



Accessibility Inclusive Design

INF2191H
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My perspective is limited.

I am learning.

Please reach out if there's anything I could do better.

Please ask for and listen to the perspectives of people with diverse and meaningful experiences.

Assignment 1

How's it going?

Office hours

- Can now book in 10-minute increments, 10-30 minutes.
- Questions: 10 minutes
- Portfolio review: 20+ minutes
- Come by for career chats or anything else that's relevant.
- I won't pre-grade your custom contribution but I can help you zero in on it, or tell you if you're on the right track.

First Name: (Required)

Last Name:

Email: (Required)

Course code and Topic: (Required)

Duration:

▼

I'm not a robot

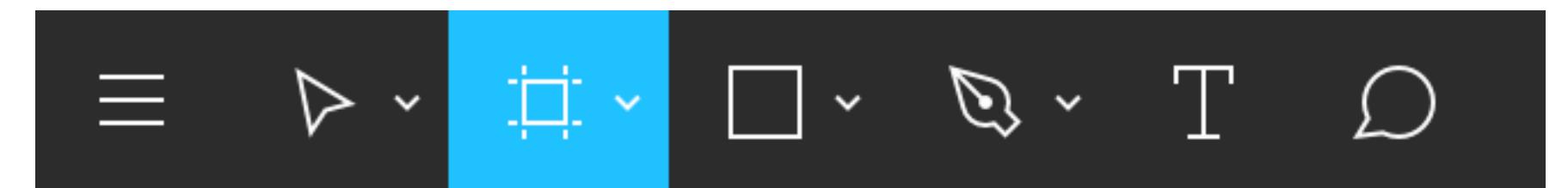
reCAPTCHA
Privacy - Terms

Confirm Booking

Figma: Quick Tips

Frames

DESIGN PROTOTYPE CODE



A frame is a group with a fixed size.

When a frame is moved, objects within it move as well.

Figma's screen presets for various resolutions are frames.

To create a frame, press “F” on your keyboard or find the frame tool in the toolbar.

The Design tab will give you a list of device options.

▼ Phone

iPhone X 375×812

iPhone 8 Plus 414×736

iPhone 8 375×667

iPhone SE 320×568

Google Pixel 2 411×731

Google Pixel 2 XL 411×823

Android 360×640

▶ Tablet

▶ Desktop

▶ Watch

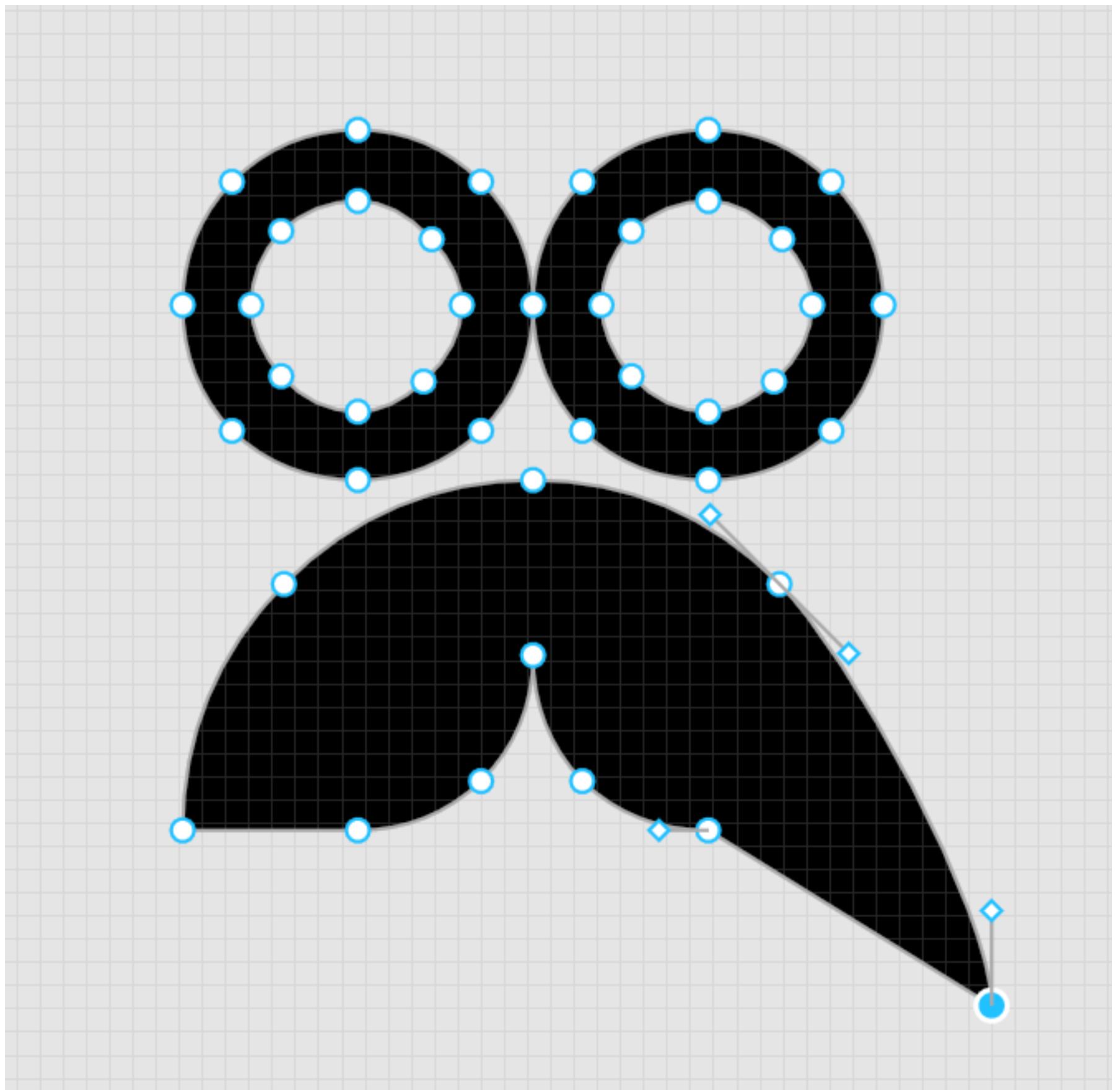
FIGMA

SVG Imports

You can drag **SVG** vector files (e.g., from Noun Project) into Figma and they will import and remain editable.

Double-click on an imported SVG image to see the points and lines that define it.

You can change the image by dragging its points and lines around.



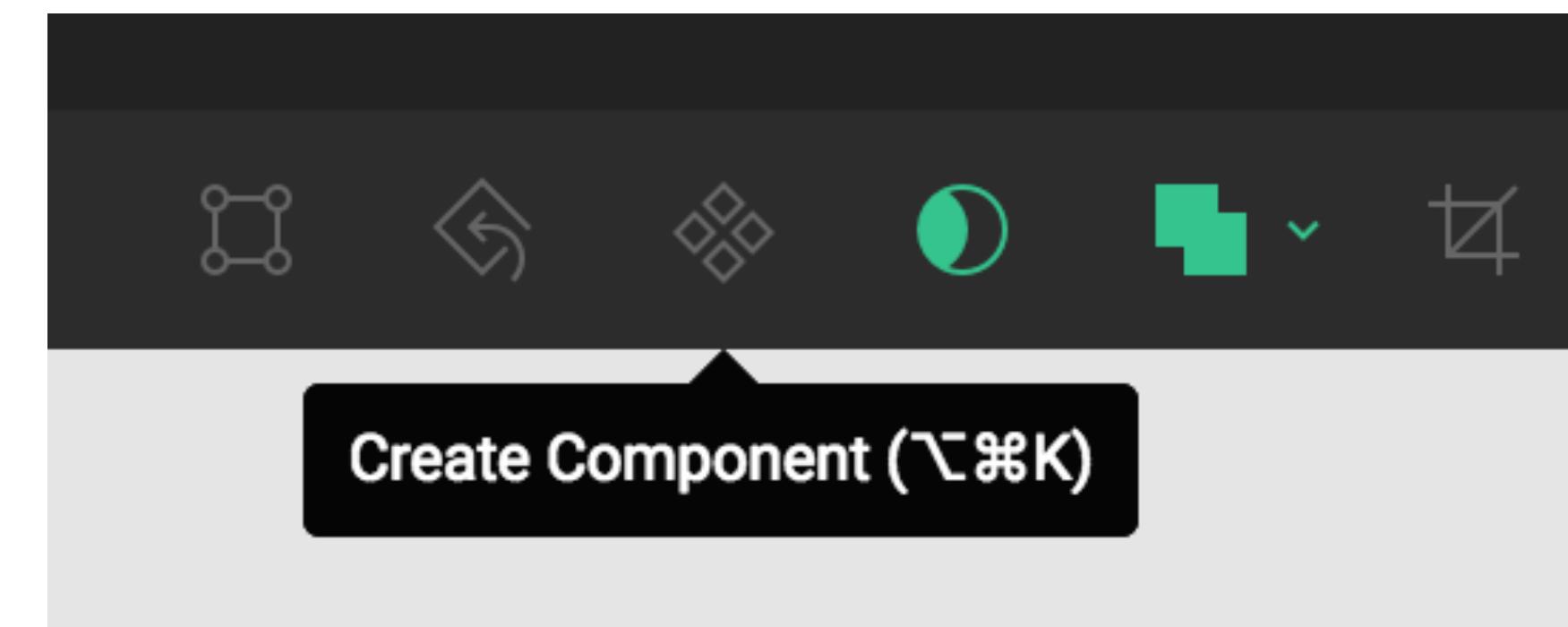
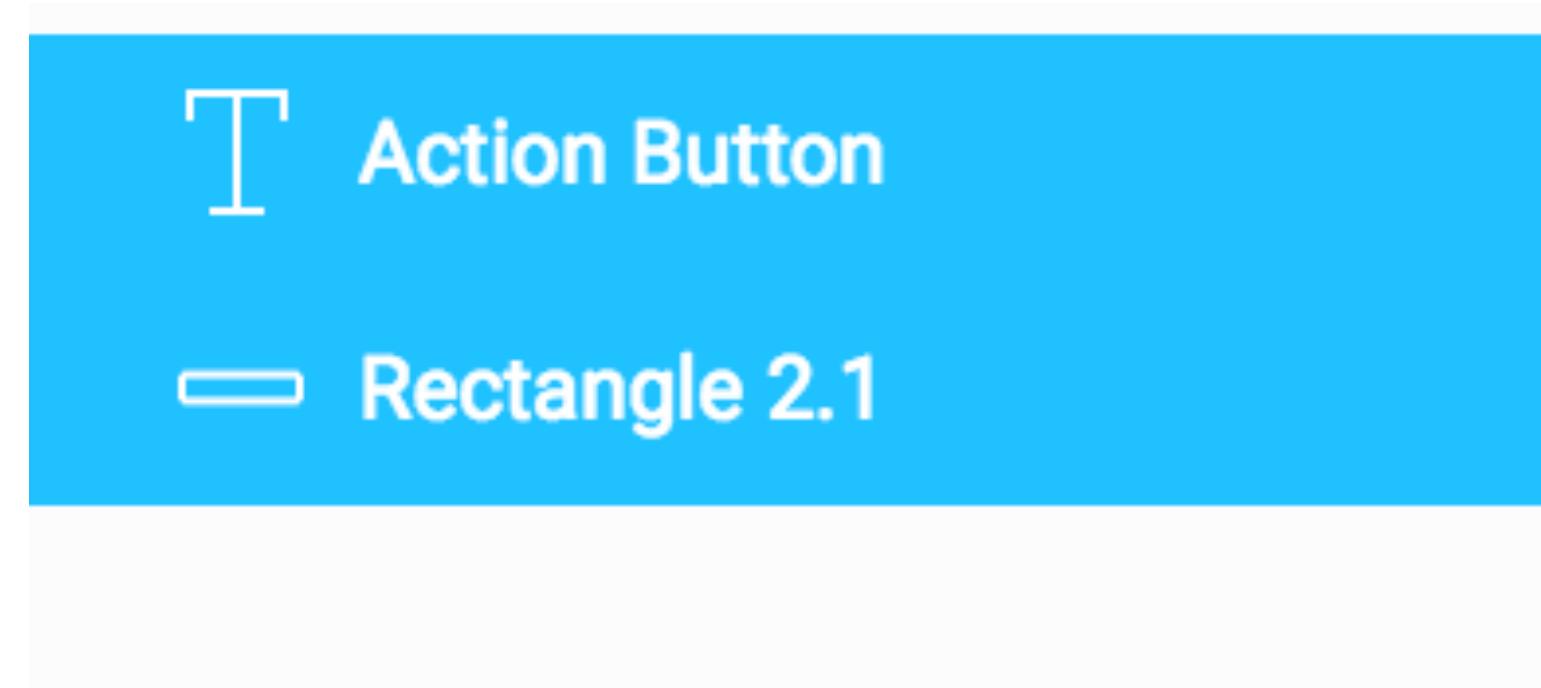
FIGMA

Components

A component is a group that represents a template for other objects to follow (e.g., a button).

