

Testing Web Accessibility

How to find accessibility vulnerabilities in your website

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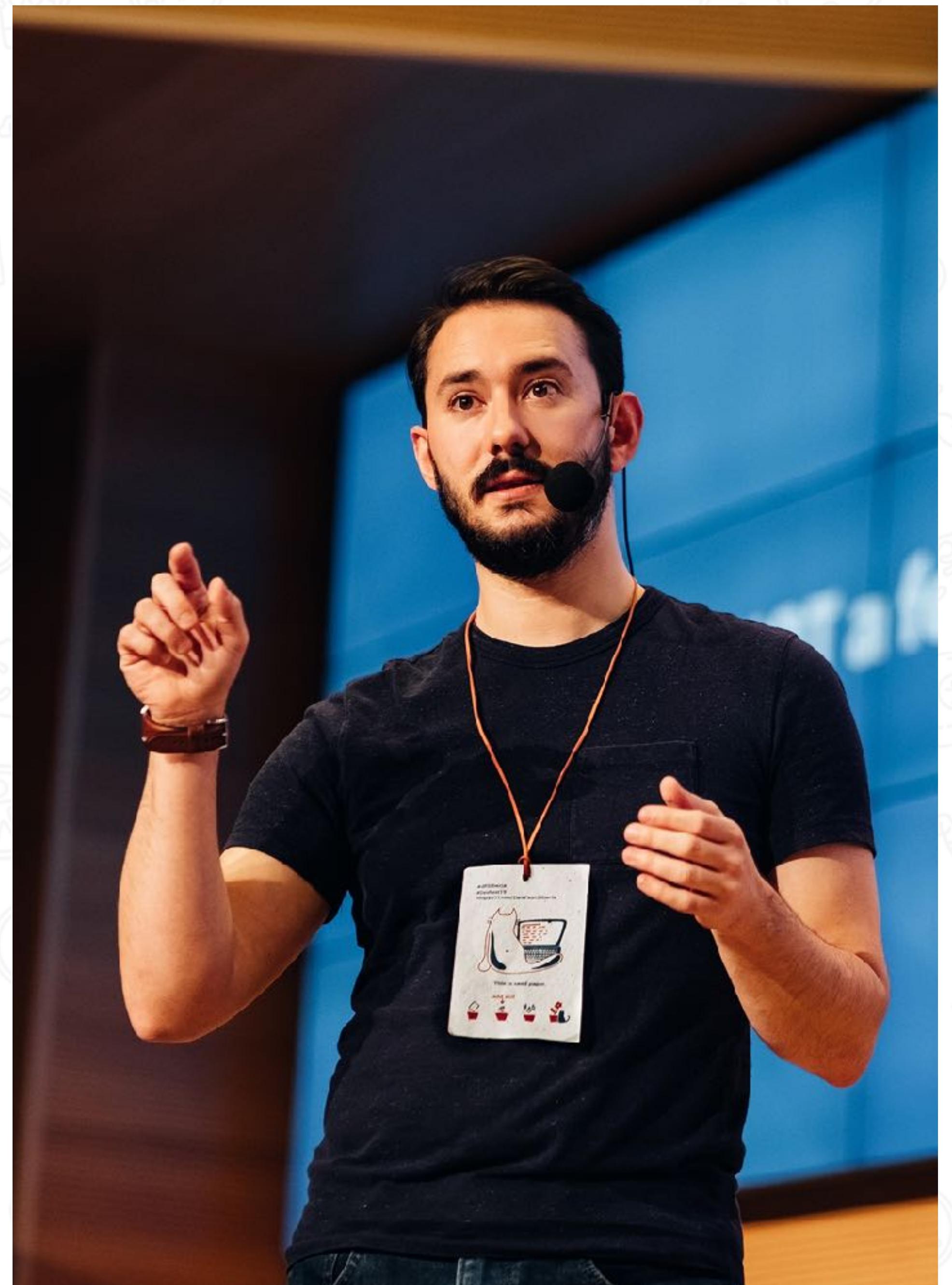
**Accessibility Software
Engineer at GitHub**



#a11y Advocate



@bolonio



Accessibility (a11y)

Accessibility (a11y)

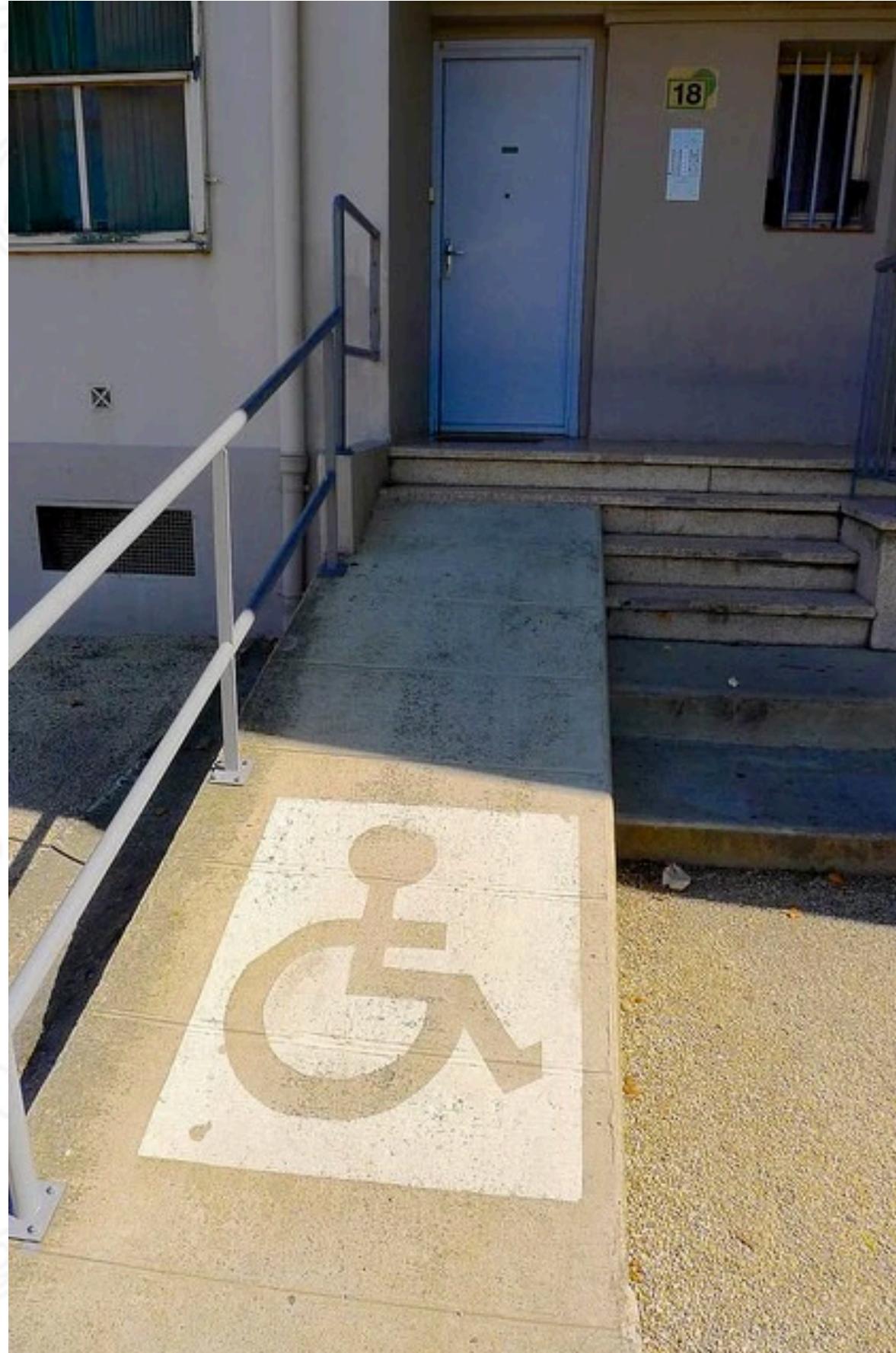
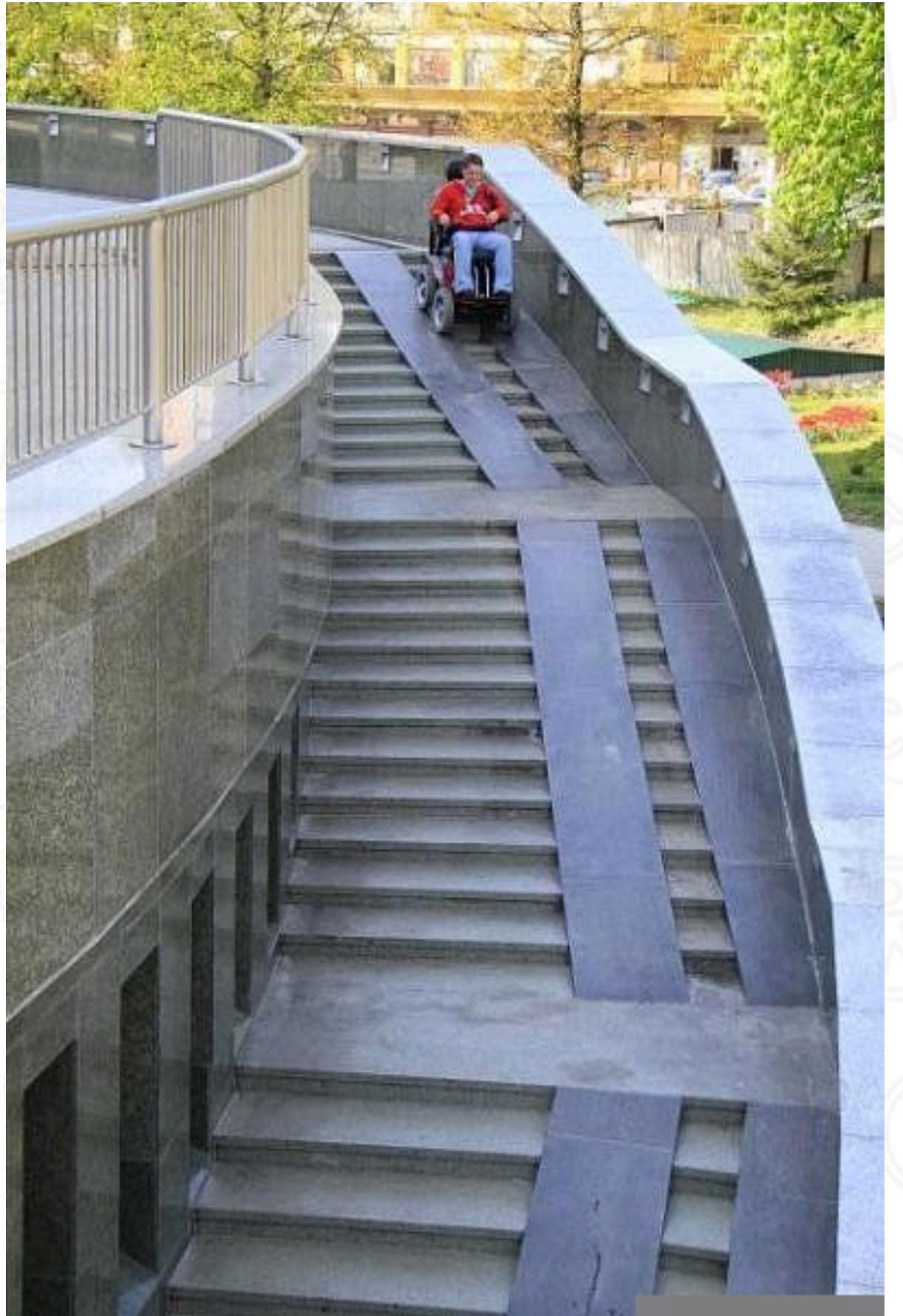
a11y

Accessibility (a11y)

a**ccessibility**y

1 2 3 4 5 6 7 8 9 10 11

Accessibility (a11y)



Accessibility (a11y)



Web Accessibility (a11y)

Web Accessibility (a11y)

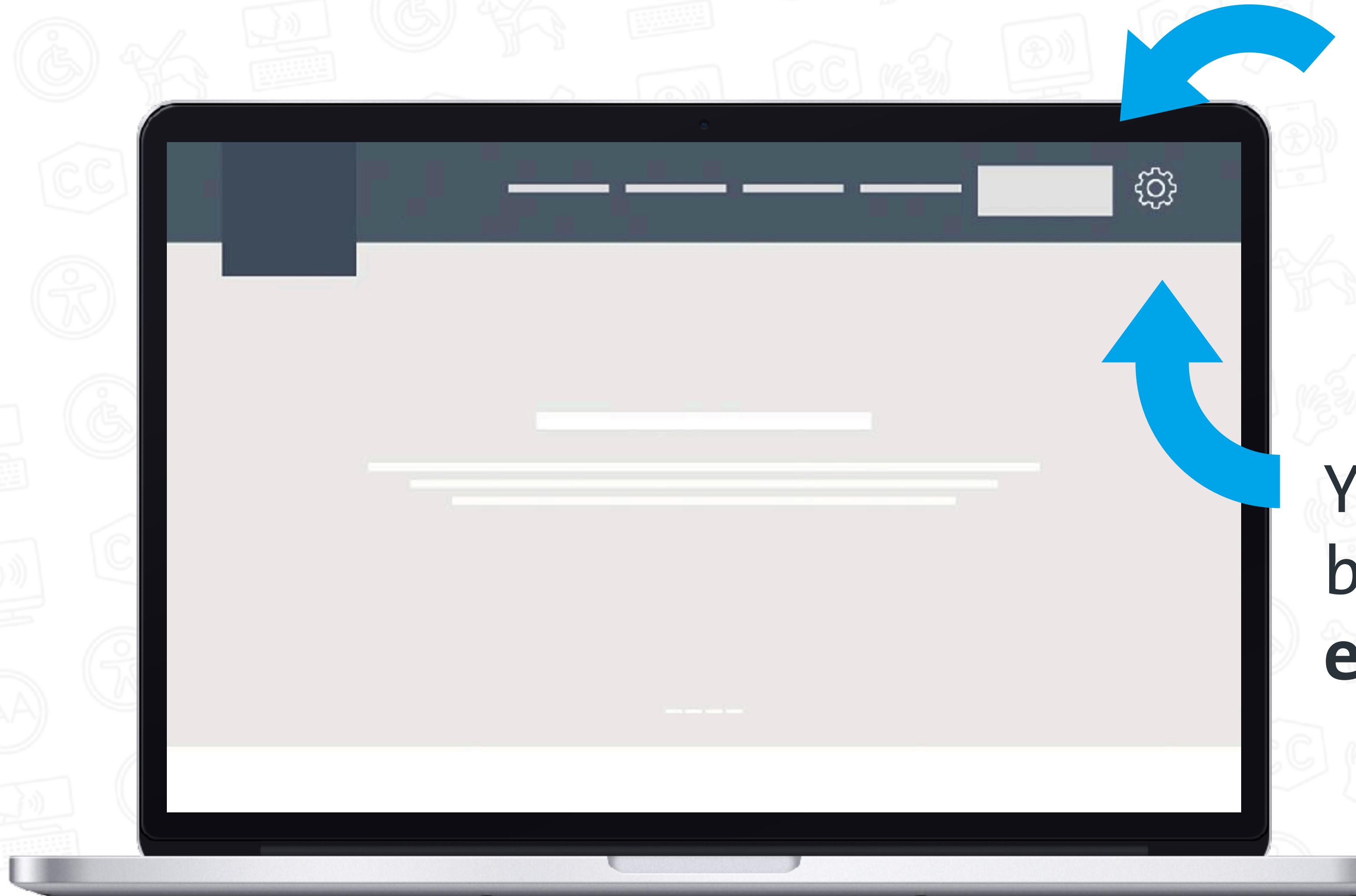
The Web is fundamentally designed to work for all people, whatever their hardware, software, language, location, or ability. When the Web meets this goal, it is **accessible** to people with a diverse range of hearing, movement, sight, and cognitive ability.

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.

Web accessibility means that websites, tools, and technologies are designed and developed so that **people with disabilities can use them**.

Source: W3C (<https://www.w3.org/WAI/fundamentals/accessibility-intro/es#what>)

Web Accessibility (a11y)



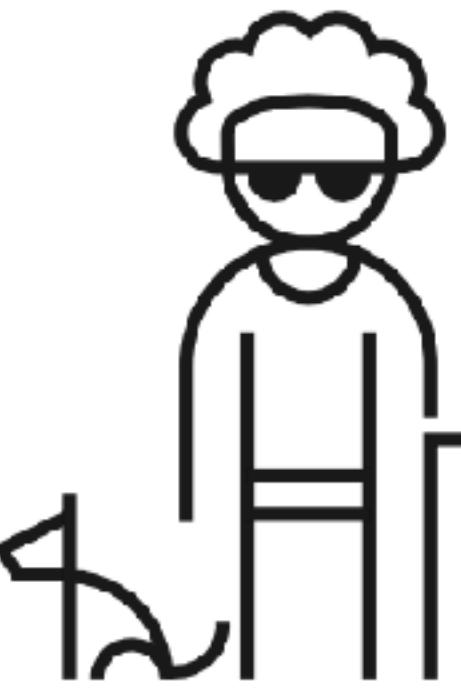
You need to click on the button in the **top right** corner.

You need to click on the button with the **engine icon**.

