Table of Contents

1.1 What is a Disability?

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities and interact with the world around them. This also applies with accessing digital resources, in order for users to be able to have equal access to digital resources, applying accessibility to websites is important to ensure equity to every person globally.

What is Digital Accessibility?

Digital Accessibility is a practice of making digital products, environments, and experiences accessible by every individual, regardless of their disabilities. Accessibility is a feature that encompasses considerations such as providing captions for videos, ensuring websites are navigable by their keyboard alone, and designing physical spaces that are accessible to everyone.

The digital world's accessibility focuses mainly on web and app designs that accommodates users with visual, auditory, motor, and cognitive impairments. What it means is that content it is created for screen readers so they can interpret, use high-contrast color schemes for visibility, and structure pages and navigate the internet easily.

1.2 Why Does Accessibility Matter to Me

Digital Accessibility is essential for providing an inclusive environment. When digital products or physical spaces are inaccessible to those with disabilities, there's a risk of excluding every community from important information, services, and opportunities that deny the equality that everyone deserves. By providing accessibility, not only are the legal requirements met, empathy and respect for a diverse user base is provided.

Personally, I have a few college friends who rely on technologies that assist their needs. Seeing their struggles and the impact of thoughtful design has motivated me to learn and apply accessibility principles of my professional writing.

1.3 Disability Rights & Regulations

Understanding the laws of helps content creators and developers avoid any legal pitfalls and ensures that every user is served.

Rehabilitation Act (1973)

The Rehabilitation Act prohibits discrimination on the basis of disability in programs conducted by federal agencies, in federally funded programs, and in federal employment.

Example: A government website must be screen-reader friendly and navigable without a mouse.

Section 504 of the Rehabilitation Act

This law was a key victory for disability rights activists. It mandates that any institution receiving federal funding must provide physical accommodations for disabled individuals.

Example: Public universities must ensure wheelchair-accessible buildings.

Americans with Disabilities Act (ADA, 1990)

Signed into law by President George H. W. Bush, the ADA guarantees equal opportunities for people with disabilities in employment, services, and public programs.

Example: A private business must provide reasonable accommodations (Equipment, Elevators, ramps) for disabled employees.

Section 508 of the Rehabilitation Act

While Section 504 focuses on physical spaces, Section 508 addresses digital accessibility. It mandates that federal websites, electronic documents, and IT systems must be accessible.

Example: Federal agencies must ensure pdf's are accessible and readable to users with disabilities.

Web Content Accessibility Guidelines (WCAG)

Unlike the previous laws listed, WCAG is not a law but a set of global accessibility guidelines. Many countries have adopted WCAG as a legal standard for government and corporate websites.

Example: WCAG requires alternative text (alt-text) for images so that cognitive disabled users can understand visual and textual content.

Why These Laws Matter?

1. The laws ensure equal access to information, employment, and services.
2. They prevent legal consequences for businesses and institutions.
3. The laws help improve user experience for all individuals, regardless of their disabilities.

Works Cited

- Guide to disability rights laws. ADA.gov. (2025, March 7) https://www.ada.gov-/resources/disability-rights-guide
- How to meet WCAG (quick reference). How to Meet WCAG (Quickref Reference). (n.d.) https://www.w3.org/WAI/WCAG22/quickref/?versions=2.1

2.1 Overview


Accessibility Principles
For Dyslexia & Hyperlexia Users
Alt-Text
Use simple descriptive images & video transcripts
Color
Use simple colors, nothing bright or contrasting
Organized Layout
Keep an organized layout
Alt. Formats
Consider producing materials in alternative forms like audio or video
Header Fonts
Use proper header fonts to structure content
<h1>
<h2>
<h3>
<h4>
Header Fonts
Allow users to change contrast between background and text

This Digital Accessibility project focuses on cognitive disabilities, specifically users with reading disorders like **dyslexia** and **hyperlexia**. Dyslexia is a reading disorder characterized by difficulty with word recognition and fluency, often stemming from phonological deficits. Hyperlexia is rare disorder where individuals have advanced reading skills but struggle with comprehension.