If you want all buttons of a certain type to share size and text features, you can set a group of objects as a component.

To create a component in Figma, select the layers that comprise it and click the “Create component” button in the top toolbar:



FIGMA

Components and instances

When a component is duplicated or pasted, it produces an instance that shares all its properties with the component.

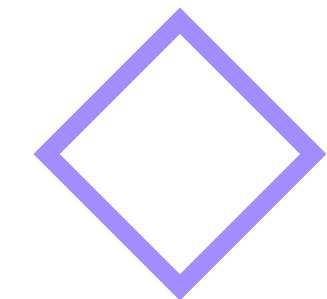
If a property is changed in the component, it changes for all instances as well.

If a property is changed in a specific instance, it changes only for that instance and **disconnects** that property from the component.

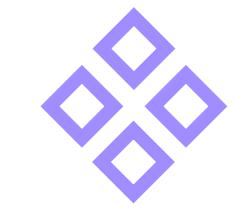
- ▼  Action Button
-  Action Button
-  Rectangle 2
- ▼  Action Button
-  Action Button
-  Rectangle 2
- ▼  Action Button
-  Action Button
-  Rectangle 2
- ▼  Action Button
-  Action Button
-  Rectangle 2

MATERIAL DESIGN

Components and instances

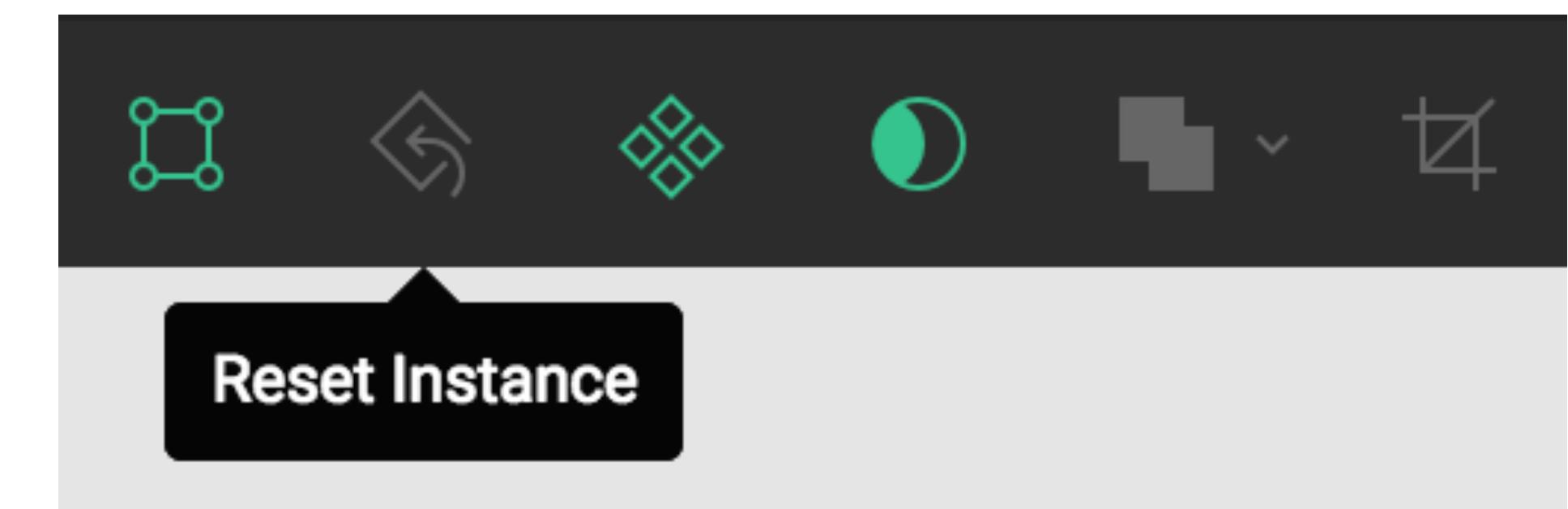


instance



component

To re-connect an instance's property to the component, select the instance and click "Reset instance"



FIGMA

Accessibility

Definitions

Accessibility: ability of a design/system to match the requirements of an individual (incl. user, context, and goal).

Barrier: a property of the world that prevents an individual from fully participating in an aspect of life

Impairment: a loss or abnormality in psychological, physiological, or anatomical structure or function

Disability: the functional impact of an impairment in a person's life

Disability: a mismatch between the needs of an individual and the environment/system/task

Social model of disability

Disability



Personal
Health
Condition

Disability



Mismatched
Human
Interactions

MICROSOFT INCLUSIVE TOOLKIT

A11y

(a-eleven-y or a-1-1-y)

is a numeronym of "accessibility"
since it shortens 11 letters from the word.

It's used to denote accessibility
efforts in the digital space.

Accessibility in UXD

~1.3 billion people worldwide face some form of disability in daily life

The accessible market impacts **53% of consumers**

Accessibility is a **legal requirement**

Innovation driven by the accessible market have vastly improved the experience of all users.

All users have limitations.

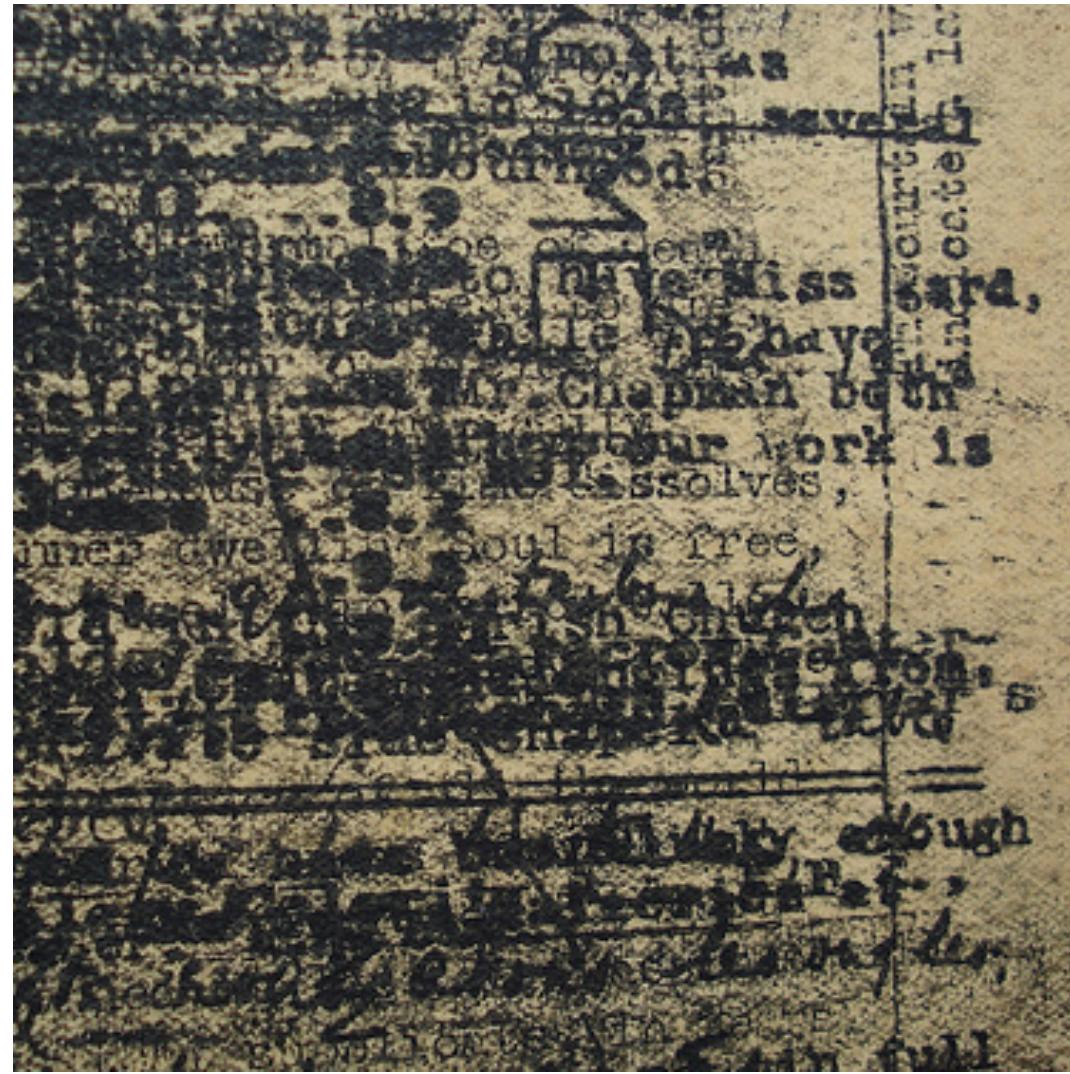
Accessibility benefits everyone who is or may ever face a barrier to communication, mobility, productivity, or fulfillment.

Have you ever used any
assistive technologies or features?

Used "assistive" tech?

- Closed captions in films
- Grippy vegetable peelers
- Speed controls in audio or video
- Speech-to-text
- Voice UI
- E-mail
- Keyboard

Accessible design is design



Typewriter

1808: Pellegrino Turri invents the typewriter to help a blind friend write legibly

E-mail

1973: Vint Cerf develops e-mail to communicate with his wife who had a hearing impairment



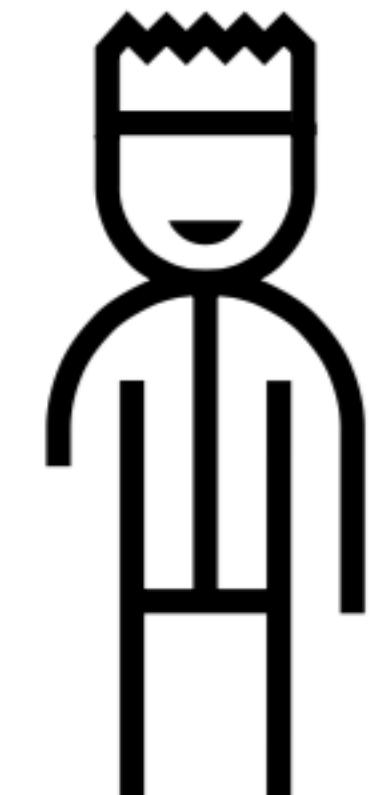
OXO GoodGrips

1990: Sam Farber pioneers ergonomic kitchen tools to alleviate his wife's arthritis

Limitations

Limitations can be permanent, temporary, or situational.

Permanent



Touch

Temporary



One arm

Situational



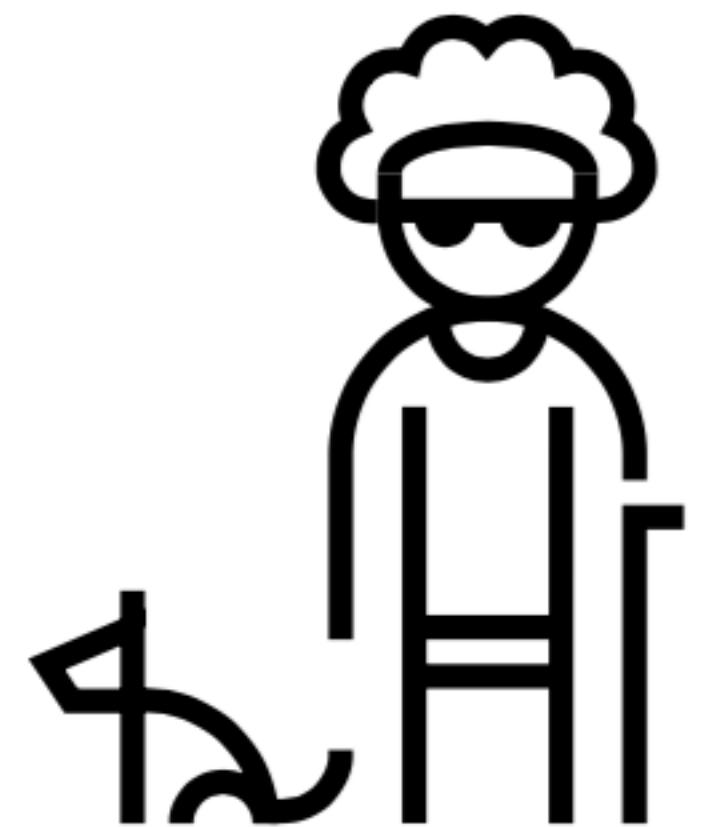
Arm injury

New parent

Limitations

Limitations can be permanent, temporary, or situational.