Types of impairments

Web Accessibility != visually impaired people

Types of impairment

	Permanent	Temporary	Situational		Permanent	Temporary	Situational
Touch				Hear			
							
	One arm	Arm injury	New parent		Deaf	Ear infection	Bartender
See				Speak			
							
	Blind	Cataract	Distracted driver		Non-verbal	Laryngitis	Heavy accent

Source: <https://www.microsoft.com/design#toolkit>

Web Accessibility (a11y)

2021

7.9 billion

**Globally more than
2.2 billion people**

are visually impaired

Source: <https://www.who.int/en/news-room/fact-sheets/detail/blindness-and-visual-impairment>

Testing Web Accessibility

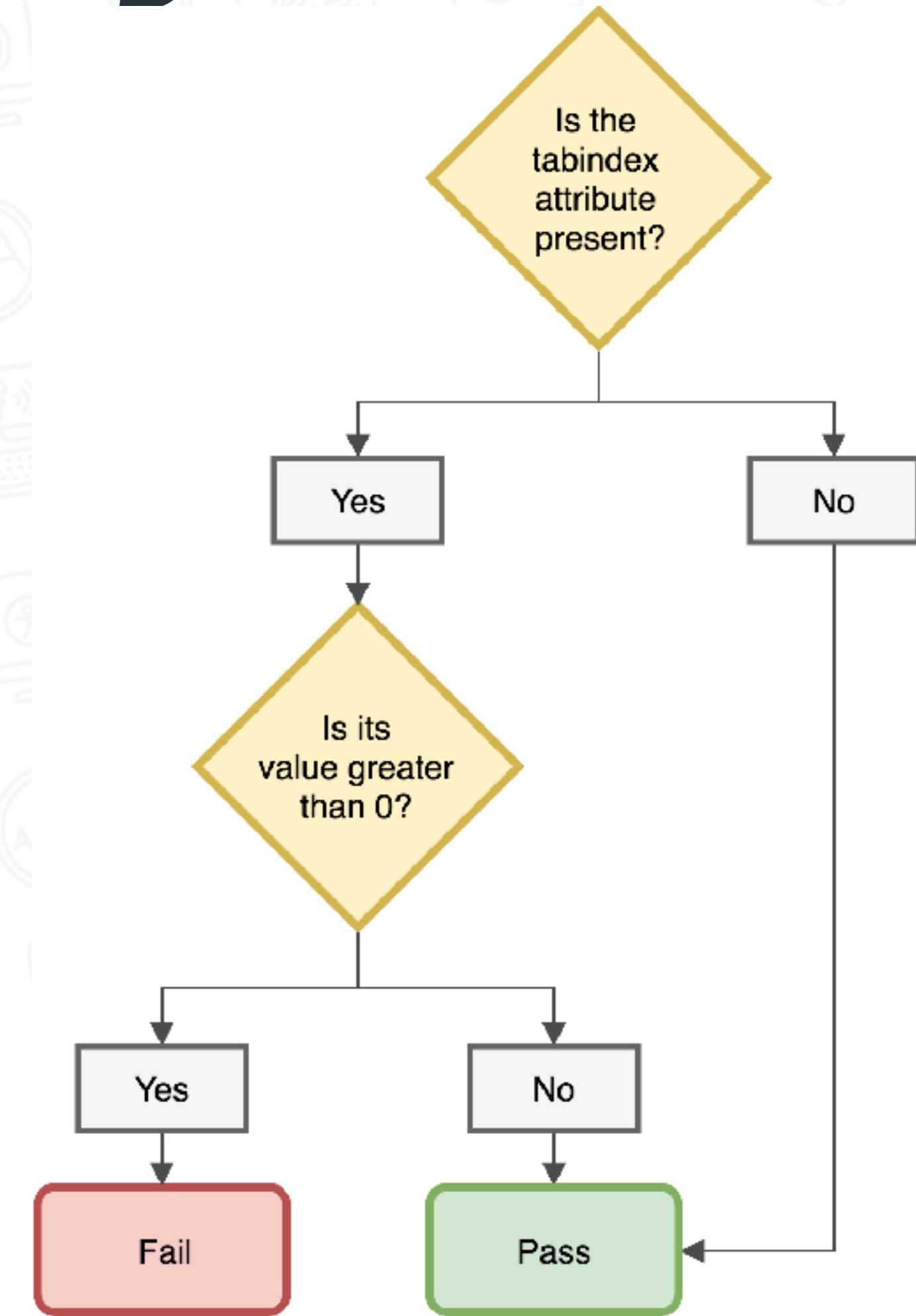
How to find accessibility vulnerabilities in your website

Testing Web Accessibility

Automated a11y tests can free up your QA team from manual testing every part of your application, but they can't automatically make your site accessible.

Use automated a11y tests as one step of a larger testing process.

Don't forget that only 20% to 50% of all accessibility issues can be detected via automated tests.





Test your code while you develop

Test your code while you develop

- **@axe-core/react**

<https://github.com/dequelabs/axe-core-npm/tree/develop/packages/react>

- **vue-axe**

<https://axe.vue-a11y.com/>

- **@axe-core/webdriverjs + protractor**

<https://github.com/dequelabs/axe-core-npm/tree/develop/packages/webdriverjs>

- **eslint-plugin-jsx-a11y**

<https://github.com/jsx-eslint/eslint-plugin-jsx-a11y>

@axe-core/react

Install it as a dev dependency



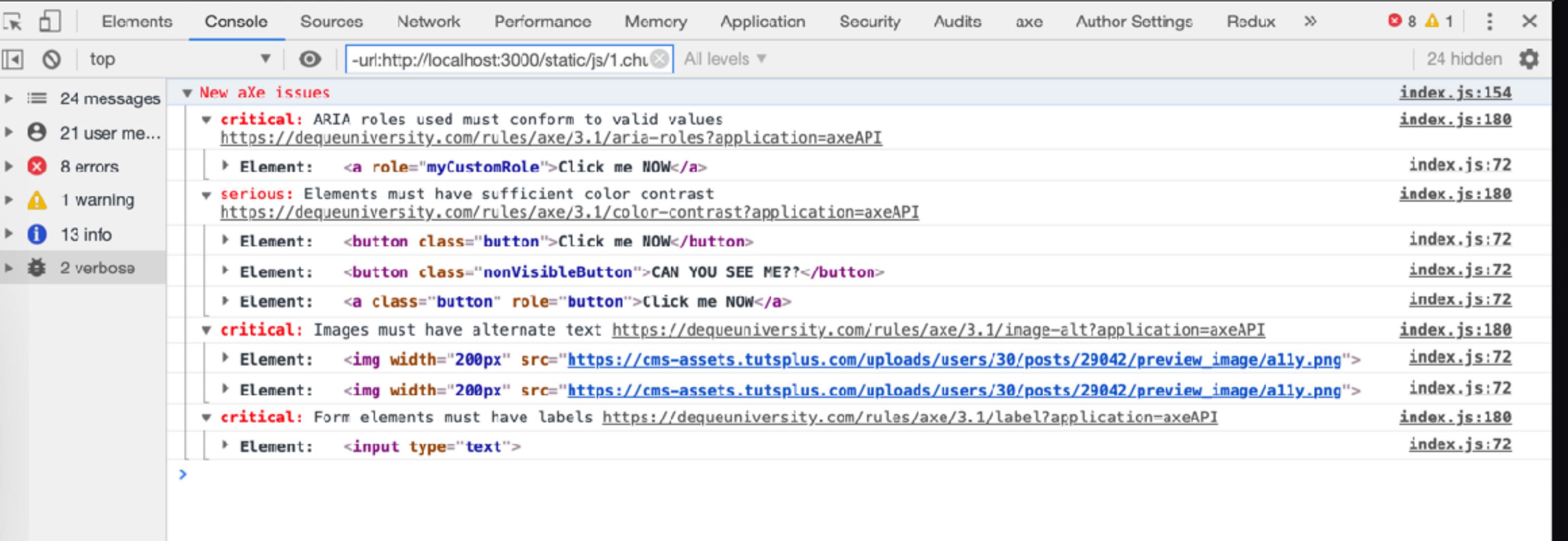
```
npm install --save-dev @axe-core/react
```

**Make sure you import the library
only if it is a non-production
environment, because you will
expose the vulnerabilities of your
web site**

```
const React = require('react');
const ReactDOM = require('react-dom');

if (process.env.NODE_ENV !== 'production') {
  const axe = require('@axe-core/react');
  axe(React, ReactDOM, 1000);
}
```

This tool will execute the a11y tests over your code using the axe-core engine, and you will be able to see the results of the tests in the development console of your browser
A severity level is also assigned for each violation (Minor, Moderate, Serious, Critical)



The screenshot shows the Chrome DevTools console tab with the axe API open. The URL is set to http://localhost:3000/static/js/1.chunk.js. The console output shows 24 messages, including 21 user messages, 8 errors, 1 warning, 13 info, and 2 verbose logs. A section titled 'New axe issues' lists several violations:

- critical:** ARIA roles used must conform to valid values (<https://dequeuniversity.com/rules/axe/3.1/aria-roles?application=axeAPI>)
 - Element: Click me NOW
- serious:** Elements must have sufficient color contrast (<https://dequeuniversity.com/rules/axe/3.1/color-contrast?application=axeAPI>)
 - Element: <button class="button">Click me NOW</button>
 - Element: <button class="nonVisibleButton">CAN YOU SEE ME??</button>
 - Element: Click me NOW
- critical:** Images must have alternate text (<https://dequeuniversity.com/rules/axe/3.1/image-alt?application=axeAPI>)
 - Element:
 - Element:
- critical:** Form elements must have labels (<https://dequeuniversity.com/rules/axe/3.1/label?application=axeAPI>)
 - Element: <input type="text">

eslint-plugin-jsx-a11y

Install it as a dev dependency

```
npm install eslint-plugin-jsx-a11y --save-dev
```

If you use eslint, you can include the a11y rules in the `.eslintrc.json` file adding the `eslint-plugin-jsx-a11y`

```
.eslintrc.json — testing-web-a11y
eslint.json X
eslint.json > ...
Adrian Bolonio, 5 months ago | 1 author (Adrian Bolonio)
1 { Adrian Bolonio, 5 months ago • added changes for the p
2   "plugins": ["jsx-a11y"],
3   "parserOptions": {
4     "ecmaVersion": 6,
5     "sourceType": "module",
6     "ecmaFeatures": {
7       "jsx": true,
8       "modules": true,
9       "experimentalObjectRestSpread": true
10      }
11    },
12    "extends": ["plugin:jsx-a11y/recommended"],
13    "rules": {
14      "jsx-a11y/alt-text": [
15        "error"
16      ]
17    }
18  }
19  "overrides": [
20    {
21      "files": ["**/*.js"]
22      "rules": {
23        "jsx-a11y/label-has-associated-control": "error"
24      }
25    }
26  ]
27  "env": {
28    "node": true
29  }
30  "plugins": [
31    "jsx-a11y"
32  ]
33  "parser": "babel-eslint"
34  "parserOptions": {
35    "ecmaVersion": 6
36  }
37  "rules": {
38    "jsx-a11y/label-has-associated-control": "error"
39  }
40  "extends": []
41  "overrides": []
42  "env": {}
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782 "extends": null
783 "overrides": null
784 "env": null
785 "plugins": null
786 "parser": null
787 "parserOptions": null
788 "rules": null
789 "extends": null
790 "overrides": null
791 "env": null
792 "plugins": null
793 "parser": null
794 "parserOptions": null
795 "rules": null
796 "extends": null
797 "overrides": null
798 "env": null
799 "plugins": null
800 "parser": null
801 "parserOptions": null
802 "rules": null
803 "extends": null
804 "overrides": null
805 "env": null
806 "plugins": null
807 "parser": null
808 "parserOptions": null
809 "rules": null
810 "extends": null
811 "overrides": null
812 "env": null
813 "plugins": null
814 "parser": null
815 "parserOptions": null
816 "rules": null
817 "extends": null
818 "overrides": null
819 "env": null
820 "plugins": null
821 "parser": null
822 "parserOptions": null
823 "rules": null
824 "extends": null
825 "overrides": null
826 "env": null
827 "plugins": null
828 "parser": null
829 "parserOptions": null
830 "rules": null
831 "extends": null
832 "overrides": null
833 "env": null
834 "plugins": null
835 "parser": null
836 "parserOptions": null
837 "rules": null
838 "extends": null
839 "overrides": null
840 "env": null
841 "plugins": null
842 "parser": null
843 "parserOptions": null
844 "rules": null
845 "extends": null
846 "overrides": null
847 "env": null
848 "plugins": null
849 "parser": null
850 "parserOptions": null
851 "rules": null
852 "extends": null
853 "overrides": null
854 "env": null
855 "plugins": null
856 "parser": null
857 "parserOptions": null
858 "rules": null
859 "extends": null
860 "overrides": null
861 "env": null
862 "plugins": null
863 "parser": null
864 "parserOptions": null
865 "rules": null
866 "extends": null
867 "overrides": null
868 "env": null
869 "plugins": null
870 "parser": null
871 "parserOptions": null
872 "rules": null
873 "extends": null
874 "overrides": null
875 "env": null
876 "plugins": null
877 "parser": null
878 "parserOptions": null
879 "rules": null
880 "extends": null
881 "overrides": null
882 "env": null
883 "plugins": null
884 "parser": null
885 "parserOptions": null
886 "rules": null
887 "extends": null
888 "overrides": null
889 "env": null
890 "plugins": null
891 "parser": null
892 "parserOptions": null
893 "rules": null
894 "extends": null
895 "overrides": null
896 "env": null
897 "plugins": null
898 "parser": null
899 "parserOptions": null
900 "rules": null
901 "extends": null
902 "overrides": null
903 "env": null
904 "plugins": null
905 "parser": null
906 "parserOptions": null
907 "rules": null
908 "extends": null
909 "overrides": null
910 "env": null
911 "plugins": null
912 "parser": null
913 "parserOptions": null
914 "rules": null
915 "extends": null
916 "overrides": null
917 "env": null
918 "plugins": null
919 "parser": null
920 "parserOptions": null
921 "rules": null
922 "extends": null
```

eslint-plugin-jsx-a11y

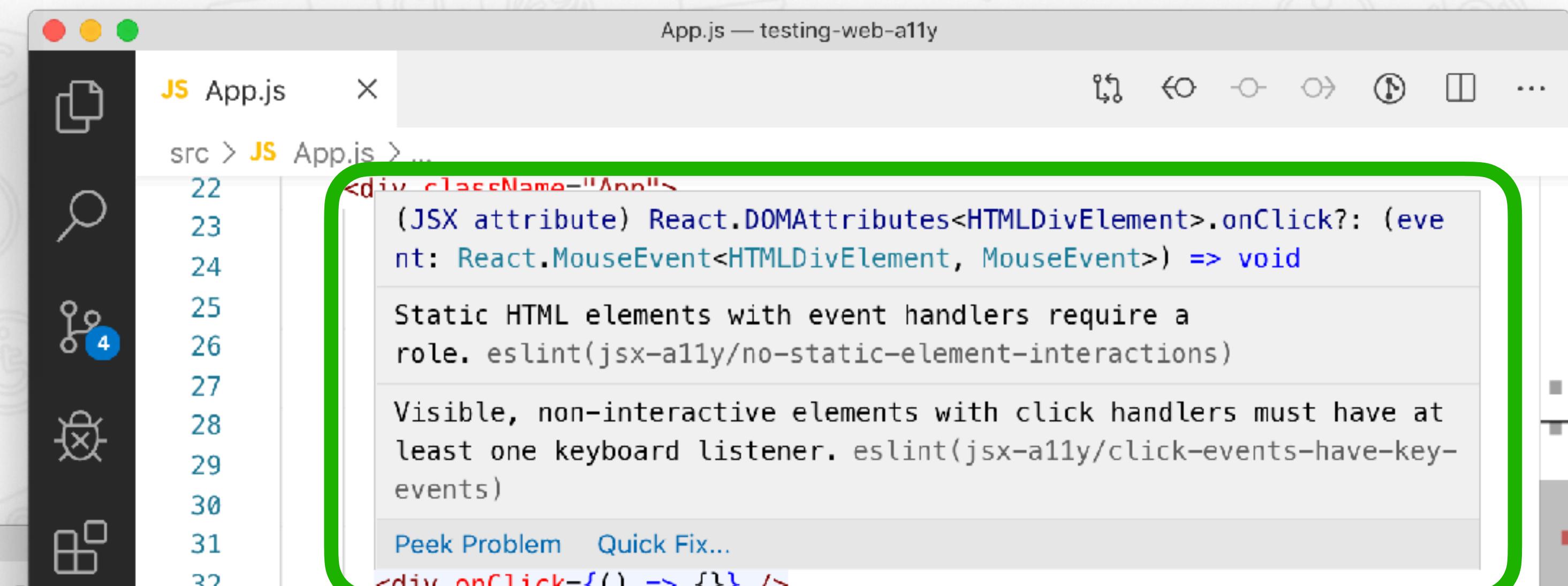
Install it as a dev dependency

```
npm install eslint-plugin-jsx-a11y --save-dev
```

If you use eslint, you can include the a11y rules in the `.eslintrc.json` file adding the `eslint-plugin-jsx-a11y`

```
eslintrc.json — testing-web-a11y
.eslintrc.json X
.eslintrc.json > ...
Adrian Bolonio, 5 months ago | 1 author (Adrian Bolonio)
1 { "plugins": ["jsx-a11y"], ...
2   "parserOptions": {
3     "ecmaVersion": 6,
4     "sourceType": "module",
5     "ecmaFeatures": {
6       "jsx": true,
7       "modules": true,
8       "experimentalObjectRestSpread": true
9     }
10   }
11   "extends": ["plugin:jsx-a11y/recommended"],
12   "rules": {
13     "jsx-a11y/alt-text": [
```

The linting issues will be displayed directly in the code editor



```
App.js — testing-web-a11y
JS App.js X
src > JS App.js > ...
22 <div className="App">
23   (JSX attribute) React.DOMAttributes<HTMLDivElement>.onClick?: (eve
24   nt: React.MouseEvent<HTMLDivElement, MouseEvent>) => void
25   Static HTML elements with event handlers require a
26   role. eslint/jsx-a11y/no-static-element-interactions
27
28   Visible, non-interactive elements with click handlers must have at
29   least one keyboard listener. eslint/jsx-a11y/click-events-have-key-
30   events
31
32   <div onClick={() => {}}> />
33   <div tabIndex={0}> />
34   <br />
35   <br />
36   <FakeButton classes="button" text="Click me NOW" />
37   <br />
38   <br />
39   <a aria-label="Continue">Click me NOW</a>
40   <br />
41   <a aria-label="Continue" role="button">
42     Click me NOW
43   </a>
44   <br />
45   <a role="myCustomRole">Click me NOW</a>
46   <a />
47   <br />
```

eslint-plugin-jsx-a11y

Install it as a dev dependency



```
npm install eslint-plugin-jsx-a11y --save-dev
```

If you use eslint, you can include the a11y rules in the `.eslintrc.json` file adding the `eslint-plugin-jsx-a11y`

```
eslintrc.json — testing-web-a11y
{
  "plugins": ["jsx-a11y"],
  "extends": ["plugin:jsx-a11y/recommended"]
}
```

