

# A critical reflection on refactoring the Web Witchcraft and Wizardry project

Edmund Mulligan

December 16, 2025

## Abstract

*Abstract goes here.*

## 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

Kevin Powell YouTube channel (Powell, 2025) Coding2GO YouTube channel (Coding2GO, 2025)

# 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

Kent Beck and Cynthia Andres. *Extreme Programming Explained: Embrace Change*. Addison-Wesley Professional, Boston, MA, 2nd edition, 2004.

Barry Boehm and Richard Turner. Balancing agility and discipline: A guide for the perplexed. *IEEE Software*, 21(6):57–58, 2004.

Coding2GO. Coding2go, 2025. URL <https://www.youtube.com/@Coding2GO>. YouTube channel focused on web development tutorials and coding.

Andrew Hunt and David Thomas. *The Pragmatic Programmer: From Journeyman to Master*. Addison-Wesley Professional, Boston, MA, 1999.

Ethan Marcotte. Responsive web design. *A List Apart*, 306, May 2010. URL <https://alistapart.com/article/responsive-web-design/>. Accessed: December 2025.

Edmund Mulligan. Web witchcraft and wizardry. <https://github.com/edmundmulligan/Witches-And-Wizards>, 2024. Accessed: November 2025.

Kevin Powell. Kevin powell — css evangelist, 2025. URL <https://www.youtube.com/@KevinPowell>. Accessed December 2025.