Permanent



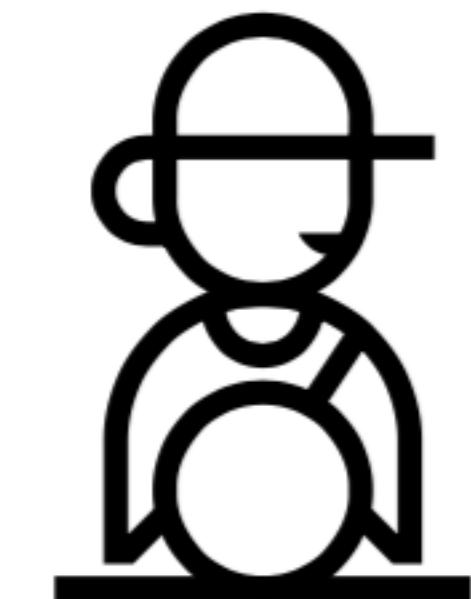
Blind

Temporary



Cataract

Situational



Distracted driver

See

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Limitations

Limitations can be permanent, temporary, or situational.

Hear

Permanent



Deaf

Temporary



Ear infection

Situational



Bartender

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Limitations

Limitations can be permanent, temporary, or situational.

Speak

Permanent



Non-verbal

Temporary



Laryngitis

Situational



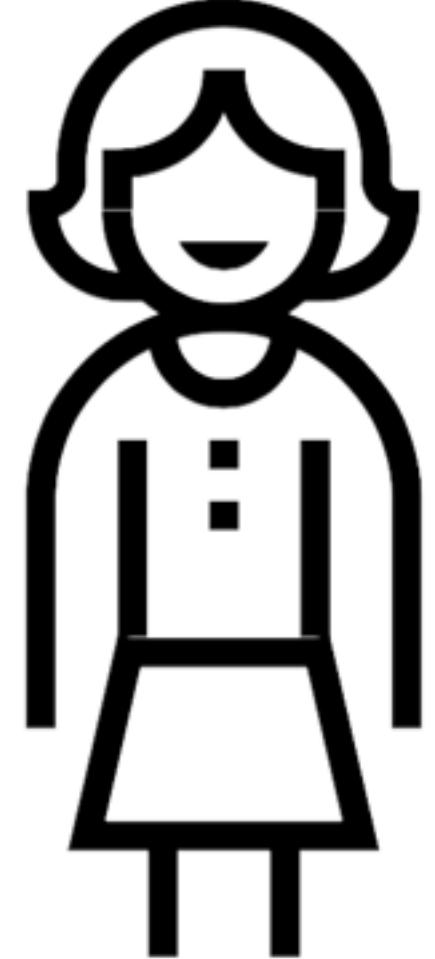
Heavy accent

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Limitations

Limitations can be permanent, temporary, or situational.

Permanent



Remember

Developmental
disability

Temporary



Concussion

Situational



Fatigue

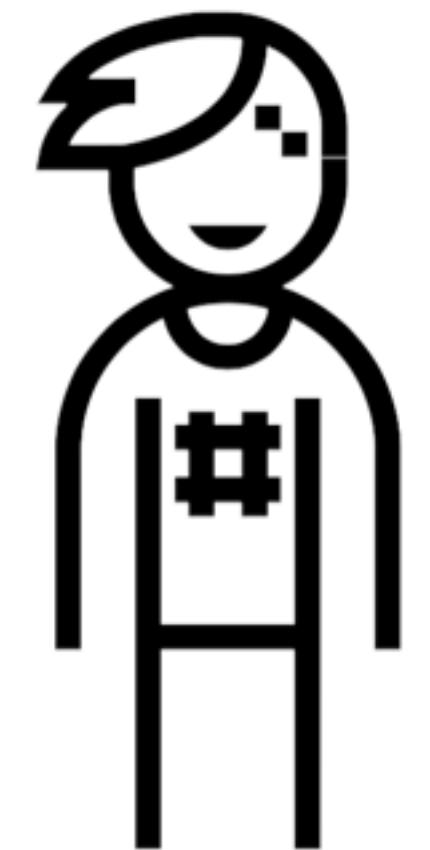
MICROSOFT INCLUSIVE TOOLKIT

Limitations

Limitations can be permanent, temporary, or situational.

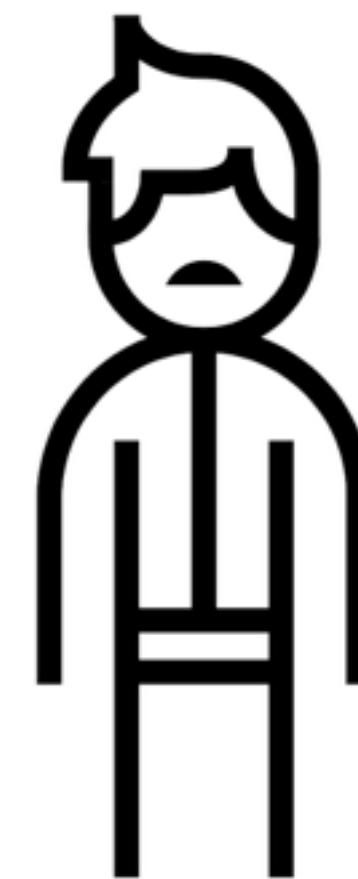
Feel

Permanent



Autism spectrum

Temporary



Depression

Situational



Bereaved

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Accessibility is design

Accessibility is design

Accessibility: ability of a design/system to match the requirements of an individual (incl. user, context, and goal).

We are not designing for ourselves.

As designers, we have to **shed our biases** that every user will see, hear, and understand things the way we do.

When we do this, we **remove friction** for more users.

Isn't that what we do all the time? How is accessibility any different?

It is different: it challenges our assumptions of "average" and "normal" and invites us to consider the breadth of human ability and experience.

Usability:

“A person [] can figure out how to use the thing to accomplish something without it being more trouble than it’s worth.”

Accessibility laws and guidelines

Legal requirement

Accessibility is legally mandated around the world, e.g.,

USA:

- Americans with Disabilities Act
- Individuals with Disabilities Education Act
- Telecommunications Act of 1996
- 21st Century Communications & Video Accessibility Act of 2010

Canada:

- Bill C-81 (Accessible Canada Act)
- Provincial legislation, e.g., the Accessibility for Ontarians with Disabilities Act (**AODA**)

Accessible Canada Act (ACA, Bill C-81)



Accessibility for Ontarians with Disabilities Act

Applies to all levels of government, non-profits, and private sector businesses with 1+ employees.

Standards:

- Customer Service Standard
- Information and Communication Standard
- Employment Standard
- Transportation Standard
- Design of Public Spaces Standard

Penalties for non-compliance (fine of up to \$100k per day)

ACCESSONTARIO.COM/AODA

Web Content Accessibility Guidelines

WCAG 2.1

The **Web Content Accessibility Guidelines** are provided and maintained by the World Wide Web Consortium (W3C).

Version 2.1 became official on June 5, 2018.

12 Web accessibility guidelines across 4 principles.

Success criteria have one of 3 levels of compliance/success:

A, AA, AAA.

US, EU, Canada, Australia, and others mandate WCAG compliance for state agencies and businesses

The WCAG also provides examples of code snippets, techniques, and examples of guideline failure.

www.w3.org/WAI/WCAG21/QUICKREF/

Perceivable

- 1.1** Provide text alternatives for non-text content like images
- 1.2** Offer captions or text summaries for audio and video
- 1.3** Structure content to be programmatically identified and write it to be presented in different ways
- 1.4** Design content to be easy to read and listened to (good contrast, volume control)

Operable

- 2.1** All functionality should be available just using a keyboard
- 2.2** There should be enough time to read content and perform wanted tasks
- 2.3** Avoid designing content that might cause seizures
- 2.4** Help users navigate and find content as much as possible

Understandable / Robust

- 3.1** Write easy-to-read text with assistive technologies in mind
- 3.2** Design content and the interface to behave in predictable ways
- 3.3** Help users to avoid and correct mistakes when entering input

(Robust)

- 4.1** Provide maximum compatibility with as many web browsers as possible

According to the AODA,
websites for companies with
50+ employees must:

File WCAG 2.0 compliance reports

Be Level A compliant starting 2014

Be Level AA compliant starting 2021

From WCAG to AG

Generalizing accessibility guidelines:

- **Perceivable:** all users should be able to perceive the system
- **Operable:** all users should be able to command the system to accomplish tasks
- **Understandable:** all users should be able to understand, remember, and reason about the system
- **Robust:** the system should adapt to and support the variety of users that might use it across a variety of technologies.

Robust

Accessibility is adaptation

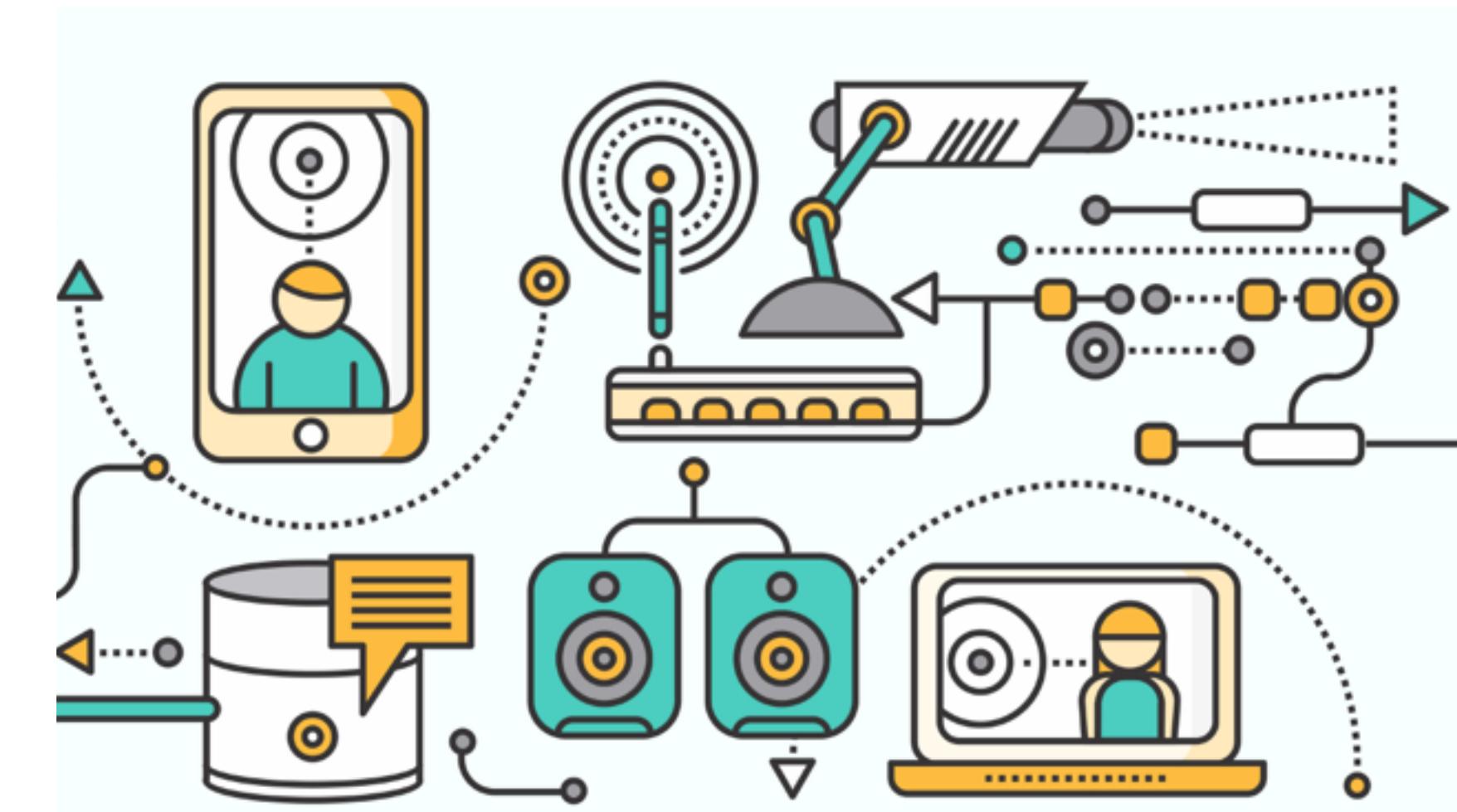


We used to have to adapt to the technology.

