Respecting Lser Preferences on the Meb

Eric Eggert · CSUN2020 · March 2020





Eric Eggert

Eric Eggert is a Web Developer and Teacher who works with $\varphi_{\text{Knowbility}}$ on improving the Web for People with Disabilities, and everyone else. 2013-2020: W3C/Web Accessibility Initiative

















Thanks Matt!

Does The Average Person Exist? - standupmaths





Why do we **design** like they are?

Why do we **develop** like they are?



Nhat Does Inclusive Design Even Mean?







Screen Reader Differences



"VoiceOver and Safari remove list element semantics when list-style: none is used."

- Scott O'Hara: "Fixing" Lists



"This was a purposeful change due to rampant 'list'-itis by web developers." - James Craig, Apple, <u>bugs.webkit.org</u>

What does it mean for me as a web developer that Safari is not reading lists when they don't look like a list?





- \rightarrow 2014: First Commit
- \rightarrow 2015: Additional Code

 \rightarrow 2019: The Web Notices



"Customers seem much happier in the 3 years since this change went in."

- James Craig, Apple, <u>bugs.webkit.org</u>



dowebsitesneedtolookexactlythesameineverybrowser.com



The same it true for screen readers: They don't all need to produce the same output.

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You Have

No Control.





ARIA can help, but not in every situation.



Accessibility is not only Screen Readers



Most non-Screen-Reader assistive technology does not work well with ARIA.



Movies playing near Chicogo, IL.





Nuance released the lucky version 13 of <u>Dragon Naturally Speaking</u>. I've been doing some preliminary testing and here's what Dragon 13 supports (so far) in terms of ARIA:

- role="button"
- role="link"
- role="radio"
- role="checkbox"
- aria-label

That's just in about 30 mins of testing, so there's definitely more to test, but this is a huge step.

How Dragon Naturally Speaking works with ARIA » Simply Accessible (2014)



I'm a real link | As am I

I'm a placeholder link (no href)

I'm an ARIA link made out of a div

within me. Where I be?

I'm an ARIA link made out of a button

Screen shot courtesy of Eric Bailey

I'm a paragraph of text with an ARIA link

I'm a real link | As am I

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Screen shot courtesy of Eric Bailey.

I'm a paragraph of text with an ARIA link



Actually Disabled Button


Knowledge Levels Vary Greatly





Users often don't know what their computers can do for them.

Other Users **hack** their assistive technology to work with inaccessible sites.

Some users write CSS and JavaScript to change websites to their needs.



User = Disability Type X Proficiency × Accessibility Support



Test with Diverse Users



Allow any assistive technology that suits a particular user's needs.

Try not to prescribe how to use a component.



Use HTML & CSS to describe elements.



Don't expect any proficiency from users.



Don't break with conventions!





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Skip to Content Change Text Size or Colors All Translations 🔯									
W3C°	Web Accessibility								

Home / Accessibility Fundamentals

Introduction to Web Accessibility

Summary

When websites and web tools are properly designed and coded, people with disabilities can use them. However, currently many sites and tools are developed with accessibility barriers that make them difficult or impossible for some people to use.

Making the web accessible benefits individuals, businesses, and society. International web standards define what is needed for accessibility.

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Page Contents

🔒 w3.org Introduction to Web

Accessibility Summary

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Page Contents

- Accessibility in Context
- What is Web Accessibility
- Accessibility is Important for Individuals, Businesses, Society

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- Making the Web Accessible
- Evaluating Accessibility
- Examples
- For More Information

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w3.org

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Page Contents

- Accessibility in Context
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• For More Information

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06:25 √

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Page Contents

- Accessibility in Context
- What is Web Accessibility
- Accessibility is Important for Individuals, Businesses, Society

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- Making the Web Accessible
- Evaluating Accessibility
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- For More Information

06:25 ৵

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Page Contents

- Accessibility in Context
- What is Web Accessibility
- Accessibility is Important for Individuals,
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- Making the Web Accessible

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Page Contents

- Accessibility in Context
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- Accessibility is Important for Individuals, Businesses, Society

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- Evaluating Accessibility
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Reader Mode

Native Support:

- \Rightarrow Safari (since 2010, can set to default since 2015)
- \rightarrow Firefox (2015)
- → Edge (2015)
- \rightarrow Chrome (soon??)





w3.org

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Introduction to Web Accessibility

w3c_wai

7-9 minutes

Page Contents

Accessibility in Context

The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.

The Web is fundamentally designed to work for all people, whatever their hardware, software, language, location, or ability. When the Web meets this goal, it is accessible to people with a diverse range of hearing, movement, sight, and cognitive ability.

Thus the impact of disability is radically changed on the Web because the Web removes barriers to communication and interaction that many people face in the physical world. However, when websites, applications, technologies, or tools are badly designed, they can create barriers that exclude people from using the Web.

Accessibility is essential for developers and organizations that want to create high-quality websites and web tools, and not exclude people from using their products and services.



Page Contents

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More Website Settings





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Leveraging **Operating System** Preferences





prefers-reduced-motion Media Query

@media (prefers-reduced-motion: reduce) { * { transition: none !important; animation: none !important;

Or, better, progressively enhance:

@media (prefers-reduced-motion: no-preference) { /* All animation code */

}



Support

prefers-reduced-motion media query



Source: Can I Use

On Windows ...it's complicated



Short note on prefers-reduced-motion and puzzled (Windows) users <u>Patrick H. Lauke @ TPG Blog</u>

prefers-color-scheme Media Query



```
:root {
    --color: #333;
    --bgcolor: #eee;
}
```

```
@media (prefers-color-scheme: dark) {
  :root {
    --color: #eee;
    --bgcolor: #333;
html {
  color: var(--color);
  background-color: var(--bgcolor);
```





Support

prefers-color-scheme media query



Source: Can I Use

Me³ also get a lot more tools to use!

³ Designers & Developers



Media Queries Level 5(?)


inverted-colors⁴

- \rightarrow none
- \rightarrow inverted

Supported in Safari macOS & iOS.

⁴ Planned in Media Queries Level 5



prefers-reducedtransparency⁴

- \rightarrow no-preference
- \rightarrow reduce
- No support yet.

⁴ Planned in <u>Media Queries</u> Level 5



prefers-contrast⁴

- \rightarrow no-preference
- \rightarrow high
- → low

No support yet.

⁴ Planned in <u>Media Queries Level 5</u>



forced-colors4

- \rightarrow none
- \rightarrow active
- No support yet.

⁴ Planned in Media Queries Level 5



Environment MQs⁴

⁴ Planned in Media Queries Level 5





- \rightarrow dim
- → normal
- \rightarrow washed
- No support yet.

⁴ Planned in <u>Media Queries Level 5</u>

environment-blending⁴

- ⇒ opaque
 - ⇒ The document is rendered on an opaque medium, such as a traditional monitor or paper. Black is dark and white is 100% light.
- \Rightarrow additive
 - ⇒ The display blends the colors of the canvas with the real world using additive mixing. Black is fully transparent and white is 100% light. For example: a head-up display in a car.
- \Rightarrow subtractive
 - > The display blends the colors of the canvas with the real world using subtractive mixing. White is fully transparent and dark colors have the most contrast.

For example: an LCD display embedded in a bathroom mirror.

No support yet.

⁴ Planned in <u>Media Queries Level 5</u>

Nice :focus Styles

- → JavaScipt
- \rightarrow We don't need JS.
- Thanks currentColor!



:focus-within





Eric Eggert Web: <u>yatil.net</u>

E-Mail: mail@yatil.net Social: @yatil