

InteractAble

Wireframes

The initial site design was established via the creation of low-fidelity sketches that wireframed the overarching layout, interactions, and presentation of the site.

Low-fidelity sketches enabled rapid iteration of design concepts and interactions without concern for more time-consuming design details such as colour and typography. The resulting wireframe sketches outline the general style and structure of the frontpage, subpages, and interactive elements.

It was found that a traditional site presentation of title, primary navigation, and main content, was suitable.

In addition to presentation, the sketches also identify the interactive elements of the site, such as the primary navigation visual states based on user interactions, and interactive example panel layout and interactions with controls and preview elements.

InteractAble is a web-based resource for people to intuitively learn about common web accessibility considerations, focusing on the W3C Web Accessibility Initiative principles of perceivable, operable, understandable, and robust. The target audience is web development students and existing web developers looking to gain a greater practical understanding of web accessibility design considerations. The site was developed using an iterative design and development process, as outlined below.

Homepage
InteractAble

Interactive article page
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Navigation button interactions:
Front page nav button states -
white background primary accent underline and font
inactive Article page -
Operable
Resource

Primary navigation interactions
identified based on mouse cursor focus and user touch outlined, including transitions and colours associated with interaction states like hover, active and inactive.

Interactive example panels design aspects identified, including layout, control elements, preview panel, and expected user interactions.

Interactive "playground" elements -
User adjusts values to see impact on text contrast with different vision impairments.
Contrast value display and WCAG compliance.

Prototype

The prototyping phase consisted building and then iterating on the high-fidelity representation of the site design features.

During this phase, detailed design considerations were made and applied to the prototype, many of these considerations focused on aspects such as application of colour, typography, iconography, visual sectioning, depth and layering.

The process of establishing these design details resulted in the creation of three major prototype versions.

The final prototype was then used as an extensive reference during the implementation phase as it clearly set out the specific implementation details of the design, such as exact font names, element sizing, border and shadow properties, and colour shades. This was made possible thanks to the inspection tools provided by the prototyping software (Figma).

Initial prototype version outlines site presentation focusing on page layout, use of colour and incorporating visual hierarchy elements like page title, subheadings, and content, following an F-shaped layout.

InteractAble

Perceivable **Operable** **Understandable** **Robust**

Accessibility Principles

Perceivable >>
Understandable >>
Operable >>

Intermediate version refines layout and introduces depth by layering content with the use of shadows and borders.

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Accessibility Principles

Perceivable >>
Understandable >>
Operable >>

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Accessibility Principles

Perceivable >>
Understandable >>
Operable >>

Final version with refined use of accent colours, off-white background, and visual cues for common interactions.

Implementation

The site was implemented with a strong focus on accessibility, adaptability, and responsiveness.

Accessibility was addressed via the use of semantic page structure, the inclusion of additional meta data in page elements, and strict compliance with web standards.

Adaptability was achieved by using relative scale units throughout the implementation providing stable and consistent resizing and reflow of page content. An automatically adjusting colour scheme was also included to suit user preferences.

Responsive layout via the application of media queries and dynamic layout mechanisms like flexbox and grid was achieved to suit a variety of device viewports.

A final addition to the site design was a page footer, featuring a sitemap style footer navigation with links to both internal subpages (and subsections), and associated external W3C and WCAG resources.

The resulting site achieves a high level of usability and adaptability to suit a wide range of target users while accommodating their needs.

InteractAble

Perceivable **Operable** **Understandable** **Robust**

Learn Web Accessibility with InteractAble

Welcome to InteractAble, a resource focused on introducing web accessibility concepts. InteractAble is designed to help people intuitively understand web accessibility principles. The four key web accessibility principles set out by the World Wide Web Consortium's Web Accessibility Initiative are Perceivable, Operable, Understandable, and Robust. Following these principles serve as the foundation for creating inclusive websites. See below for a summary of the key considerations under each principle and links to interactive examples.

Perceivable >>
Operable >>
Understandable >>
Robust >>

Perceivable explores the impact of text size and contrast on the readability of text-based content on websites. We also introduce alternative text, which enables defining a written description of graphical content on webpages, allowing users who cannot see the content to still understand its purpose.

Operable focuses on enabling a diverse range of interaction methods. One consideration is tab order and keyboard shortcuts, accommodating users who might require or prefer interacting with page content without the use of a mouse cursor. The idea of motion sensitivity and the importance of reduced motion options is also introduced.

Understandable covers the importance of conveying information in a clear and concise way, such that it is inclusive of the widest audience possible. The need for consistency in webpage structure and user interface interactions is also addressed.

Robust highlights the importance of ensuring compatibility with a variety of web browsers and alternative user agents. We also demonstrate a basic screen reader and show the importance of correct page structure and metadata when supporting screen readers.

Perceivable Size and Contrast Alt Text and ARIA
Operable Keyboard Shortcuts Low Animation
Understandable Content Predictable
Robust Browsers Assistive Tech
Resources Accessibility Principles WCAG Quick Reference

Adaptive colour scheme implementation that automatically adjusts the applied colours based on the prefers-color-scheme media feature. This enables the site to adapt to match the user's operating system and browser themes, helping to maintain a cohesive and consistent viewing experience in a variety of situations.

InteractAble

Perceivable **Operable** **Understandable** **Robust**

Operable

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Keyboard Shortcuts

Keyboard shortcuts provide an essential alternative input method for users who use the keyboard instead of a mouse cursor to interact with the page. Keyboard-based interactions are a common preference for power users and a necessity for users with reduced motor control.

Properties
Enable Tab Order
Enable Enter to Submit
Simulate TAB
Random Tab Order
ENTER

Reduced Animation

Reduced animation can cause discomfort and negative reactions from motion-sensitive users; hence it is important to provide reduced animation versions of pages for these users.

Properties
Animation Duration
Simulate Motion Sensitivity
Reduced Animation

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Perceivable explores the impact of text size and contrast on the

Future Work

The current state of the site serves as a great proof of concept but falls short of fully achieving its goal of being a useful learning resource. A few key areas of improvement would be content, examples, and linked resources.

Content could be improved by introducing better structure and elaborating further on common accessible design considerations.

A better structure would involve providing a motivating example, introducing the relevant guidelines, and then encouraging experimentation with the interactive example to build intuition.

Examples could be improved by increasing the relevance of user adjustable properties and the inclusion of an analysis view that describes the current WCAG classification and provides hints about how to improve the level of classification. Another minor issue that should be resolved is the toggle switches not always allowing tab focus in some situations.

Linked resources could be provided in the form of inline links within the page content. This enables users to easily seek out additional information on the content and examples. An example would be links to relevant sections of the Web Content Accessibility Guidelines.