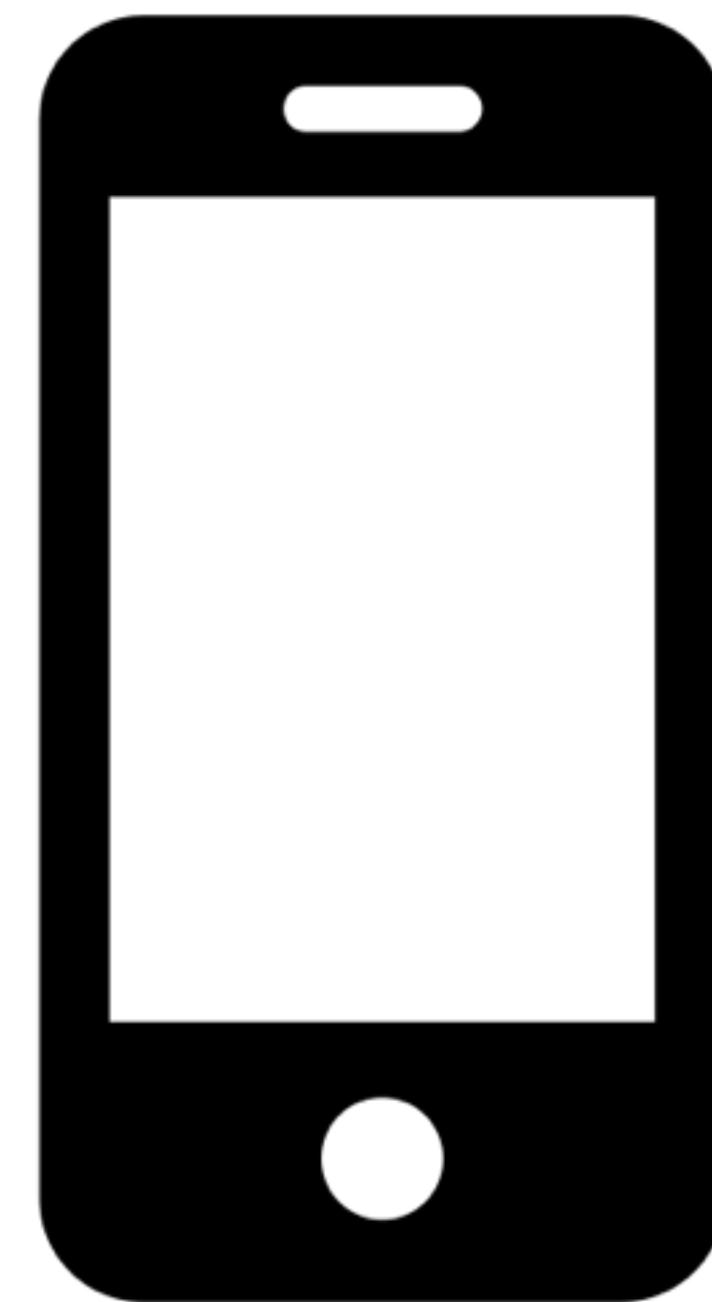
Now technology can adapt to us to help bridge the gap.

Like with public spaces, transportation, language, employment.

Accessibility is about taking responsibility and facilitating this adaptation.



Adaptation

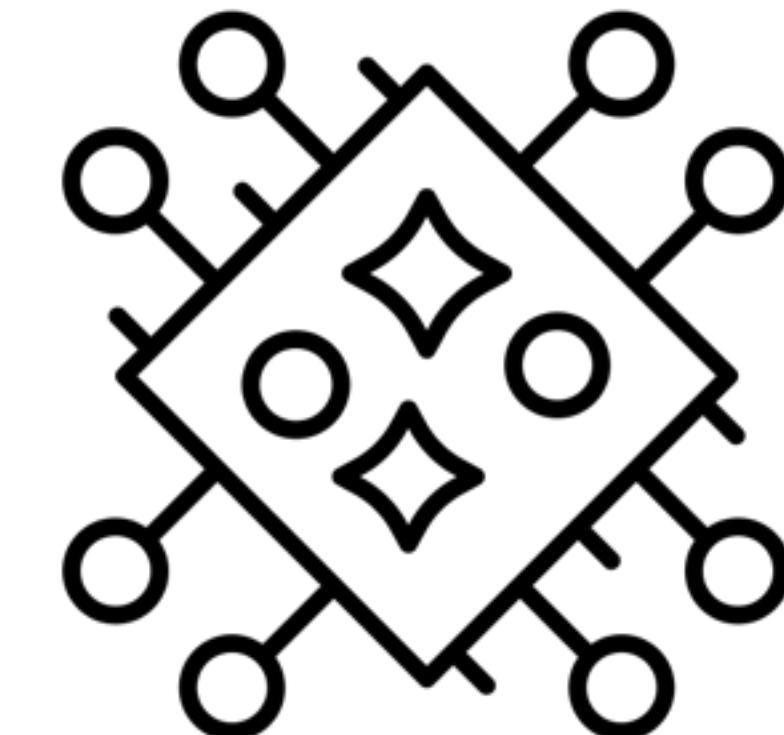


Accessibility is adaptation

Accessible design makes interfaces adaptable and decouples them from their default format.

This process is responsive to screen sizes and ratios.

Why wouldn't it be responsive to the abilities and limitations of users?



Designer

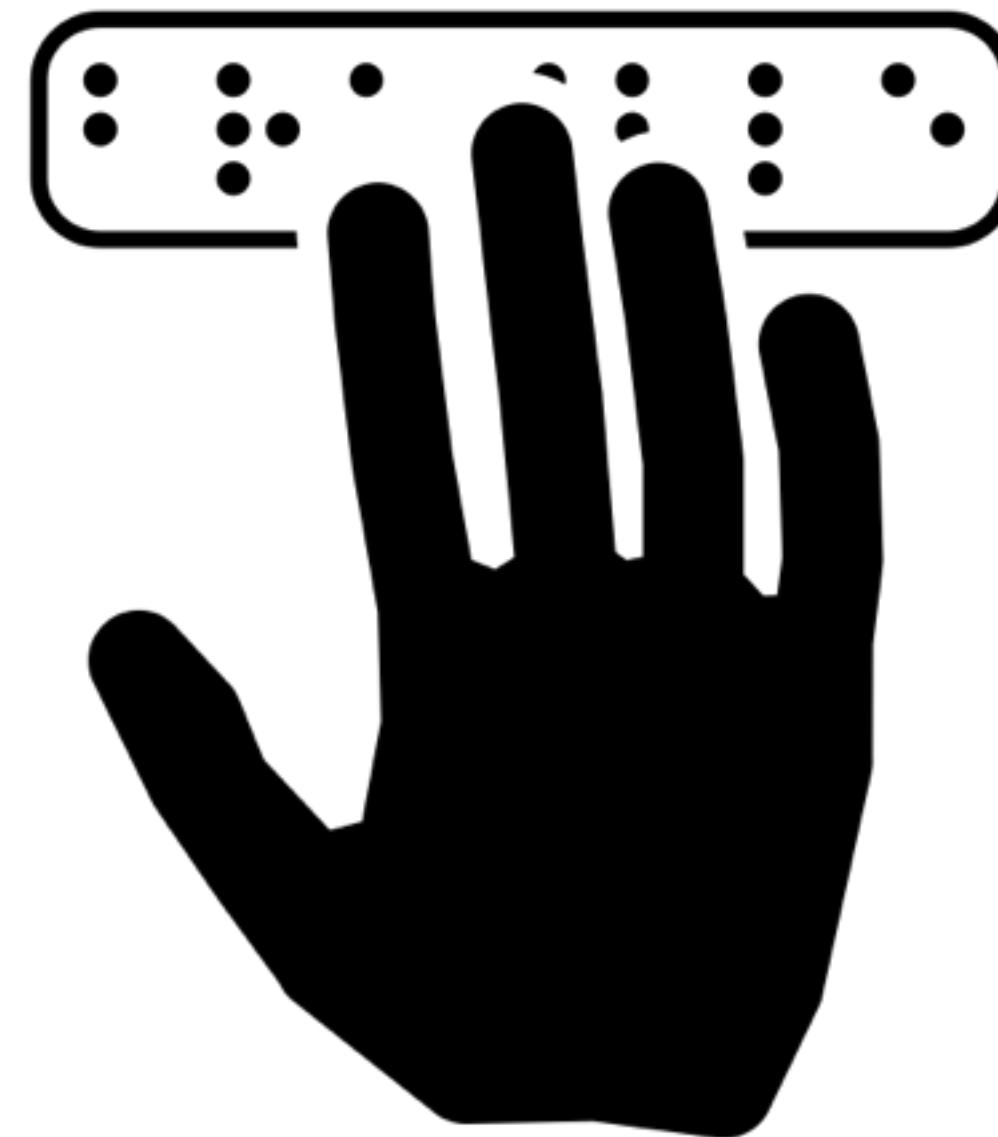


Semantic interface



User interface

Adaptation



Common assistive technologies

Keyboard only (primarily Tab, arrow keys, Enter key)

Functions must be accessible without specific pointer/touch access

Screen magnifier (built into OS, add contrast control/cursor)

Is full-screen context essential to understanding a design element?

Screen reader (auditory or Braille, reading speed up to 800 WPM)

Everything is serialized and read to the user. What should and should not be read? In what order should things appear?

You can try a screen reader to check your designs for accessibility:

NVDA (desktop), VoiceOver (iOS), TalkBack (Android)

Also: speech recognition, eye tracking, joystick, sip and puff devices

Perceivable

WCAG Perceivable Criteria

1. Perceivable: Information and user interface components must be presentable to users in ways they can perceive.

- **1.1 Text alternatives:** Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.
- **1.2 Time-based media:** Provide alternatives for time-based media.
- **1.3 Adaptable:** Create content that can be presented in different ways (for example simpler layout) without losing information or structure.
- **1.4 Distinguishable:** Make it easier for users to see and hear content including separating foreground from background.

Sensory

- Ensure sufficient **contrast (7:1)**
- Verify text **legibility** (clean fonts, beware hairline weights)
- **Sensory sensitivity:** avoid sudden changes in light levels or content
- **Motion sickness:** use or allow opt-out of parallax scrolling, unusual scrolling direction
- **Photosensitive epilepsy:** flashes between 3 and 60 Hz, high-contrast patterns, moving patterns, patterns containing saturated reds can trigger seizures. Avoid more than three successive flashes, reduce contrast, suppress flashes before content is displayed

Serialized presentation

Serialized presentation occurs when a 2-dimensional visual space must be navigated using 1-dimensional, serialized input and output.

Visuo-spatial presentation enables random access, quick skimming, information seeking, and holistic orientation.

In contrast, **serialized** presentation is single-channel, slow, and linear.



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Coronavirus

Wednesday
5 February 2020

Coronavirus live updates / China deaths pass 490 as 10 test positive on cruise ship in Japan

Britain has told citizens to leave China, New Zealand is the latest country to airlift people out of Wuhan

Analysis

Is the UK's call for citizens to leave an overreaction?