The linting issues will be displayed directly in the code editor

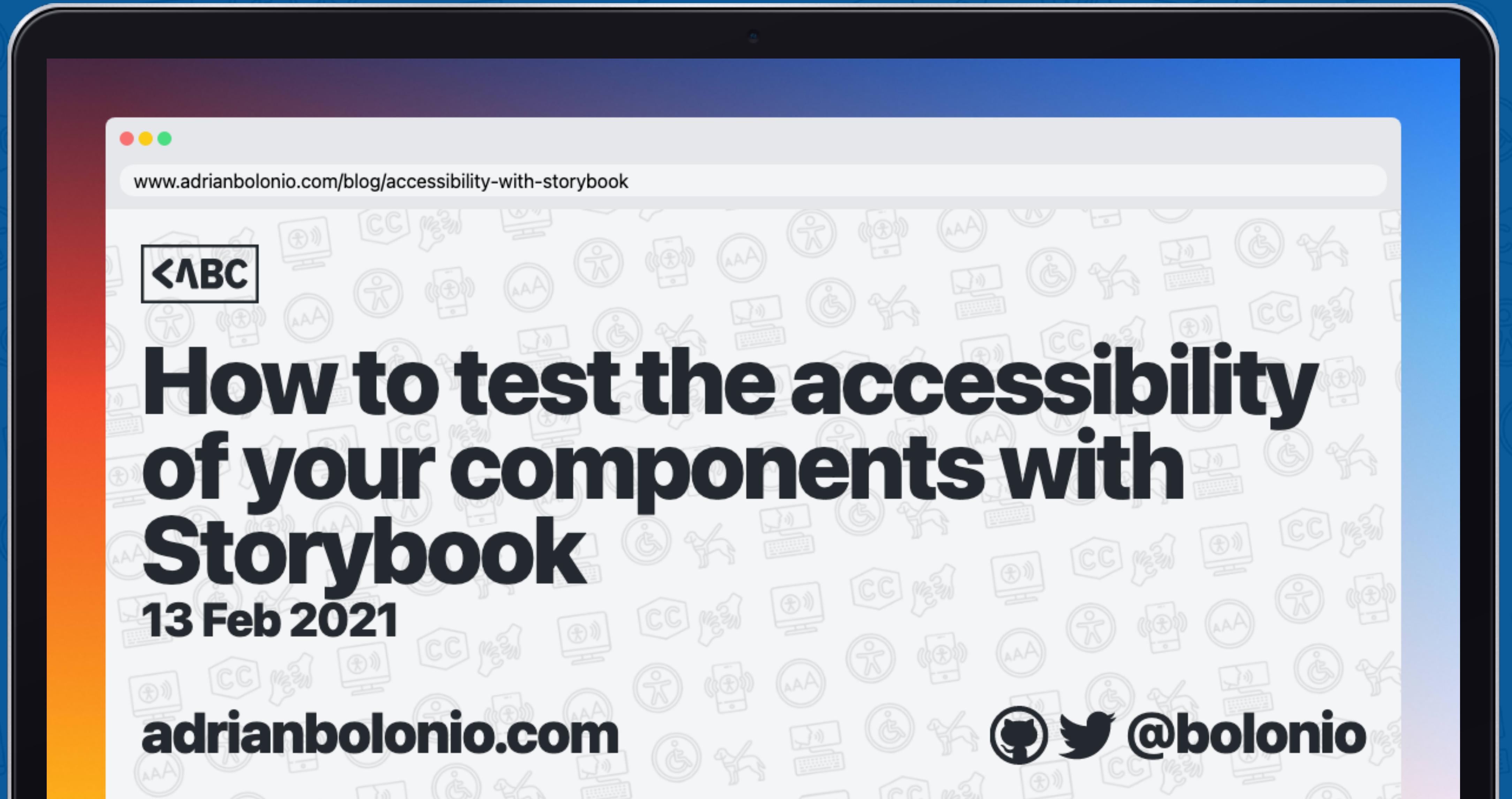
```
App.js — testing-web-a11y
The linting issues will be displayed in the terminal
./src/App.js
Line 26: The element button has an implicit role of button. Defining this explicitly is redundant and should be avoided

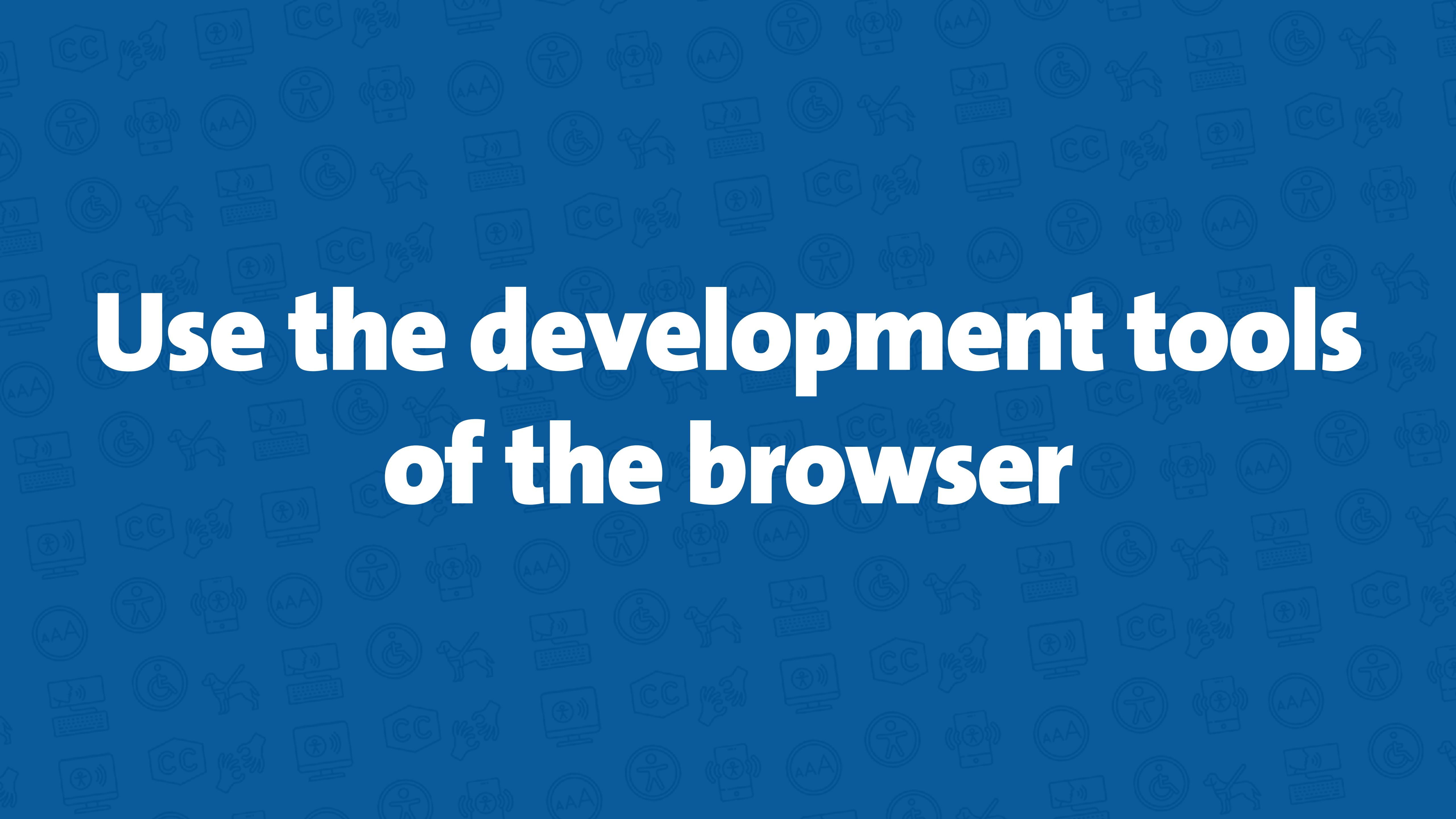
Line 39: The href attribute is required for an anchor to be keyboard accessible. Provide a valid, navigable address as the href value. If you cannot provide an href, but still need the element to resemble a link, use a button and change it with appropriate styles. Learn more: https://github.com/evcohen/eslint-plugin-jsx-a11y/blob/master/docs/rules/anchor-is-valid.d.md jsx-a11y/anchor-is-valid
Line 41: The href attribute is required for an anchor to be keyboard accessible. Provide a valid, navigable address as the href value. If you cannot provide an href, but still need the element to resemble a link, use a button and change it with appropriate styles. Learn more: https://github.com/evcohen/eslint-plugin-jsx-a11y/blob/master/docs/rules/anchor-is-valid.d.md jsx-a11y/anchor-is-valid
Line 45: The href attribute is required for an anchor to be keyboard accessible. Provide a valid, navigable address as the href value. If you cannot provide an href, but still need the element to resemble a link, use a button and change it with appropriate styles. Learn more: https://github.com/evcohen/eslint-plugin-jsx-a11y/blob/master/docs/rules/anchor-is-valid.d.md jsx-a11y/anchor-is-valid
Line 45: Elements with ARIA roles must use a valid, non-abstract ARIA role

Line 46: Anchors must have content and the content must be accessible by a screen reader

jsx-a11y/aria-role
Line 46: Anchors must have content and the content must be accessible by a screen reader
```

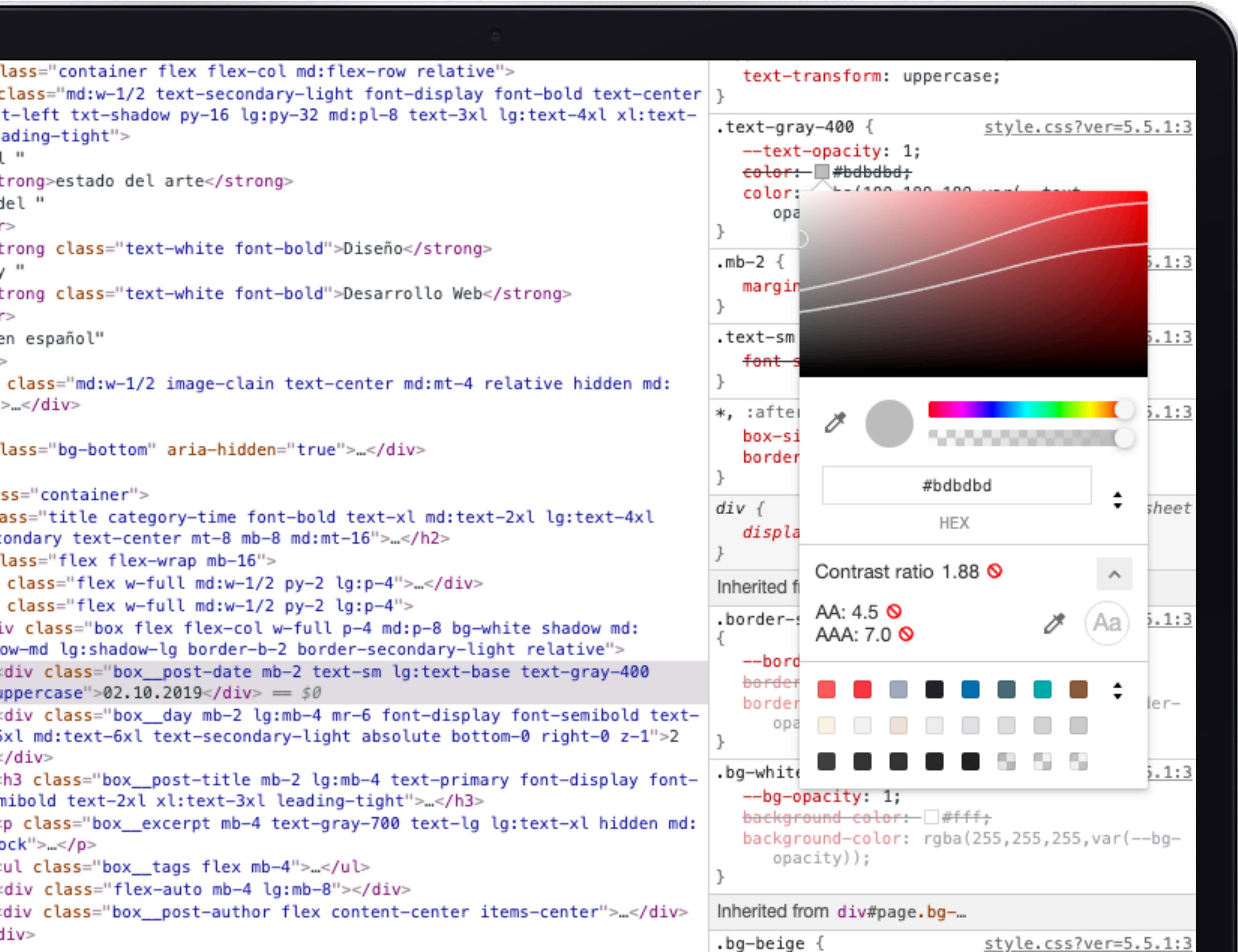
www.adrianbolonio.com/blog/accessibility-with-storybook





Use the development tools of the browser

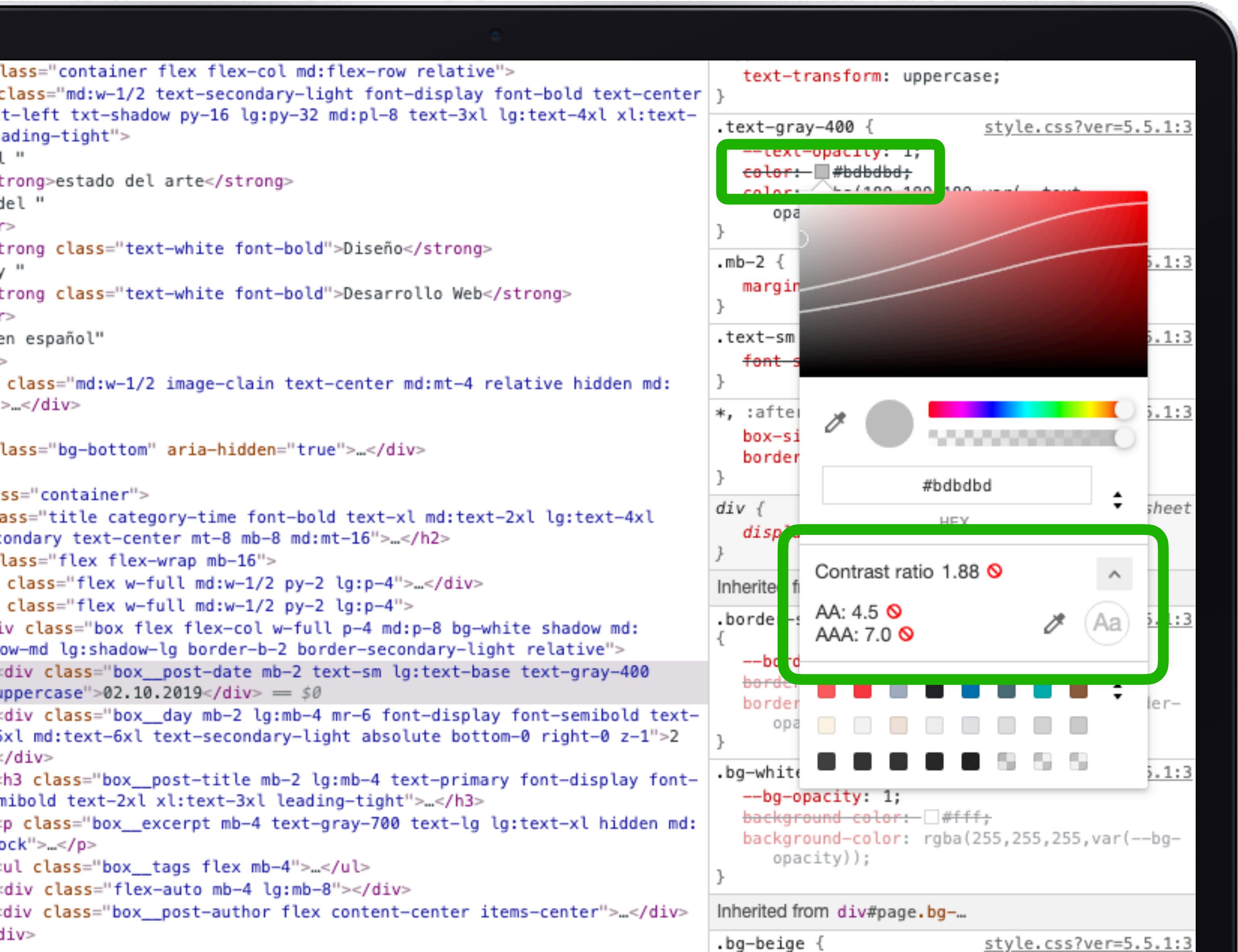
Use the development tools of the browser



When inspecting an HTML element and clicking on the color box in front of the **HEX code** in the CSS inspector, a floating window will appear with information about that color.

You will see the score of the contrast ratio of that color with the background where it's placed (text, button, ... etc) and you will be able to see if it passes the AA and AAA contrast ratio tests.

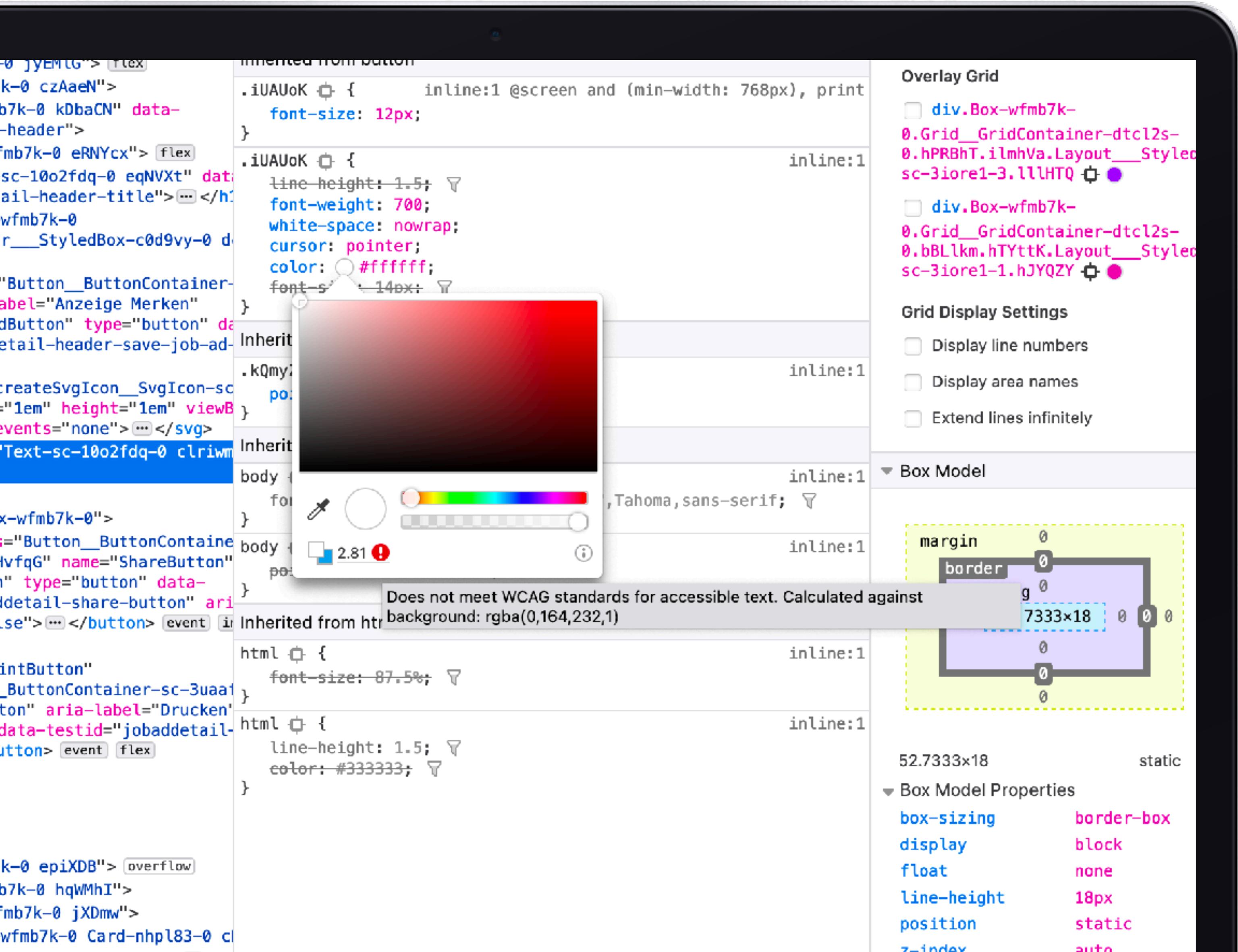
Use the development tools of the browser



When inspecting an HTML element and clicking on the color box in front of the **HEX code** in the CSS inspector, a floating window will appear with information about that color.

You will see the score of the contrast ratio of that color with the background where it's placed (text, button, ... etc) and you will be able to see if it passes the AA and AAA contrast ratio tests.

