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Intro to Digital Accessibility

With Alex Chen (they/them, he/him)

For #FundraisingTech Event

Hi, I'm Alex!

I design software with a focus on accessibility and usability.

Visual description: I'm a tan, Chinese-American person with short black hair and glasses, wearing large black headphones. Behind me is an abstract, pink and light blue painted background.

Land Acknowledgment

Chicago lies on the stolen traditional homelands of the Council of 3 Fires: the Ojibwe, Odawa, and Potawatomi nations.

Talk to me!

Feel free to chat with me online as we go.

🐦 @access_guide_ on twitter

📷 @access_guide_ on instagram

🔗 accessguide.io/

Intro to Digital Accessibility Agenda:

1. **Overview** - Disability Justice and Accessibility
2. **Content** - Images, Videos, Audio, Text
3. **Styles** - Color, Typography, Layout
4. **Interaction** - Keyboard, Buttons, Touch
5. **Assistive Technology** - Screen Reader

*WCAG = Web Content Accessibility Guidelines, pronounced "Wuh-cag"

Accessibility

What does this word make you think? No judgment, open thinking exercise.

🖊️ Activity

Disability

What does this word make you think? No judgment, open thinking exercise.

🖊️ Activity

Note on Language

This workshop intentionally uses the term disability - both "disabled people" and "people with disabilities."

For more thought leadership on this topic, check out Lawrence Carter-Long's campaign #SayTheWord and Liz Jackson's project The Disabled List.

Conventional Definition of Disability

The official definition is "a physical or mental condition that limits a person's movements, senses, or activities."

This definition itself is limiting! Disability happens at the intersection of a **person's unmet needs** and a **society that oppresses them**.

The medical vs. social model of disability

Brief History of Disability Rights

- Pre-advocacy: forced hospitalization, home isolation, circus
- Post WWI: disability became a public issue due veterans
- 1968 Architectural Barriers Act (ABA)
- 1990 Americans with Disabilities Act (ADA)
- 2005 Disability Justice movement founded by QTPOC* artists at Sins Invalid

QTPOC = queer and trans people of color

Disability Justice recognizes our inherent worth as human beings outside of commodification and capitalist productivity.

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10 Principles of Disability Justice

- Intersectionality
- Leadership of those most impacted
- Anti-capitalist politic
- Commitment to cross-movement organizing
- Recognizing wholeness
- Sustainability
- Commitment to cross-disability solidarity
- Interdependence
- Collective access
- Collective liberation

What is Accessibility?

Accessibility is the process of removing access barriers and providing the right support to fit people's access needs, with a focus on needs of disabled people.

The built environment is a collection of human decisions that are inherently ableist. We combat ableism by building accessibility into our art, communication, and technology.

