardized platform for hiring managers to quickly evaluate the applicant's credentials, projects and experience.

Key Deliverables: The key deliverables of the project included a professionally formatted curriculum vitae (CV) produced through LaTeX, an organized GitHub repository containing the necessary supporting files, a mobile-responsive portfolio website hosted via GitHub Pages, and a complete report outlining the design and implementation.

Significance:

In addition to being a technical artifact, the portfolio is also a personal branding identity. In context of computer science employment, the digital exhibition of their work product is an essential skill. Having a portfolio demonstrates proficiency in web-design, documentation, and version control while also demonstrating self-representation ability.

2. Portfolio Website

Website Architecture and Design

A portfolio webpage has been produced that is simplistic and modularised to adjust the priority to usability and readability.

Figure 1: Website page

(Source: Acquired from VS-code**)**

The main HTML page, index.html, consists of a header, a navigation bar, as well as four main content blocks (About, Projects, CV, and Contact). This linear, scroll-friendly layout is sure to ensure easy movement amongst the users, especially those who are going through candidate portfolios as interviewing managers.

Header and Navigation

In the header, it offers his full name with a brief professional statement, allowing the visitor to the site to understand the content in brief. Right below it is the navigation bar that includes

anchor links to internal parts: About, Projects, CV/resume, and Contact. This simple and simple structure is quite effective, especially when it comes to single-page designs as it allows effortless navigation of a site (Krysta and Kanbach, 2022).

Design Logic and Content Sections

Each content component is effectively described with the help of semantic HTML tags. In the section "About" it is possible to find a short personal description which includes the information about the purposes and the past information. In the Projects section, important technological initiatives have been outlined with their short descriptions and clicking live links is optional. The section of the CV contains a printable PDF file created through LaTeX to allow the recruiter to view an adequate curriculum vitae as well. The Contact section has a direct mail connection and all the required contacts to enable easy communication.

The design rationale is highly concerned with the aspects of accessibility, reactivity, and clarity (Danko *et al.*, 2022). In order to maintain smooth and attention-getting layout, the sections are specially padded to read and made in parallel typeface and color palette, predominantly teal, white and dull gray.

Mobile Design and Responsiveness:

