Including Accessibility into User Experience

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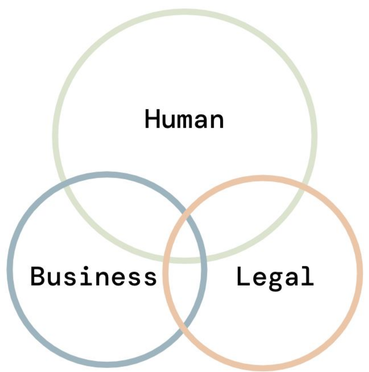
Abstract

Technology plays a large role in our lives today, from the ability to shop online and have your items here the next day to being able to participate in online classes being miles away from your institution. Although various technological advancements have the benefit of high efficiency and productivity, some of these advancements fail to recognize the concern of accessibility in technology. Innovations such as screen readers, switches, and assistive keyboards help with improving accessibility while also changing the way people with disabilities engage with technology Our team examined various types of assistive technologies from plug-ins, screen readers, and familiarization of the Web Content Accessibility Guidelines (WCAG). Our research examined how these technologies allowed people with disabilities to access and interact with digital platforms, which consisted of performing web accessibility audits on various websites and checking if certain design and development tools were accessible themselves. Results from our web and application audits proved that more awareness surrounding accessibility can be improved, as our team witnessed websites with poor color contrast, lack of heading usage, and absence of alternative text for images. Our research seeks to not only enhance our understanding of accessibility but hopes to raise awareness about accessibility in various workspaces and environments.

Introduction

- Accessibility is the practice of making information, environments, and technologies more usable especially for people with disabilities.
- Our research worked to see ways technology can be more accessible through testing out assistive technologies, completing web audits, and learning about the simple and best practices when creating accessible technology.
- **Why It Matters?** The reason for our research is to increase accessibility in the workplace, as well as raising awareness about it.
  - Enhancing accessibility in work environments not only empowers individuals with disabilities to fully participate and contribute but also foster a culture of diversity and inclusivity.



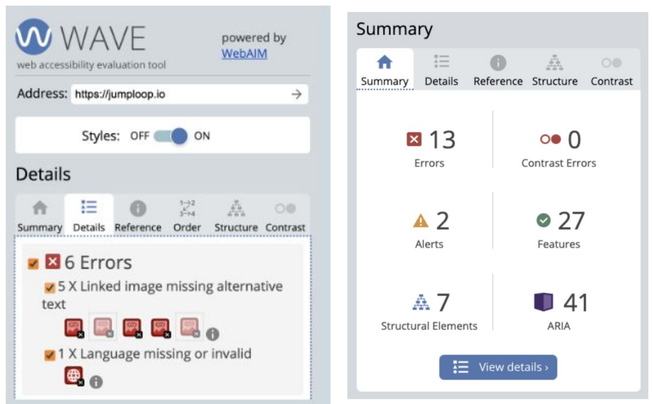
Research Question

What are the prevalent barriers to accessibility in current web and application designs & development?

Methods

Accessibility Checking Tools

- Utilized Web Content Accessibility Guidelines (WCAG) and IBM Accessibility Kit for guideline adherence, ensuring designs were perceivable, operable, understandable, and robust.
- Employed tools like WAVE, Google Lighthouse, and Deque Accessibility Checklist for additional accessibility checks.



Error Identification using the Wave Accessibility Tool

Interview Process

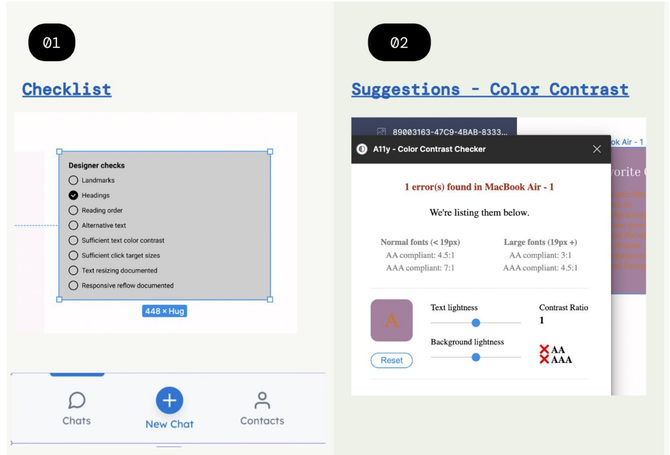
- Conducted interviews with designers, developers, and accessibility specialists to understand common challenges in implementing accessibility features.
- Interview questions focused on design challenges, tool limitations, screen reader compatibility, integration with assistive technologies, and accessibility of tutorials/documentation.
- Transcribed and analyzed interviews to identify recurring themes and insights, using NVivo for data coding and analysis.

Overall Approach

- Integrated automated accessibility checks with qualitative insights from interviews for a comprehensive understanding of web accessibility challenges and solutions.
- Ensured adherence to WCAG and IBM Accessibility Kit guidelines.
- Employed a systematic approach to analyze interview data, providing actionable insights for improving web accessibility practices.

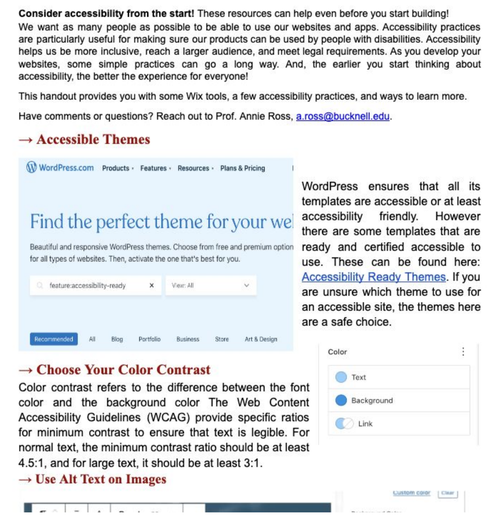
Results

- Conducted audits of multiple design and development platforms including Wix, Figma, Squarespace.
  - Highlighted key differences in accessibility features and usability among platforms.
- Documented the journey towards learning more about accessibility.



Accessibility Audit Toolkit for Figma

- Identified challenges in satisfying accessibility requirements across teams, developers, and UX/UI designers.
- Emphasized the intersectionality and collaborative efforts necessary to address accessibility in the workplace.
- Explored in-depth resources for understanding accessibility.
  - Identified challenges as opportunities for innovation.
- Highlighted potential limitations imposed by the platforms in use.
  - Lack of built-in accessibility features in design tools.
  - Difficulty in assessing and ensuring accessibility compliance for designers.



Example of an Accessibility reference sheet - WordPress

Discussion/Next Steps

While completing some of the web audits, some of the tech shortcomings that were presented were expected due to accessibility not always at the forefront. Common issues observed included lack of alternative text for images, low color contrast, and lack of headings. However, some sites and applications supporter screen readers and keyboard accessibility. By addressing accessibility concerns early on and incorporating inclusive design practices, developers and designers can mitigate these shortcomings and ensure that their technologies and programs are accessible to all users.

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