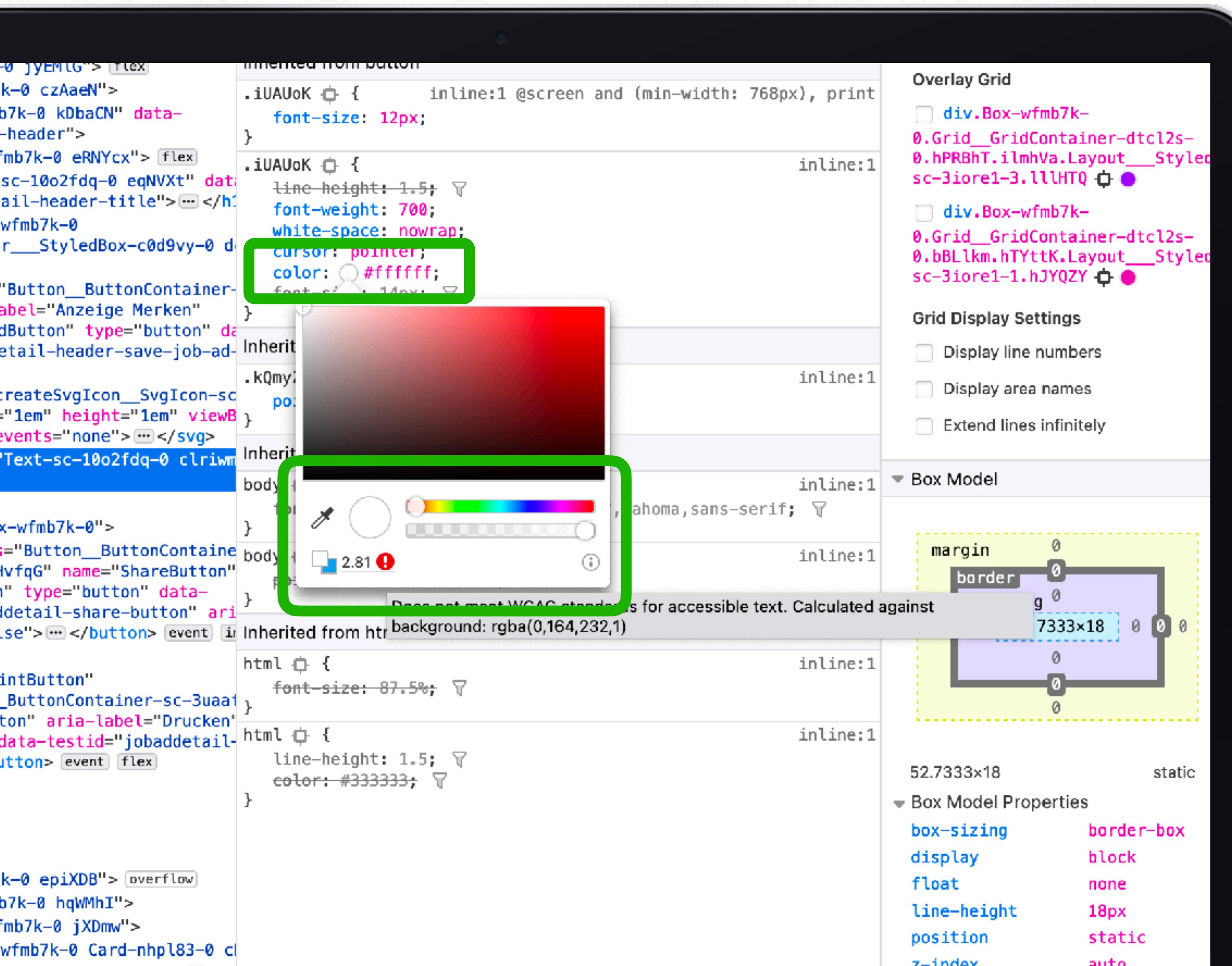
Use the development tools of the browser



When inspecting an HTML element and clicking on the color box in front of the **HEX code** in the CSS inspector, a floating window will appear with information about that color.

You will see the score of the contrast ratio of that color with the background where it's placed (text, button, ... etc) and you will be able to see if it passes the AA and AAA contrast ratio tests.

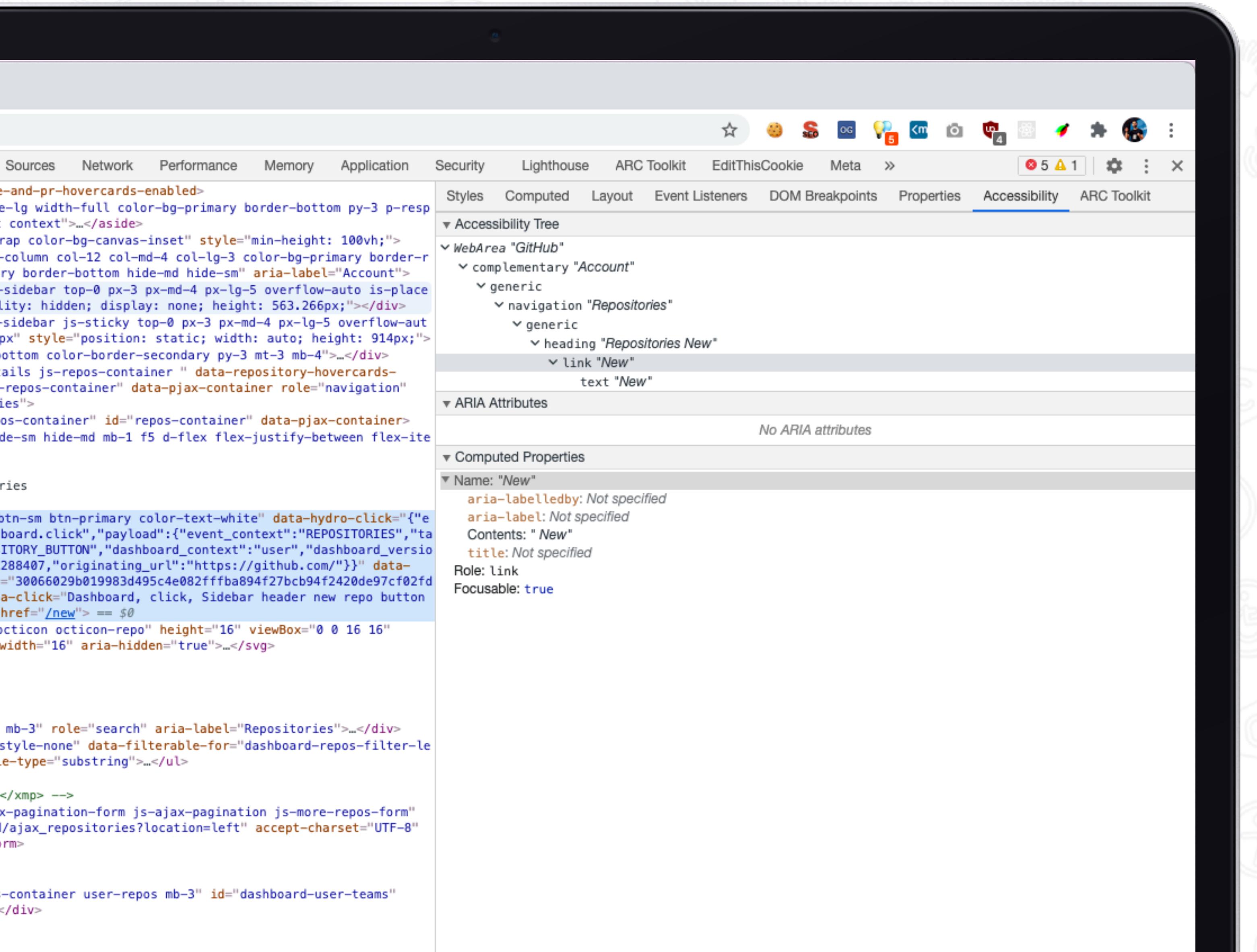
Use the development tools of the browser



When inspecting an HTML element and clicking on the color box in front of the **HEX code** in the CSS inspector, a floating window will appear with information about that color.

You will see the score of the contrast ratio of that color with the background where it's placed (text, button, ... etc) and you will be able to see if it passes the AA and AAA contrast ratio tests.

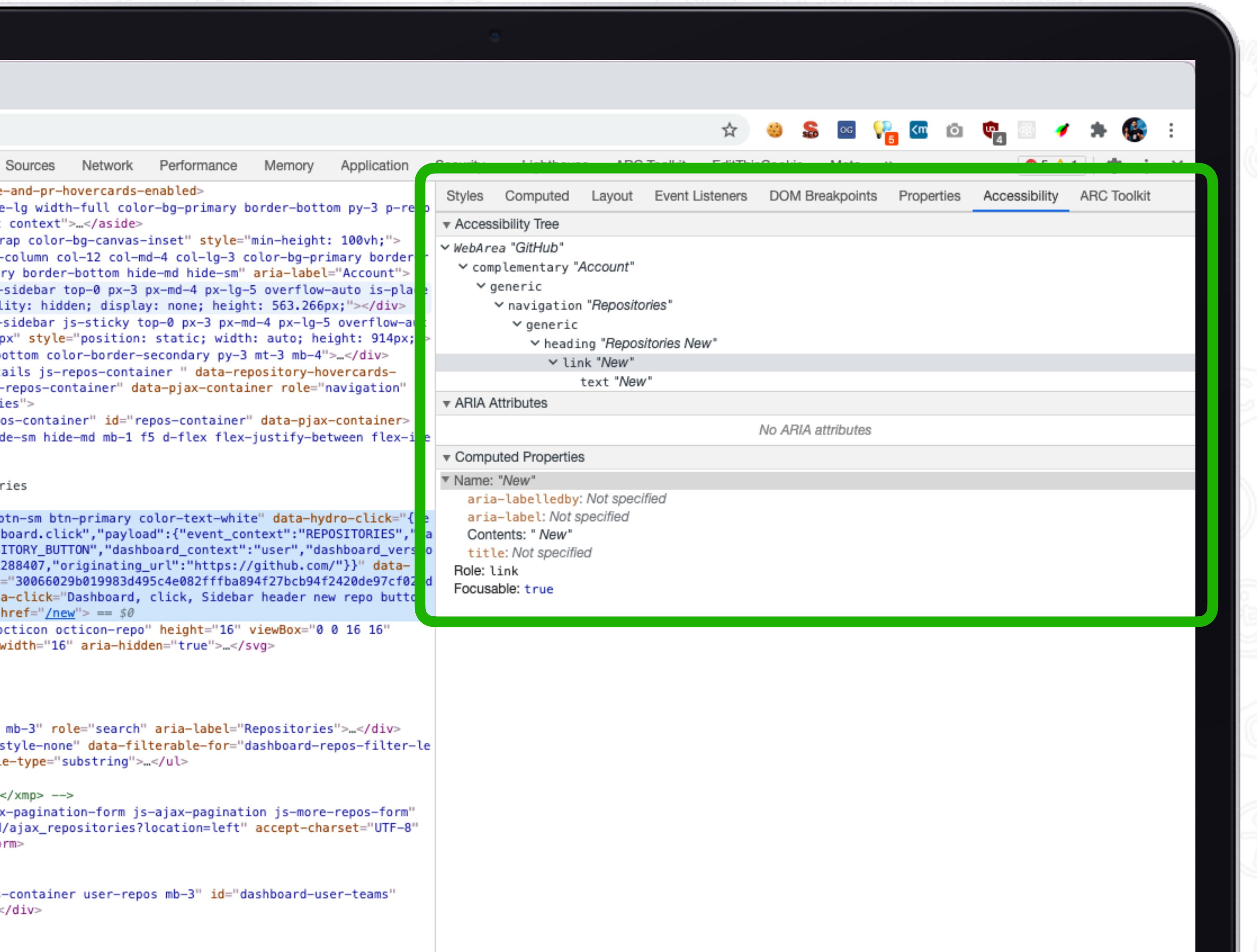
Use the development tools of the browser



The accessibility inspector provides a means of accessing important information exposed to assistive technologies on the current page through the accessibility tree, allowing you to check what is missing or what needs attention.

The accessibility inspector can be found in your browser's developer tools.

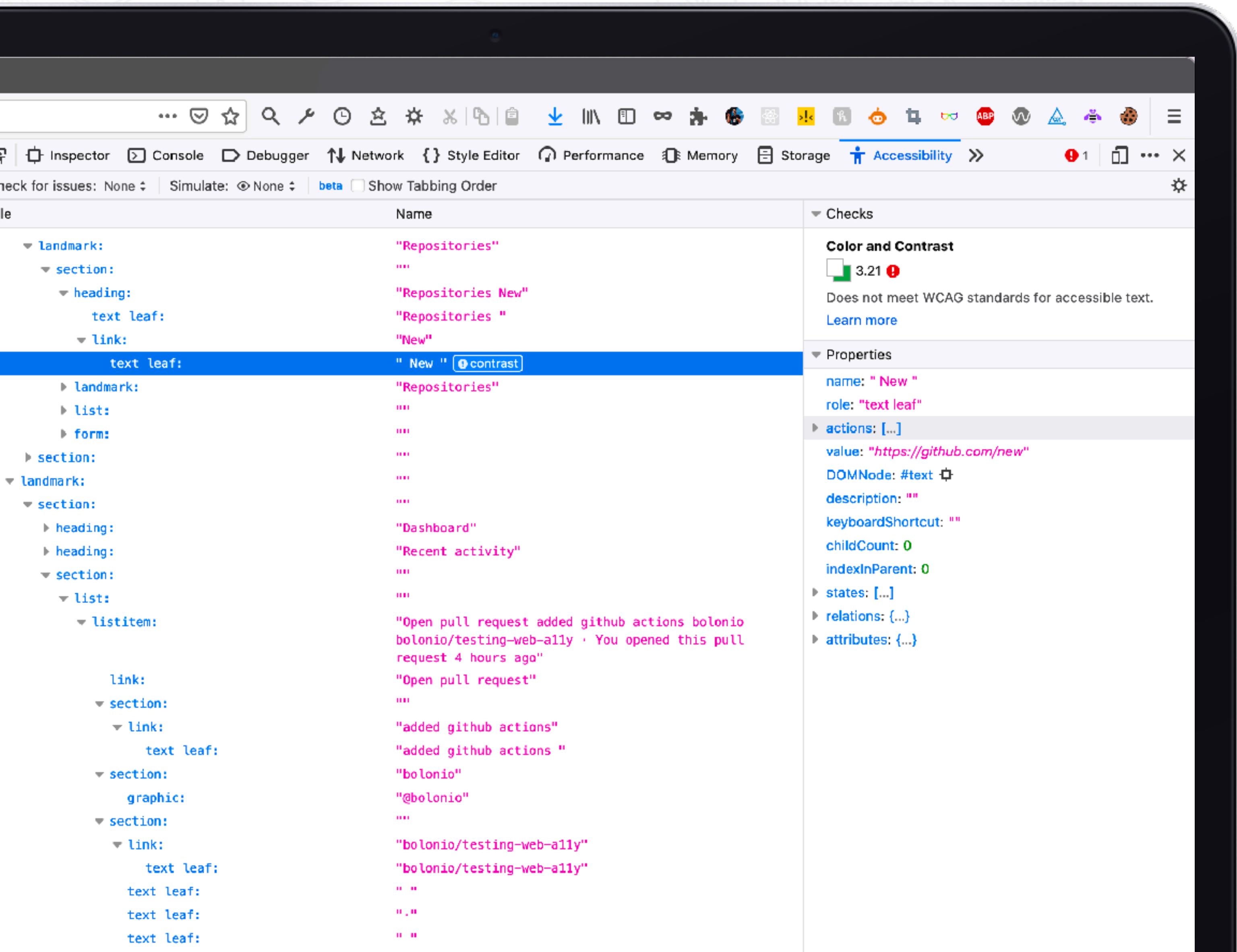
Use the development tools of the browser



The accessibility inspector provides a means of accessing important information exposed to assistive technologies on the current page through the accessibility tree, allowing you to check what is missing or what needs attention.

The accessibility inspector can be found in your browser's developer tools.

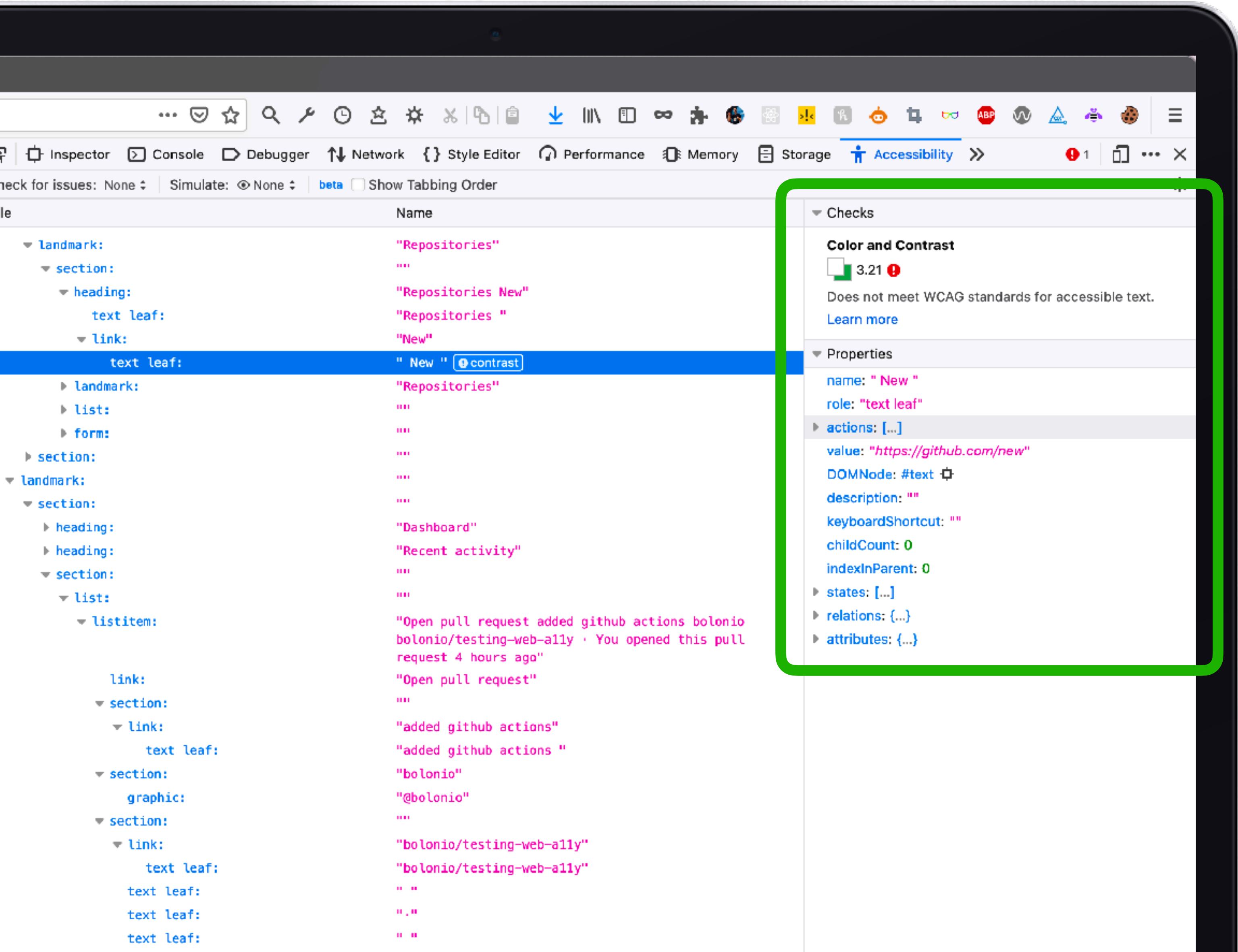
Use the development tools of the browser



The **accessibility inspector** provides a means of accessing important information exposed to assistive technologies on the current page through the accessibility tree, allowing you to check what is missing or what needs attention.

The accessibility inspector can be found in your browser's developer tools.