Evacuations

Australia and New Zealand fly citizens out

Explainer

How to protect yourself from coronavirus



Chinese people are enduring coronavirus like everyone else. Don't traumatisise us further
Yang Tian

Headlines

Q. Toronto

State of the Union / Trump makes re-election pitch after



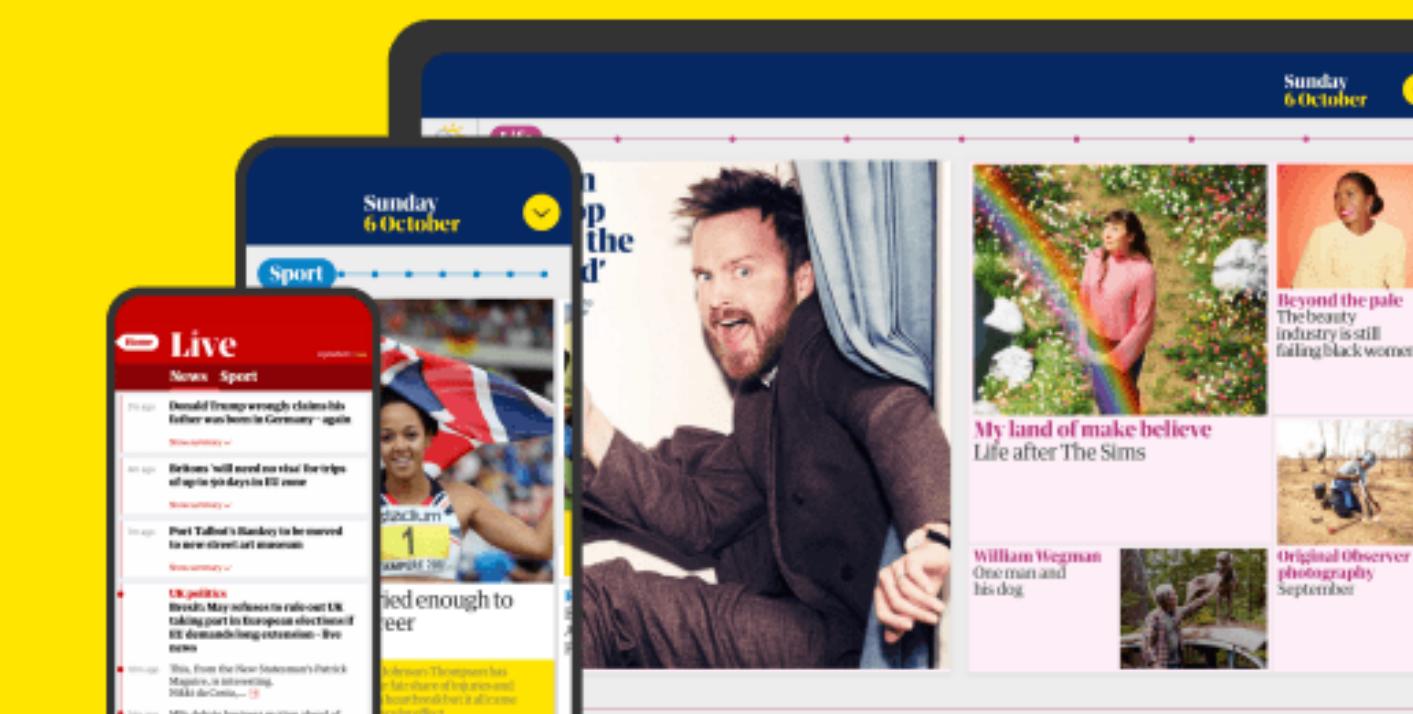
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**The
Guardian**

Serialized presentation

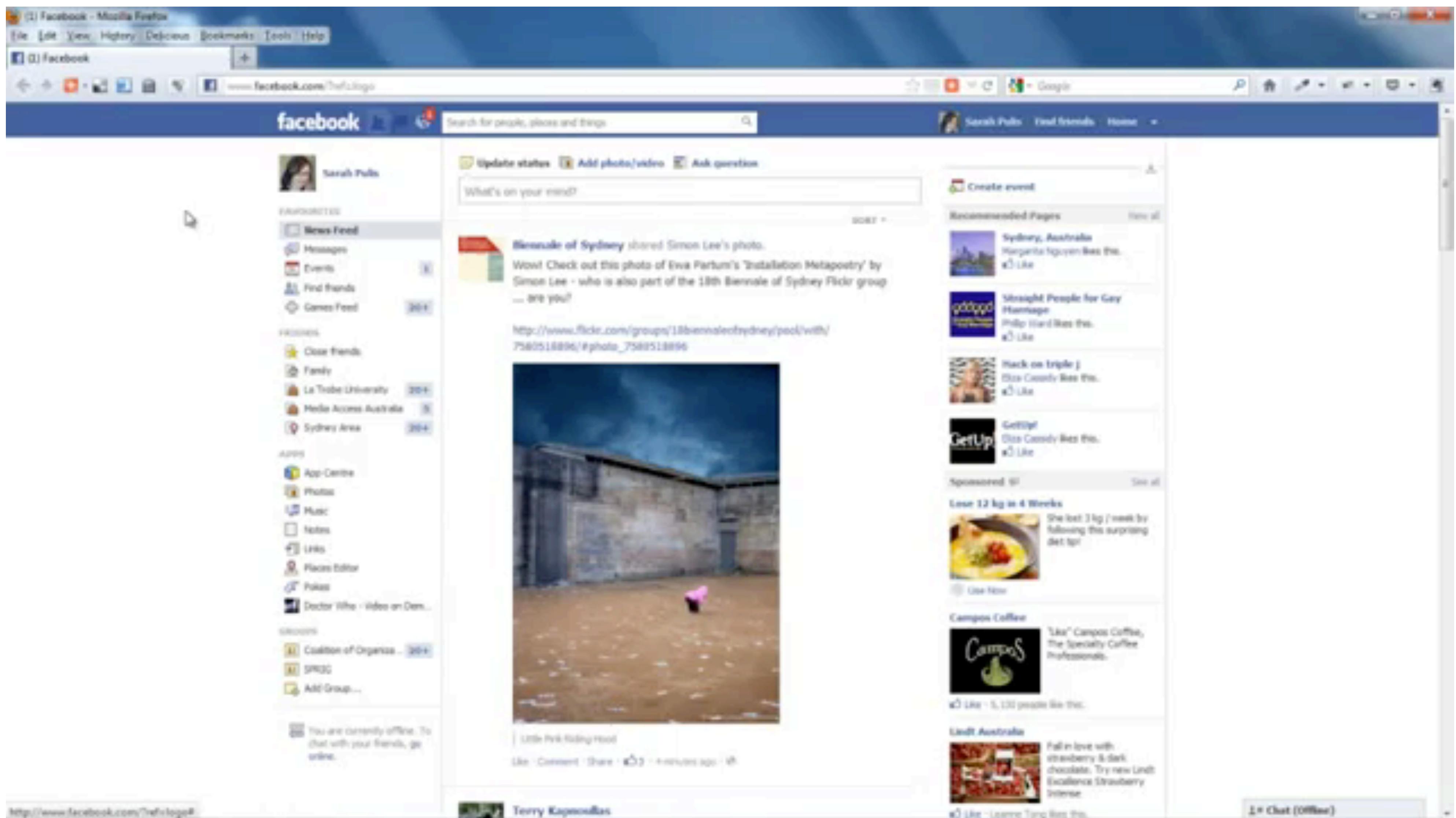
Serialized presentation occurs when a 2D visual space must be navigated using 1-dimensional input and output.

Screen readers (audio or Braille) are the main adaptive interface for blind and low vision users.

Considerations:

- minimize serialized content (omit unnecessary noise)
- make all content **serializable**
- enable skipping content
- expose **semantics of** document structure

Filter noise



Text alternatives for non-text media

Provide text-based alternatives for all non-text media, e.g.,

- transcripts and descriptive text for video
- transcripts for audio
- alternative text for images

Consider the difficulty in doing so for tables or complex visualizations.

Text alternatives for images

In HTML, every image has a built-in **alt** attribute that stands for "alternative text". A remnant from the days of text-only browsers, it is an easy way to specify how an image should be serialized.

Always provide a meaningful text-based description of an image.

If the **alt** attribute is missing, screen readers may output the image's filename instead, which is always worse.

To exclude an image from being read, you can specify that it's for decoration only.

In HTML, we can do so with **alt=""**

Alt text in HTML

```
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Page title</title>
</head>

<body>
<h1>First heading</h1>
<p>Some body text</p>


</body>
</html>
```



Alt text



"This is a cropped, horizontal banner style black and white photograph depicting one of the vigils and its participants (who are of various races, genders, and dis/ability statuses)[...] Lydia Brown [...] is in the middle with their back to the viewer. Many participants are holding cameras, video recorders, or phones. There is an American Sign Language interpreter. This picture shows about 16 people."

LYDIA X.Z. BROWN

Operable

WCAG Operable Criteria

2. Operable: User interface components and navigation must be operable.

- **2.1 Keyboard Accessible:** Make all functionality available from a keyboard.
- **2.2 Enough Time:** Provide users enough time to read and use content.
- **2.3 Seizures and Physical Reactions:** Do not design content in a way that is known to cause seizures or physical reactions.
- **2.4 Navigable:** Provide ways to help users navigate, find content, and determine where they are.
- **2.5 Input Modalities:** Make it easier for users to operate functionality through various inputs beyond keyboard.

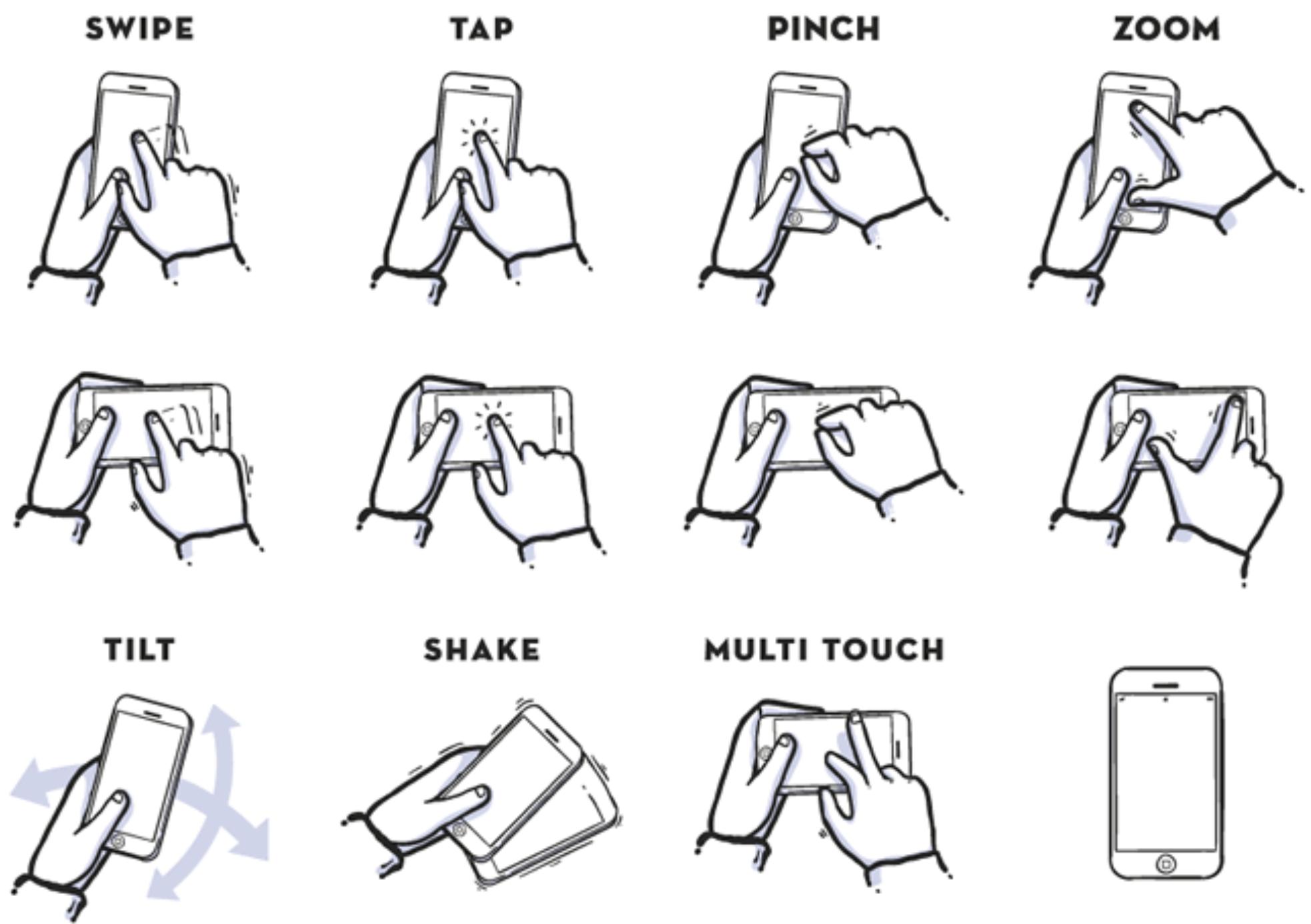
Alternative and forgiving input

Simplify inputs and support common alternatives, e.g., keyboard only.

