

THE WEB IS YOUR ATTY

Building Accessible Web Apps
By Using the Platform

An estimated **1.3 billion people** experience significant disability. This represents **16% of the world's population.**

Permanent



Permanent



Temporary



Permanent



Temporary



Situational



ACCESSIBILITY

Accessibility is the practice of making your websites usable by as many people as possible.

~~ACCESSIBILITY~~ * Usability

Accessibility is the practice of making your websites usable by as many people as possible.

The DESIGN of EVERYDAY THINGS

DON
NORMAN



Affordances

“When affordances are taken advantage of, the user knows what to do just by looking: no picture, label, or instruction needed.”

Landmarks

Define the different parts of your page, so assistive technologies like screen readers can more easily navigate and understand it.

```
/**
  Used to describe different areas of your
  website and help users of assistive
  technology navigate them
 */
<body>
  <header>
    <nav>...</nav>
  </header>

  <aside>
    <nav>...</nav>
  </aside>

  <main>
    <section>...</section>
    <section>...</section>
  </main>

  <footer>...</footer>
</body>
```

Semantic HTML

Semantic HTML elements often contain a lot of behaviour baked into them.

```
/**  
  HTML elements, that contain semantic  
  meaning and actually implement the  
  desired behaviours, e.g.  
  */
```

```
<button>, <a>, <input>, <select>,  
<textarea>, <detail>, <summary>,  
<dialog>, <abbr>, <audio>, <video>,  
<progress>, <img>, ...
```

```
/**  
  and of course  
  */  
<marquee> * sadly deprecated
```



Figma Sites



WAI-ARIA

As a fallback, if no semantic elements exist. Often do not include behaviour implementation.

```
/**  
Can describe an elements state and  
behaviours, but usually without actually  
implementing them (so less preferable)  
*/  
<div role="menu">  
  <div role="menuitem">  
    <div role="button"  
      role="button"  
      aria-label="Some collapsable"  
      aria-expanded="true"  
      aria-disabled="true"  
      class="icon--collapsable">  
    </div>  
  </div>  
</div>
```

** don't create
div soup like this
pretty please :)*

**LET'S LOOK AT SOME
PRACTICAL EXAMPLES**

<button> vs. <div>

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/HTML/REFERENCE/ELEMENTS/BUTTON](https://developer.mozilla.org/en-US/docs/Web/HTML/Reference/Elements/button)

```
// Button
<button>Click me</button>

// Div
<div role="button">Click me</div>

<script>
$div.tabIndex = $div.ariaDisabled === "true"
  ? "-1"
  : "0";

$div.onclick = (e) => {
  // Manually check to ensure the callback
  // does not trigger when disabled
}

$div.onkeypress = (e) => {
  // Manually implement "space" and "enter"
  // handlers to trigger onclick callback
}
```

<dialog>, but accessible

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/DOCS/WEB/HTML/REFERENCE/ELEMENTS/DIALOG](https://developer.mozilla.org/en-US/docs/Web/HTML/Reference/Elements/dialog)

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/DOCS/WEB/API/INVOKER_COMMANDS_API](https://developer.mozilla.org/en-US/docs/Web/API/Invoker_commands_API)

```
// Using the experimental commands API
<button command="show-modal"
  commandfor="demo-modal">
  Click me
</button>

<dialog id="demo-modal">
  <p>...</p>
  <button command="close"
    commandfor="demo-modal">
    Close
  </button>
</dialog>
```


<popover>, and invoke interest

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/HTML/REFERENCE/GLOBAL_ATTRIBUTES/POPOVER](https://developer.mozilla.org/en-US/docs/Web/HTML/Reference/Global_Attributes/popover)

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/API/POPOVER_API](https://developer.mozilla.org/en-US/docs/Web/API/Popover_API)

[HTTPS://GITHUB.COM/WHATWG/HTML/ISSUES/10309](https://github.com/whatwg/html/issues/10309)

```
<button popovertarget="demo-popover">  
  Click me  
</button>
```

```
<div popover id="demo-popover">  
  <p>...</p>  
</div>
```

```
/**  
  The above opens the popout on click,  
  but the new interesttarget proposal would  
  allow for alternative triggers, e.g. hover  
*/
```

```
<button interesttarget="demo-popover">  
  Click me  
</button>
```

```
/**  
  Combined with CSS anchor targets, this  
  has potential to be pretty magical ✨  
*/
```