Use the development tools of the browser



The **accessibility inspector** provides a means of accessing important information exposed to assistive technologies on the current page through the accessibility tree, allowing you to check what is missing or what needs attention.

The accessibility inspector can be found in your browser's developer tools.

Write your own unit tests

- **jest-axe**

<https://github.com/nickolley/jest-axe>

jest-axe

Install it as a dev dependency



```
npm install --save-dev jest-axe
```

Write an accessibility test using **ReactDOMServer** to render the html of your application and check for violations

```
App.test.js — testing-web-a11y
src > App.test.js > ...
Adrian Bolonio, 5 months ago | 1 author (Adrian Bolonio)
1 import { axe, toHaveNoViolations } from "jest-axe";
2 import React from "react";
3 import ReactDOMServer from "react-dom/server";
4 import App from "./App";
5
6 expect.extend(toHaveNoViolations);
7
8 it("should demonstrate this matcher's usage with react", async () => {
9   const html = ReactDOMServer.renderToString(<App />);
10  const results = await axe(html);
11  expect(results).toHaveNoViolations();
12 });
13
```

The results of the test will be displayed in the terminal

```
FAIL src/App.test.js
✖ should demonstrate this matcher's usage with react (605ms)
● should demonstrate this matcher's usage with react
  expect(received).toHaveNoViolations(expected)
    Expected the HTML found at $('a[role="myCustomRole"]') to have no violations:
    <a role="myCustomRole">Click me NOW</a>
    Received:
    "ARIA roles used must conform to valid values (aria-roles)"
    Try fixing it with this help: https://dequeuniversity.com/rules/axe/3.1/aria-roles?application=axe

    Expected the HTML found at $('img:nth-child(28)') to have no violations:
     input') to have no violations:
    <input type="text">
    Expected the HTML found at $('label:nth-child(40) > input') to have no violations:
    <input type="text">
    Received:
    "Form elements must have labels (label)"
```



Use CLI tools to run accessibility tests

CLI tools to run accessibility tests

- **@axe-core/cli**

<https://github.com/dequelabs/axe-core-npm/tree/develop/packages/cli>

- **pa11y**

<http://pa11y.org/>

- **Lighthouse**

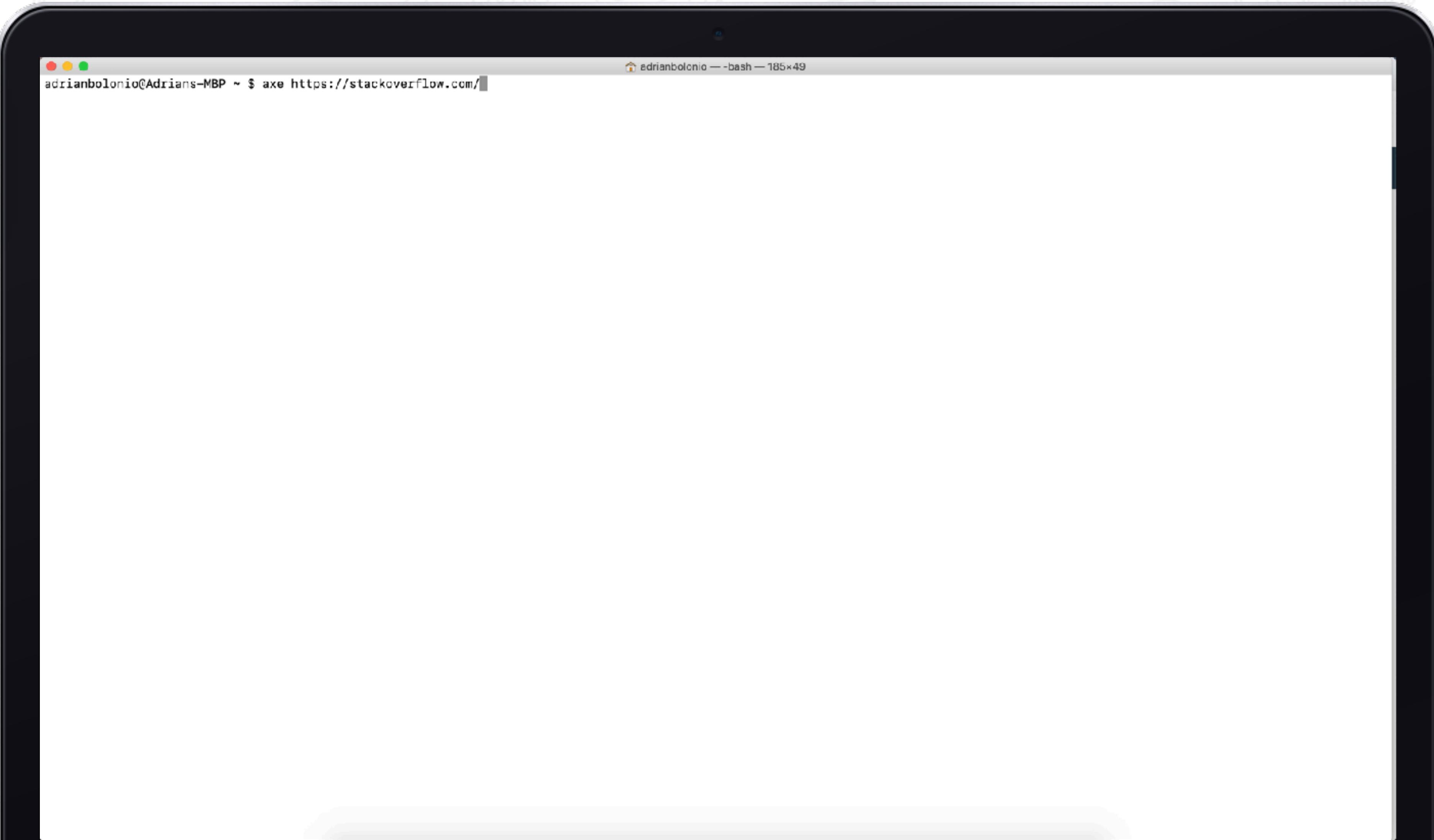
<https://developers.google.com/web/tools/lighthouse/>

@axe-core/cli

You can now run the command in your CLI, followed by the URL of the page you wish to test

Install it globally in
your machine

```
npm install -g @axe-core/cli
```

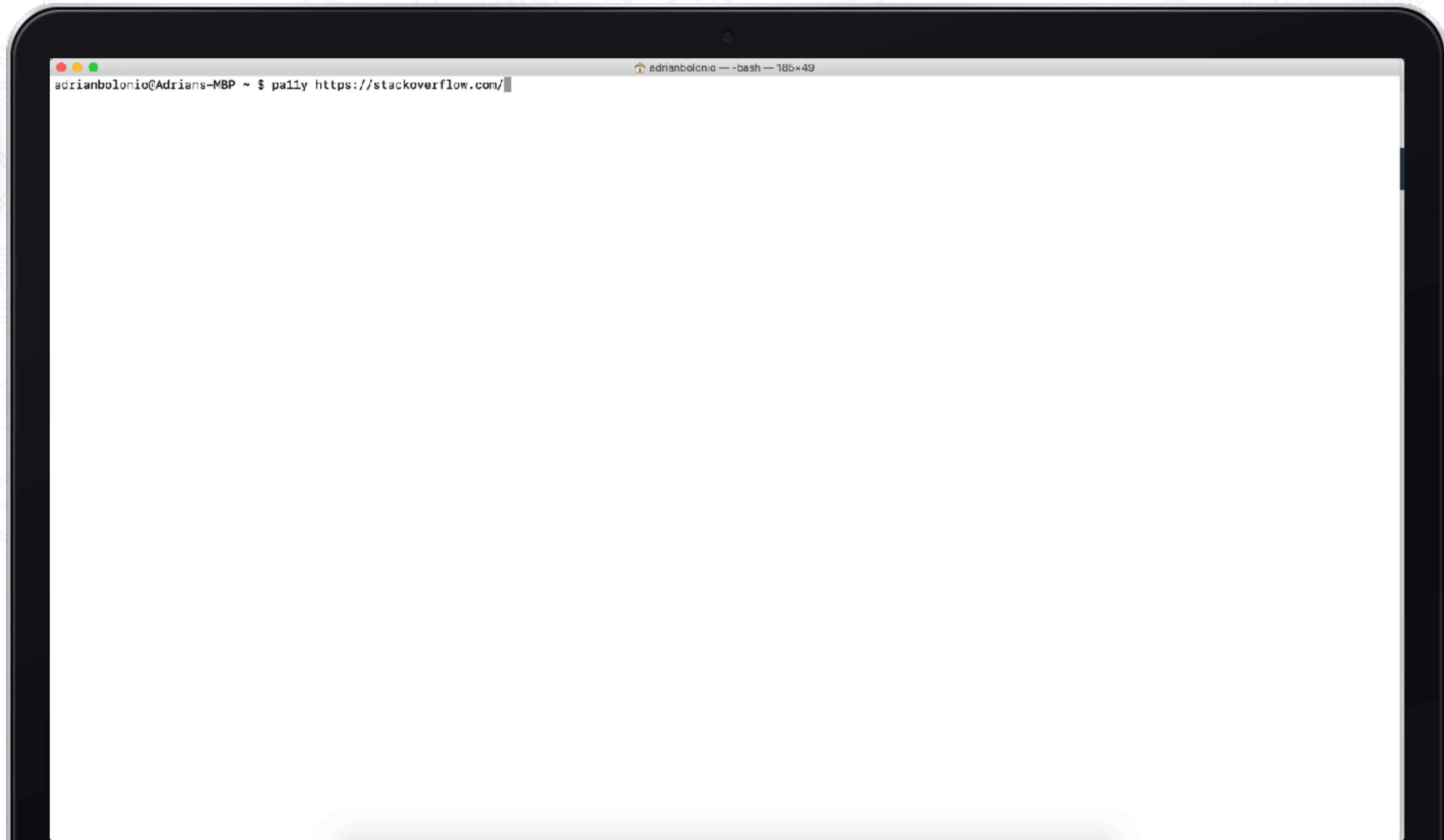


pally

Install it globally in
your machine

```
npm install -g pally
```

You can now run the command in your CLI, followed by the URL of the page you wish to test



pally

Install it globally in your machine

```
npm install -g pally
```

You can now run the command in your CLI, followed by the URL of the page you wish to test

You can run the command in your CLI for localhost as well



```
#footer > div > div:nth-child(3) > p > a:nth-child(2) <a href="https://stackoverflow.blog/2009/06/25/attribution-equity">Attribution equity</a>
  • Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 3.12:1. Recommendation: change text colour to #fff.
    └── WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
      └── #svnrev
        <span id="svnrev">rev&nnbsp;2019.11.14.35439</span>

  • Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 3.12:1. Recommendation: change background to #c35600.
    └── WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
      └── html > body > header > div > ol:nth-child(2) > li <a href="#" class="-marketing-link is-selected js-topbar-placement="bottom" data-gps-track="top_nav.product">...</a>
        <li class="list-item"><a href="#" class="js-topbar-navigation-link" data-gps-track="login.click" data-ga="["top nav product", "click", "link"]">...</a></li>

  • Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 2.95:1. Recommendation: change background to #fbfbfc.
    └── WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
      └── html > body > header > div > ol:nth-child(5) > li <a href="https://stackoverflow.com/users/login?ss=w" data-gps-track="login.click" data-ga="["top nav product", "click", "link"]">...</a>
        <li class="list-item"><a href="https://stackoverflow.com/users/signup?ss=w" data-ga="["sign up","Sign Up Navigation"]">...</a></li>

  • Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 1.05:1. Recommendation: change background to #5d7c7c.
    └── WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
      └── #root > div > button:nth-child(7)
        <button class="nonVisibleButton">CAN YOU SEE ME??</button>

  • Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 2.95:1. Recommendation: change background to #d93d21.
    └── WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
      └── #root > div > a:nth-child(14)
        <a class="button" role="button">Click me NOW</a>

  • Error: Anchor element found with no link content and no name and/or ID attribute.
    └── WCAG2AA.Principle4.Guideline4_1.4_1_2.H91.A.EmptyNoId
      └── #root > div > a:nth-child(22)
```

Welcome to Pally

> Running Pally on URL http://localhost:3000/

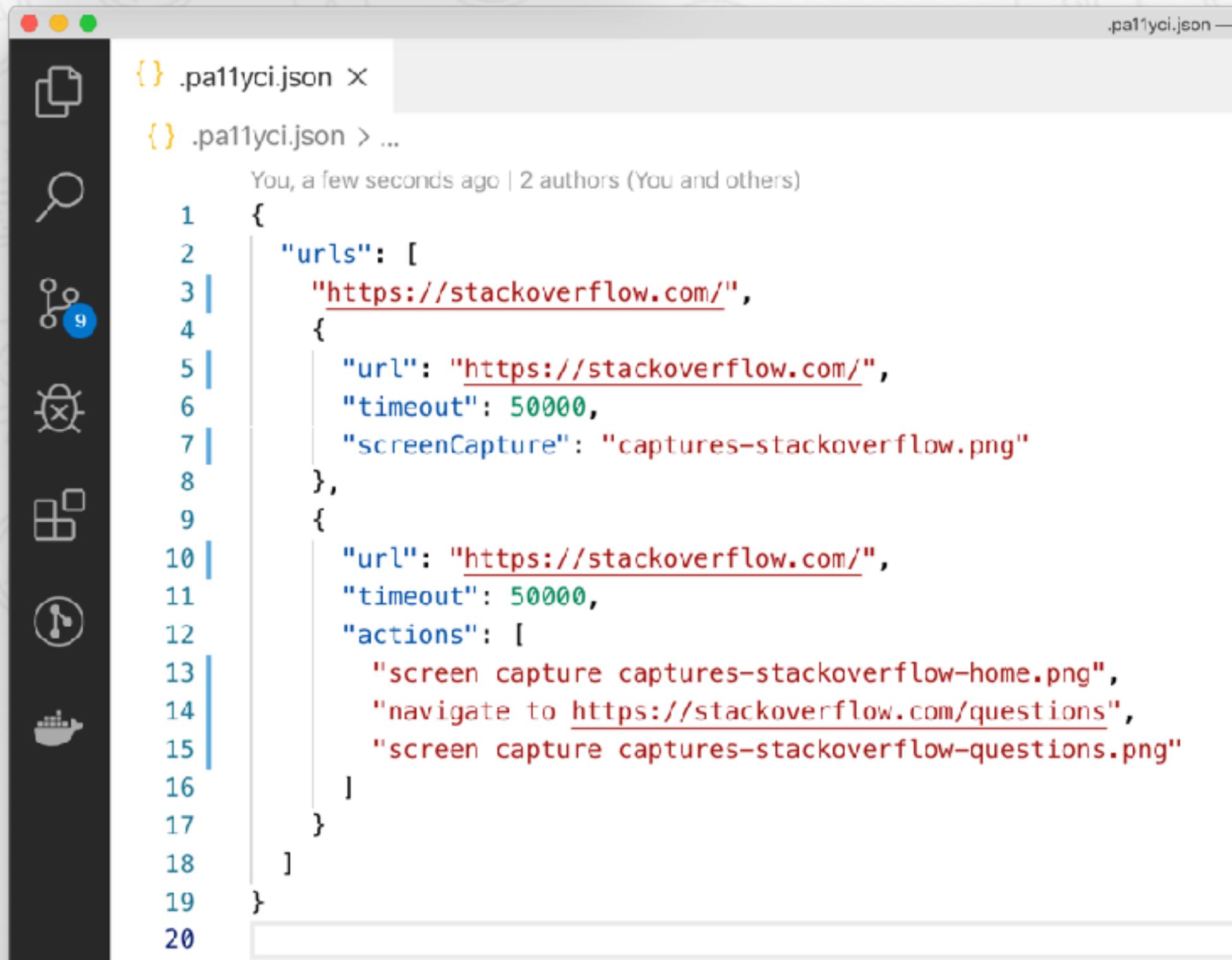
Results for URL: http://localhost:3000/

- Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 2.95:1. Recommendation: change background to #d93d21.
 - WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
 - #root > div > button:nth-child(1)
 - <button class="button">Click me NOW</button>
 - Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 1.05:1. Recommendation: change background to #5d7c7c.
 - WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
 - #root > div > button:nth-child(7)
 - <button class="nonVisibleButton">CAN YOU SEE ME??</button>
 - Error: This element has insufficient contrast at this conformance level. Expected a contrast ratio of at least 4.5:1, but text in this element has a contrast ratio of 2.95:1. Recommendation: change background to #d93d21.
 - WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail
 - #root > div > a:nth-child(14)
 - Click me NOW
 - Error: Anchor element found with no link content and no name and/or ID attribute.
 - WCAG2AA.Principle4.Guideline4_1.4_1_2.H91.A.EmptyNoId
 - #root > div > a:nth-child(22)

pa11y-ci

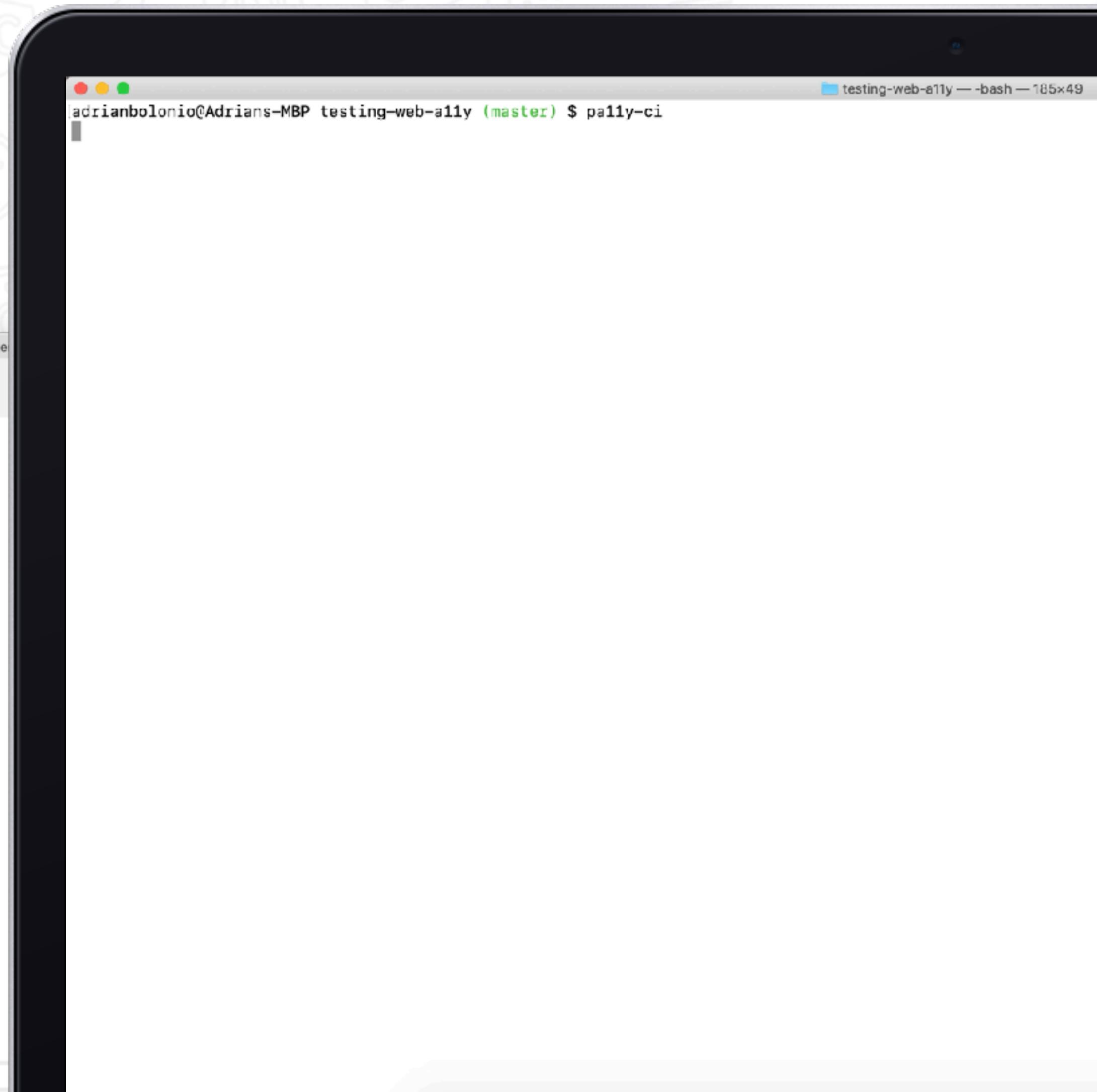
Install it globally in
your machine

```
npm install -g pa11y-ci
```



```
{}
{} .pa11yci.json > ...
{} .pa11yci.json > ...
You, a few seconds ago | 2 authors (You and others)
1  {
2    "urls": [
3      "https://stackoverflow.com/",
4      {
5        "url": "https://stackoverflow.com/",
6        "timeout": 5000,
7        "screenCapture": "captures-stackoverflow.png"
8      },
9      {
10     "url": "https://stackoverflow.com/",
11     "timeout": 5000,
12     "actions": [
13       "screen capture captures-stackoverflow-home.png",
14       "navigate to https://stackoverflow.com/questions",
15       "screen capture captures-stackoverflow-questions.png"
16     ]
17   }
18 ]
19 }
20 }
```

