

A critical reflection on refactoring the Web Witchcraft and Wizardry project

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Abstract

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Introduction

Web Witchcraft and Wizardry (Mulligan, 2024) is a website for children to learn the basics of web development through fantasy-themed metaphors. The original version of the website was neither accessible (except by accident) nor responsive. This essay reflects on the design and implementation of a refactored version of the project, focusing on accessibility, usability, and quality of the new code. Detailed decisions are documented as comments in the source code, which should be read alongside this essay, so the essay focuses on higher level design decisions and reflections.

The development process used was iterative and incremental (Beck and Andres, 2004), and while there are many criticisms of this approach, particularly around its lack of documentation, endless changes and lack of scalability to large teams (see, for example, (Boehm and Turner, 2004)), it was well suited to this small project with a single developer fulfilling all team roles.

Responsiveness and Accessibility

A primary goal of the refactor was to make the website responsive and accessible.

Site Architecture and Navigation

information architecture and layout choices navigation design site navigation vs page navigation

Third party resources

Testing

Challenges and Solutions

responsive design techniques Fluid grids, flexible images, and media queries (Marcotte, 2010)
prefer responsive Viewport cutoffs ; 80px too small - unusable 80px - 200px very small - give

warning but still usable 200px - 800px small - mobile layout - prefer vertical stacking > 800px
- desktop layout - prefer horizontal layout

accessibility features implemented

grid vs flexbox use of media queries semantic HTML ARIA roles and attributes colour contrast keyboard navigation alt text for images form accessibility

performance improvements (minification, image optimisation)

dry code (Hunt and Thomas, 1999)

automated testing (Lighthouse, axe, pa11y, Wave) manual testing (screen readers, keyboard only navigation)

Conclusion

Word count

Word count: 244 words (excluding references)

References

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