<input>

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/HTML/REFERENCE/ELEMENTS/INPUT](https://developer.mozilla.org/en-US/docs/Web/HTML/Reference/Elements/input)

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/LEARN_WEB_DEVELOPMENT/EXTENSIONS/FORMS/
FORM_VALIDATION#USING_BUILT-IN_FORM_VALIDATION](https://developer.mozilla.org/en-US/docs/Learn/Web_Development/Extensions/Forms/Form_validation#using_built-in_form_validation)

```
/**
  Help browsers guide the user and control
  user inputs by narrowing down input types
  */
<input type="text" />
<input type="number" />
<input type="tel" />
<input type="search" />

<input type="range" />
<input type="color" />
...

/**
  This also allows you to take advantage
  of built-in validation rules
  */
```

<select>, finally customisable?

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/DOCS/WEB/HTML/REFERENCE/ELEMENTS/SELECT](https://developer.mozilla.org/en-US/docs/Web/HTML/Reference/Elements/select)

[HTTPS://DEVELOPER.CHROME.COM/BLOG/RFC-CUSTOMIZABLE-SELECT](https://developer.chrome.com/blog/rfc-customizable-select)

```
/**
  Uses the existing <select> element
  for easier backwards compatibility
  and fallbacks
 */
<select>
  <button>
    <selectedcontent></selectedcontent>
  </button>

  <option>
    /**
      Allows for more complex HTML inside
    */
    <span class="title">Option title</span>
    <span class="subtitle">Subtitle</span>
  </option>

  . . .
</select>
```


<details> and <summary>

```
<details>
  <summary>Toggle me</summary>

  /**
   Can use any complex HTML within here.
   The real magic happens when the user
   uses cmd+f search on the document, the
   browser will automatically unfurl any
   details content with search results
   in it ✨
  */
  <p>...</p>
</details>
```


HTML carousels without JS

```
<div class="carousel">
  <div class="carousel--item">...</div>
  <div class="carousel--item">...</div>
  . . .
</div>

<style>
.carousel {
  . . .
  scrollbar-width: none;
  scroll-behavior: smooth;
  scroll-snap-type: x mandatory;
}

.carousel--item {
  . . .
  scroll-snap-stop: always;
  scroll-snap-align: center;
}
```

HTML carousels without JS

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/CSS/::SCROLL-BUTTON](https://developer.mozilla.org/en-US/docs/Web/CSS/::scroll-button)

[HTTPS://DEVELOPER.MOZILLA.ORG/EN-US/
DOCS/WEB/CSS/::SCROLL-MARKER](https://developer.mozilla.org/en-US/docs/Web/CSS/::scroll-marker)

```
/**  
  New proposed APIs for markers and controls  
 */  
.carousel {  
  scroll-marker-group: after;  
  
  &::scroll-button(left) { ... }  
  &::scroll-button(right) { ... }  
  
  &::scroll-marker-group { ... }  
}  
  
.carousel--item {  
  &::scroll-marker { ... }  
  &::scroll-marker:target-current { ... }  
}
```

BEYOND HTML: ATTY IN CSS AND JS

E.g. helpful CSS media queries

```
/**
CSS has loads of helpful media queries
to help serve content based on the
users preferences
*/
@media (prefers-reduced-motion: reduced) {
    // Disable animations and transitions
}

@media (prefers-contrast: more) {
    // Increase color contrast, e.g. between
    // background and text color
}

@media (prefers-reduced-data: reduced) {
    // e.g. no or smaller background images
}

...
```

Use Javascript Web APIs

```
/**  
    Browsers provide a lot of standardised  
    Javascript APIs for common functionality,  
    which goes through a vigorous proposal  
    process to ensure e.g. accessibility  
    */  
navigator.vibrate(...);  
  
navigator.share({ title: ... });  
  
navigator.contacts.select(...);  
  
new PaymentRequest(..., {  
    total: { ... }  
});  
  
...
```

AUTOMATED TESTING

A Government Digital Service (GDS) audit revealed that even the best automated tools detect **only 30-40%** of known accessibility issues.

*only goes
so far*

AUTOMATED TESTING *

TOOLING RIGHT IN THE BROWSER

.. /NEW

THE CONFERENCE
FOR TECHNOLOGY
PROFESSIONALS

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SlashNEW_25 will be held 28-29 May 2025 in Newcastle, NSW.