By default, Pa11y CI looks for a config file (.json) in the current working directory. Each URL in your config file can be an object and specify pa11y configurations which override the defaults too.



```
adrianbolonio@Adrians-MBP testing-web-a11y (master) $ pa11y-ci
```

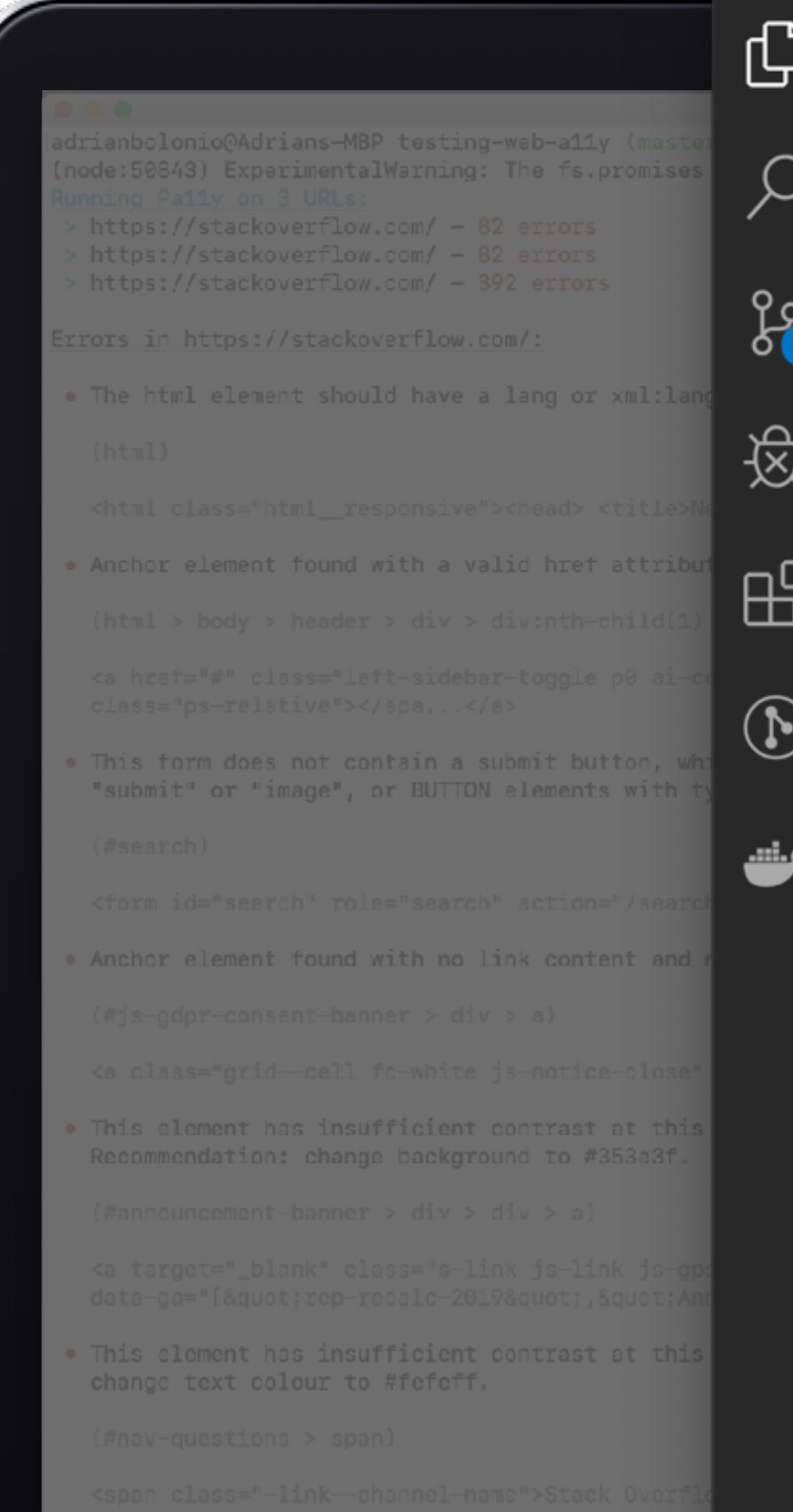
pa11y-ci

Install it globally in your machine

```
npm install -g pa11y-ci
```

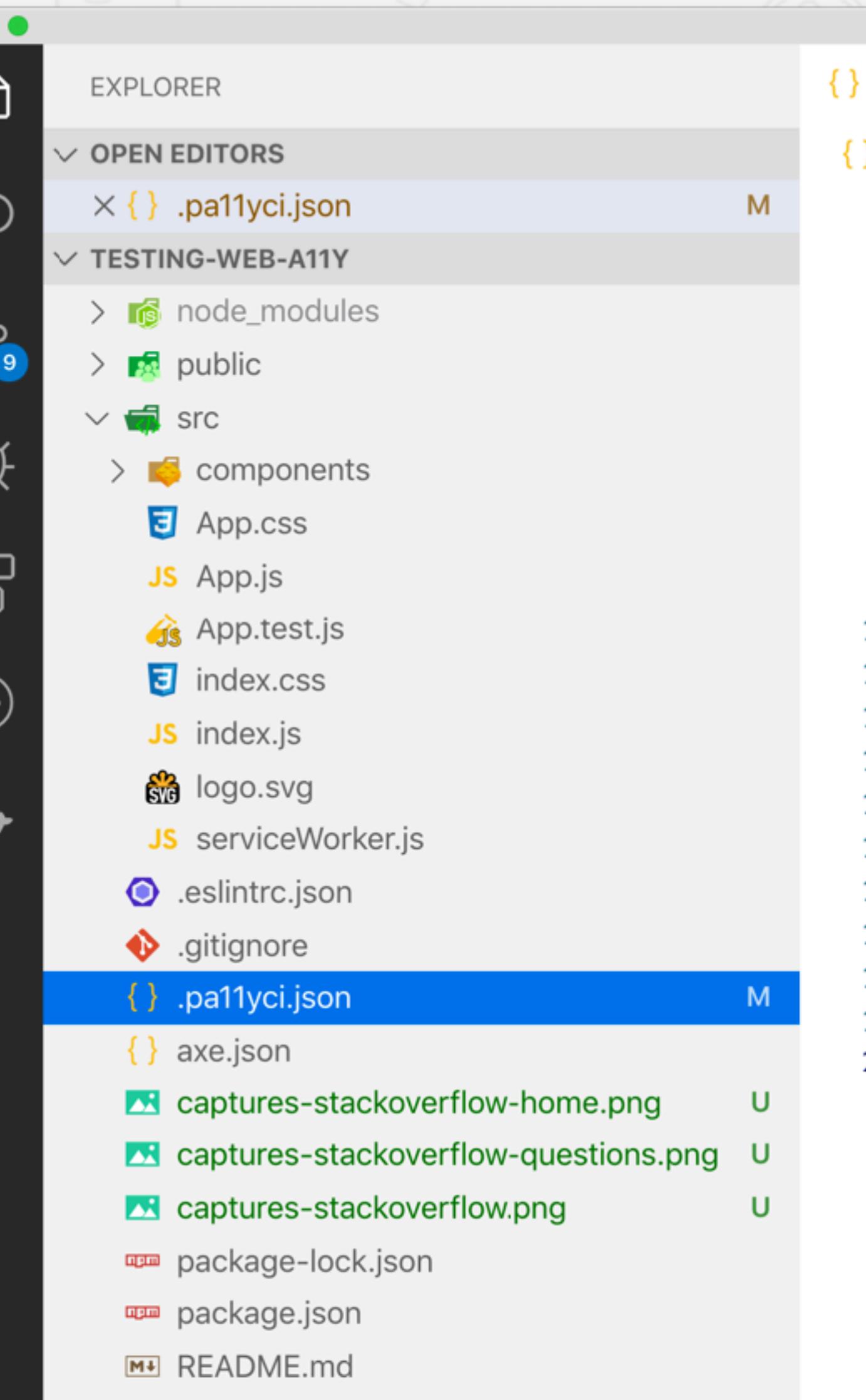
```
{ } .pa11yci.json x
{ } .pa11yci.json > ...
  You, a few seconds ago | 2 authors (You and others)
1 {
2   "urls": [
3     "https://stackoverflow.com/",
4     {
5       "url": "https://stackoverflow.com/",
6       "timeout": 5000,
7       "screenCapture": "captures-stackoverflow.png"
8     },
9     {
10    "url": "https://stackoverflow.com/",
11    "timeout": 5000,
12    "actions": [
13      "screen capture captures-stackoverflow-home.png",
14      "navigate to https://stackoverflow.com/questions",
15      "screen capture captures-stackoverflow-questions.png"
16    ]
17  }
18]
19}
20}
```

By default, Pa11y CI looks for a config file (.json) in the current working directory. Each URL in your config file can be an object and specify pa11y configurations which override the defaults too.



```
adrianbolonio@Adrians-MBP testing-web-a11y (master)
(node:50843) ExperimentalWarning: The fs.promises
Running Pa11y on 3 URLs:
> https://stackoverflow.com/ - 82 errors
> https://stackoverflow.com/ - 82 errors
> https://stackoverflow.com/ - 392 errors

Errors in https://stackoverflow.com/:
• The html element should have a lang or xml:lang attribute.
  (html)
<html class="html__responsive"><head> <title>No
• Anchor element found with a valid href attribute.
  (html > body > header > div > div:nth-child(1))
<a href="#" class="left-sidebar-toggle p0 ai-c
• This form does not contain a submit button, which is required for "submit" or "image", or BUTTON elements with type="button".
  (#search)
<form id="search" role="search" action="/search
• Anchor element found with no link content and no href attribute.
  (#js-gdpr-consent-banner > div > a)
<a class="grid--cell fo-white js-notice-close"
• This element has insufficient contrast at this
  Recommendation: change background to #353a3f.
  (#announcement-banner > div > div > a)
<a target="_blank" class="s-link js-link js-gp
  data-ga="["rep-recalc-2019"]";&quot;Ann
• This element has insufficient contrast at this
  Recommendation: change text colour to #fcfeff.
  (#nav-questions > span)
<span class="-link--channel-name">Stack Overflo
```



EXPLORER

- OPEN EDITORS
- TESTING-WEB-A11Y
 - node_modules
 - public
 - src
 - components
 - App.css
 - App.js
 - App.test.js
 - index.css
 - index.js
 - logo.svg
 - serviceWorker.js
 - .eslintrc.json
 - .gitignore

You, a few seconds ago | 2 authors (You and others)

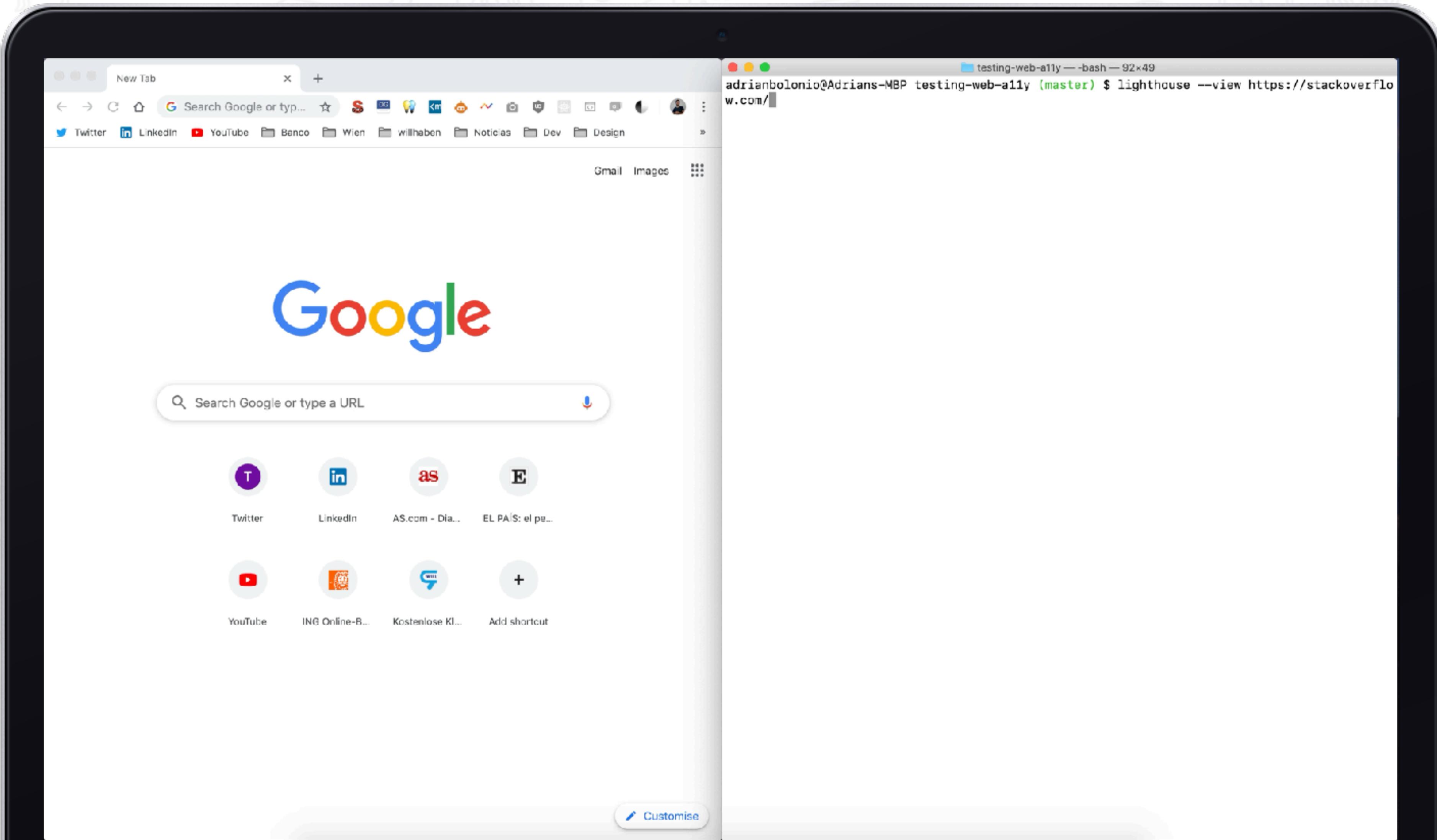
```
{
  "url": "https://www.stackoverflow.com",
  "timeout": 5000,
  "actions": [
    "screen capture captures-stackoverflow-home.png",
    "navigate to https://www.stackoverflow.com/questions",
    "screen capture captures-stackoverflow-questions.png"
  ]
}
```

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Lighthouse

Install it globally in
your machine

You can now run the lighthouse command in the terminal (with --view) and it will immediately open the generated html report.



Automating the accessibility tests of your source code with GitHub Actions

GitHub Actions

GitHub Actions allow you to automate, customize, and execute software development workflows right in your repository with GitHub Actions.

With GitHub Actions you could execute a series of statements and commands after a specific event has occurred, simply put, it's your own **pipeline CI / CD** directly in your repository.

Github defines a **workflow** as a configurable automated process made up of one or more jobs.

The workflow configuration to define events, tasks, and steps to be executed in GitHub Actions are defined using **YAML** files that must be located in the **.github/workflows** folder.

Source: <https://github.com/features/actions>

GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  build:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/checkout@v3
19    - name: Use Node.js ${{ matrix.node-version }}
20      uses: actions/setup-node@v3
21      with:
22        node-version: ${{ matrix.node-version }}
23        cache: "npm"
24    - run: npm ci
25    - run: npm run build --if-present
26    - run: npm test
27
```

```
1 name: Axe
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  axe:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/checkout@v3
19    - name: Use Node.js ${{ matrix.node-version }}
20      uses: actions/setup-node@v3
21      with:
22        node-version: ${{ matrix.node-version }}
23        cache: "npm"
24    - run: npm ci
25    - run: npm run build --if-present
26    - run: npm start & npx wait-on http://localhost:3000 --exit
27    - name: Run axe
28      run: |
29        npm install -g @axe-core/cli
30        axe http://localhost:3000 --exit
```

```
1 name: Lighthouse
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  lighthouse:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/checkout@v3
19    - name: Use Node.js ${{ matrix.node-version }}
20      uses: actions/setup-node@v3
21      with:
22        node-version: ${{ matrix.node-version }}
23        cache: "npm"
24    - run: npm install && npm install -g @lhci/lhci
25    - run: npm run build
26    - name: Run lighthouse
27      run: lhci autorun
```

GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  build:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/checks@v1
19    - name: Use Node.js ${{
20      uses: actions/setup-with:
21        node-version: ${{
22          cache: "npm"
23        - run: npm ci
24        - run: npm run build
25        - run: npm test
26
27
```

The screenshot shows a GitHub pull request interface. At the top, there's a dark header bar with three colored circles (red, yellow, green) on the left. Below it, the main content area has a dark background.

Header: Add GitHub Actions #4
bolonio wants to merge 4 commits into `main` from `add-github-actions`

Commits:

- bolonio force-pushed the `add-github-actions` branch from `e6e36e2` to `b1b5e05` 30 minutes ago
- bolonio added 2 commits 27 minutes ago
 - Remove element with wrong role (X 7eeee2d)
 - Update lighthouse config (X 95db275)

Add more commits by pushing to the `add-github-actions` branch on `bolonio/a11y-github-actions`.

Check Status: Some checks were not successful (3 failing and 1 successful checks)

- Axe / axe (16.x) (pull_request) Failing after 1m — axe (16.x) (Details)
- Pa11y / pa11y (16.x) (pull_request) Failing after 1m — pa11y (16.x) (Details)
- Unit tests / build (16.x) (pull_request) Failing after 49s — build (16.x) (Details)
- Lighthouse / lighthouse (16.x) (pull_request) Successful in 1m (Details)

This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge Options: Merge pull request ▾ You can also open this in GitHub Desktop or view command line instructions.

