

The What, Why, Who and How of accessibility on the web

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WeAreDevelopers Berlin 2022

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**Who am I to
talk about this?**



In Writing

**[engineering.leanix.net/blog/
web-accessibility](http://engineering.leanix.net/blog/web-accessibility)**

Access to (



**Web accessibility is about enabling
all humans to use web services, regardless
of their physical or situational disability**

Disability

“Disability emerges where there is a mismatch between individual capacities and environmental demands.”

**(Dis)ability and the experience of accessibility in the urban environment
Lid and Solvang, 2016 <https://doi.org/10.1016/j.alter.2015.11.003>**



Visual

Blindness, low vision, color-blindness



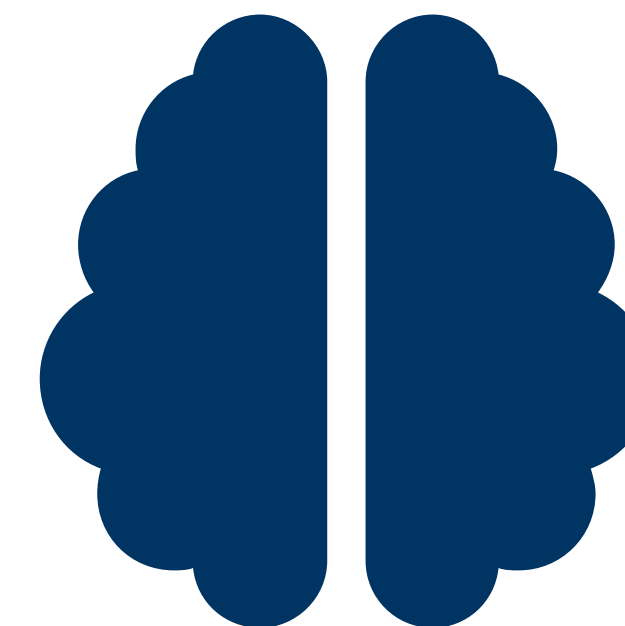
Auditory

Deafness and hard-of-hearing



Motor

Inability to use a mouse, slow response time,
limited fine motor control



Cognitive

Learning disabilities, distractibility

Permanent Temporary Situational

Touch



One arm



Arm injury



New parent

Hear



Deaf



Ear infection



Bartender

See



Blind



Cataract



Distracted driver

Speak



Non-verbal



Laryngitis



Heavy accent

microsoft.com/design/inclusive

Inclusive
is Microsoft Design Toolkit

A photograph of a sandy beach with waves crashing onto the shore. The word "why" is written in the sand in a cursive, hand-drawn style. The sand is a light tan color, and the water is a pale blue-grey. The waves are white with foam as they break. The word "why" is written in the center of the frame, with the 'y' having a long, sweeping tail that extends towards the bottom right. The overall scene is serene and evocative.

why

Your users

w3.org/WAI/perspective-videos

Accessibility Fundamentals

Introduction to Accessibility

Foundations Online Course

Components of Web Accessibility

Accessibility Principles

Perspectives Videos

Keyboard Compatibility

Colors with Good Contrast

Clear Layout and Design

Text to Speech

Large Links, Buttons, and Controls

Video Captions

Customizable Text

Speech Recognition

Understandable Content

Notifications and Feedback

How People with Disabilities Use the Web

Older Users and Accessibility

Accessibility, Usability, Inclusion

Web Accessibility Perspectives Videos: Explore the Impact and Benefits for Everyone

Web accessibility is essential for people with disabilities and useful for all. Learn about the impact of accessibility and the benefits for everyone in a variety of situations.

