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PRIFYSGOL CAERDYDD

Hopza

Too fast to last

VISIT US

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https://effatalkenani.github.io/Hopza/index.html

Design Process (Agile-based Approach)

I followed an iterative and structured development process inspired by the Agile methodology, which is characterized by a focus on incremental improvement through short and flexible development cycles (Agile Alliance 2025). This approach allowed continuous testing, refinement, and integration of new features while maintaining usability, accessibility, and compliance with the assessment requirements.

1-Requirement Analysis

The process began with reviewing the assessment brief to identify the core functional requirements. I categorized them into two groups:

Core features: home content, order system, and contact form.

Additional enhancements: theme and language toggling, a live search bar with instant suggestions, accessibility support for users with disabilities, field validation for login/register forms, and an invoice printing feature.

2-Planning and Sketching

After defining the requirements, I created initial sketches and wireframes using my LCD writing tablet to visualize the overall layout and navigation structure after integrating the additional features.
These sketches helped clarify the interface organization and ensured smooth alignment between the core and enhanced functionalities prior to the development stages.

3-Design and Development

development phase began with HTML, structuring the pages using semantic elements and ARIA labels to ensure accessibility compliance.
Then, CSS was used to establish a consistent colour scheme (blue and yellow), chosen based on HCI studies highlighting their positive emotional and psychological effects on users (Fialkowski and Schofield 2024). Finally, **JavaScript** was implemented to add interactivity and dynamic behaviour.
The main common.js file handled several functionalities, including:

Language switching (langBtn): dynamically toggles between English (LTR) and Arabic (RTL).

Theme toggle (themeBtn): allows switching between blue and yellow colour schemes.

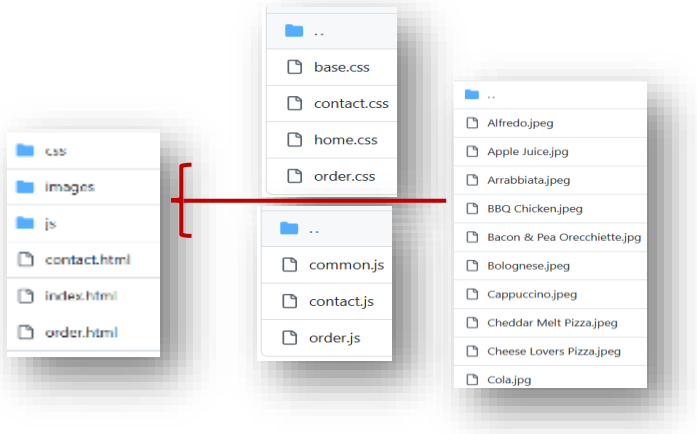
Live search suggestions: display results as the user types.

Login/Register modals: open dynamically with built-in **input validation**, ensuring correct data entry before submission.

Invoice generation and printing: a custom-built function enabling users to preview and print their invoice directly.

All project files were clearly commented to explain their structure and functionality.

The directory layout to the right illustrates the full internal organization of folders and files.



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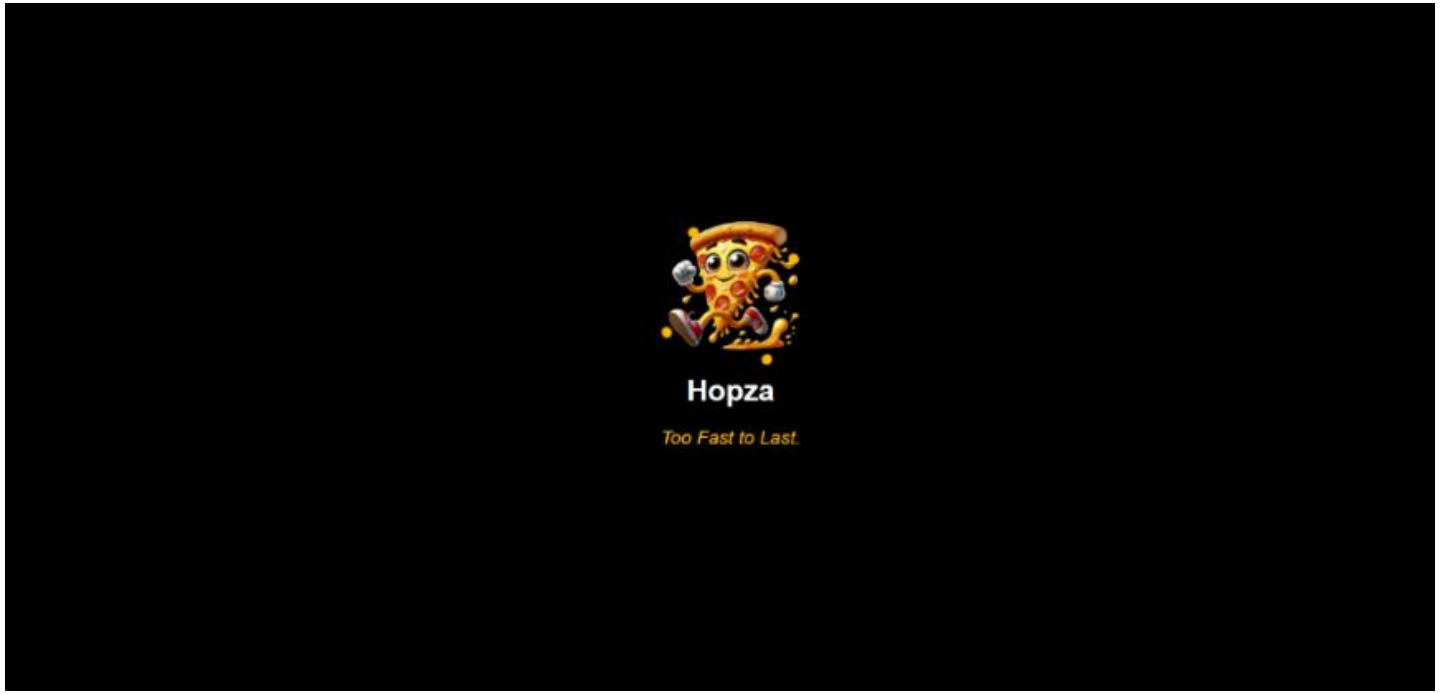
Screenshots Of the Main Interfaces

