
Accessibility and Design
Power Hour by Leanne Macaspac

Power Hour Agenda

What is accessibility design?

- Accessibility
- The 4 disability categories
- Assistive technology
- Web Content Accessibility Guidelines (WCAG)
- Level A, AA, AAA

Design best practices

The team process

Key takeaways

Resources

What is accessibility design?

Accessibility enables people with disabilities to perceive, understand, navigate, interact with and contribute to the web.

- Roughly 1 in 5 people have a disability
- As UX designers, we have a responsibility to make our products accessible
- 4 Categories: visual, hearing, mobility, cognitive

- ~ over 1.2 billion people
- that’s why we’re user experience designers, user interface designers; when we design products, we’re essentially putting ourselves in the shoes of our users; we’re representing our users in client meetings; we are advocates for people, regardless of a level A/AA standard

Visual

Blindness

Low vision

Colour blindness

Hearing

Deafness

Hard of hearing

Mobility

Inability to use a mouse

Slow response time

Limited fine motor control

Cognitive

Learning disability

Distractibility

Inability to remember or focus on large amounts of information

- These may be permanent disabilities, but we need to keep in mind our users won’t always have these issues

What is accessibility design?

Visual

Blindness

Cataracts

Mobile user

Hearing

Deafness

Ear infection

Bartender

Mobility

Inability to use a mouse

Arm injury

Nursing parent

Cognitive

Learning disability

Distracted

Tourist

- These impairments could be temporary
- We can’t make assumptions; Not every person approaches applications with the same abilities, and we can’t make assumptions about how our users interact with our products

What is accessibility design?

- Even in the outside world
- curbs, subway bumps, doors
- Shortcuts = helps accessibly
- We take these things for granted because it makes it 20x easier for us

Accessible design = **universal design**

- Accessible design is about making products usable by the greatest number of people
- Designing accessible products is better usability for everyone
- Large companies like Facebook and Google are embracing it
- Being informed and having a conversation around accessibility is already one step in the right direction

Assistive technology

Screen Readers

- Reads text on screen for people with visual disabilities
- Affects development more than design
- Ignores CSS, reads HTML
- Navigate using tabs and arrow keys

Screen Magnifiers

- Overlay (literally like a magnifier)
- Zooms in as much as possible for people with visual disabilities
- Navigate and scroll using a mouse or tabs (more efficient)

Speech recognition devices

- Reads HTML tags on UI elements
- Used by people who have mobility issues and can only speak to their computer to interact with elements on the screen

- 3 commonly used assistive technologies
- While some operating systems have accessibility modes built in, most people with a disability use more robust software
- Won’t be demoing these because they don’t inform too much of the design
- We will demo some Chrome extensions

Web Content Accessibility Guidelines (WCAG)

- A technical standard developed by the World Wide Web Consortium (W3C)
- Pass or fail system — 🔑 usability is key 🔑
- 4 principles (as seen in RGD AccessAbility Handbook)
  - **Perceivable** UI/content must be presented in ways that all users can perceive
  - **Operable** Users must be able to navigate and interact with all components, regardless of how they use their computers
  - **Understandable** UI/content must be clear so that all people can understand it
  - **Robust** Website works on a wide variety of browsers, devices and assistive technologies
- 3 Levels: A, AA, AAA
- All public websites should be meeting Level A
- **January 1 2021** All public websites must conform to Level AA
  - UN: Access to the internet is a basic human right

- Countries generally have their own laws but they still use WCAG as a guideline
- (W3C is an international community that develops open standards to scale the web for everyone to use)
- **pass/fail:** your UI elements and colours can pass these guidelines but if the usability isn't up to standard, you can still fail. The key is usability
- Perceivable: alt text, color contrast, fonts, transcripts or captions for audio/video content
- Operable: keyboard-friendly, large clickable targets, flagging timed actions, labelling images with clear text descriptions, text-format alternatives to tables, tagging HTML
- Understandable: hierarchy in page elements; consistent UI elements; plain language, provide definitions; break up long passages into smaller sections; providing detailed explanations if you're asking the user to complete a task
- Robust: responsive; development is well structured

Eventually by 2021, everyone needs to adhere to at least Level AA otherwise we can get sued. Access to the internet is a basic human right. Disabled people need these options in order to exercise their freedom of speech and opinion and other fundamental human rights.