The cognitive disabilities such as how individuals process information, interact with digital interfaces, and navigate online spaces Inclusive design will be taken in to account in order to create a tutorial on the accessibility features using a Unity-based guide that will provide clarity, predictability, and adaptability to my target audience

The accessibility features will include:

- **Readable Fonts:**Dyslexia-friendly fonts and tools like alternative text.
- **Customizable Contrast Adjustments:**How to access features to change contrast to enhance visual ad readable content.
- **Light Sensitivity Adjustments:** How to avoid unnecessary flashing lights that could be distracting or dangerous to certain users susceptible to flashing lights.
- **Keyboard Navigation:**How to access certain features on the keyboard.

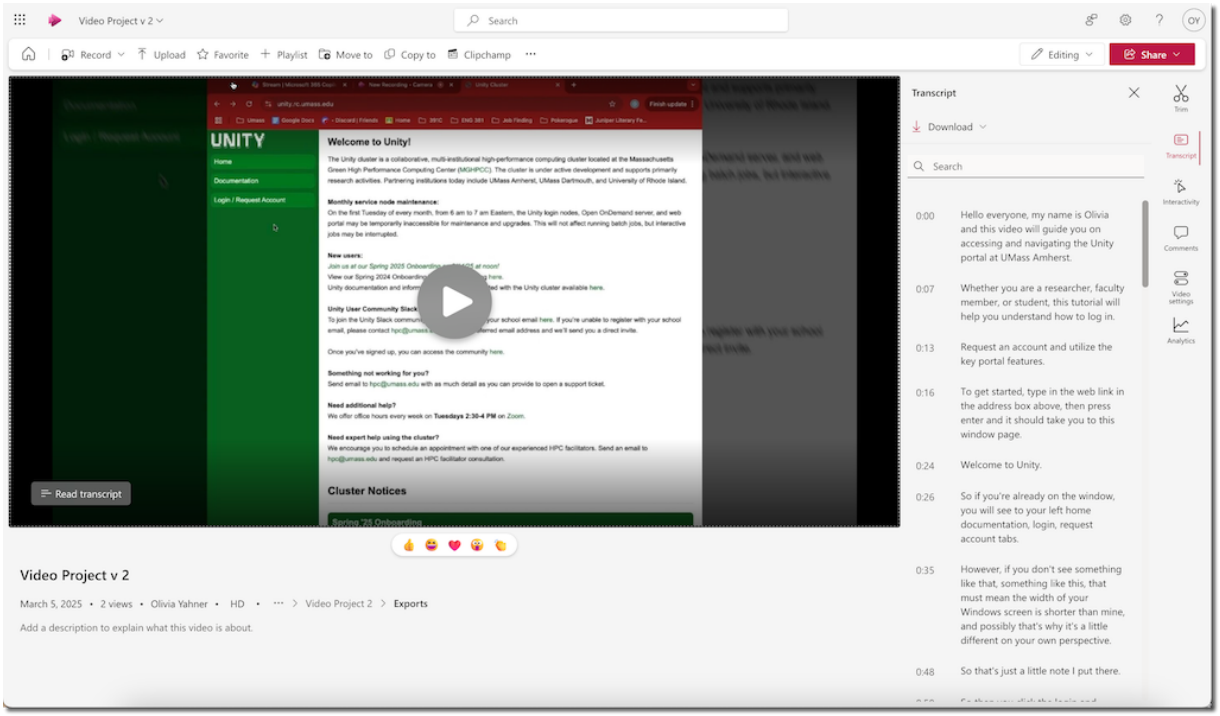
Works Cited

- Halpin, Michael. “Neurodiversity and Online Barriers.” Recite Me, 9 Apr. 2025, https://reciteme.com/news/neurodiversity-and-online-barriers.