The following screenshot illustrates the final design outcome of the website after applying all discussed development stages, including the Welcome (Home) Page, Order Page, and Contact Page.

Welcome (Home) Page

Before the Home Page loads, a short Splash Screen appears displaying the Hopza logo and slogan (“Too Fast to Last”), introducing the brand identity in a visually engaging way.

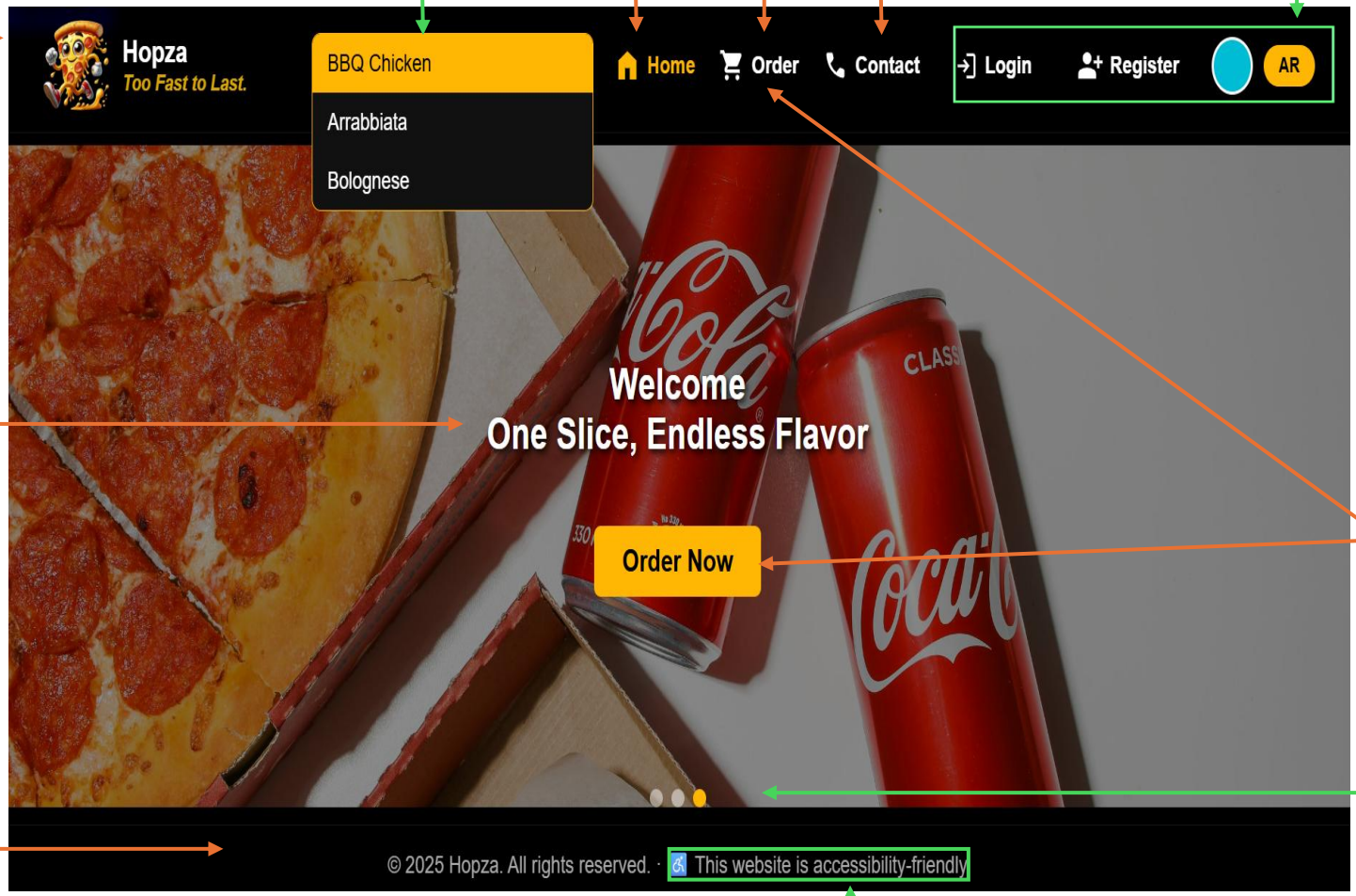


search bar displaying live suggestions for user

Home, Order and contact selection in the right integrated via Google Fonts

Language & Theme Toggles beside Login/Register icons