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SCROLL DOWN

Elements

Console

Sources

15

2

1

h1

nav-down Home

main class="content home" id="genesis-content"

div class="container"

div class="live-hero-title"

h1

"THE CONFERENCE "

br

span class="changecolor">FOR TECHNOLOGY PROFESSIONALS

h1

p style="text-align: center;"></p>

p></p>

p></p>

a href="#next_section" id="scroller">

div class="no-schedule " id="next_section"></div>

html

body

main#genesis-content.content.home

div.container

div.live-hero-title

h1

Styles

Computed

Layout

Event Listeners

Accessibility

Accessibility Tree

Enable full-page accessibility tree

The accessibility tree moved to the top right corner of the DOM tree. [Send us your feedback.](#)

ARIA Attributes

No ARIA attributes

Computed Properties

Name: "THE CONFERENCE FOR TECHNOLOGY PROFESSIONALS"

aria-labelledby: Not specified

aria-label: Not specified

Contents: "THE CONFERENCE + "FOR TECHNOLOGY PROFESSIONALS"

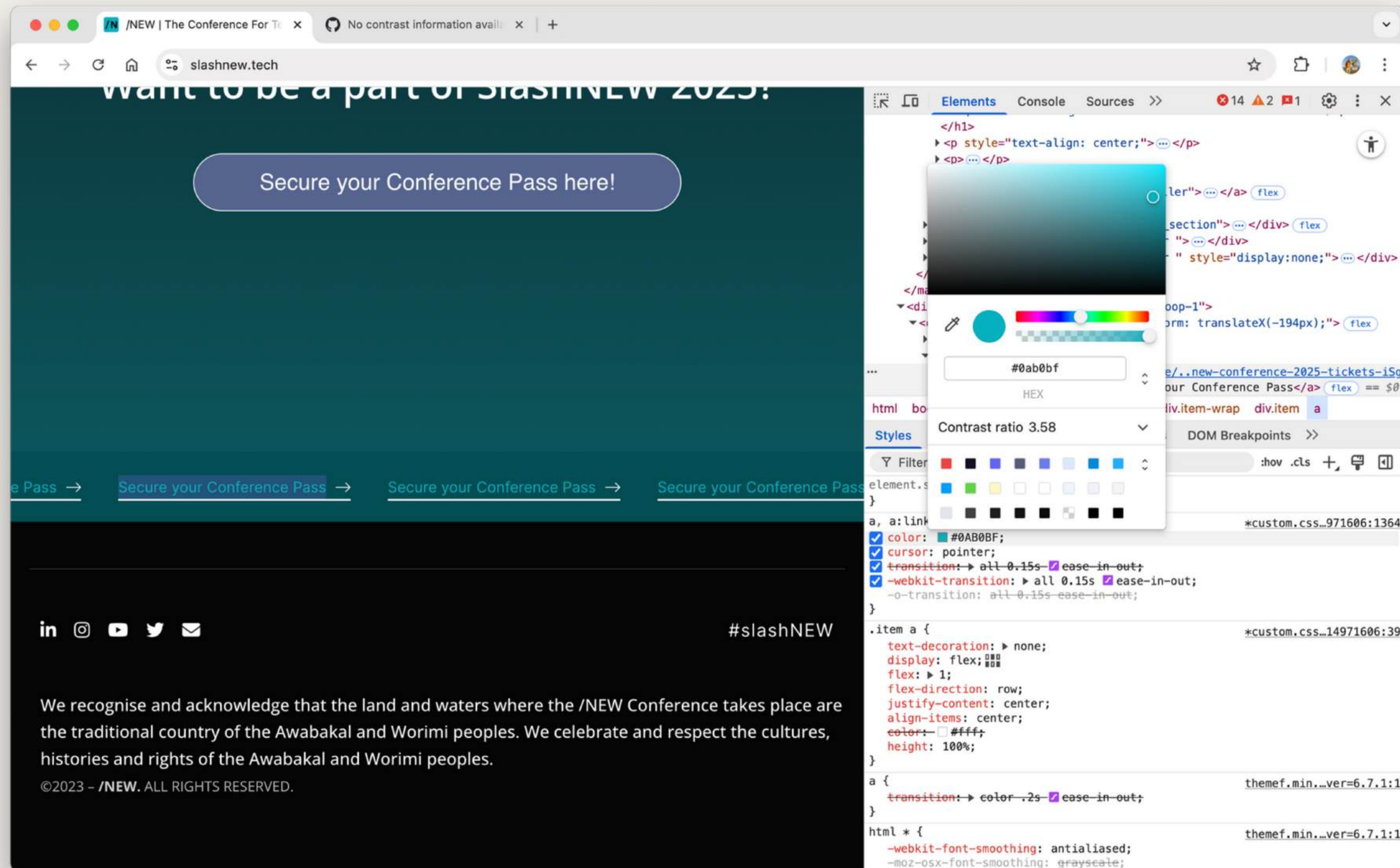
title: Not specified

Role: heading

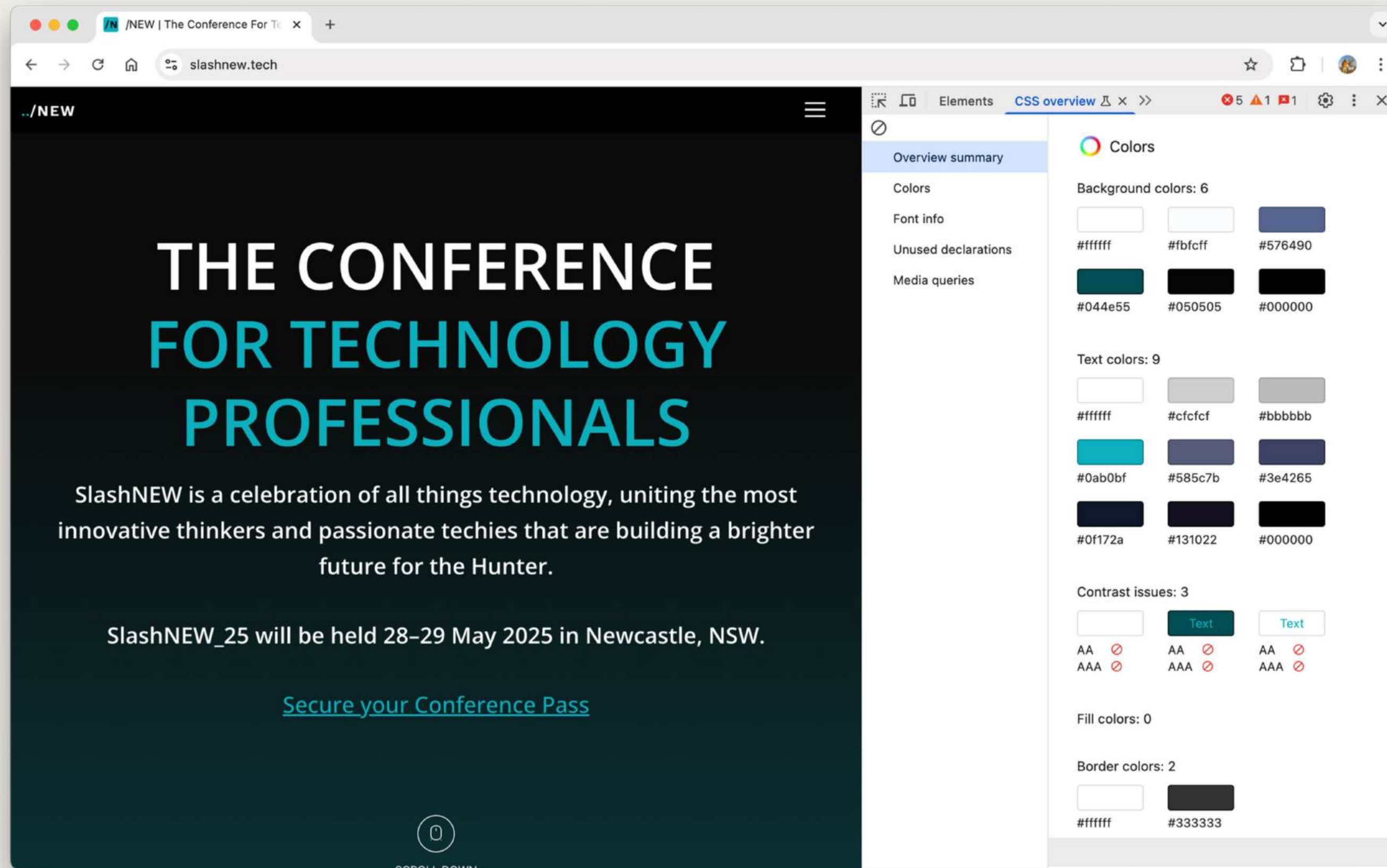
Level: 1

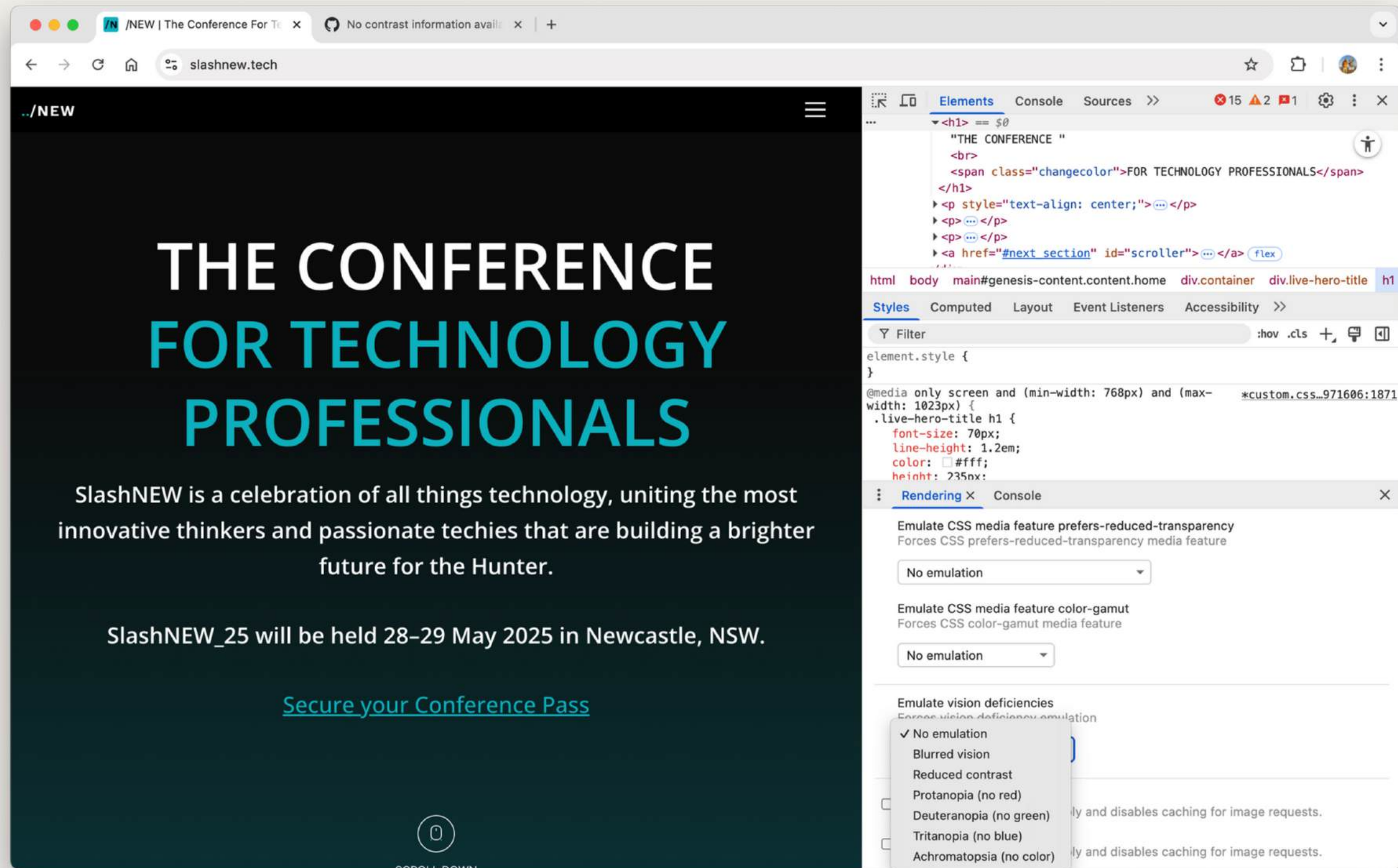
Source Order Viewer

Show source order



[HTTPS://DEVELOPER.CHROME.COM/DOCS/DEVTOOLS/ACCESSIBILITY/CONTRAST](https://developer.chrome.com/docs/devtools/accessibility/contrast)







Browser tabs: /NEW | The Conference For Tech Professionals

Address bar: slashnew.tech

Page title: /NEW

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Elements Console Lighthouse

14:50:49 - slashnew.tech

https://slashnew.tech/

90

Accessibility

These checks highlight opportunities to [improve the accessibility of your web app](#). Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so [manual testing](#) is also encouraged.