Provide alternatives for complex fine-motor gestures, e.g., squeeze, shake, pinch, swipe, two-handed interaction

Implement forgiving input timing or remove timing requirements altogether (e.g., double-click time, cancel within 10 seconds, etc.)

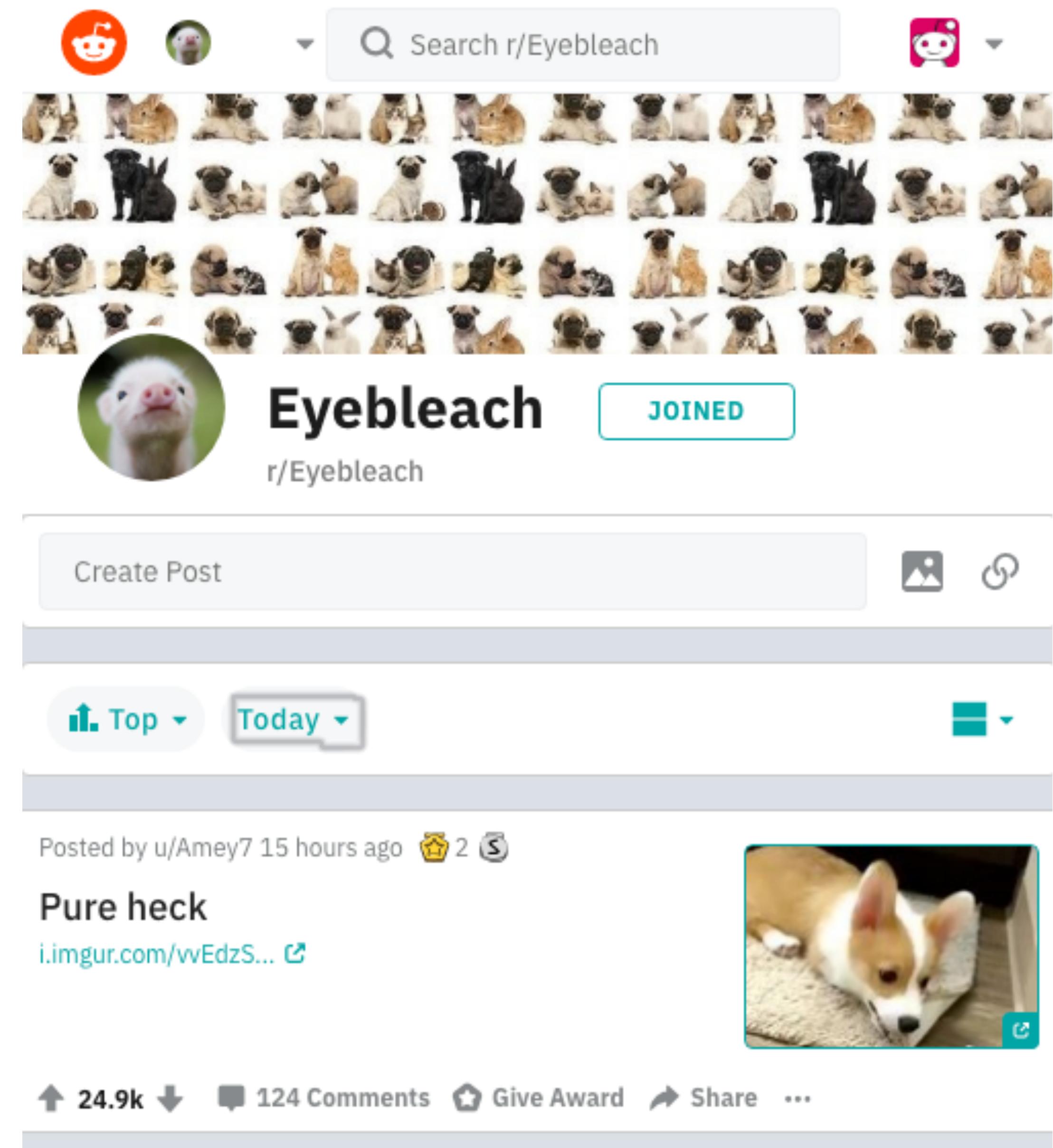
IPHONE GESTURES BY JULIAN BURFORD



Focus

Serialized input (e.g., keyboard only) means the user's input is **focused** on one component at a time.

- **Indicate** which element has focus
- Make all **interactive** elements focusable
- Don't give focus to **non-interactive** elements
- No focus **traps**



Tab order

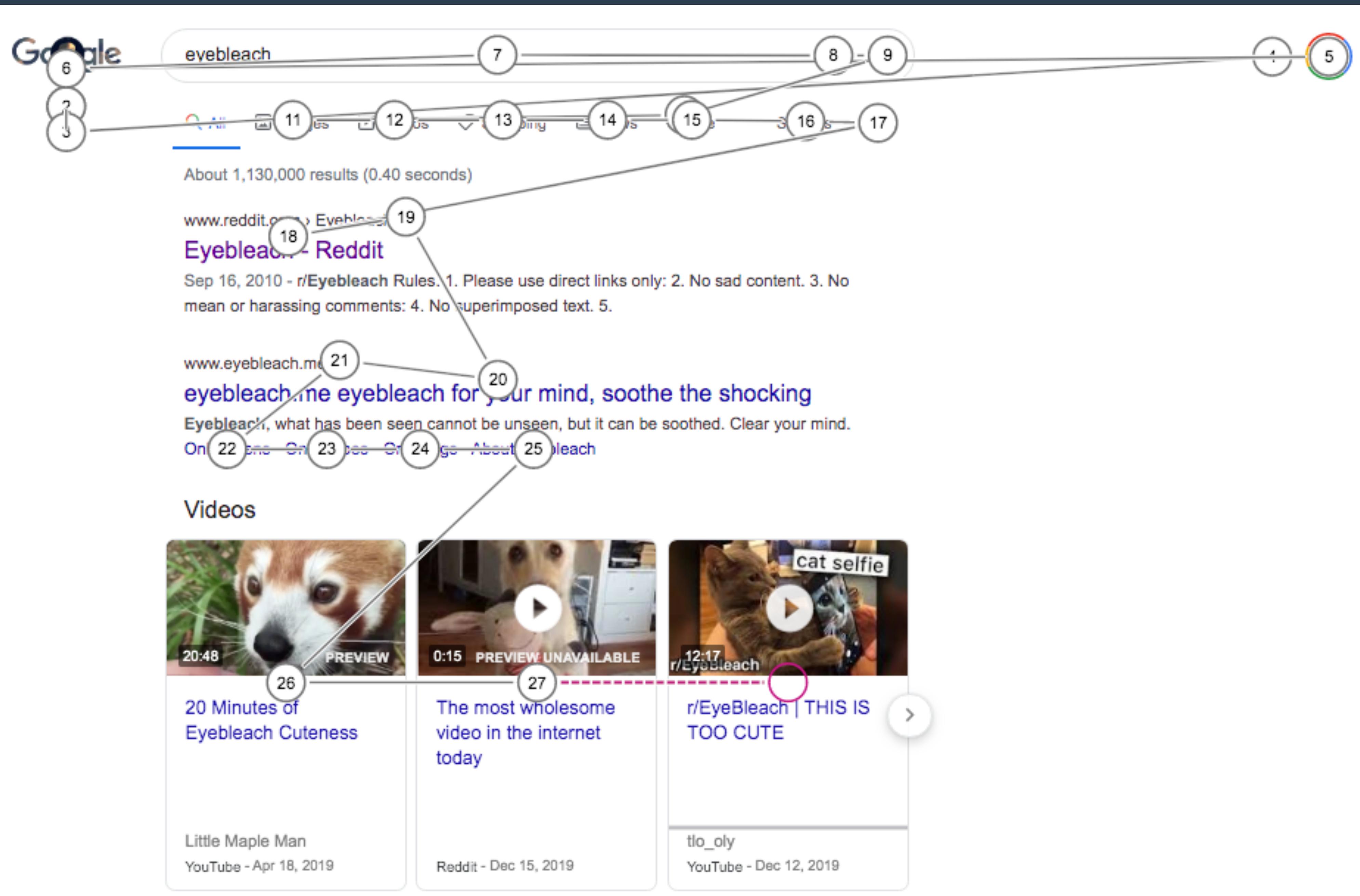
The order in which interactive components gain focus in a serialized interface is often called the "**Tab order**", because typical keyboard navigation uses Tab and Shift-Tab to move focus forward and back.

Tab order should be logical, reversible, and looping.

Tab order can be changed programmatically.

Test the tab order to ensure it's logical and there are no traps:

- focus going to invisible elements
- visible elements not in the tab order
- tab order not reversible or resetting