ADA Title III Website Accessibility Lawsuits in Federal Court
2017-2020

- 2017: 814
- 2018: 2,258 — 177% Increase from 2017
- 2019: 2,256 — .01% Decrease from 2018
- 2020: 2,523 — 12% Increase from 2019
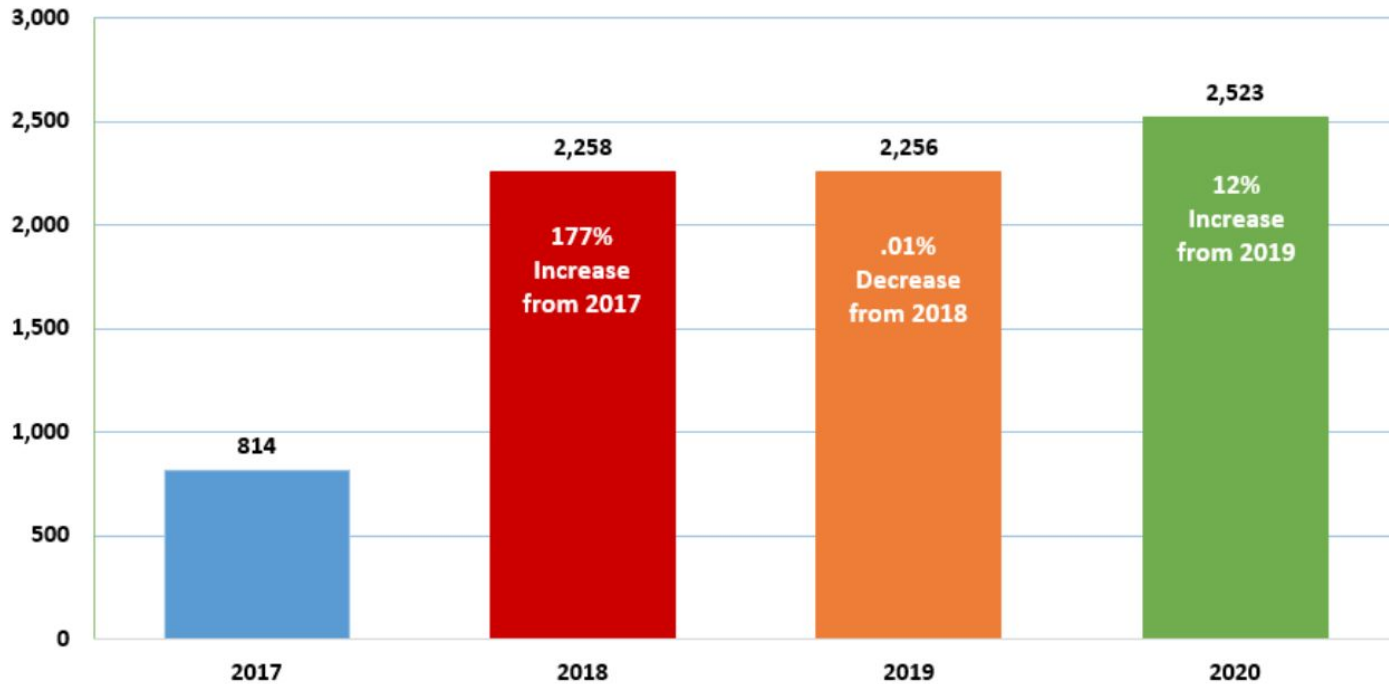
Accessibility Lawsuits have only increased over the years

Access Guide is a friendly introduction to digital accessibility
(WIP - Work in Progress)

4 Broad Categories of Disabilities

- 👀 **Visual** - Blind, visually impaired, colorblind, dyslexia
- 👂 **Hearing** - Deaf, Hard of Hearing
- 💪 **Physical**, mobility
- 🧠 **Cognitive**, learning, intellectual, developmental, and neurodivergence

*Some Deaf folks do not self-identify as disabled

4 Broad Categories of Accessibility

- 👀 **Visual** - screen reader, screen magnifier, styles
- 👂 **Hearing** - transcripts, captions, ASL
- 💪 **Physical** - keyboard, interaction, error recovery, timing
- 🧠 **Cognitive** - navigation, usability, writing, error recovery, timing

3 Main Ways to Approach Accessibility

- **Content** - images, audio, video, writing
- **Design** - styles, navigation, usability, interaction
- **Programming** - writing code that's accessible to assistive tech (screen readers, screen magnifiers, keyboards, etc.)

Content

Images, Video, Audio, Text

Screen reader

Blind people commonly use screen readers, which interprets digital elements and presents them in an audio and/or braille format.

https://www.youtube.com/watch?v=PR5fzIeh-fY

"Image"

Write Image Descriptions

An image description describes essential visual information to Blind and visually impaired people. They're also helpful for colorblind and cognitively disabled folks.

A grey-brown rabbit crouched in a grassy field of yellow flowers

How to Write an Image Description

Focus on

object-action-context

Examples: Beyonce singing at a concert. 2 bunnies hopping in a field.

More tips:

- Try to keep it objective, concise, and descriptive
- Mention gender/race when it's relevant and you know their identity
- Transcribe all text

Image Description vs. Alt Text

The **alt text** is the brief summary of an image added to the alt attribute.

The **image description** is the full visual description. It could be added to the alt text, though it's better to add it to the caption so that it's also visible to sighted people.

Try Writing an Image Description!

Find an image and write a description for it.

Feel free to share online and tag **@access_guide_** on twitter or instagram.

Provide Audio Access

Deaf and hard of hearing people need to access audio in visual ways. Use audio transcripts, subtitles and closed captions, and ASL interpretation if that's available.

Free/low-cost captioning:

- Webcaptioner
- Ava
- Live Caption
- Clipomatic

More high-cost captioning:

- Otter
- Rev
- Vitac

Captioning Video

Editing video to include quality captions is a manual process that also needs to be visually accessible, accurate, objective, and descriptive.