CONTRAST

▲ Background and foreground colors do not have a sufficient contrast ratio.

These are opportunities to improve the legibility of your content.

NAMES AND LABELS

▲ Links do not have a discernible name

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

NAVIGATION

▲ Heading elements are not in a sequentially-descending order

These are opportunities to improve keyboard navigation in your application.



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Page title: /NEW

Page URL: https://slashnew.tech/

Page description: These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

NAVIGATION

- Heading elements are not in a sequentially-descending order

These are opportunities to improve keyboard navigation in your application.

ADDITIONAL ITEMS TO MANUALLY CHECK (10)

- ☐ Interactive controls are keyboard focusable
- ☐ Interactive elements indicate their purpose and state
- ☐ The page has a logical tab order
- ☐ Visual order on the page follows DOM order
- ☐ User focus is not accidentally trapped in a region
- ☐ The user's focus is directed to new content added to the page
- ☐ HTML5 landmark elements are used to improve navigation

Custom interactive controls are keyboard focusable and display a focus indicator. [Learn how to make custom controls focusable.](#)

THE FUTURE OF ATTY AND AI

Potential

Automatic **generation of captions** and alt-texts

AI agents might be able to help improve the **automated testing** landscape

With more **code-gen tools**, ensure LLMs are trained to generate accessible code

Risks

Low quality accessibility content & implementations (garbage in, garbage out)