Navigation bar at top with company name on the left



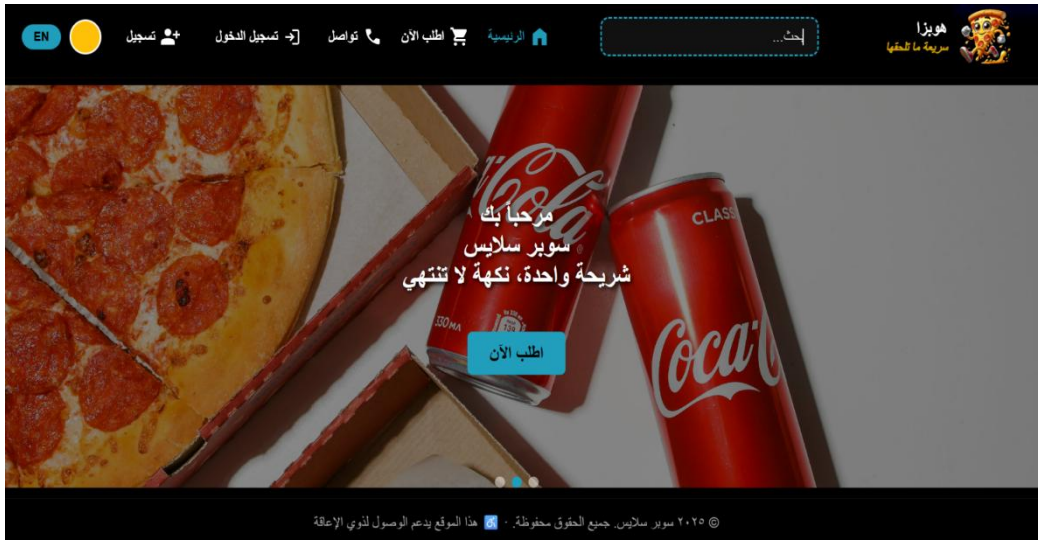
Welcome text with image (slider), the content cantered horizontally and vertically

Same functionality

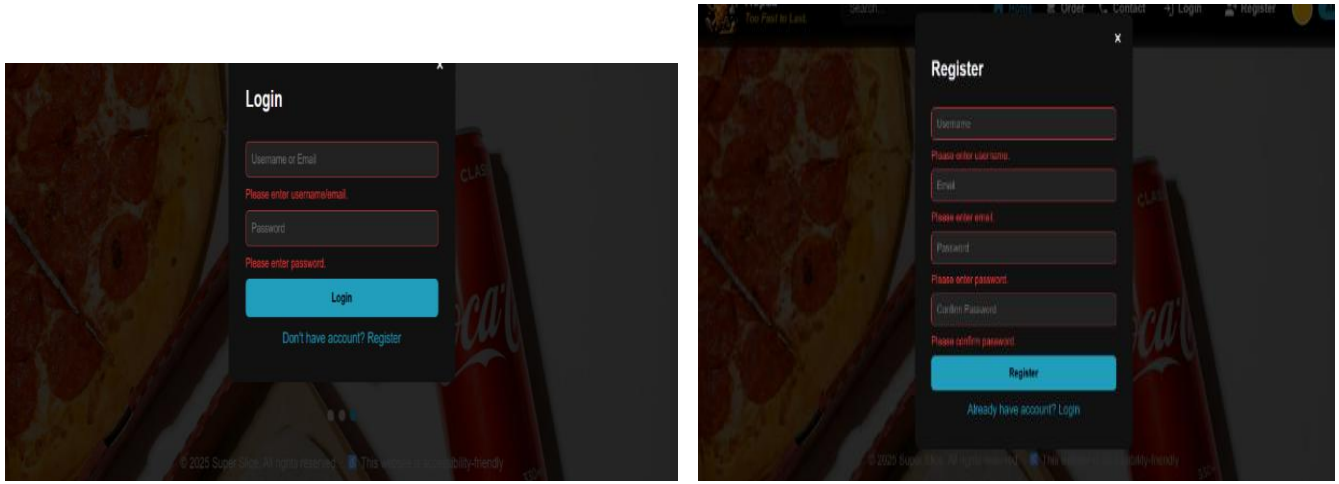
Copyright bar at the bottom

interactive image slider enhancing

Footer section confirming the website's accessibility support.



After changing the language to another language



Pop-up windows for Login and Register forms with input validation.

Order page

Sorting options (3 choices name, price and calories)

Food category section (3 choices, >10 items per category)