WCAG TL;DR checklist

	A	AA	AAA
Alt Text	✓	✓	✓
Keyboard accessible	✓	✓	✓
Labels	✓	✓	✓
Link text	✓	✓	✓
Colour to convey information	✓	✓	✓
Colour contrast		✓	✓
Resizable text		✓	✓
Focus states		✓	✓
Consistent navigation, identification		✓	✓
Sign language/ Transcripts/alternatives for video			✓
Breadcrumbs			✓
No timing, interruptions, flashes			✓
Abbreviations are defined/explained			✓
Pronunciations available			✓
Reversible submissions			✓

AAA: ratio of 7:1 for normal text and 4.5:1 for large text

“should be done” but no one actually meets these standards. Usually applies to governments/accessibility-related website

Design best practices

Every element doesn’t have to be accessible. What a user needs to know needs to be.

- Hairline dividers, shadows, decorative elements that have no impact on usability doesn’t count for accessibility
- Your elements can pass the WCAG standard, but the website can still fail your website has a usability issue

Will be going through best practices; giving you details first then examples. They’re not perfect, but these websites work in terms of usability and cater to the largest audience.

These examples are great because it shows that accessible design isn’t always ugly, especially when an experience is seamless.

Layout (hierarchy)

- Every page should have a heading
- Consistency in elements (buttons, h1, h2, …) and copy
  - Accounts for cognitive load
- Allows user to navigate your content quickly (remember: users don't always read, they scan content for what they want)
- Good for tabbing, screen readers
- Responsive design
  - Accounts for readability on mobile devices, magnifiers, smaller viewports

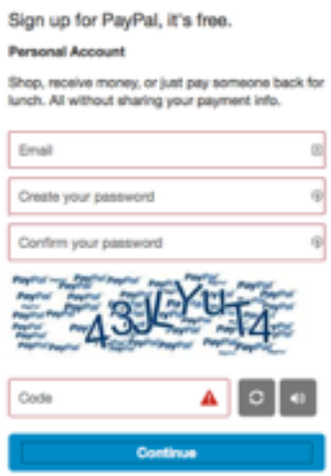
- Headings are important because some users navigate only to headings using assistive devices
- **Consistency** don't make users learn a new element/experience; cognitive issues; that's why we design for primary/secondary/tertiary buttons; applying consistent design that follows user expectations saves people time.

- Navigation at the top, big beautiful imagery, links at the bottom, footer at the bottom.
-

Colour

- **Protanopia, Deuteranopia, Tritanopia** are the most forms of colour blindness
- Don't use colour alone as a means of communication/information/states
  - This includes form error states, hover/focus states
  - Must be conveyed in a secondary non-colour way (depending on scenario)

- stripped down to see how someone with deuteranopia blindness may see the screen
- open to the floor - What fields have an error state?
-



- looks like there are four errors, but we only knew about the one because of the icon
- how do we solve this accessibility problem?
- by adding additional icons, adding labels, not placeholders; will be discussing forms a little later

Colour cont

Level AA

- 4.5:1 contrast ratio between text and its background
- 3:1 contrast ratio if the text is larger than 24px (or 19px bold)
- #959595 is the lightest gray for 24px font (or 19px bold)
- #767676 is the lightest gray for 12px font

- Logos/elements (including inactive buttons and menu items) in disabled state don't count
- Placeholder text is not exempt
- Define your colour palette with colour contrast in mind as early as possible

- Agree on a palette to start, make sure which combinations are compliant, and stick to it. If there are new colours, just check it. Defining the colour palette early means we can avoid going back and forth with our working files to adjust colours.

- High contrast colours
- Big buttons
- ***use nocoffee***

Colour cont

Ways to check for colour contrast

- colorsafe.co
- Tanaguru's Contrast Finder
- Photoshop (View > Proof Setup > Colour Blindness)
- Sketch (Contrast Checker Plugin)

This all depends on the size, so it's best to just check your colours using a tool.