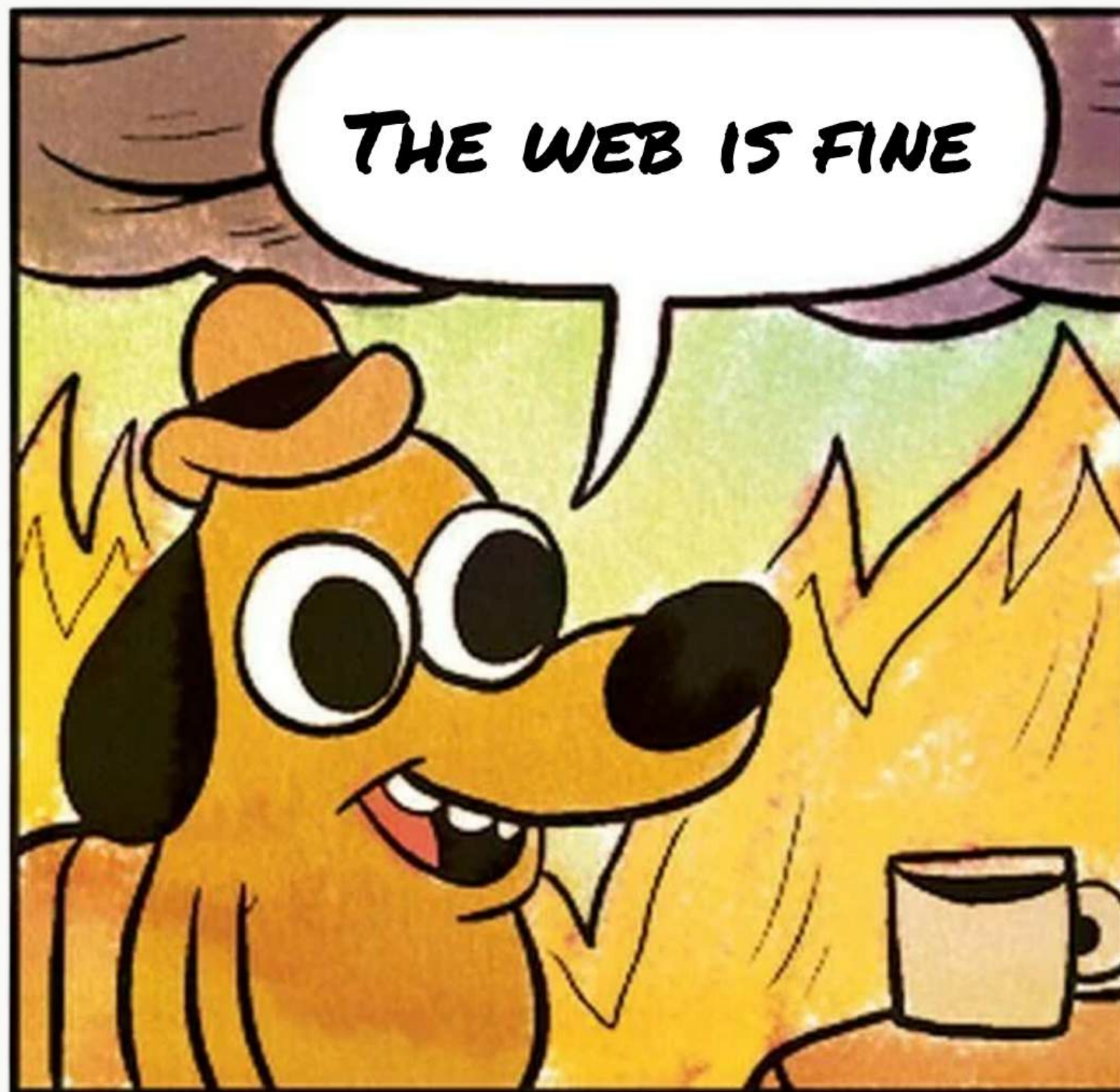
Biases in the training of LLMs

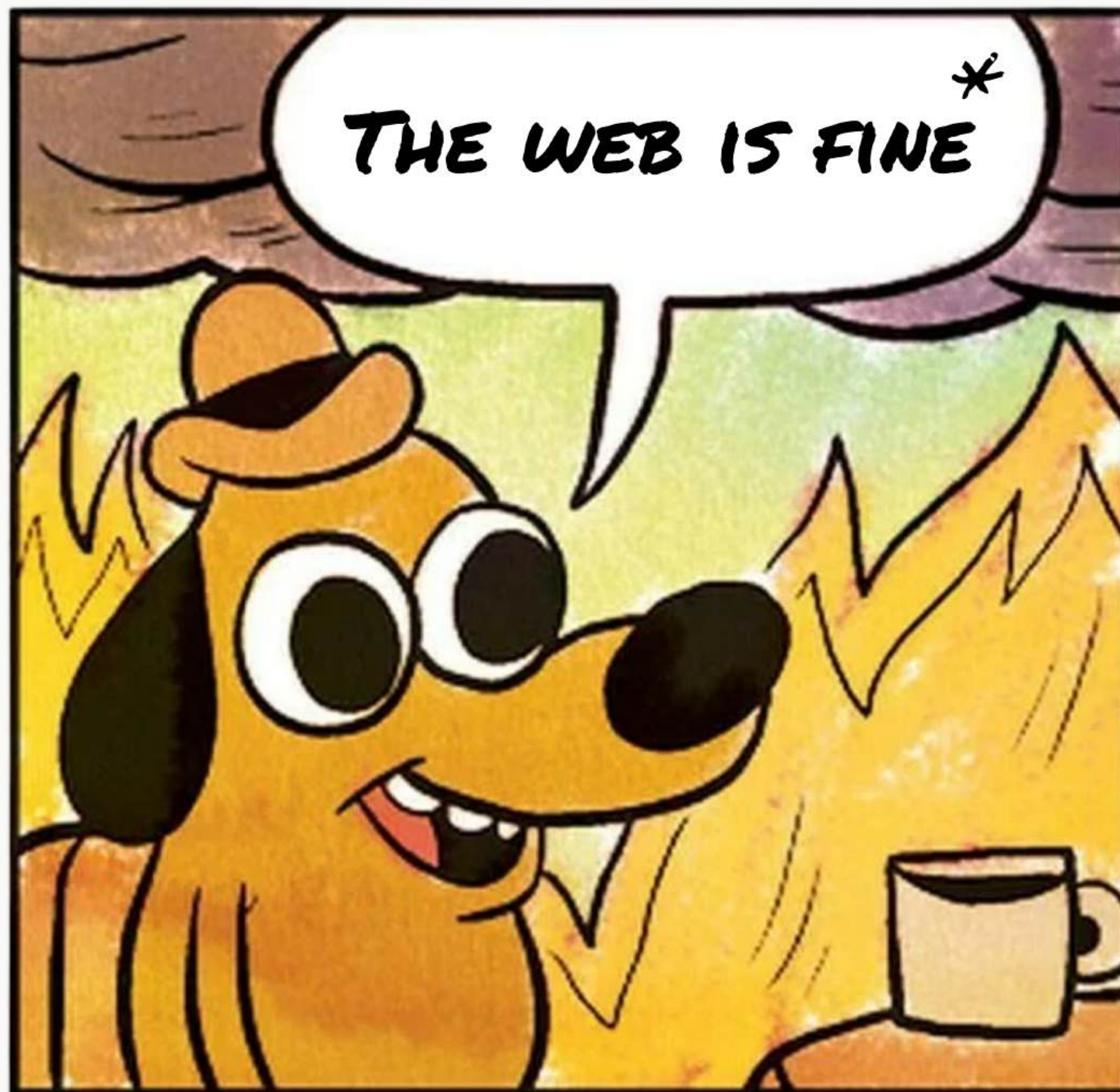
Checkbox phenomenon (companies see usage of AI as enough to fulfil their obligations)