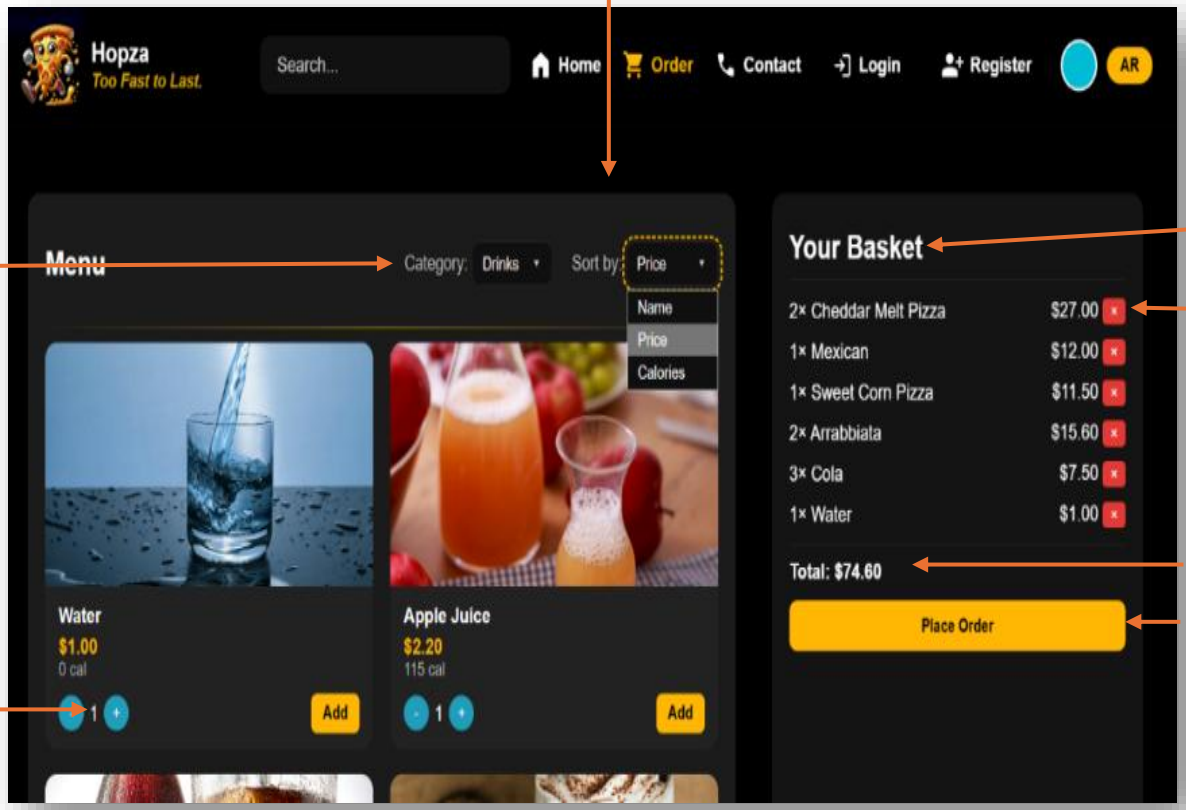
Basket

Removal option

Total calculation

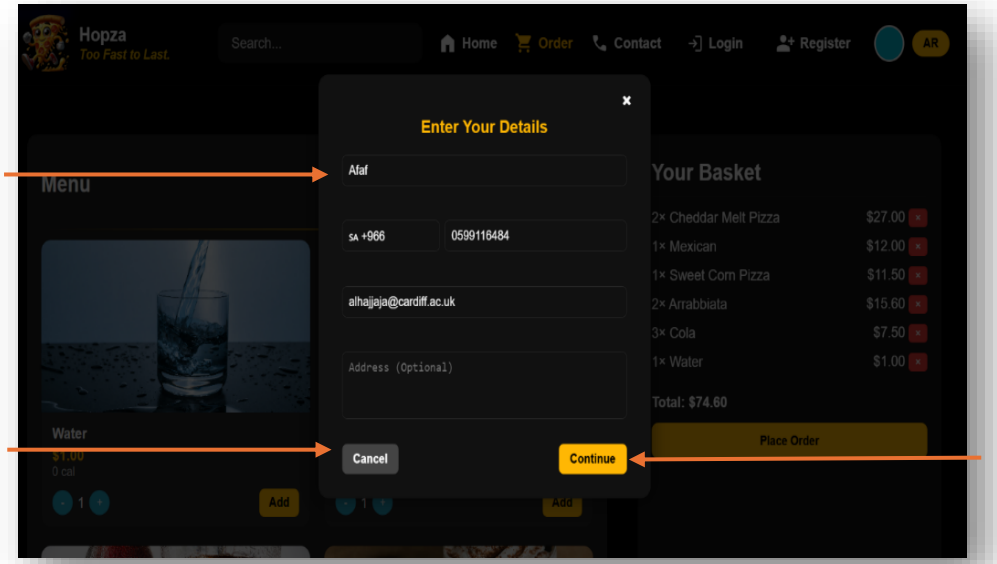
Start order dialogues

Adding variable number of

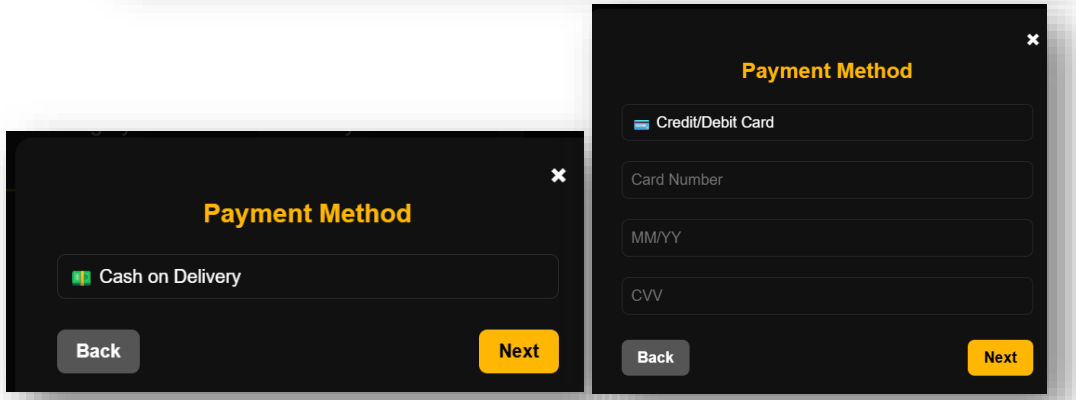


Contact details (Name, phone with country key, email and address

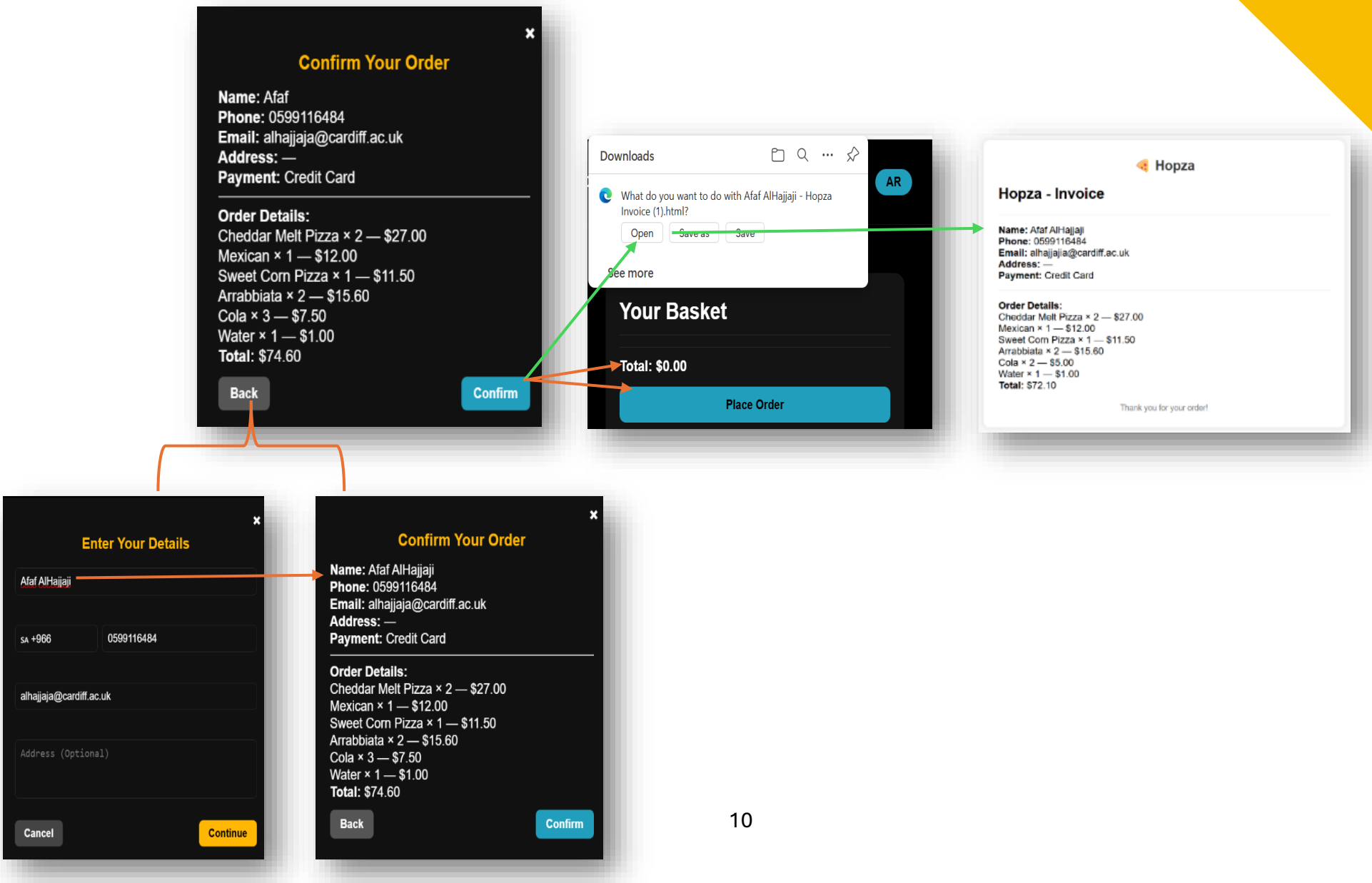
Cancel dialogue



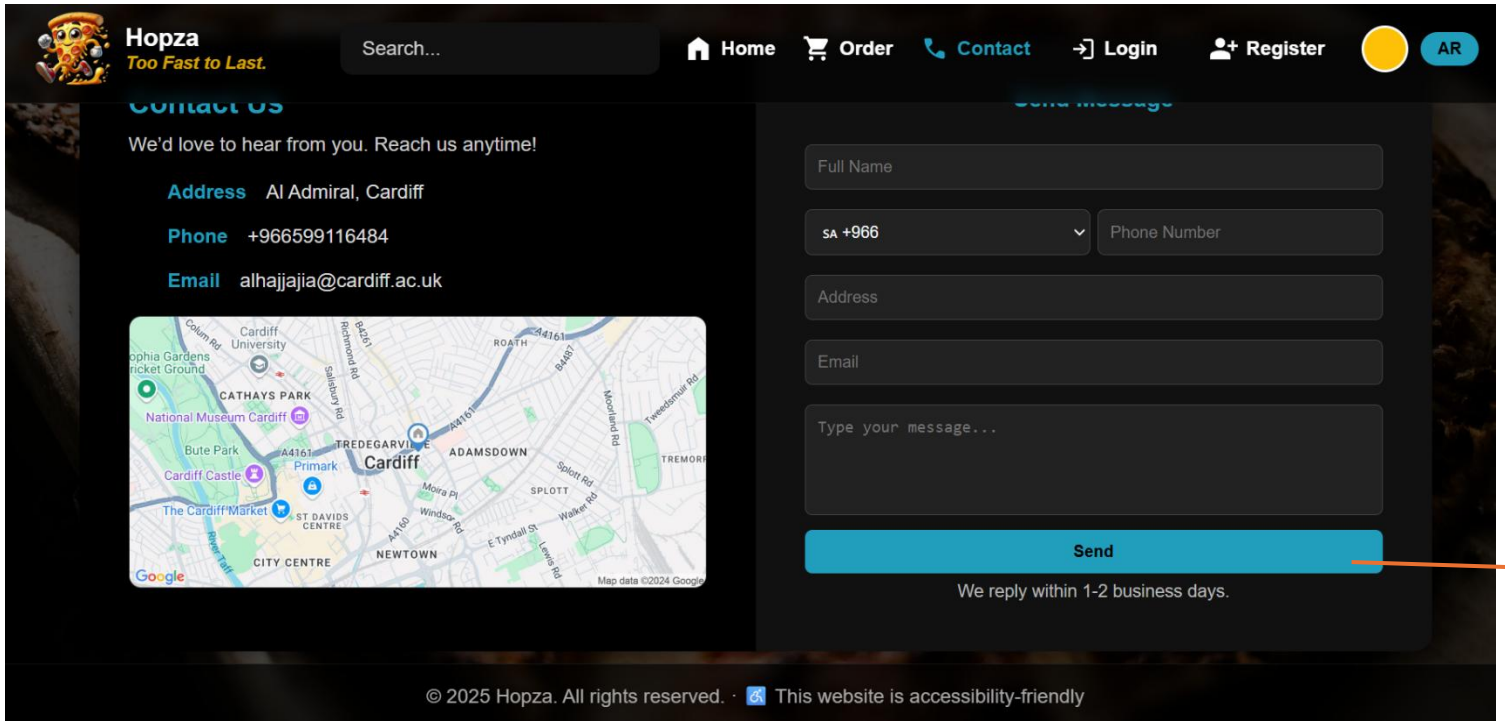
Continue to the next step

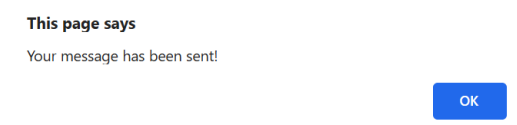


Payment Options (Card / Cash on Delivery)


Confirm Your Order
Name: Afaf
Phone: 0599116484