2.2 Unity Video Tutorial

Tools used

- Microsoft 365 Stream
- Captions



Requesting an account video section provided by Lauren Saloio.

The video is available on the University of Massachusetts Sharepoint site.

The video tutorial goes over how to request an account as a student or faculty member. In addition, features such as the Unity homepage, accessible tabs on Unity OnDemand, and where to access information and how to contact members of Unity for additional help were provided in the tutorial. As a result of making of the tutorial, I have gained some experience with both of Unity's and MadCap Flare's features.

2.3 Accessibility Additions

Why are Transcripts & Captions Important?

Providing closed captions and transcripts in video tutorials improves accessibility for users who have the following conditions:

- Users who are deaf or have trouble hearing.
- Users who have difficulty comprehending audible language.
- Users who speak in a language other than English.

Sharepoint Captions Guide

1. Log into to Sharepoint Stream.
2. Open video details of your selected video.
3. Enable auto-captions by pressing the button (the small box with CC).

Works Cited

- (WAI), W3C Web Accessibility Initiative. “Developing for Web Accessibility – Tips for Getting Started.” Web Accessibility Initiative (WAI), 7 May 2025, https://www.w3.org/WAI/tips/developing.

3.1 Alternative Text Guidelines

What is Alternative Text?

Alternative Text describes images and other non-text content for users that may not see or process the original. Using assistive technologies like **screen readers**, the content meaning is communicated in a way that makes it more comprehensive without overwhelming or confusing to users.

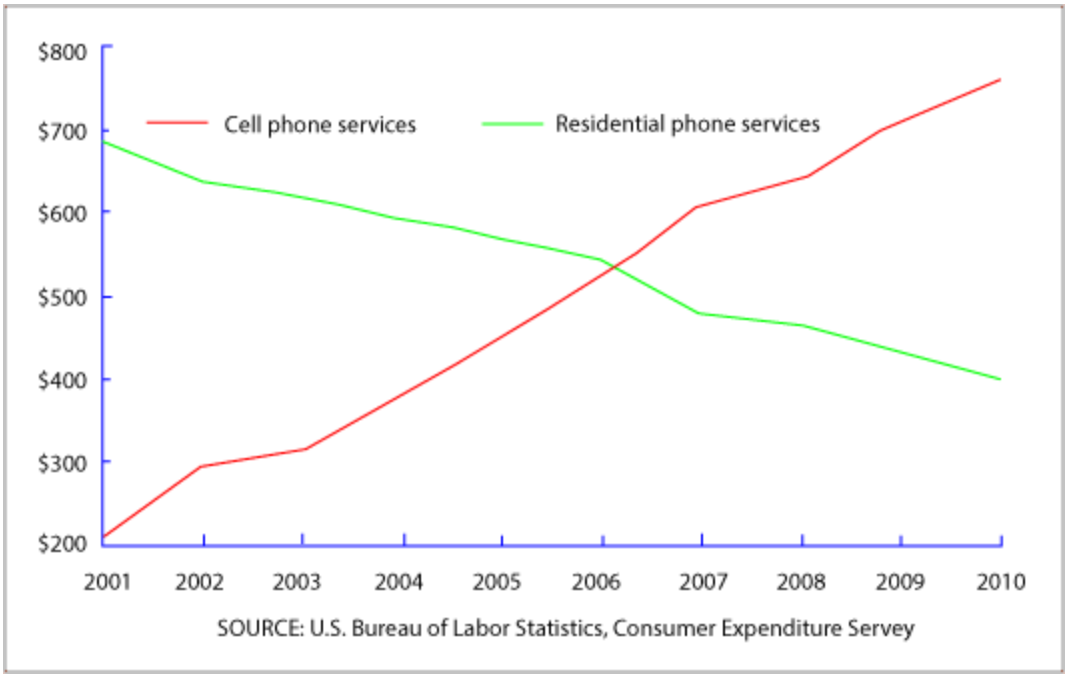
Alternative text is one of the mostimportant tools in digital accessibility for providing simplified informational text to users who have reading disorders. It is a particularly helpful use of digital accessibility for readers with reading disorders such as dyslexia and hyperlexia who need to access and comprehend information on the internet.