Resources:

- [Extensive tip sheet](#) by Described and Captioned Media Program
- [Captioning checklist](#) by UC Boulder (has recommendations for mood/tone)

ASL (American Sign Language)
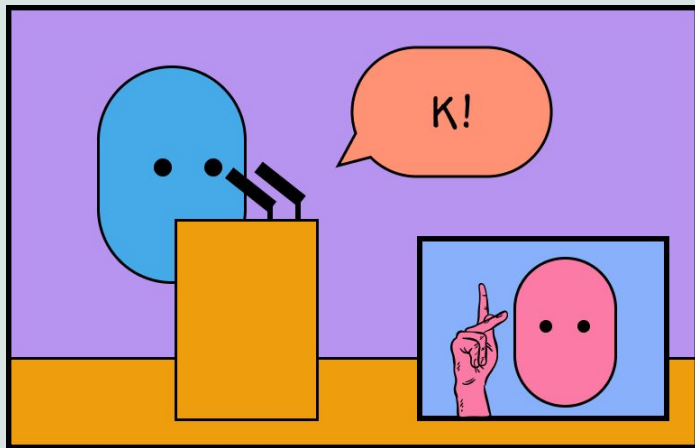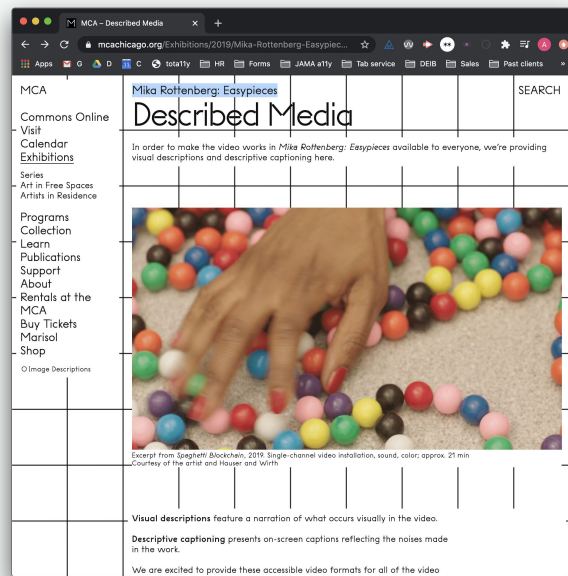
Hiring an ASL interpreter for your event is a great option for Deaf access.

Just keep in mind that ASL is not a universal experience due to differences in dialects and languages (e.g. Black ASL) and inequitable access to ASL education.

Multimedia Descriptions

The MCA exhibit "Mika Rottenberg: Easypieces" contains descriptions of audio and visuals that make the experience accessible to Blind, Deaf, and Blind-Deaf folks.

https://mcachicago.org/Exhibitions/2019/Mika-Rottenberg-Easypieces

Styles

Color, Typography, Layout
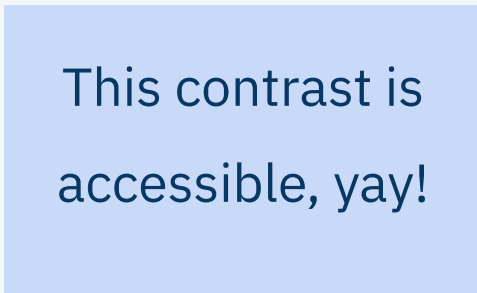
Use High Color Contrast

Contrast is the difference in luminosity between the foreground (text) and the background. Aim for a contrast of 7:1 or higher to be accessible. ([contrast checker](#))

🚫 Inaccessible Low Contrast:

This contrast is not accessible!

✅ Accessible High Contrast:

This contrast is accessible, yay!
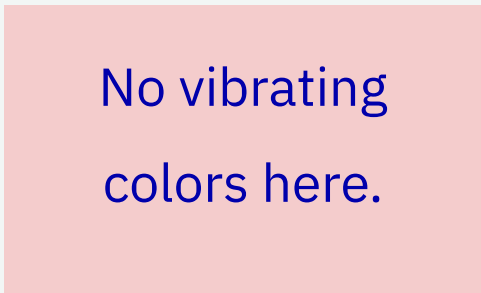
Avoid Vibrating Colors

Vibrating colors occur when 2 bright colors are paired together, which can be distracting or painful to look at, especially to Autistic & neurodivergent folks.

🚫 Inaccessible Vibrating Colors:

Look at how this vibrates, yikes!

✅ Accessible Non-Vibrating Colors:

No vibrating colors here.

Dark Mode vs. Light Mode

Dark mode (white text on a dark background) is more accessible to some people because it emits less light and puts less strain on people's eyes.