Built-in AI

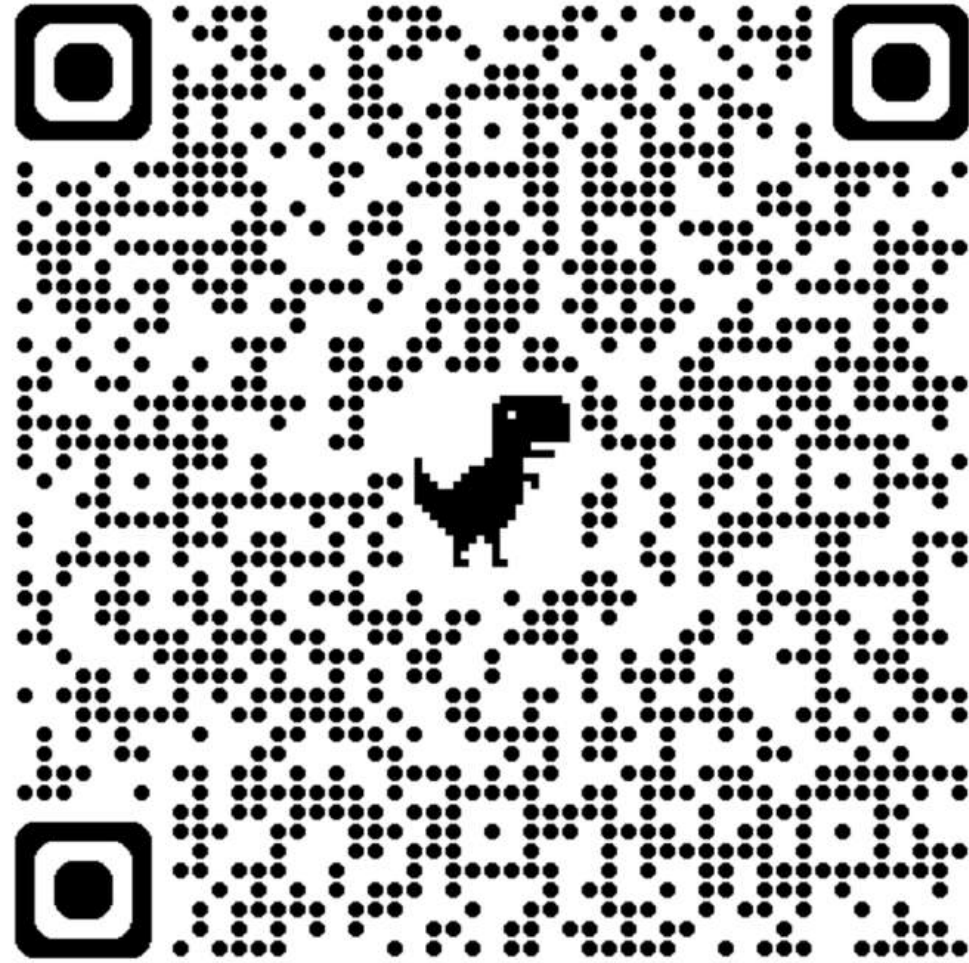
Very experimental, available in Chrome Canary with some manual setup.

```
/**  
  Chrome is experimenting with built-in  
  AI capabilities through Web APIs and  
  small models running locally  
*/  
  
// Prompt API  
window.LanguageModel.create();  
  
// Writer + Rewriter API and Summarisation  
window.Writer.create();  
window.Rewriter.create();  
window.Summarizer.create();  
  
// Language detection and translations  
window.LanguageDetector.create();  
window.Translator.create();
```



**narrator: it was not*



Link to the slides:

<https://www.julianburr.de/slashnew-2025-slides.pdf>

<https://www.linkedin.com/in/julianburr/>

<https://bsky.app/profile/julianburr.de>