Best Practices

1. Use **plain, concrete language.**
2. Keep your sentences **short and focused (1-3 sentences)**.
3. **Prioritize meaning over detail**. In other words, provide simple meaning rather than comprehensive meaning.
4. For charts or diagrams, **use simple descriptions and labels.**

Examples

Positive example: “Graph of favorite cereals by vote.”



This alternative text uses simple words in its sentence which is important for users with reading disorders so they can comprehend the information given to them easily.

Negative example: “A pair of trendy sneakers sit on a white podium in front of a white background.”

This sentence uses complex vocabulary which will create confusion for users with reading disorders.

Works Cited

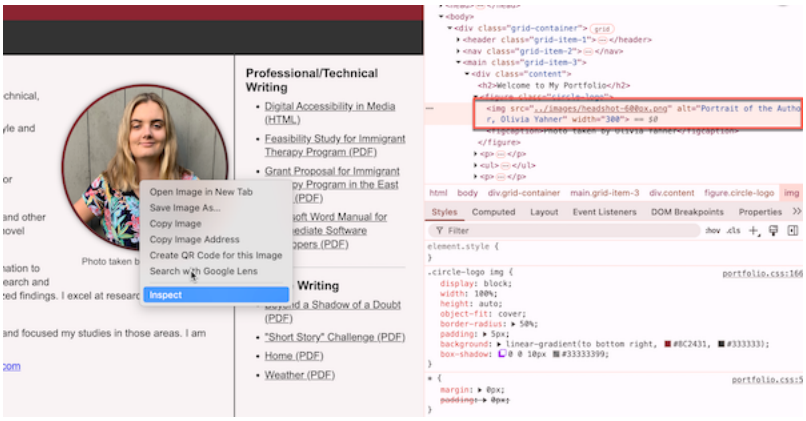
- Level Access. “Alt Text for Accessibility Examples, Tips & Best Practices.” Level Access, 30 Apr. 2025, https://www.levelaccess.com/blog/alt-text-for-accessibility.
- Albee, Tammy. “Beyond Basic Alt Text - Charts, Maps, and Diagrams.” Equidox, 27 Jan. 2025, https://equidox.co/blog/beyond-basic-alt-text-charts-maps-and-diagrams.

3.2 Locating Alternative Text Features

Alternative text man be found on image tags on the internet web pages. A screen reader will automatically read the alternative text withing the page.

To verify alternative text *without* a screen reader, all you have to do is:

1. Right click on an image and select “inspect”.



2. The tab on the right of your computer screen will include the `<img>` elements section. The attribute "`alt=`" defines the alternative text for the image.
3. This is a good example of accessibility being practiced.

Follow the steps above on your favorite web sites and you will see that most do *not* include alternative text or include unclear text.

4.1 Fonts

Digital Accessibility Fonts

By using appropriate font sizes and styles on digital websites, navigating digital information is made easier for users to scan content, understand the page structure, and navigate to the information they need.

Here's a list of important header font guidelines for digital accessibility:

- **Use sans-serif** fonts like **Arial, Verdana, Tahoma, or Calibri**.
- **Avoid italics** or **All Caps.** Use **bold** instead to indicate emphasis.
- **Increase line spacing** to 1.5x and letter spacing slightly for readability.

What are Header Fonts?

Header fonts are often used for organizing written digital content. Accessible header fonts help improve readability and navigation for all users, especially users who need digital accessibility needs.

- Maintain **consistent header levels** (H1, H2, H3) and spacing.