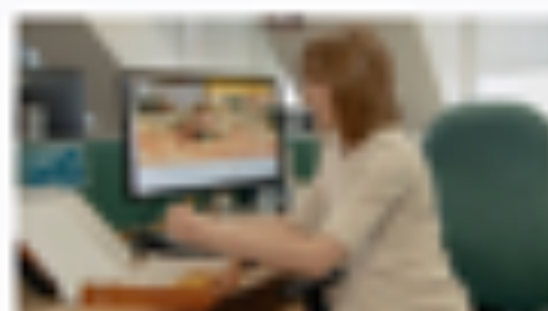
Perspectives Videos



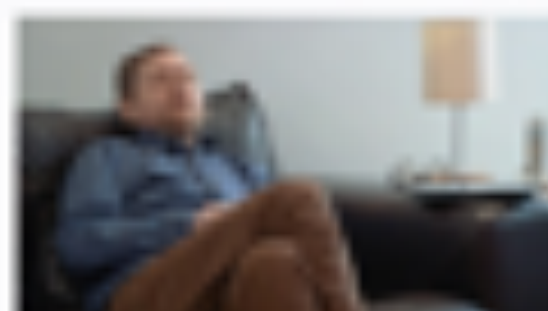
Keyboard Compatibility



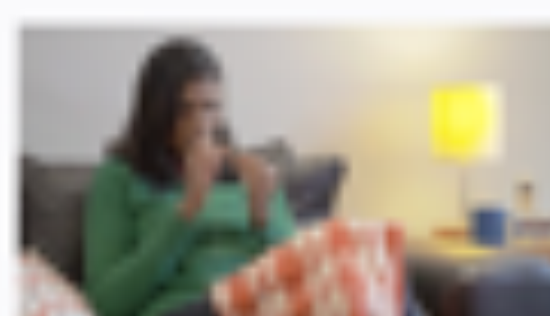
Colors with Good Contrast



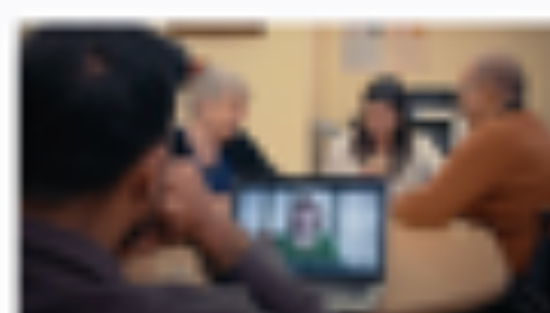
Clear Layout and Design



Text to Speech



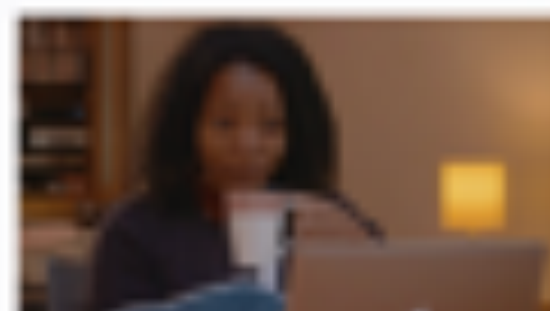
Large Links, Buttons, and Controls



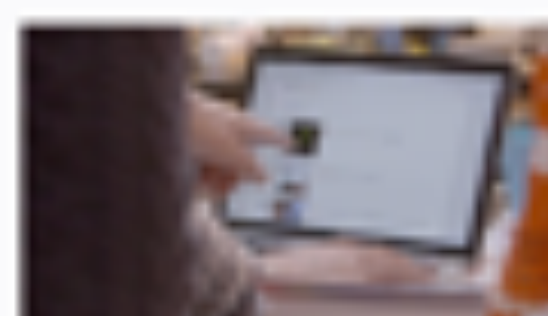
Video Captions



Customizable Text



Speech Recognition



Understandable Content



Notifications and Feedback

For presentations: compilation of all 10 videos (7:36 minutes) [ES](#).

The law

BITV 2.0

European Accessibility Act (2019)

Barrierefreiheitsstärkungsgesetz (2021)

Americans with Disabilities Act



WMO

Meet the W3C

Founded in 1994 at MIT

1989



Weltweit erste Internetseite

Am CERN in Genf entwickelt Tim Berners-Lee
die Programmiersprache html.