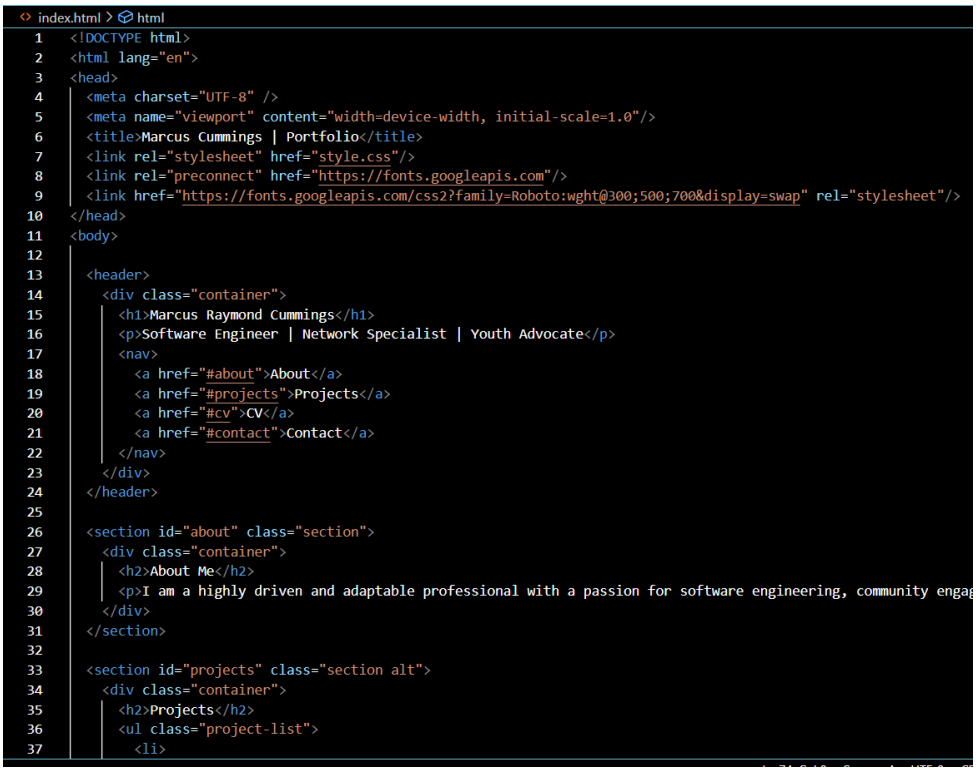

Figure 2: HTML code

(Source: Acquired from VS-code**)**

A crucial element of how the front-end approach is applied in the construction of the website is the responsiveness. Using relative units and responsive grid system encourages the layout of the approach of mobile first. Media queries allow recruiters and visitors to easily retrieve the portfolio on desktops, tablets, or mobile devices by assuring that information conforms fluidly across screen sizes.

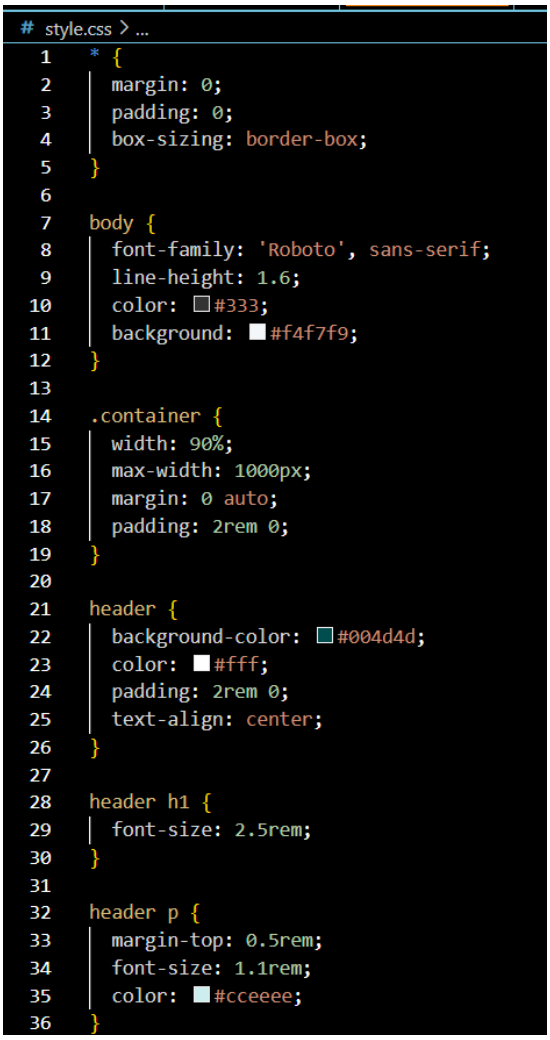

Figure 3: CSS code

(Source: Acquired from VS-code**)**

The index.html and style.css files bundled up in the project directory are organized for maintainability. This separation of assets, style (CSS) and HTML file is regarded as a clean development practice (Mohajeri, 2023).

Readability and User Navigation:

This website is readable and encourages user navigation for good information discovery. It uses anchor-based navigation, as well as content organized into clear sections, which allows

hiring managers to quickly find relevant information without distractions due to its presentation (Westerveld *et al.*, 2023).

3. GitHub Repository Structure

The GitHub repository is the base for hosting and maintaining the portfolio website. The repository employs a simple structure with clear and organized folders for any collaborators or recruiters viewing it:

At the root is an index.html file which contains the main structure of the portfolio. The index.html file calls a style.css file to define the presentation. The repository has a directory called /cv/ that contains a curriculum vitae, in PDF format, created using LaTeX. This repository has an optional /assets/ folder that could be useful, so that any media related to icons or project images can be included in the future.

The portfolio also contains a clear README.md file that describes the purpose of the repository, the key features of the portfolio, the technologies behind it, and how to install or change the project. This adds safety for documentation and transparency, as well as representing good practices.