Works Cited

- "Accessible Fonts: How to Choose a Font for Web Accessibility." Siteimprove, https://www.siteimprove.com/glossary/accessible-fonts. Accessed 12 May 2025.

4.2 Heading Layouts

- **Left-align** your text to provide a consistent starting point for each line and prevent disorientation.
- Avoid newspaper-style columns, as they can make it harder to follow the text.
- Use **subheadings** to break down long blocks of text and create a clear hierarchy. Utilize **bullet points and numbering** for organizing information in a concise manner.
- Use **white space** effectively to create visual breaks between sections and elements, improving readability.

Works Cited

- “Accessibility - Heading Structure.” Texas A&M University - Knowledge Base, 17 Feb. 2025, https://service.tamu.edu/TDClient/36/Portal/KB/ArticleDet?ID=697.

5.1 What are Visual Aids?

Visual aids are helpful tools that focus on making digital content perceivable for individuals with visual impairments. This involves using techniques and tools that enhance the clarity, readability, and accessibility of visual information for users with difficulty comprehending written digital information or users with other vision-related challenges.

Visual aids are valuable tools for users with dyslexia, offering support in reading and writing. Visual aids can help users who suffer from dyslexia and even hyperlexia manage their reading, organizing information, and even managing time.

5.2 Visual Aid Guidelines & Examples

Some examples of visual aids for users with dyslexia and hyperlexia include:

1. Diagrams and flowcharts as visual representations breaking down complex information into more manageable chunks
   This is easier for dyslexic individuals to understand and retain information.
2. High Contrast visuals like dark text on a light background and vice versa can improve readability.
3. Pictures to support text are particularly helpful for users who read but struggle with comprehending written details.

About Me

Welcome! My name is Olivia Yahner. I am an aspiring writer with an interest in different types of professional writing such as technical documentation, scientific writing, and creative writing. I am from Norwell Massachusetts, having graduated from Norwell High school in 2021. I attended my first year of college at the University of Maine at Orono deciding to transfer to the University of Massachusetts Amherst for my second year. I graduated college in May of 2025 and am now excited to start my career.

In my spare time I enjoy writing Fantasy and Horror stories. Growing up, I always kept journals during holiday travels and other signifigant events in my life. These are often a source for my writing pool and I review them periodically to pad my fiction with realistic scenarios. I enjoy travelling, the journeys just as much as the destinations.

My Biology minor stems from an avid fascination for animal care. I've kept a menagerie of pets that include several uncommon species. Some of my favorite pet projects have included

- Chameleons (veiled, panther)
- African Pygmy Hedgehog
- Hairless guinea pigs
- Madagascar Hissing Cockroach
- Axolotls

As a compromise for my "hobby" of raising so many animals, my parents requested a short research proposal. They would evaluate and inevitably approve the request

as a commitment of responsibility for bringing them into our home. This directly led me toward my chosen fields of study, as writing and animal care were always something closely entwined for me.

My most interesting animal experiment in high school included breeding the Axolotls. While I anticipated a yield of a dozen or so, the final (shocking) product was over 200 healthy younglings! We re-homed them to local pet stores.

About this Project

The accessibility website project was created at the University of Massachusetts Amherst as a final project for English 381: Professional Writing and Tech Comm 2 (Spring) course that reflects my learnings from the course's teachings of technical proficiency and accessibility-inclusive practices for users with dyslexia and hyper-lexia.

Tools

HTML5 & CSS: All pages were constructed using both MadCap Flare's HTML/XML and customized with the Text editor for finer control over the HTML and CSS.

Adobe Illustrator: Illustrator was used to design the accessibility principles chart

MLA Citation Maker: The MLA citation generator was used to assist with formatting citations for my sources in MLA format.

GitHub Pages: GitHub Pages was used to easily export the files of my MadCap Flare to my GitHub Repository.

Artificial Intelligence: AI (ChatGPT, etc) was not used to generate any images or content for the page, though it was helpful in learning some CSS and HTML techniques.