Dark Mode

Yay for dark mode

Light Mode

Yay for light mode

Don't Use Color Alone to Convey Info

There are many different types of colorblindness. Don't use color alone to convey information, but rather pair it with text, icons, and/or value.

🚫 Inaccessible Color-Only:

● ● ● ● ●

✅ Accessible Color + Other Info:

In Progress	🔄 In Progress
Ready	✔️ Ready
Flagged	🚩 Flagged
Archived	📦 Archived

Don't Use Flashing Lights

Flashing lights are often over-stimulating and can cause seizures for people with epilepsy.

Don't use flashing lights. If unavoidable, provide a content warning.

Typography Tips

- Use a simple typeface
- Align text to one direction (don't fully justify)
- Use large font sizes
- Use weights and styles sparingly

🚫 Inaccessible Typography:

*You have to **act** as if it were possible to <u>**radically transform**</u> THE WORLD And you have to do it all the time.*

✅ Accessible Typography:

You have to act as if it were possible to **radically transform** the world. And you have to do it all the time.

Text Over Image

Putting text over busy images often makes it difficult to read. Instead, use one of these options:

1. Separate text from image
2. Add a solid background
3. Add text over a solid color portion of the image

🚫 Inaccessible:

Boooo Columbus sucks

✅ Accessible:

Boooo Columbus sucks
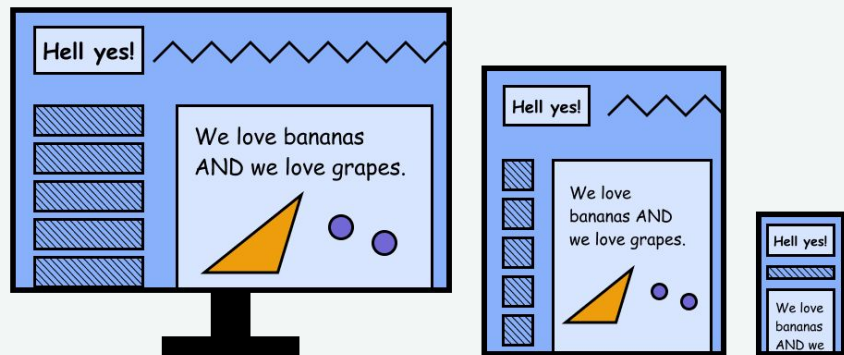
Use Responsive Layouts

Make sure that your interface works across different screen sizes and devices.

Zoom In/Out

Make sure that users can zoom in up to 200% on the interface without losing any content. Don't just design for one screen size.
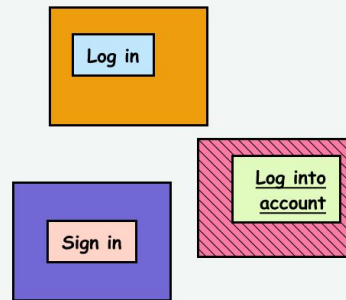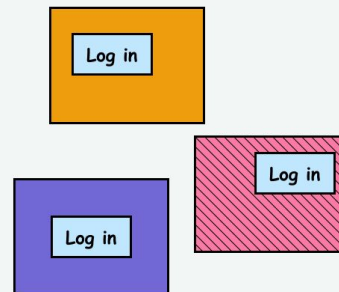
Consistent Navigation & UI

Make sure that pages are labeled the same in the same order across all pages. Make sure that user interface components are consistent, especially if they have the same functionality.

🚫 Inaccessible and Inconsistent:

Log in

Log into account

Sign in

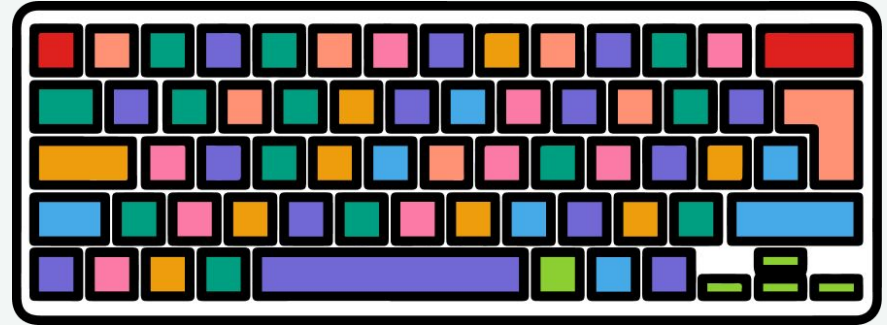✅ Accessible and Consistent:

Log in

Log in

Log in

Interaction

Keyboard, Buttons, Touch

Keyboard Access

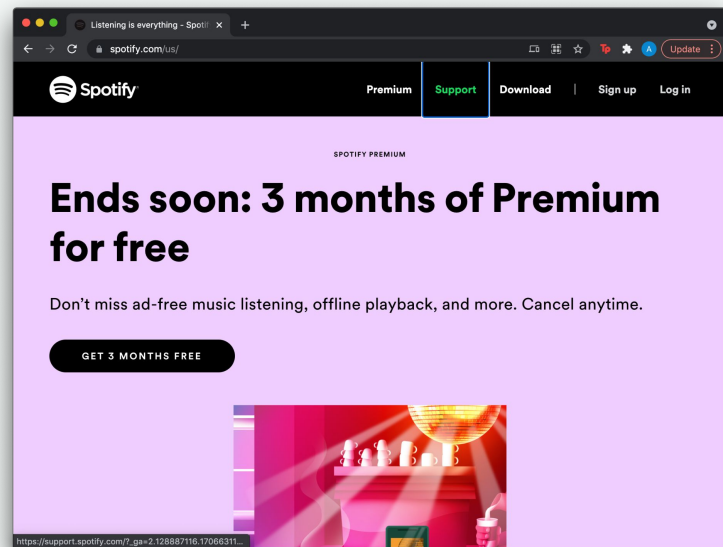People may prefer to or only use the keyboard, especially if they have a motor disability that makes using a mouse difficult.

Keyboard Tips:

- Create visible focus styles
- Create an intuitive focus order
- Use a skip link to bypass navigation

(Great example = Spotify)

https://spotify.com/

Use Large Buttons
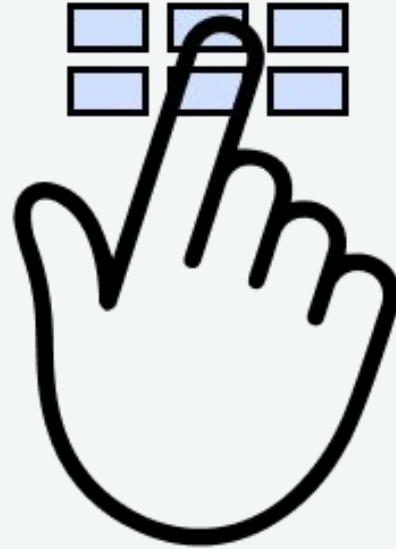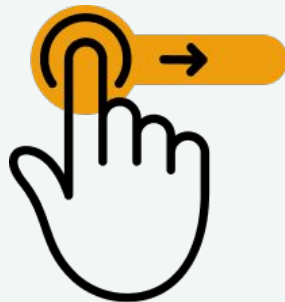
Especially on touch devices like smartphones and tablets, large buttons help users avoid making mistakes.

Provide Single-Pointer Gestures

A single-pointer gesture is more accessible to people with motor disabilities than path-based gestures (such as drag and drop or pinch to zoom)

🚫 Inaccessible (Path-Based):

✅ Accessible (Single-Pointer):

← →

Assistive Technology

Screen Reader

General Markup Tips:

- Separate structure (HTML) from styles (CSS)
- Use semantic markup to structure the page
- Write clean code so that assistive tech can parse content

Some great accessibility docs to reference:

- [MDN Web Docs](#)
- [Digital A11y](#)
- [Accessibility for Teams](#)
- [18F Accessibility](#)

Using Structure

Screen reader users often use the structure noted in the semantic markup to navigate the page. For example, tabbing through all the headings to browse.

- Label the human language attribute (lang="en-us")
- Use descriptive headings (h1, h2, h3)
- Use landmark regions to (header, nav, main, footer)
- Label buttons, links, and other interactive elements

Automated Testing

Automated testing tools can help catch and document errors as you go.

- [Tota11y](#)
- [Deque Axe](#)
- [IBM Accessibility Checker](#)
- [Google Lighthouse](#)

Manual Testing

Manual user testing helps catch major issues, especially if you are testing with screen reader users.

Tips for user testing:

- Pay people for their labor!
- Use social media and relevant organizations to recruit people
- Write a script and list of activities to go through

Thank You!

If you'd like to support my work, you can make a donation at https://ko-fi.com/alexyingchen

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🔗 accessguide.io/