The source of deployment for GitHub Pages is linked to the root of the main branch in the repository. Due to this, the repository can function as a live website accessed through the public URL. As long as the portfolio continues to be changed regularly, GitHub enables collaboration with versioning, and provides a stable web host that does not require external dependency (Mikkelsen and Røiseland, 2024).

4. Design Decisions and Rationale

The purpose of the design choices made carefully to create a portfolio site has been clarity, accessibility, and professionalism. Each structural and aesthetic element was selected with the aim of keeping a lightweight and recruiter-friendly user experience but serving a purposeful and a visually pleasing objective.

Design and the colour scheme:

The color scheme employed on the site consists of teal, white and different shades of gray. The professionalism and trust have been communicated with the help of the craft color teal which is quite calm and modern. The use of gray allows a balance of the available space and provides a background to distinguish things or as a separator, and white would be overused as an overall

background colour to ensure high contrast and readability. The combination can ensure the website remains clean, though easy to navigate and attract the user.

Typography-Readability:

As the typeface of the webpage, the style of font used was Roboto, a modern sans-serif genre famous because it possesses high levels of cross-platform accessibility through the internet. The judicious application of the typeface all throughout the site has made it look clean and filled up, which enhances user experience especially during the time one is reading.

Structure and Layout:

Its layout is an easy card grid with a clearly outlined sectional breakdown. The location can be grown in the future in anticipation of content growth and it is not difficult to use due to its modularity. In order to ensure that the portfolio is fully responsive on devices, mobile-first design concept was implemented. In order to achieve consistency among the screen sizes, the CSS took the opportunity of relative unit and flexbox orientation.

Accessibility and HTML semantic:

Semantic HTML5 elements were used to make it readable and accessible to the search engines (Varma and Virmani, 2022). Understandable link word, legible font sizes and sufficient contrast ratios are elements of considerations under accessibility. Although the site is not dynamic, it is also designed in a way that can be navigated using the keyboard and by screen readers, which complies with the principles of inclusive design.

Performance and Simplicity:

It is intentional for the website to have a simplistic style. The website does not have unnecessary scripts or media-intensive content to ensure the site is fast-loading and runs optimally. This is especially helpful for hiring managers or recruiters who review many applicants and appreciate getting to the information without a lot of searching. Simplifying also reduces technological overhead, and allows an increased visibility for the primary content - the projects, skills and experiences.

Hosting on GitHub Pages:

GitHub Pages provided the site with reliability, low cost and compatibility with version-controlled repositories. It serves a professional technical portfolio well because it provides a stable, secure, and recognisable URL without needing proxy websites for web hosting.

5. Technologies and Tools Used

The portfolio website has been developed based on a limited selection of web technologies and productivity tools, selected for their reliability, accessibility, and compatibility with best-practices in industry. The intent of the project is to provide an example of basic web programming skills, while demonstrating professionalism, efficiency, and simplicity.

Frontend Technologies

The web site is purely frontend utilizing HTML5 as a structural basis. The use of semantic tags including and to define content structure not only establishes hierarchy, but also supports improved accessibility. These semantic tags not only support better SEO and screen reader access, but also allow for a cleaner and more maintainable codebase. CSS3 has been used for the presentation level enabling consistency, properness with respect to default fonts and ensuring responsiveness. At the time when styling I used styling both through regular CSS rules and CSS modern layout techniques . Flexbox is used to control the alignment and spacing of layout content. In the case of navigation and project sections the Flexbox content was inherently associated (i.e. navigation was a Flexbox space as well as the project area), but has the distinct advantage of organization for reference. Media queries were well adopted for controlling responsive allowances, especially as this reminded me of being seen or not based on a smattering of screen dimensionality with progressive reveal for seating adjustment to the dimensions of the user interface, as well as making font size adjustments to maximize readability and general aesthetics for desktop, tablet, and/or mobile.

Development and Publishing Tools

Visual Studio Code (VS Code) was the primary code editor used for writing the site; VS Code allows for syntax highlighting, Git integration, and live previews allowing for greater speed and accuracy during development. Version control was handled using Git, and code was pushed to a public GitHub repository (www.github.com/jeremytm) to demonstrate the evolution of the code, and for the eventual deployment. The site was hosted using GitHub Pages which offers a free stable solution for static web site hosting, as well as the ability to update the site without extra work directly from the GitHub repository, all while working out changes to actions or approaches consistent with a version-controlled software development platform.