First internet site worldwide

*At CERN in Geneva, Tim Berners-Lee develops
the html programming language.*

WCAG

Web Content Accessibility Guidelines

[w3.org/WAI/standards-guidelines/wcag/](https://www.w3.org/WAI/standards-guidelines/wcag/)

Perceivable
Operable
Understandable
Robust

[w3.org/WAI/fundamentals/accessibility-principles/](https://www.w3.org/WAI/fundamentals/accessibility-principles/)

ARIA

Accessible Rich Internet Applications

Useful patterns for accessible UI components:

w3.org/WAI/ARIA/apg/patterns/



Great Talk by Léonie Watson on
screenreaders and accessibility

youtube.com/watch?v=qdB8SRhqvFc

Everyone

FOR

**Use semantic
HTML elements**

**If an action can be done with a mouse,
it needs to be possible using a keyboard
as well**



checklist

CHECK YOUR WCAG COMPLIANCE



Form inputs must have a label

Bad:

```
<p>Enter your age:</p>  
<input type="text" name="answer" />
```

Good:

```
<label>  
  Enter your age:  
  <input type="text" name="age" />  
</label>  
  
<label for="age">Enter your age:</label>  
<input id="age" type="text" name="age" />
```



Images must have an alt attribute

Bad:

```
  

```


Good:

```
  
  
  


```


Buttons must have a meaningful label

Bad:

```
  
<button>  
  <i class="calendar-icon"></i>  
</button>
```

Good:

```
  
<button aria-label="Add to calendar">  
  <i class="calendar-icon" aria-hidden="true"></i>  
</button>
```


Respect heading hierarchy

Bad:

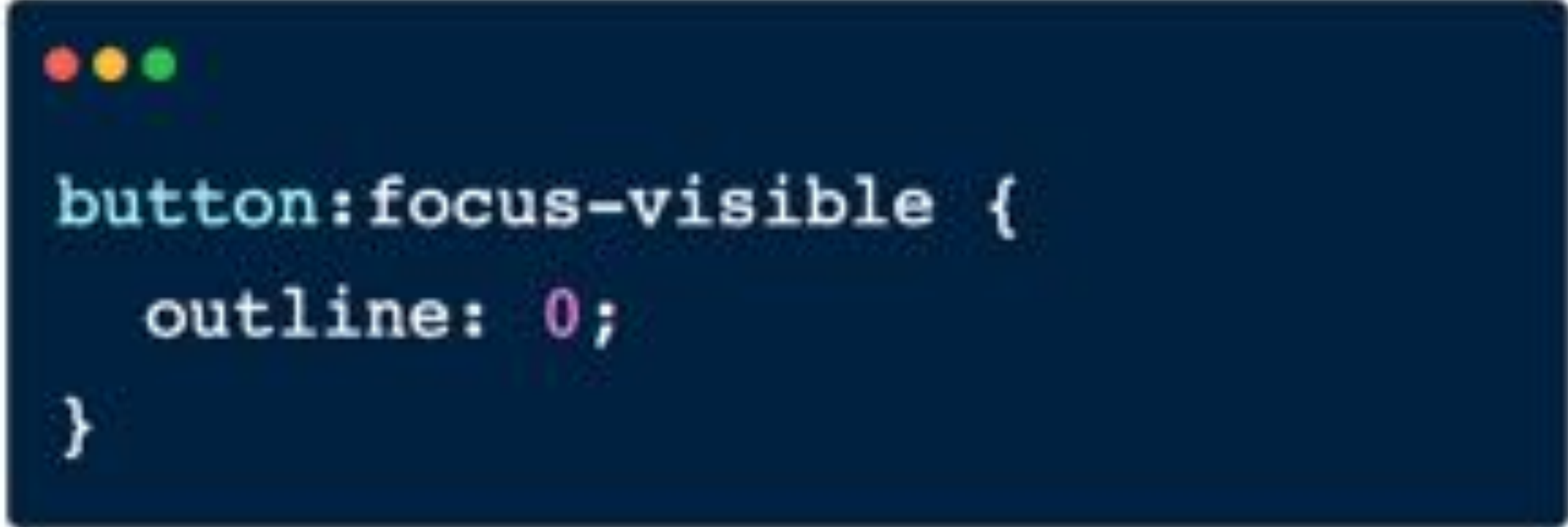
```
•••
<h1>WeAreDevelopers Congress</h1>
<p>...</p>
<h1>Buy your tickets now</h1>
<p>...</p>
<h3>How to get there</h3>
<p>...</p>
```

