Understanding Accessibility

For web designer and developer

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Accessibility

- Addressing site, app and service accessibility
  - the process of making your product or service usable by as many people as possible
- 15% of the world’s population is estimated to have some form of disability
- It’s the law in many countries and regions

Types of disability

Type of disability (1)

- Vision Impairments
    - Blindness
    - Partial Vision
    - Colour Blindness
    - Weak eyesight
        - Straw test

Do you live in Vancouver?

○ Yes ○ No

Where do you live?

○ Vancouver ○ Burnaby

○ Surrey ○ Somewhere else

Type of disability (2)

- Mobility Impairments
    - Difficulty using input devices such as mouse, trackpad, and keyboard
    - Partial to full paralysis

Type of disability (3)

- Cognitive Impairments
    - Learning Disabilities (ADHD, dyslexia)
    - Mental Illnesses
    - General difficulties with memory and understanding

Type of disability (4)

- Hearing Impairments
    - Partial hearing loss
    - Complete hearing loss

Assistive Technologies

Find Accessibility setting on your computer and phone.

What options do they provide?

Assistive Technologies (1)

- Text-to-speech, or “screen reader” technology
  - Determine what is an appropriate case to put alternative text to images
  - Screen reader examples:
    - Google Chrome Extension: Screen Reader
    - Apple Voice Over https://www.apple.com/accessibility/vision/

Assistive Technologies (2)

- Captions, subtitles, and transcripts for audio and video
  - Tools: Descript, YouTube Automatic Caption Feature, other captioning service

Assistive Technologies (3)

- Screen magnification, font and colour customization, and other methods to make small or low contrast text readable
  - Find a Magnifier / Zoom tool on your computer

Assistive Technologies (4)

- Input devices, including custom and alternate pointing devices, eye-tracking, customization of standard (keyboard, mouse) input devices

Alternative Input Methods

Alternative Input Method (1)

- **Head pointers**
  - a device or a software (OS) feature used for users who have no control over their hands, mounted on their head

    https://youtu.be/NL0x-b6zZ8Y
  - [NEW] OS offers a header pointer feature which requires no other device.

    https://youtu.be/--6Ovsnc6B4 (Watch this later on your own)

Alternative Input Method (2)

- **Motion/eye tracking**
  - devices that track users' head or eye movement to control a input focus https://youtu.be/Y7_f-pR8SBY
  - [New] OS feature using facial recognition

Alternative Input Method (3)

- **Single switch devices**
  - devices that use a single button for a user to select an option as focus moves across the page
    https://axesslab.com/switches/

Alternative Input Method (4)

- **Keyboard input**
  - simply allowing the user to use tab, space, arrow and enter keys to navigate — is generally the base alternative input method we optimize for when building web apps and sites, and many of the above methods rely on the hooks in code for keyboard navigation to function correctly
  - Use of the **tab** key to navigate a web page

    https://bltt.org/keyboards-for-disabled-people/
    https://webaim.org/techniques/keyboard/

Addressing accessibility

As a good UX/UI designer, always

- Prepare alternative ways for presenting the same information, and providing similar experience
- Follow W3C Web Content Access Guidelines (WCAG)
- Treat accessibility as an absolute necessity
- Do a **straw test** on your wireframes and mockup
- Always use **contrast checker** to decide on colours

As a good software engineer, always

- Follow W3C Web Content Access Guidelines (WCAG)
- Use proper **semantic tags**, **content hierarchy, and** **ARIA attributes**
- Test
  - navigating your site with a tab key
  - with accessibility technology in web browsers and operating systems
- Treat accessibility as a necessity, not a “nice to have” add-on or option

Plugins and Services

- Lighthouse - from Google, an open-source, automated tool for improving the quality of web pages, that you can run in Chrome DevTools, from the command line, or as a Node module
- Siteimprove - a paid service that helps automate testing accessibility, QA, digital security, etc. (free Chrome extension available)
- WAVE - a free extension for Chrome and Firefox that allows you to test accessibility
- aXe - a paid suite of developer tools to help test accessibility
- Improve Accessibility for Adobe XD and Google Chrome - from Adobe Tech Blog
- Whocanuse - a tool to test colour combinations for a variety of visual impairments
- Contrast Ratio - a contrast ratio tester for accessibility
- Can I Use - great for understanding which accessibility features are available in browsers

W3C References

- Web Content Accessibility Guidelines (WCAG) - from the W3C
- Web Accessibility Fundamentals - Essential background information from the W3C
- How to Meet WCAG (Quick Reference) - a customizable quick reference to Web Content Accessibility Guidelines (WCAG) 2 requirements (success criteria) and techniques from the W3C

Your task

**Submit your writing to
the Accessibility reflections assignment folder**

1.
Analyze the college's homepage* desktop interface and provide recommendations for improving its accessibility. What does it get wrong, and how could this be fixed? Does it get anything right? Feel free to use the Web Aim Wave tool: https://wave.webaim.org

Summarize your findings rather than describing every error in detail.
*If this is your second time doing this activity, select a different website.

2.
Install a screen reader to your browser or turn on the OS's voice over feature, and use it while your EYES CLOSED on your previous project page as well as one other site of your choice. (You can have your fingers on the Tab, Return, and arrow keys.) Summarize your findings.

3. [At home bonus task - due tonight]
Watch this Youtube video https://youtu.be/--6Ovsnc6B4 and submit your thoughts to the same reflections assignment folder as an additional submission