Email: alhajjaja@cardiff.ac.uk
Address: —
Payment: Credit Card
Order Details:
Cheddar Melt Pizza × 2 — $27.00
Mexican × 1 — $12.00
Sweet Corn Pizza × 1 — $11.50
Arrabbiata × 2 — $15.60
Cola × 3 — $7.50
Water × 1 — $1.00
Total: $74.60
Back
Confirm
Downloads
What do you want to do with Afaf AlHajjaji - Hopza Invoice (1).html?
Open
Save as
Save
See more
AR
Your Basket
Total: $0.00
Place Order
Hopza
Hopza - Invoice
Name: Afaf AlHajjaji
Phone: 0599116484
Email: alhajjaja@cardiff.ac.uk
Address: —
Payment: Credit Card
Order Details:
Cheddar Melt Pizza × 2 — $27.00
Mexican × 1 — $12.00
Sweet Corn Pizza × 1 — $11.50
Arrabbiata × 2 — $15.60
Cola × 2 — $5.00
Water × 1 — $1.00
Total: $72.10
Thank you for your order!
Enter Your Details
Afaf AlHajjaji
SA +966
0599116484
alhajjaja@cardiff.ac.uk
Address (Optional)
Cancel
Continue
Confirm Your Order
Name: Afaf AlHajjaji
Phone: 0599116484
Email: alhajjaja@cardiff.ac.uk
Address: —
Payment: Credit Card
Order Details:
Cheddar Melt Pizza × 2 — $27.00
Mexican × 1 — $12.00
Sweet Corn Pizza × 1 — $11.50
Arrabbiata × 2 — $15.60
Cola × 3 — $7.50
Water × 1 — $1.00
Total: $74.60
Back
Confirm