Good:

```
•••
<h1>WeAreDevelopers Congress</h1>
<p>...</p>
<h2>Buy your tickets now</h2>
<p>...</p>
<h2>How to get there</h2>
<p>...</p>
```


Focused element can always be identified

Bad:

A dark-themed code editor window with a yellow border and three colored window control buttons (red, yellow, green) in the top-left corner. It contains CSS code for a button's focus-visible state.

```
button:focus-visible {  
  outline: 0;  
}
```


Text to background contrast ratio is at least 4.5:1

The screenshot shows a web browser displaying a program schedule for 'wearedevelopers.com/world-congress/program'. The schedule is organized into columns representing different stages and rows representing time slots. A Lighthouse accessibility audit overlay is visible, highlighting a text element and providing contrast ratio information.

Stage 4 (400 seats)	Stage 5 (450 seats)	Panorama Stage (150 seats)	Microstage 1 (80 seats)	Microstage 2 (80 seats)	Microstage 3 (80 seats)	Outdoor Airstream (80 seats)
16:40 → 30 min The Data Mesh: Revolution in Data Handling Mario Meir-Huber	16:40 → 30 min The Software Bug All Stars - and what we Christian Seifert		Autism in Tech Dennie Declercq	Text ? i Baeli Lugo Lassiège	Robin Kohze	Influencers and How I Became Dragan Petric

Lighthouse Accessibility Audit Overlay:

- Color: 80.68 x 15.5
- Font: 12px "IBM Plex Sans", sans-serif
- Contrast: 1.98
- Accessibility: [Autism in Tech link](#)
- Keyboard-focusable: ☒

My personal “know in your sleep” a11y list

1. Every form input needs to have a label that can be clearly associated to it. Placeholders are no replacement for labels!
2. Images must have an alt attribute
3. Every button (especially icon buttons) need a meaningful label.
4. Order your heading tags properly. Don't skip ranks, e.g. from h2 to h4. Only one h1 per page.
5. For keyboard users the element that currently holds the focus should always be identifiable as such.
6. Text should have a minimum contrast ratio of 4.5:1 with its background. Strive for at least 7:1. The highest achievable contrast is 21:1, e.g. black on white.

Testing tools



Your keyboard



**Apple VoiceOver
(cmd + f5)**



**Accessibility testing
with affected people
as a service**



**axe DevTools
browser extension**



**Accessibility Insights for
Web browser extension**

... and many more

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2
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WE ARE BACK

After two long years the global developer community meets once again in Berlin to connect with peers and get recent insights on software development, best practices and future tech trends.

Inspector Console Debugger axe DevTools

DevTools
axe core 4.4.2

Let's get started

You're one click away from scanning your site with the most widely used and trusted accessibility tool in the world.

Scan ALL of my page

powered by
eleque

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**Accessibility needs
you!**

You are not alone

Some a11y people I follow on Twitter:

- [@polarbirke](#)
- [@LeonieWatson](#)
- [@mmatuzo](#)
- [@SaraSoueidan](#)
- [@scotthara](#)
- [@ericwbailey](#)



Wrapping up

- Keep expanding your accessibility knowledge shoreline by asking more questions
- Come chat with me and my colleagues at the LeanIX booth
- See engineering.leanix.net/blog/we-are-developers-2022