Links and buttons

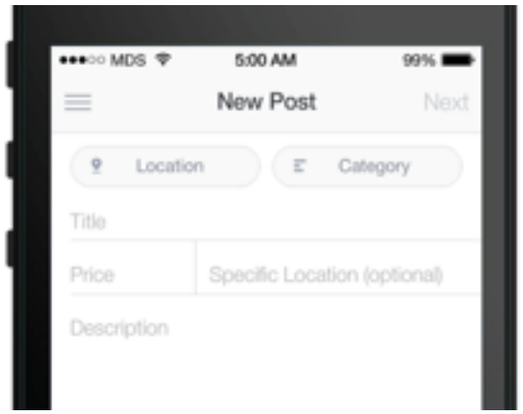
- Links/buttons need to make sense out of context (not just say “click here” or “submit”)
- Make sure a link stands out from body copy (Read: Is the underline hurting readability?)
- Include external link (pop up) indicators so the user knows that there is a change of context
- Button sizing; important for someone with mobility issues
- Focus/active states should not be turned off; if we decide to turn them off, we need to custom styles in style guide to override it

- when you tab in twitter, there’s a focus glow, icon is highlighted and a tooltip appears for the user

- Direct CTAs and links to packages

Forms

- Boundaries to indicate location and size of target
- Everything needs a visible label, not placeholder labels
  - Not all browsers support placeholders
  - Might cause cognitive issues
  - Lacks context
  - Insufficient contrast — makes the field look complete; might not be read by screen readers
  - Colour and error descriptions
  - Float labels are a good in-between solution



- Obvious area to click to start typing
- Labels
- Placeholder

Best practices align with user expectations. We aren’t designing for designers. We are designing for everyone.

- Don’t be discouraged — be creative!
- Accessibility isn’t a barrier to innovation; it introduces a set of constraints that leads to new ideas that we can explore to make better products for everyone

- Accessibility shouldn’t tforce you to make a product that is ugly, boring, or cluttered.
- We shouldn’t feel discouraged by these rules; instead, we should rise up to the challenge of finding creative ways to make visually pleasing designs that helps a wider audience.

The team process

Keep accessibility in mind at all stages of the product

- Should be baked into the product from start to finish
  - Vox Media Checklist for all team members
  - Consultants/designers need to keep the user in mind when creating design systems
  - Developers need to organize their code/remember to label
  - Copywriters need to keep content simple
  - QAs need to test early, focus on usability and testing on most used browser combination
  - Project managers should make sure we check our boxes
- Collaborate and help each other strive towards a product that works for everyone

- Checklist for all team members to take a look as we keep accessibility in mind
- Designers should communicate with developers and vice versa to clarify elements that need to be tweaked or called out in code
- There's a lot of overlap between all teams in this checklist—and there's a reason why. We should all be collaborating towards creating an accessible experience.

Key takeaways

Accessible design = **universal design**

- Design for our users, not for ourselves
- Accessibility is addressing the widest possible audience regardless of ability or disability
- We need to keep an empathetic and open mind; can’t make assumptions about our users
- Collaborate with other members of the team — we’re all on the same team achieving the same goal
- Keep accessibility in mind through all stages of the product process
- Talk about accessibility

- It’s for the widest possible audience, regardless of ability or disability. We are not designing for designers, we’re designing for users.
- Collaborate
- If we keep accessibility in mind through all stages of the product process, then we should be able to create a product that’s accessible for everyone.

Resources

Tools

Contrast Checkers

- colorsafe.co
- GoFlourish (Sketch Plugin)

Information on Accessibility

- Vox Media Guidelines
- Web Aim - Accessibility in Mind (access to training, colour contrast checker)
- Bureau Briefing: Accessibility (Podcast)
- Interactive WCAG (Filters guideline by level and team member)
- RGD Accessible Design
  - AccessAbility design handbook (PDF)
- WCAG guideline on dealing with design patterns and widgets
- A11y Newsletter — sends accessibility design-related articles weekly
- Free web development course on accessibility on Ucadity (by Google)

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Articles

- 7 things every designer needs to know about accessibility
- Accessible interface design
- Design principles for reducing cognitive load
- Do’s and Don’ts on designing for accessibility
- 10 reasons why placeholders are problematic
- XD essentials: Button design best practices
- How to create a culture of accessibility
- Accessible UI components for the web
- Dsxyliea
- The inaccessible web: how we got into this mess
- Everyday accessibility
- NN Group: Placeholders in form fields are harmful
- Styling forms accessibly


Thanks!