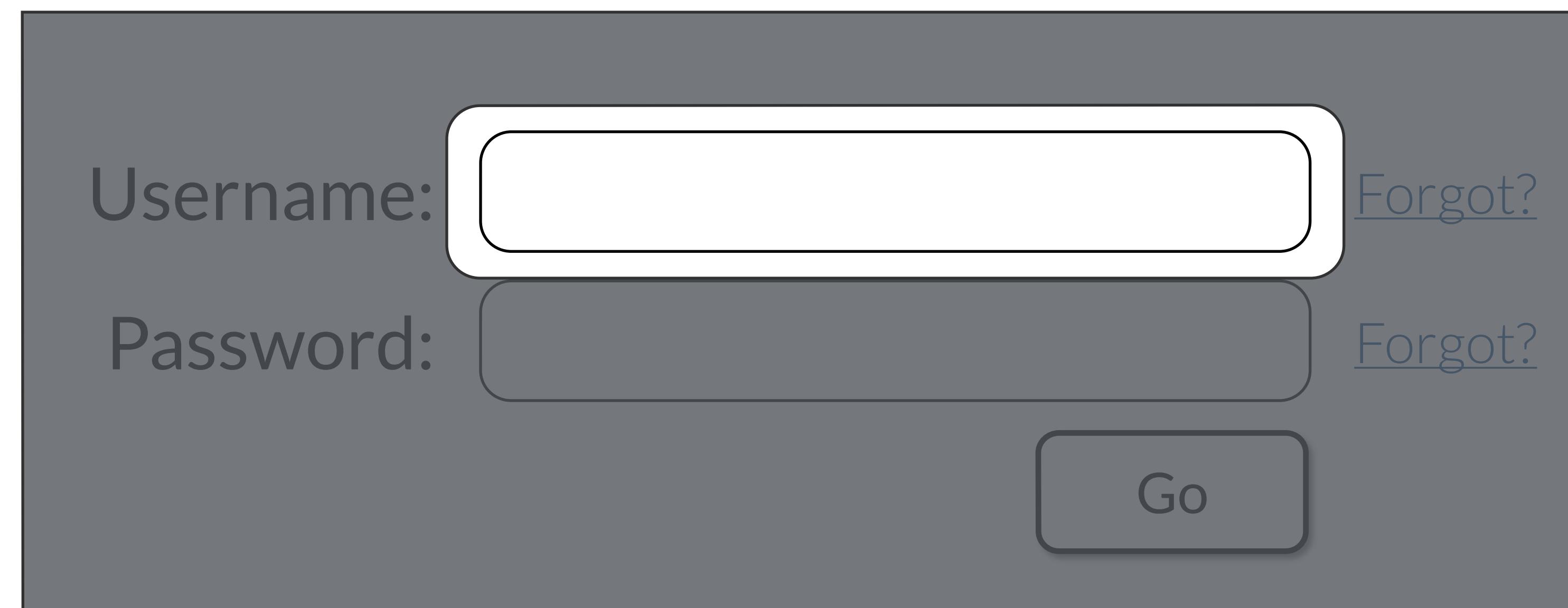


How to
"LIKE" a video
using VOICE OVER
& TALKBACK

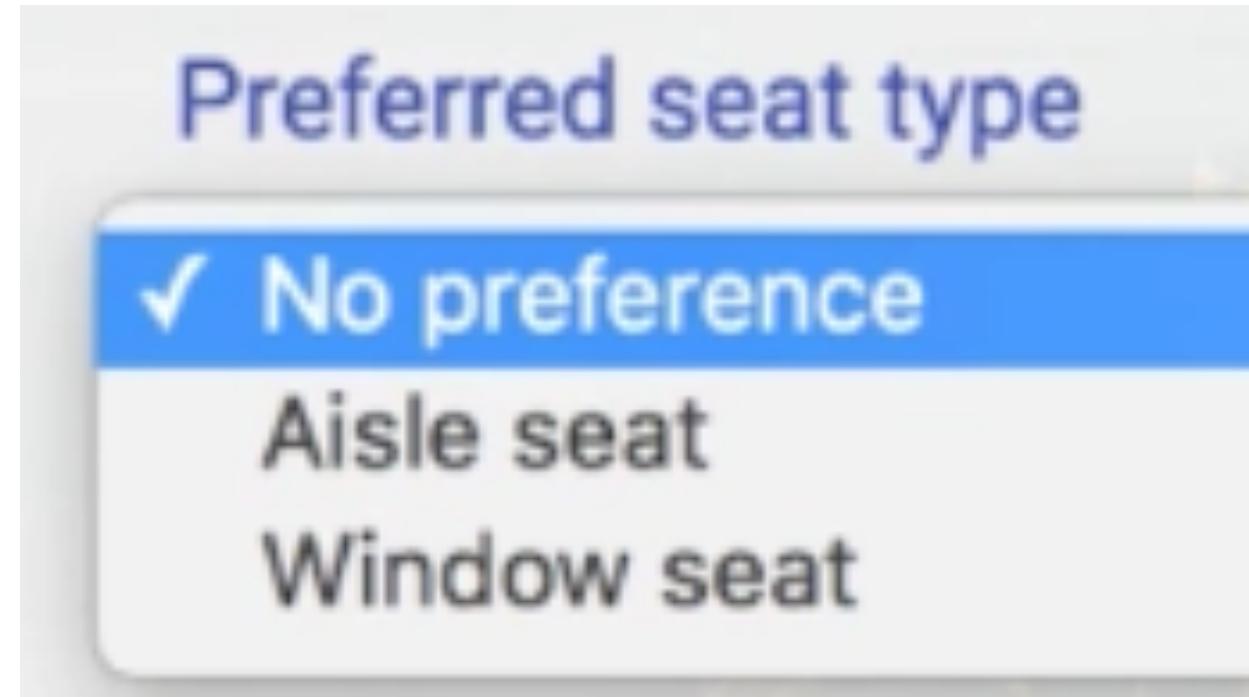
Semantics and affordances

To accommodate adaptation, each interactive item needs to be **self-contained** and include **all information necessary** to perceive and use it, and make it available in other modalities besides visual.

Items should not rely on others being perceivable at the same time.



Semantics example



Role: dropdown element

Name: "Preferred seat type"

Value: "No preference"

Possible values:

"No preference"

"Window"

"Aisle"



*Drop-down interactive element: preferred seat type.
No preference selected.*

GOOGLE DEVELOPERS

WAI-ARIA

WAI-ARIA - Web Accessibility Initiative's Accessible Rich Internet Applications specification:

- **extends** HTML5 elements, attributes, and semantics
- adds **richer context** and alt text in compatible browsers
- **modifies attributes** of elements in the semantic representation of an interface
- express semantic relationships:
 - role
 - control
 - description

GOOGLE DEVELOPERS

Navigation: Headings

Headings enable users to scan a page for relevant information.

The semantic structure of headings should match the visual structure.

It should be well formed and accessible to users.

Many screen reader users navigate by heading by default.

In HTML, heading tags **<h1>** to **<h6>** indicate this hierarchy.

<h1>How to Make a Cake</h1>

<h2>Ingredients</h2>

<h3>Ingredients for Sponge</h3>

<h3>Ingredients for Toppings</h3>

<h2>Instructions</h2>

<h3>Preparation</h3>

<h3>Process</h3>

<h2>Serving the Cake</h2>



Eat Fresh Every Day

Lorem ipsum dolor sit amet, consectetur elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Headings

- 1: Lifestyle
- 2: Today's Posts
- 3: Eat Fresh Every Day
- 3: Dive Into The Water
- 3: Vintage Coffee Cups
- 3: Wonderful Buildings
- 3: Warm Moments
- 3: Explore the World
- 3: Capture The Scene
- 3: Hear It All
- 3: Emerging Artists
- 3: Benefits Of Sports
- 3: Summer Wear
- 2: Hot List
- ▼ 3: Lovely Landscapes Captured By Great Photographs

Landscapes Captured
by Great Photographs



Consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Structure: Landmarks

Landmarks are used to semantically define different portions of an interface as:

- banner
- header
- main
- article
- navigation
- footer

HTML5 or ARIA have landmark definitions.

Web Accessibility Auditing Show**role=banner**

Home

Examples >

role= navigation



Home

Navigating websites can be quite challenging for people who rely on assistive technology. On this website we will illustrate the most common accessibility problems and challenges that can be found online. Use links on the left to learn more about web page elements in which these challenges typically occur.

Each problem is demonstrated by "good" and "bad" examples:

Bad Example

Good Example

role=main

Bad Example

Bad examples illustrate incorrect use of HTML and/or Javascript code.

Useful Resources

- ▶ General Information
- ▶ Evaluation Tools

role= complementary

Ryerson
University

The Chang School
of Continuing
Education

role=contentinfo

©The Chang School, Ryerson University

Understandable

WCAG Operable Criteria

3. Understandable: Information and the operation of user interface must be understandable.

- **3.1 Readable:** Make text content readable and understandable.
- **3.2 Predictable:** Make Web pages appear and operate in predictable ways.
- **3.3 Input Assistance:** Help users avoid and correct mistakes.
 - Describe errors in text
 - Checking, confirmation, and reversibility
 - Context-sensitive help

Language

Using concise, plain, jargon-free, level-appropriate language is a known heuristic in UX design.

Through an accessibility lens, we will extend these principles to include:

- Make the **language** of content programmatically available
- Avoid or define **unfamiliar words** and abbreviations
- Avoid **metaphors**, cultural references, hidden meanings and subtext

This ensures that second-language users, users unfamiliar with common cultural practices, as well as users with cognitive, social, or emotional limitations are not excluded from understanding an interface.

Dark patterns and accessibility

Dark patterns are designed to exploit cognitive biases or deceive users into doing things that benefit the designer but not the user.

"Friendly staff-early check in -Fantastic views from the room- very clean- bed comfortable. All facilities exceeded my expectations."

D Debbie
United Kingdom

"Great location, clean and well equipped, nice staff, everything you need for self catering and close to amenities, room quiet even though we were facing the main road 😊😊 a wonderful stay. WiFi in the rooms and good t.v also air conditioning."

C Carol
United Kingdom

"The location ... the best one if you are a visitor"

S Salim
Oman

"The room was a good size, quality furnishings and the kitchen was an

From 15:00 until 00:00

(1-night stay)

Room type

► [Deluxe Room](#)

● Only 6 rooms left on our site!

Choose your bed:

- 1 large double bed
- 2 single beds

● 279 ft² Flat-screen TV

● Air conditioning Soundproofing

● Free WiFi

• TV • Telephone • Satellite Channels

• Cable Channels • Safety Deposit Box

• Iron • Seating Area • Heating

• Interconnected room(s) available

• Sofa • Hardwood/Parquet floors

• Wardrobe/Closet • Sofa bed

• Shower • Hairdryer • Free toiletries

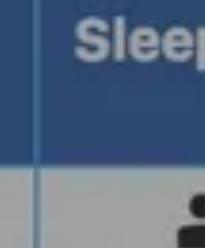
• Tea/Coffee Maker • Kitchenette

• Refrigerator • Microwave

• Electric kettle • Kitchenware

• Stovetop • Toaster • Towels • Linen

Sleeps



Today's price



Expires in:

11 : 17 : 19

£201.24

► Jackpot! This is the cheapest price you've seen in London for your dates!

1 nights (Mon 21 May - Tue 22 May)

Your package

- Non-refundable

Select rooms

0

I'll reserve

No booking or credit card fees!

21 other people looking now



Expires in:

11 : 17 : 19

£228.24

Sleeps



Your package

- Non-refundable

Select rooms

0

Dark patterns and accessibility

Dark patterns are designed to exploit cognitive biases or deceive users into doing things that benefit the designer but not the user.

Non-neurotypical users and users with cognitive or emotional limitations are at greater risk of suffering from dark patterns.

This includes:

- **Misleading** presentation (e.g., fake "Download" buttons)
- **Cognitive** traps (habit, compulsion, artificial scarcity)
- **Emotional** manipulation (shame, consensus fallacy, appeal to emotion)

"I have autism [...], which can result in often bizarre fixations on certain things. "

"During the first of Overwatch's winter events, I spent around three times the amount I did on the game just trying to get a specific skin for Winston from the limited-time loot boxes. Although I knew buying another set of loot boxes was irresponsible, it'd create so much anxiety that I had to give it another shot."

Dynamic content

Alerts can interrupt the user's flow and make it difficult to resume a task, especially with limited cognitive resources.

Asynchronous **updates** (e.g., in AJAX) can remain imperceptible to a user if not properly inserted into a serialized interface.

How should alerts and asynchronous changes be handled in a serialized interface?

- **Prioritize:** ensure that more important alerts are more salient
- **Switch focus:** decide when and how to redirect focus to new elements

Priority

Determine how important / urgent an update is and use your system to match its salience to its importance.

ARIA's **aria-live** attribute identifies an updating region and specifies how updates should be announced to a screen reader:

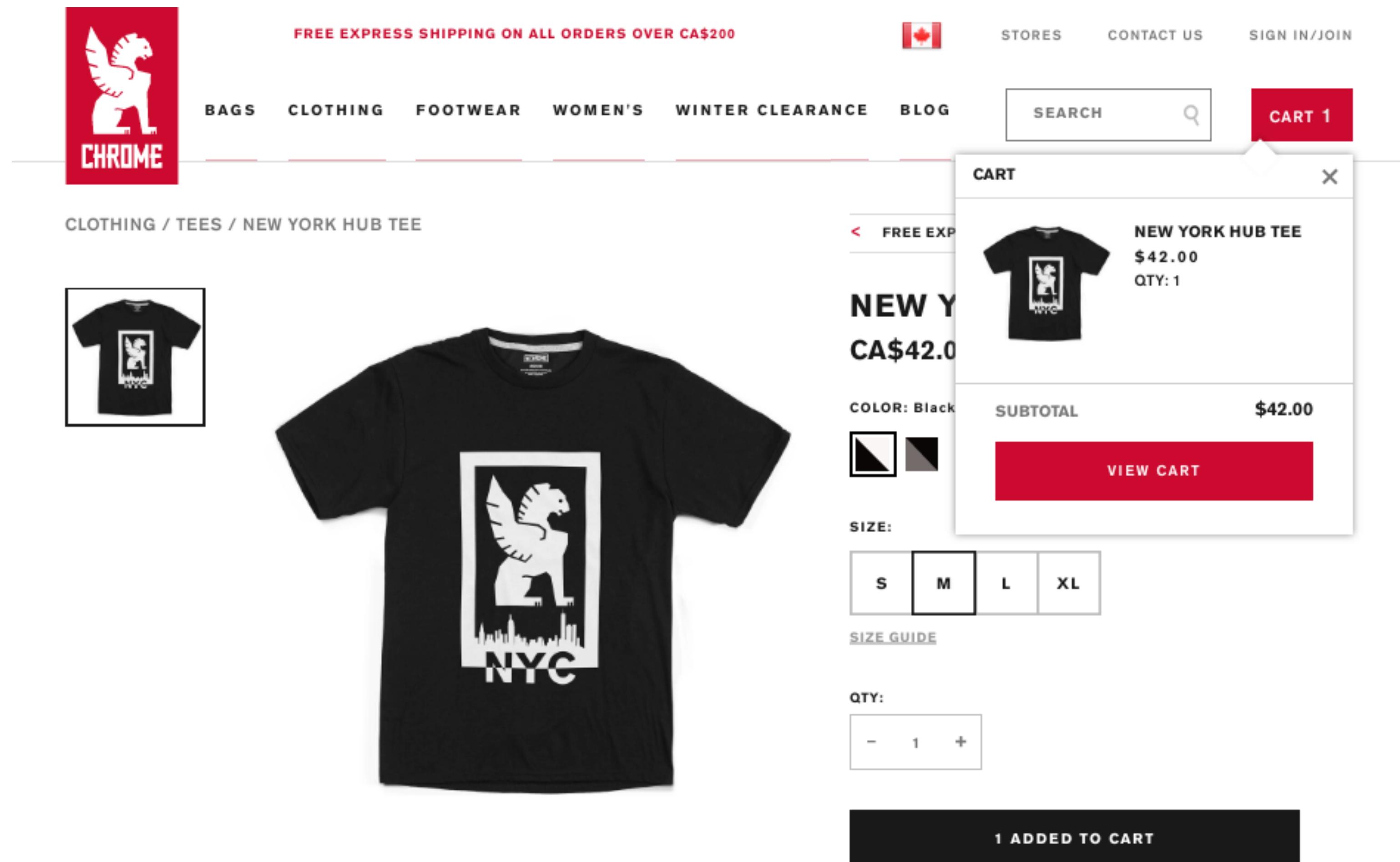
- **off**: updates not announced
- **polite**: announced only if the user is idle
- **assertive**: announced to the user as soon as possible
- **rude**: announced immediately, even if this interrupts the user

MOZILLA

Switch focus

If a change or user input has caused a change in another element:

- put that element next in the tab order OR
- switch focus to it right away



CHROME INDUSTRIES

Inclusive design

Inclusive design

“**Inclusive design:** A design methodology that enables and draws on the full range of human diversity.