Concepts

Alt-Text: Alternative Text was implemented for all images in the project. Specifically, the image properties of my Accessibility Principles chart and the images on the alt-text pages for where to find alternative text as well as the good example and bad example accessibility images.

Heading Hierarchy: Proper headings were used to organize the contents of the MadCap Flare Accessibility Website and divide them into sections. Heading hierarchies are one of the accessibility tools used to aid digital users with dyslexia and Hyperlexia. One challenge is that MadCap Flare uses the H1, H2 and H3 heading tags when generating the Table of Contents.

Font Selection: Font examples like Arial, Tahoma, and Helvetica were discussed in the Font section discussion tab of the MadCap Flare. I also changed the FontFamily variable to specify those fonts across the website. This makes the default Madcap Flare Accessibility Website is in Arial Font as a default, with a fallback to Tahoma, then Helvetica.

Visual Aids: Visual aid examples were discussed on the website such as graphs, icons, and illustrations on how they provide better readability and reinforce textual meaning. The Accessibility Principles is an example of a Visual Aid for improving Accessibility.

Color Contrast: Text background color combinations that pass WCAG standards were discussed on how they enhance readability and create a less stressful reading environment for digital users with dyslexia and hyperlexia. The website follows those standards.

Process/Research

I conducted background research into my chosen subject surrounding digital users with dyslexia and hyperlexia as well as their needs. I drew information from resources such as the WEB Content Accessibility Guidelines (WCAG), the W3C Cognitive Accessibility Roadmap, and user studies that focused on dyslexia and hyperlexia. I also referenced course readings on inclusive design and reviewed technical writing frameworks to construct a website that was readable and inclusive for all users, especially users who benefit from accessibility tools. Drafting multiple revision for structuring the sections with accessibility practices took a while. This also involved researching and implementing changes based on references from examples presented in the course and other PWTC courses.

Reflection

This course and the final project have helped me polish my technical writing by showing me inclusive designs and practices relating to accessibility. It has encouraged me to think about how content is delivered, but also how the content is consumed and processed differently for users with accessibility needs. Accessibility often appears to be a check mark in box, but it should not be. It is a design ethic that should be acknowledged and provided for, making content more accessible for users with specific needs. Notably, all users benefit from the practices.

Roadmap

This details the road-map for the HTML version of the Accessibility User Guide.

This details the roadmap for the PDF version of the Accessibility User Guide.

Versions

1.0.0

- Initial Release with 3 basic topics

1.0.1

- Added 8 new topics
- Updated Welcome Page
- Included FAQ and linked to relevant Topics
- Variables for my personal details
- Snippet for Latest Updates used in Home and Release Notes
- Conditionals set for Web and Print versions
- Enabled partial searches for the search index

1.0.2

- Added 4 new topics
- Updated Welcom Page content
- Glossary Entries added
- Added Concept topic for Alt Text

- Added Step by Step Instructions topic
- Added some examples of good/bad practices
- Included and Updated Citations on all topics
- Moved reusable content to Snippeds
- FAQ includes links to topics and specific anchors within content pages
- Updated HTML TOC
- Included PDF/Print TOC
- Added accessibility features withing content
    - Alt text on images
    - Added bold for important content
    - Replaced underlining with bold for emphasis
    - Implemented proper header layout
    - Verified sans-serif fonts

Glossary

D

Digital Accessibility

Digital accessibility ensures that everyone, including individuals with disabilities, can access and use digital content and technology.

Dyslexia

Dyslexia is a specific learning disability characterized by difficulties with accurate and fluent word recognition, and poor spelling and decoding abilities.

H

Hyperlexia

Hyperlexia is a condition where a child exhibits advanced reading skills far beyond their age or developmental level, often accompanied by an intense fascination with letters and numbers. While they may be able to decode words quickly, they may struggle with understanding the meaning of what they read.