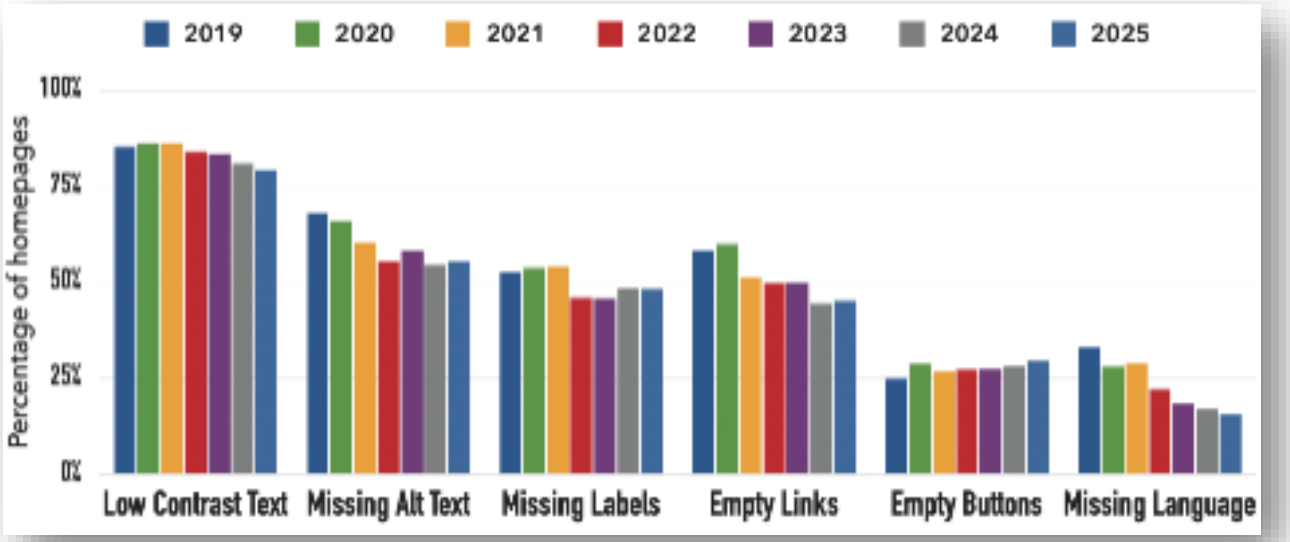
Contact Page





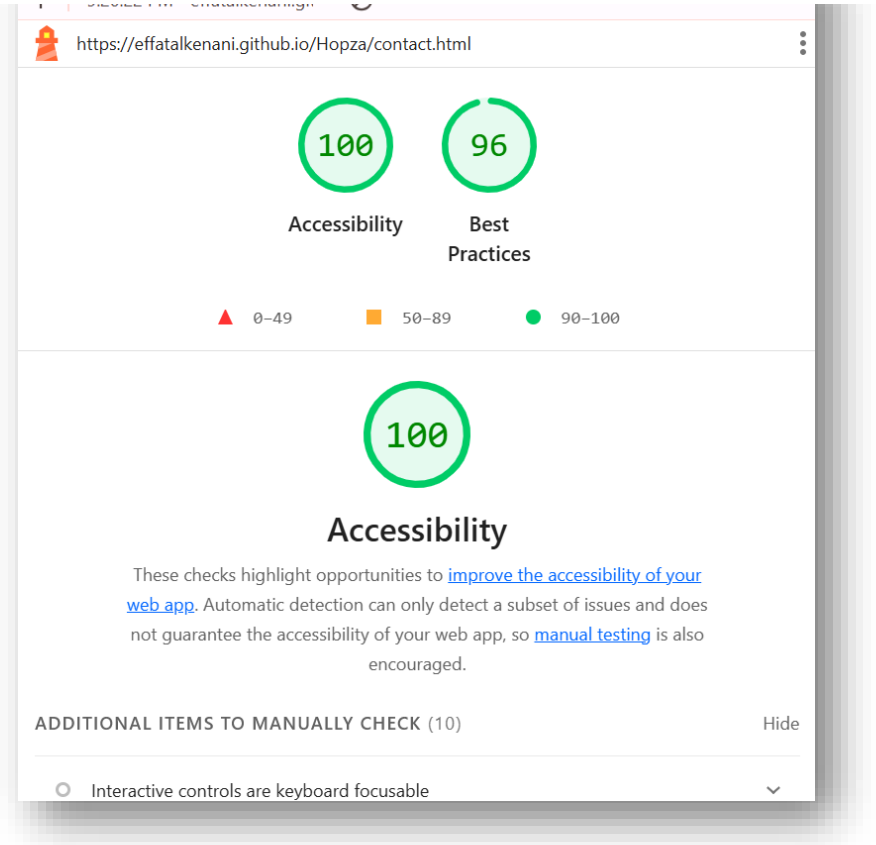
4-Testing and Enhancement

Testing was conducted continuously after implementing each new feature whether a core functionality or an additional enhancement following the iterative development approach.
The Order Page was the most interactive section of the site.
According to the *2025 WebAIM Million Report*, 94.8% of websites still fail to meet WCAG 2.2 accessibility standards, mainly due to low-contrast text and missing alternative text (WebAIM 2025). Therefore, accessibility improvements were intentionally included as part of this project to support users with disabilities, as illustrated in the figure below.



Common website accessibility errors between 2019 and 2025 (WebAIM 2025).

During the testing phase, the Contact Page achieved a perfect 100% accessibility score, confirming that all functions operated correctly and complied with WCAG 2.1 standards



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Prompt Engineering Applications

As part of the development process, I utilized prompt engineering techniques to guide AI tools in generating and refining specific website functionalities. These prompts were designed to produce accurate, accessible, and standards-compliant code segments. Below are the three main prompts

Prompt 1

Splash Screen Implementation

Prompt Example:

"Generate HTML, CSS, and JavaScript code for a splash screen that displays a logo, tagline, and animated dots for 2 seconds before fading into the main content. The design should be accessible and responsive.

Reason for Use:

This prompt streamlined the creation of a visually engaging entry experience.

Prompt 2

Language and Theme Toggle System

Prompt Example:

"Write JavaScript logic to switch website language between English (LTR) and Arabic (RTL) and toggle between two themes. save persistent user preferences using localStorage."

Reason for Use:

This prompt demonstrates AI-assisted problem solving for multilingual support and customization. It reduced development time.

Prompt 3

Interactive Search Suggestions

Prompt Example:

"Create a JavaScript function that listens to input in a search box and displays up to five live suggestions matching an internal keyword list. Ensure it's accessible via keyboard and screen readers."

Reason for Use:

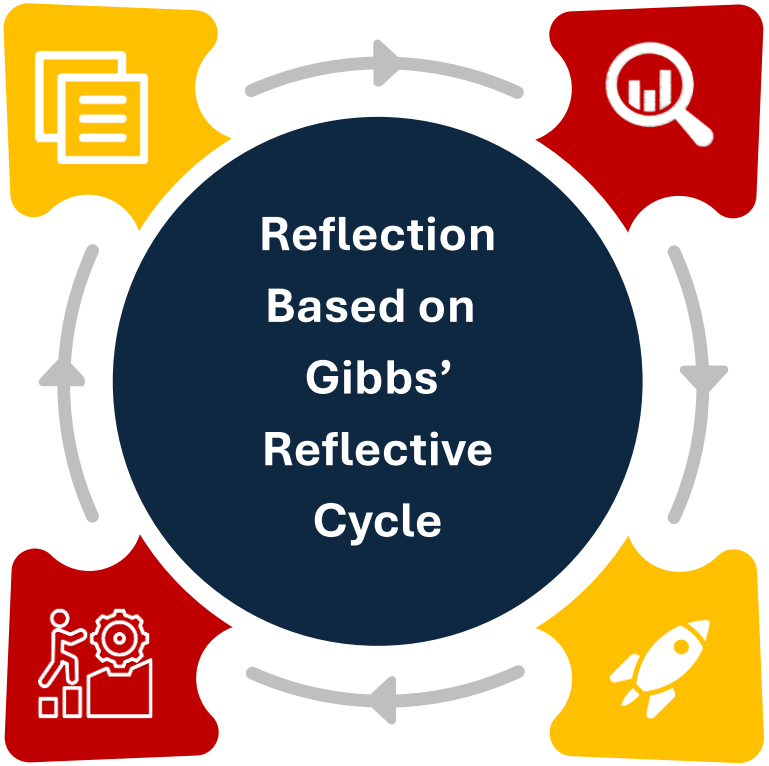
This prompt enhanced interactivity and usability. It illustrates how prompt engineering can be used to generate efficient logic for real-time user interaction.