Most importantly, this means **including** and learning from people with a range of perspectives.

Designing inclusively doesn’t mean you’re making one thing for all people. You’re designing a **diversity of ways** for everyone to participate in an experience with a sense of belonging.

Many people are unable to participate in aspects of society, both physical and digital. Understanding why and how people are **excluded** gives us actionable steps to take towards inclusive design.”

MICROSOFT DESIGN TOOLKIT

Accessibility simulation

Designers can use some **simulation** techniques to catch low-hanging fruit or make easy improvements:

- straw test (look at screen through a hole-punched hole)
- screen magnifier
- thick gloves
- use screen reader
- unplug mouse, use keyboard only

These simulations have very **shallow, limited utility**.

Research

No matter how hard we try, none of us can "**pretend**" to live with any and all of the possible limitations our users may face.

Get actual users with lived experience as soon as possible.

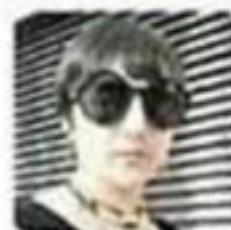
- Remember that users with disabilities don't owe you data
- Approach a user community or group respectfully
- Offer fair compensation for their input:
 - Persons with a disability are at higher risk of low income.
 - Lived experience is valuable

LOW INCOME AMONG PERSONS WITH A DISABILITY IN CANADA (2017)



Emma Barnett @Emmabarnett

Should people with learning disabilities be allowed to work for less than the minimum wage? Debate on @bbc5live 10am spectator.co.uk/2017/03/the-mi...



Another Angry Woman @stavvers

alternate phrasing of this question:
should employers be allowed to
exploit some of society's most
vulnerable people?

Toronto

Adults with disabilities need to earn minimum wage for sense of 'belonging,' parents say

6 young adults with developmental disabilities have been permanently hired by North York firm



Kelda Yuen · CBC News · Posted: Feb 19, 2019 6:00 AM ET | Last Updated: December 24, 2019

Families say minimum-wage changes are cutting jobs for people with disabilities

NOELLA OVID

PUBLISHED APRIL 16, 2018

Respect and empathy

- Avoid negative or value-laden terms ("suffers from...")
- Avoid euphemistic terms ("handi-capable", "differently-abled")
- Avoid labelling user groups/personas based on disabilities
- Avoid emotional tone, e.g., "hero, saint, victim, burden, soldier, inspiration", etc.
- Don't patronize, treat users like any other
- Address the user, not their interpreter or companions
- Never attempt to speak for the person you are talking to
- Ask for guidance if unsure

What is your favourite game of all time?

We know it can be hard to choose, but you have to pick one!

Because of any physical, cognitive or emotional condition, do you/your child often experience any difficulties in playing video games?

Not at this time (or I prefer not to say)

Why do we ask this?

Game developers are often interested in making their games more accessible to persons with impairments, and we therefore seek individuals with whom to collaborate on improving these games. You are not required to disclose an impairment, however we request that you make us aware of any physical access requirements you may have, if you're invited to playtest.

What is your favourite game of all time?

We know it can be hard to choose, but you have to pick one!

Because of any physical, cognitive or emotional condition, do you/your child often experience any difficulties in playing video games?

Yes

Why do we ask this?

Game developers are often interested in making their games more accessible to persons with impairments, and we therefore seek individuals with whom to collaborate on improving these games. You are not required to disclose an impairment, however we request that you make us aware of any physical access requirements you may have, if you're invited to playtest.

If you are comfortable doing so, you can provide additional information on games or interactions that present difficulties

Ableism and language

15 Crazy Examples Of Insanely Ableist Language

By Parker Marie Molloy, October 21st 2013

As with all aspects of design, we must use **intentional, precise, and respectful** language when communicating with users with disabilities.

Inspect and **challenge** the language you use for any discriminatory or ableist connotations or histories.

List of **ableist terms** and alternatives:

<https://www.autistichoya.com/p/ableist-words-and-terms-to-avoid.html>

Language and community

Person-first language: ***person with a disability***

- avoids defining the person entirely by their disability
- disassociates the disability from the person's experience
- implies disability should not be associated with a person as it is intrinsically negative

Identity-first language: ***disabled person***

- includes the disability as integral to the person's experience
- frames disability using the social model: as a consequence of a barrier-laden environment, not as an intrinsic quality
- can indicate disability pride or group membership

CARA LIEBOWITZ

When in doubt, ask.



Participatory design

End users participate in and often **lead** the creation of products intended for them while UX designers act as facilitators.



PARTICIPATEINDESIGN.ORG

User testing and disability

- Recruit disabled **users** as part of your usability testing
- Hire an accessibility **consultant** / advocate. Many consultants have lived experience with disabilities.
- Include disabled users as **members of the design team**.
- **Partner with an organization** that manages pools of disabled volunteers for usability studies, e.g., Fable in Toronto (<https://www.makeitfable.com/>),

(Which also offers a great example of respectful, empowering, intentional language)

Common excuses

- “I have received no complaints about accessibility”
- “Fixing accessibility is expensive”
- “Accessibility is not my job”
- “The accessible market is too small to justify the effort”
- “Accessible design is boring design”

Beyond compliance

Compliance trap

By focusing on meeting compliance requirements, we're discarding a key benefit to designing for accessibility:

Constraints drive innovation and sharpen our designs.

While accessibility is not for or about a minority (most users will encounter limitations or benefit from assistive technology at some point),

I encourage you to solve challenges for extreme outliers first. Why?

Outliers challenge us.

Designing an ATM for a 14-year old is boring.

Designing one for a 4-year old takes skill.

Motivations

Compliance: meeting accessibility standards is required by law

Profit: reaching new user groups

Effort: a small amount of targeted awareness and effort can lead to massive improvements in solution flexibility and adoption

Inclusion: enable and draw from the full range of human diversity

Innovation: the mushy middle does not drive invention and change

Challenge: the ultimate achievement of any designer is to create an interface usable by everyone

Go for the throat.

Solve a challenge that's difficult,
not one that's easy.

Bring an underserved user group
into the fold.

100% your designs.



Example: Xbox Adaptive Controller

[HTTPS://YOUTU.BE/9FCK19CAJWM](https://youtu.be/9FCK19CAjWM)

Xbox adaptive controller



Xbox adaptive controller packaging

Accessible, looks like any other Xbox accessory on the shelf.





[HTTPS://YOUTU.BE/YJSWYLZD8EI](https://youtu.be/YJSWYLZD8EI)

Workshop

Accessibility audit

- Contrast and text size
- Alt text for non-text content
- Tab order and focus: all on-screen, no off-screen, ordering
- Keyboard-only traversal
- Screen reader traversal

You can try a screen reader to check your designs for accessibility:
NVDA (desktop), VoiceOver (macOS / iOS), TalkBack (Android)
- Structure: headings, landmarks, and semantics
- Alerts to new content

Audit

Find a single page on a site or blog that offers **travel advice** (e.g., landmark review, restaurant recommendation, museum tips, walking routes).

Install the **Accessibility Insights for Web** Chrome Extension.

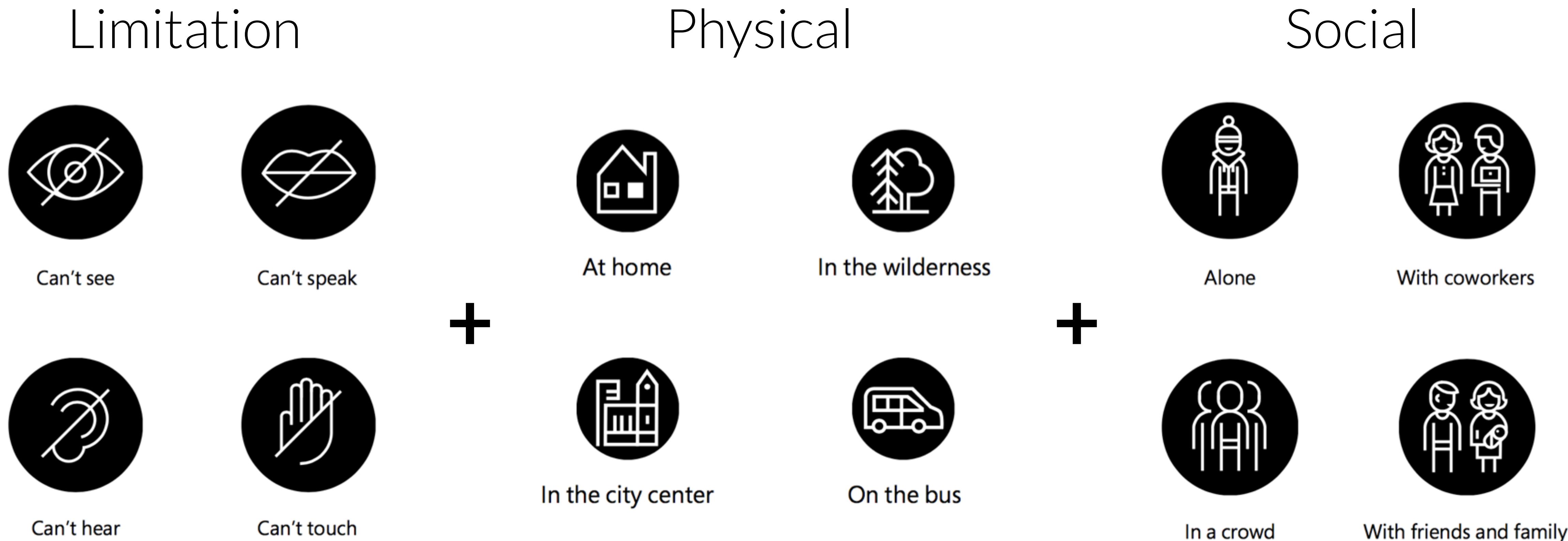
Use AIW's **FastPass**:

- WCAG compliance
- Tab order

Compile results, screenshots, and recommendations.

Assemble a challenging scenario

Combine one limitation, physical, and social context and write some ideas on how the site you've chosen should adapt to accommodate.



Further reading and resources

WCAG 2.1:

<https://www.w3.org/TR/WCAG21/>

Web Accessibility in Mind:

<https://webaim.org/>

UK government accessibility dos and don'ts posters:

<https://accessibility.blog.gov.uk/2016/09/02/dos-and-donts-on-designing-for-accessibility/>

Microsoft Inclusive Design Toolkit:

<https://www.microsoft.com/design/inclusive/>

A Web for Everyone, Whitney Quesenberry and Sarah Horton

<https://rosenfeldmedia.com/books/a-web-for-everyone/>

Accessibility for Everyone, Laura Kalbag

<https://abookapart.com/products/accessibility-for-everyone>

Inclusive Design Patterns, Haydon Pickering

<https://www.smashingmagazine.com/inclusive-design-patterns/>

<https://www.polygon.com/2019/12/23/20926876/accessible-games-vr-gears-5>

Credits

Developed with materials from Adrian Petterson