Supporting Tools and Assets

The website’s visual appeal and clarity have been improved by employing Google Chrome in addition to the writing style. Additional icons and resources for download were included to make navigating the site more engaging and interactive. Together, these technologies and tools

showcase a deep understanding of frontend development and modern techniques in software engineering (Roberts and Hamilton Edwards, 2023).

6. Key Content: CV and Project Highlights

The information presents the qualifications in a concise and professional manner, and then utilises a downloadable CV created using LaTeX, to display his credentials in the portfolio. Marcus' work history is included in the resume, and documents his job as a Network Engineer at Esscon Services where he managed high-performance systems, and a career defining as a Youth Coordinator where he mentored and provided seminars to more than 100 youth. The portfolio directs notice to his educational history from BlueCrest College and GISMA University and important technology, management, and communication skills.

In addition to his CV, he includes three real-life projects. These three projects include a youth outreach application developed to increase community engagement; a network monitoring tool which allows real-time performance, and the portfolio website which shows his skills as a web developer. These projects allow Marcus to be better prepared for roles in a technology, and social-oriented career demonstrated his ability to link technical understanding to real-world models.

7. Strengths and Weaknesses

Refelection

At the time when building my portfolio website I made several intentional decisions that enabled me to design a clean, professional, and user-friendly site. One major benefit of my website is responsive design, which ensures optimal use across a variety of platforms (desktop and mobile). The prototype to maximize clarity and user experience are priorities in minimal design, essential for a hiring manager or recruiter who is reviewing several applications.

Another highlight of my site is the LaTeX generated CV, as it demonstrates both proficiency with professional documentation tools and presents content in a professional, organized, and accessible format.

The website's project section is intentionally focused on relevant experiences and real-world applications related to the opportunity I am applying for. The overall portfolio has been arranged to show professionalism, technical expertise and solid sense of direction; all sought-after in a working student or early-career developer. Nevertheless, I also know some of the shortcomings of the present version. To support simplicity and efficiency, JavaScript

interactivity has been intentionally excluded, however, limiting the level of user interaction, dynamic elements, etc. able to enhance the interface. Moreover, the site itself is totally static and has no database-related or backend features which could provide it with interactive concepts requirements, such as form processing or user input (Kevin, 2022). Finally, only three projects can be demonstrated nowadays. These are major samples of my work, however I intend to add more to this section because as I complete more and more complicated and diverse projects.

8. Future Improvements

Reflection

I want to make some changes in the future to improve the functionality and interaction with the site. One of the more significant upgrades would be the addition of a contact form, which could utilize JavaScript or Netlify Forms for simple validation and completion. I would also like to incorporate animations and filters to engage the user with JavaScript. It would be helpful to include a blog column or short case studies, giving more information regarding how I approach technical issues. I would also desire to have a dark/light mode in order to enhance usability and user preference. The ability to improve content management, theming and scalability in the long term would be achieved by changing the project to a static site using Jekyll.

9. Conclusion

As the portfolio project comes to a successful end, a neat, usable, and well designed personal website has now been produced. The educational background and professional experiences and abilities are all well represented in a clear and usable digital portfolio; and the site allows hiring managers to interact with his abilities in an organized way. The site is even more useful and relevant in a hiring environment with the addition of a LaTeX resume and some selected project highlights.

In the process of developing his portfolio, Marcus demonstrated his command of key web technologies, including HTML5, CSS3, responsive design paradigms, and deployment through GitHub Pages. Here, it is also learned a good deal about version control software, semantic web design, content organisation and digital self-presentation.

This project does a lot for his career readiness by providing a meaningful context to view his technical abilities and accomplishments. At the time while the current, static, minimalist site is a good start, it will only get better. It will further improve the site and website, and use other

tools to create interactivity and to expand the content, and enhance the layout through some familiarity with CSS and HTML.

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