Reflection Based on Gibbs' Reflective Cycle (1988)

Description

This reflection applies Gibbs' Reflective Cycle (1988) to assess my experience using AI during the website development process. The following table summarizes the approximate contribution of AI versus manual

Category	AI Contribution	Manual Work
HTML	20%	80%
CSS	25%	75%
JavaScript	70%	30%
Accessibility Features	20%	80%
Overall Contribution	~34%	~66%



Analysis

AI enhanced efficiency by enabling faster error detection, increasing productivity, and providing 24/7 availability, allowing the project to be completed within two weeks. *(This demonstrates)* how automation can accelerate development and improve workflow.

However, it lacked visual creativity and contextual awareness, requiring human oversight to maintain consistency, color balance, and accessibility. *(This contrast highlights)* that AI is effective technically but still limited in design judgment.

Consequently, the synergy between automation and human design judgment resulted in a coherent and inclusive final website.

Evaluation

The development process involved several key challenges and solutions.

-The external icon limitation was solved by converting icons to inline SVGs, which proved effective for accessibility.

-The limited theme and language toggle was addressed using localStorage, ensuring site-wide consistency.

-Managing over thirty images required consistent naming to enhance reliability and reduce loading issues.

-Finally, inconsistent AI output was improved through refined prompts, boosting precision and performance.

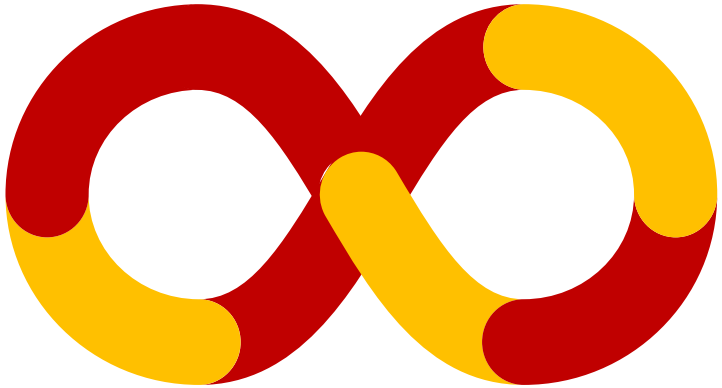
Action Plan

In future work, I aim to enhance my prompt engineering skills through recent studies to achieve higher precision, using AI for optimization and validation instead of direct generation.

Best Practices from the module

Computational

In developing the website, I applied the core principles of **Computational Thinking** including *Decomposition, Abstraction, Pattern Recognition,* and *Algorithmic Thinking* to organize the workflow and solve complex problems efficiently.
These principles were implemented within the development **methodology explained earlier**, ensuring adaptability, structure, and continuous refinement throughout the process.



In HTML

I selectively used **semantic elements** to enhance structure and accessibility. While tags were still used where appropriate, clearer elements such as <header>, <main>, and <nav> were incorporated to provide a more meaningful hierarchy for both users and assistive technologies. Additionally, HTML code was thoroughly **documented** using both **single-line** (<!-- comment -->) and **multi-line** comment blocks to ensure clarity, maintainability, and easier collaboration.

In CSS

I utilized **Flexbox** and **CSS Media Queries** to achieve a responsive and balanced design that adapts smoothly to different screen sizes.
I also applied CSS selectors strategically including *class*, *ID*, and *descendant* selectors to maintain design consistency and reduce redundancy across pages.

In JavaScript

I followed best practices such as modularizing **functions**, using **descriptive variable names**, and structuring logic clearly.
Additionally, I placed all **<script> tags** at **the end of the <body>** to optimize loading performance and ensure smoother user interaction.

References

Agile Alliance 2025. *A short history of Agile*. Available at: https://agilealliance.org/a-short-history-of-agile/ [Accessed: 9 October 2025].

Fialkowski, B. and Schofield, D 2024. *Considering color: applying psychology to improve the use of color in digital interfaces*. *Art and Design Review* 12(4), pp. 306–329. https://doi.org/10.4236/adr.2024.124022

Gibbs, G 1988. *Learning by doing: a guide to teaching and learning methods*. Oxford: Oxford Polytechnic. Available at: https://thoughtsmostlyaboutlearning.files.wordpress.com/2015/12/learning-by-doing-graham-gibbs.pdf [Accessed: 21 October 2025].

WebAIM 2025. *The WebAIM Million: the 2025 report on the accessibility of the top 1,000,000 home pages*. Logan, UT: Utah State University. Available at: https://webaim.org/projects/million/ [Accessed: 10 October 2025].