Comment Area: Write Preview Leave a comment Attach files by dragging & dropping, selecting or pasting them.

Bottom Buttons: Close pull request Comment

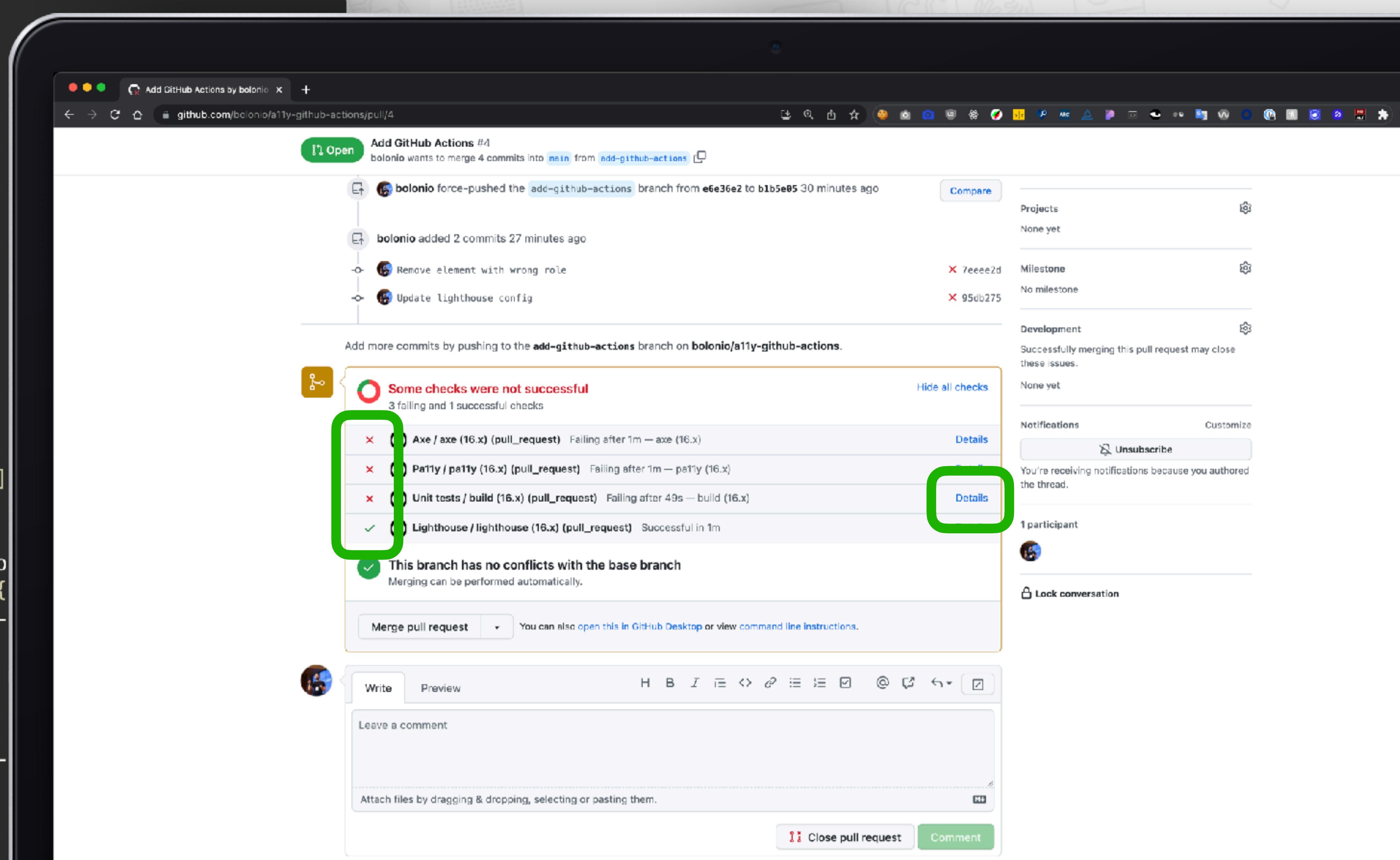
GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  build:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/checks@v1
19    - name: Use Node.js ${{
20      uses: actions/setup-with:
21        node-version: ${{
22          cache: "npm"
23        - run: npm ci
24        - run: npm run build -
25        - run: npm test
26
27
```

A screenshot of a GitHub pull request interface. The title of the pull request is "Add GitHub Actions #4" and it says "bolonio wants to merge 4 commits into main from add-github-actions". The commit history shows two commits from bolonio: one force-push and one adding two commits. The second commit contains two failing checks: "Axe / axe (16.x) (pull_request)" and "Pa11y / pa11y (16.x) (pull_request)". Both are failing after 1m. There is also a failing "Unit tests / build (16.x) (pull_request)" after 49s and a successful "Lighthouse / lighthouse (16.x) (pull_request)" in 1m. A green box highlights the failing checks. Below the checks, a message says "This branch has no conflicts with the base branch" and "Merging can be performed automatically." At the bottom, there is a "Merge pull request" button and a comment section.

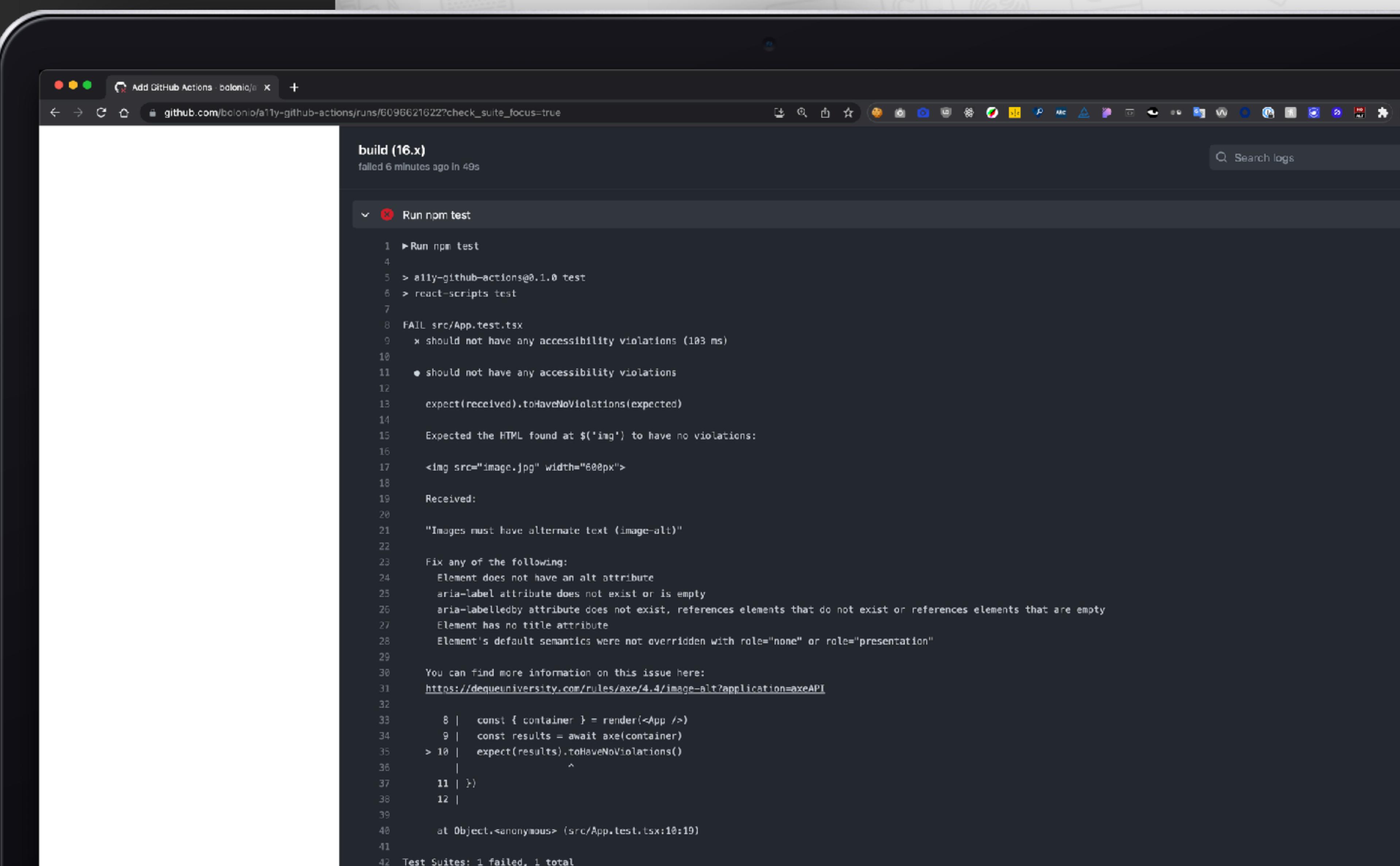
GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10  build:
11    runs-on: ubuntu-latest
12
13  strategy:
14    matrix:
15      node-version: [16.x]
16
17  steps:
18    - uses: actions/check-dependencies@v1
19    - name: Use Node.js ${{ matrix.node-version }}
20      uses: actions/setup-node@v2
21      with:
22        node-version: ${{ matrix.node-version }}
23        cache: "npm"
24    - run: npm ci
25    - run: npm run build -c --prod
26    - run: npm test
```



GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10 build:
11   runs-on: ubuntu-latest
12
13   strategy:
14     matrix:
15       node-version: [16.x]
16
17   steps:
18     - uses: actions/checko
19     - name: Use Node.js ${{
20       uses: actions/setup-
21       with:
22         node-version: ${{
23           cache: "npm"
24     - run: npm ci
25     - run: npm run build -
26     - run: npm test
27
```



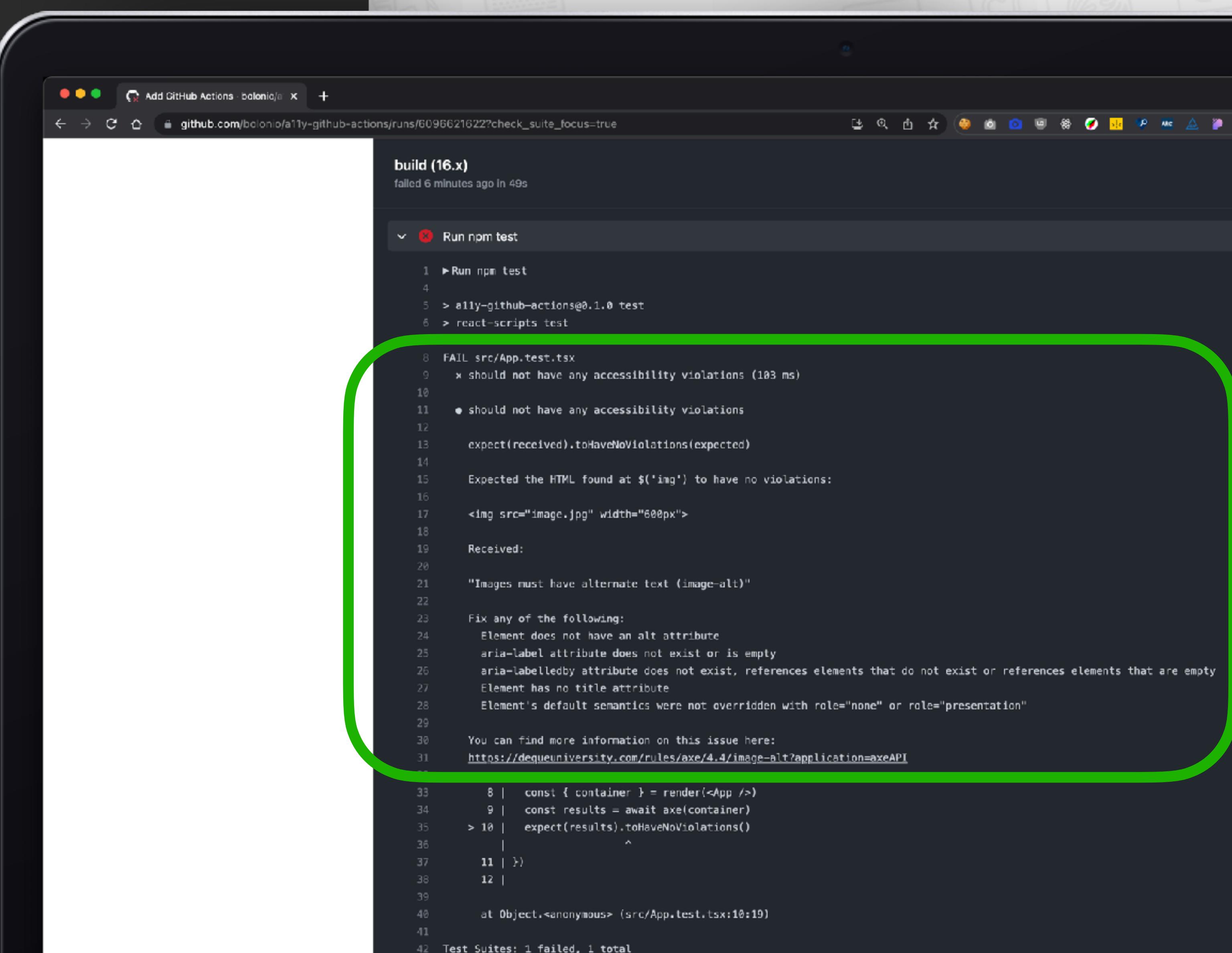
The screenshot shows a GitHub Actions run log for a job named 'build (16.x)'. The job failed 6 minutes ago in 49s. The log output shows an accessibility violation for an image element:

```
build (16.x)
failed 6 minutes ago in 49s

Run npm test
  1 ► Run npm test
  4
  5 > ally-github-actions@0.1.0 test
  6 > react-scripts test
  7
  8 FAIL src/App.test.tsx
  9   ✕ should not have any accessibility violations (103 ms)
 10
 11   ● should not have any accessibility violations
 12
 13     expect(received).toHaveNoViolations(expected)
 14
 15     Expected the HTML found at $('img') to have no violations:
 16
 17     
 18
 19     Received:
 20
 21     "Images must have alternate text (image-alt)"
 22
 23     Fix any of the following:
 24       Element does not have an alt attribute
 25       aria-label attribute does not exist or is empty
 26       aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
 27       Element has no title attribute
 28       Element's default semantics were not overridden with role="none" or role="presentation"
 29
 30     You can find more information on this issue here:
 31     https://dequeuniversity.com/rules/axe/4.4/image-alt?application=axeAPI
 32
 33     8 |   const { container } = render(<App />)
 34     9 |   const results = await axe(container)
 35     > 10 |   expect(results).toHaveNoViolations()
 36     |
 37     11 |   ^
 38
 39     12 |
 40
 41     at Object.<anonymous> (src/App.test.tsx:10:19)
 42
 43 Test Suites: 1 failed, 1 total
```

GitHub Actions

```
1 name: Unit tests
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10 build:
11   runs-on: ubuntu-latest
12
13 strategy:
14   matrix:
15     node-version: [16.x]
16
17 steps:
18   - uses: actions/checko
19   - name: Use Node.js ${{
20     uses: actions/setup-
21     with:
22       node-version: ${{
23         cache: "npm"
24       - run: npm ci
25       - run: npm run build -.
26       - run: npm test
27 }}
```



The screenshot shows a GitHub Actions run log for a job named 'build (16.x)'. The log indicates a failure 6 minutes ago in 49s. The 'Run npm test' step is expanded, showing the command 'npm test' running. The log then displays an error from the 'ally-github-actions@0.1.0 test' step, specifically regarding an accessibility violation in 'src/App.test.tsx'. The error message states: 'FAIL src/App.test.tsx' and 'x should not have any accessibility violations (103 ms)'. It then lists several violations found in the HTML: 'should not have any accessibility violations', 'expect(received).toHaveNoViolations(expected)', 'Expected the HTML found at \$('img') to have no violations:', and 'img src="image.jpg" width="600px"'. The 'Received:' section shows the expected result: 'Images must have alternate text (image-alt)'. The 'Fix any of the following:' section lists several potential fixes for accessibility issues. A green box highlights the first violation message: 'x should not have any accessibility violations (103 ms)'.

```
build (16.x)
failed 6 minutes ago in 49s

Run npm test
  1 ► Run npm test
  4
  5 > ally-github-actions@0.1.0 test
  6 > react-scripts test

  8 FAIL src/App.test.tsx
  9   x should not have any accessibility violations (103 ms)
10
11   ● should not have any accessibility violations
12
13     expect(received).toHaveNoViolations(expected)
14
15     Expected the HTML found at $('img') to have no violations:
16
17     
18
19     Received:
20
21     "Images must have alternate text (image-alt)"
22
23     Fix any of the following:
24       Element does not have an alt attribute
25       aria-label attribute does not exist or is empty
26       aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
27       Element has no title attribute
28       Element's default semantics were not overridden with role="none" or role="presentation"
29
30     You can find more information on this issue here:
31     https://dequeuniversity.com/rules/axe/4.4/image-alt?application=axeAPI
32
33     8 |   const { container } = render(<App />)
34     9 |   const results = await axe(container)
35     > 10 |   expect(results).toHaveNoViolations()
36     |
37     11 |   ^
38     12 |
39
40     at Object.<anonymous> (src/App.test.tsx:10:19)
41
42 Test Suites: 1 failed, 1 total
```

GitHub Actions

```
1 name: Lighthouse
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10 lighthouse:
11   runs-on: ubuntu-latest
12
13 strategy:
14   matrix:
15     node-version: [16.x]
16
17 steps:
18   - uses: actions/checkout@v2
19   - name: Use Node.js ${{ matrix.node-version }}
20     uses: actions/setup-node@v2
21     with:
22       node-version: ${{ matrix.node-version }}
23       cache: "npm"
24   - run: npm install && npm run build
25   - name: Run lighthouse
26     run: lhci autorun
27
28
```

A screenshot of a GitHub pull request interface. The title of the pull request is "Add GitHub Actions #4" and it says "bolonio wants to merge 4 commits into main from add-github-actions". The commit history shows two commits from bolonio: one force-push and one adding two commits. The second commit contains two failing checks: "Axe / axe (16.x) (pull_request)" and "Pa11y / pa11y (16.x) (pull_request)". Both of these are highlighted with red X icons. Below them, the "Lighthouse / lighthouse (16.x) (pull_request)" check is shown as successful, indicated by a green checkmark icon. This successful check is highlighted with a green rounded rectangle. A tooltip below the successful check states: "This branch has no conflicts with the base branch. Merging can be performed automatically." At the bottom of the pull request interface, there is a "Merge pull request" button and a comment input field with a "Leave a comment" placeholder.

GitHub Actions

```
1 name: Lighthouse
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10 lighthouse:
11   runs-on: ubuntu-latest
12
13   strategy:
14     matrix:
15       node-version: [16.x]
16
17   steps:
18     - uses: actions/checkout@v3
19     - name: Use Node.js ${{ matrix.node-version }}
20       uses: actions/setup-node@v3
21       with:
22         node-version: ${{ matrix.node-version }}
23         cache: "npm"
24     - run: npm install && npm run build
25     - name: Run lighthouse
26       run: lhci autorun
27
28
```

The screenshot shows a GitHub Actions run details page for a job named 'lighthouse (16.x)'. The job succeeded 10 minutes ago in 1m 27s. The steps listed are: Set up job, Run actions/checkout@v3, Use Node.js 16.x, Run npm install && npm install -g @lhci/cli@0.8.x, Run nom run build, and Run lighthouse. The 'Run lighthouse' step is expanded, showing the command 'lhci autorun' running successfully. A green box highlights the final log output:

```
20 Uploading median LHR of http://localhost:35611/index.html...success!
21 Open the report at https://storage.googleapis.com/lighthouse-infrastructure.appspot.com/reports/1650464328137-90557.report.html
22 No GitHub token set, skipping GitHub status check.
```

Github Actions

```
1 name: Lighthouse
2
3 on:
4   push:
5     branches: [main]
6   pull_request:
7     branches: [main]
8
9 jobs:
10 lighthouse:
11   runs-on: ubuntu-latest
12
13   strategy:
14     matrix:
15       node-version: [16.x]
16
17 steps:
18   - uses: actions/checkout@v2
19   - name: Use Node.js ${{ matrix.node-version }}
20     uses: actions/setup-node@v2
21     with:
22       node-version: ${{ matrix.node-version }}
23       cache: "npm"
24   - run: npm install && npm run build
25   - run: npm run build
26   - name: Run lighthouse
27     run: lhci autorun
28
```

Lighthouse Report

storage.googleapis.com/lighthouse-infrastructure.appspot.com/reports/1650464328137-90557.report.html#accessibility

http://localhost:35611/index.html

96 74 100 92 PWA

74

Accessibility

These checks highlight opportunities to [improve the accessibility of your web app](#). Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

Names and labels – 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.

▲ **Image elements do not have `alt` attributes**

Informative elements should aim for short, descriptive alternate text. Decorative elements can be ignored with an empty alt attribute. [Learn more](#).

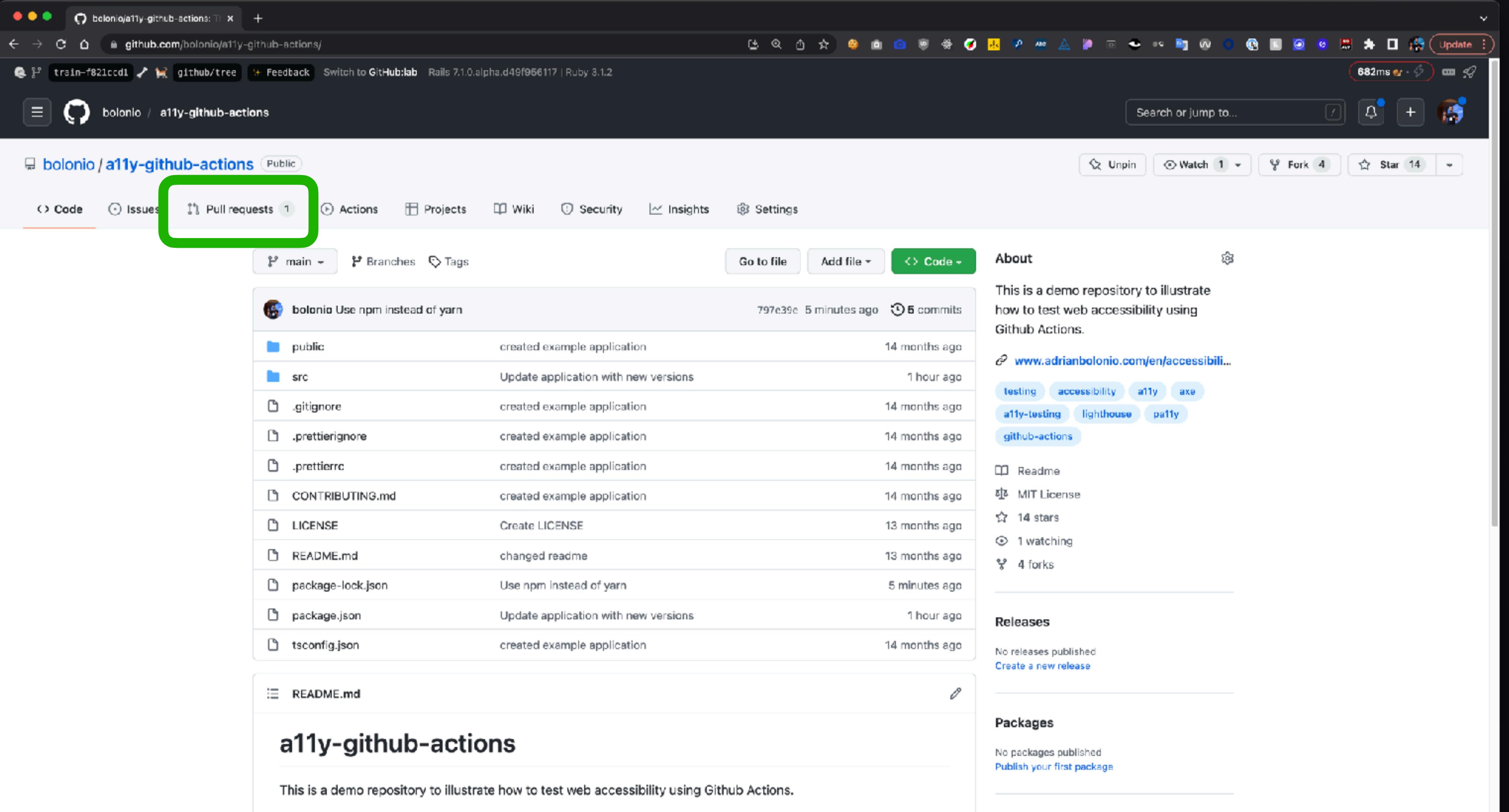
Failing Elements

img
``

Additional items to manually check (10) – These items address areas which an automated testing tool cannot cover. [Learn more in our guide on conducting an accessibility review](#).

Passed audits (5)

<https://github.com/bolonio/a11y-github-actions/>

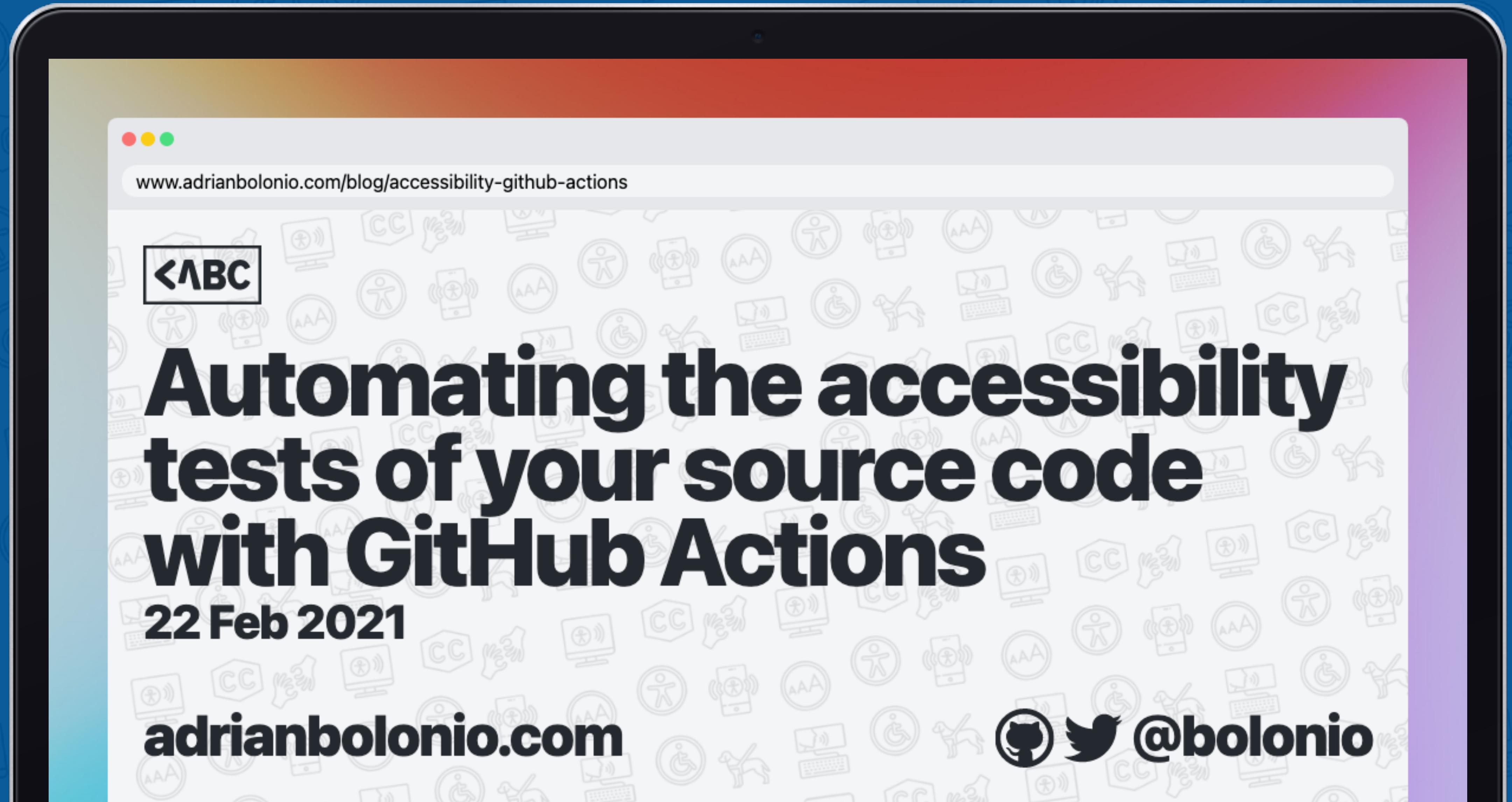


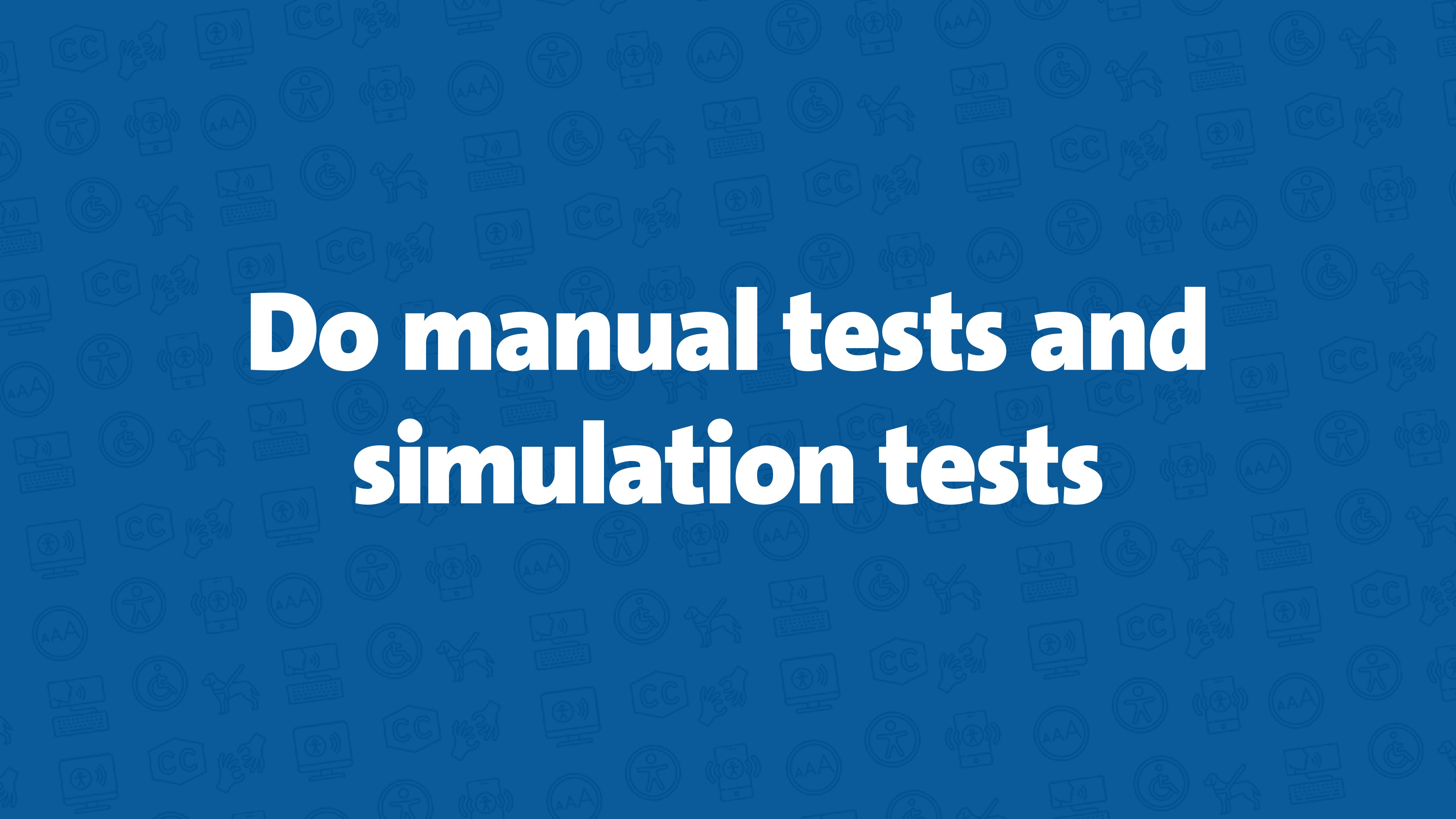
The screenshot shows a GitHub repository page for 'bolonio/a11y-github-actions'. The 'Pull requests' tab is highlighted with a green box. The page displays a list of commits from a single author, showing the creation of a basic application structure and configuration files. The commits are as follows:

Commit	Message	Date
797e39e	Use npm instead of yarn	5 minutes ago
public	created example application	14 months ago
src	Update application with new versions	1 hour ago
.gitignore	created example application	14 months ago
.prettierrc	created example application	14 months ago
CONTRIBUTING.md	created example application	14 months ago
LICENSE	Create LICENSE	13 months ago
README.md	changed readme	13 months ago
package-lock.json	Use npm instead of yarn	5 minutes ago
package.json	Update application with new versions	1 hour ago
tsconfig.json	created example application	14 months ago

The repository has 14 stars, 4 forks, and 1 watching. It includes sections for About, Releases, Packages, and a README file titled 'a11y-github-actions'.

www.adrianbolonio.com/blog/accessibility-github-actions





Do manual tests and simulation tests

Screen Readers

Screen readers are software programs that allow blind or visually impaired users to read the text that is displayed on the computer screen with a speech synthesizer.



Voice Over



Narrator



Orca



Talkback

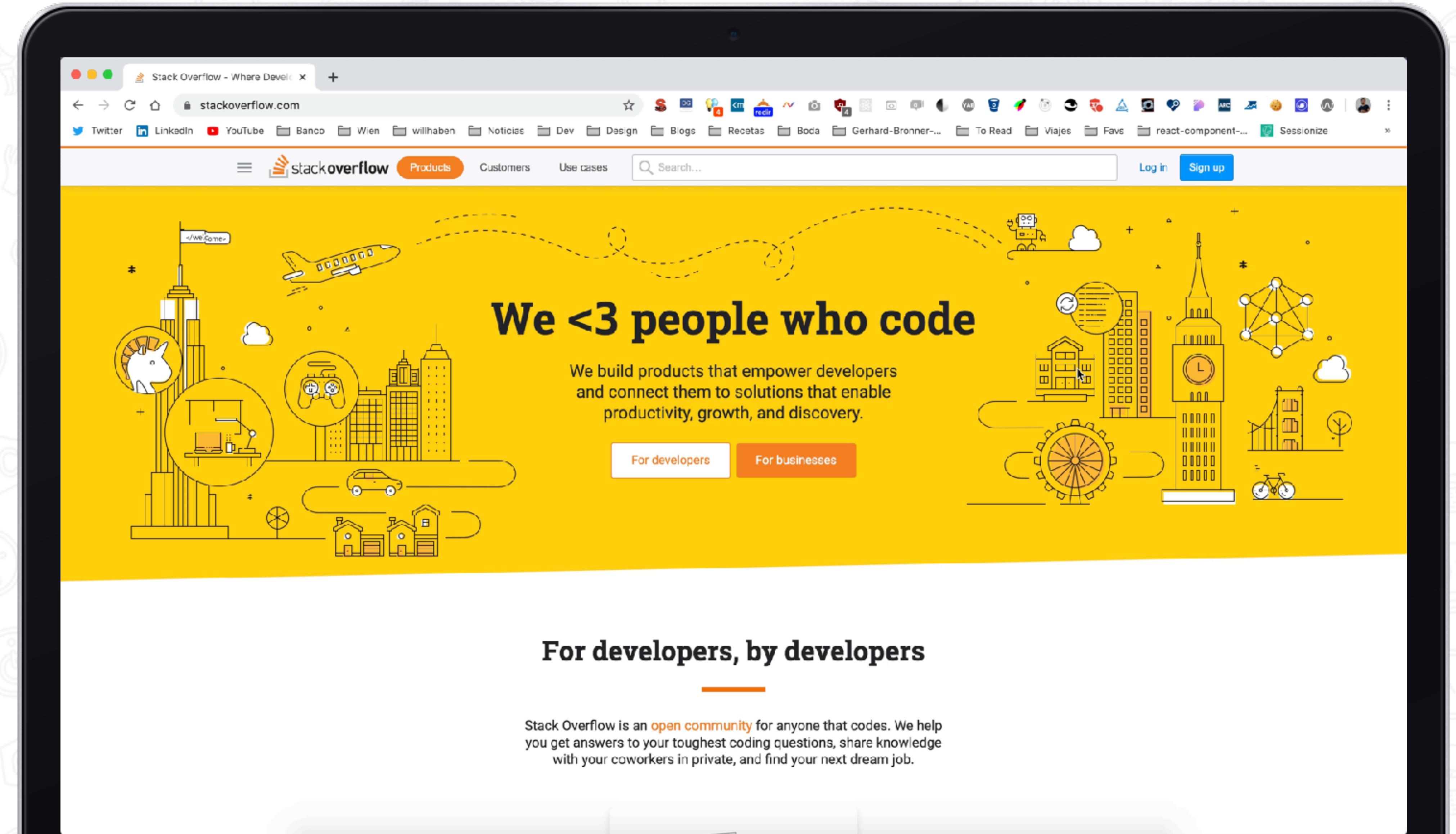
Other commercial screen readers: NVDA, JAWS

Testing a11y manually

- **axe extension** <https://www.deque.com/axe/>
- **ARC Toolkit** <https://www.paciellogroup.com/toolkit/>
- **Accessibility Insights** <https://accessibilityinsights.io/>
- **WAVE** <https://wave.webaim.org/>
- **Browser development tools**

axe extension

<https://www.deque.com/axe/>



Stack Overflow is an [open community](#) for anyone that codes. We help you get answers to your toughest coding questions, share knowledge with your coworkers in private, and find your next dream job.

ARC Toolkit

<https://www.paciellogroup.com/toolkit/>

The screenshot shows the Stack Overflow homepage with a yellow background. In the center, the text "We <3 people who code" is displayed in a large, bold, black font. Below this, a smaller text reads: "We build products that empower developers and connect them to solutions that enable productivity, growth, and discovery." At the bottom of this section are two buttons: "For developers" (white background) and "For businesses" (orange background). The background features a collage of various icons related to technology, development, and business, such as a city skyline, a plane, a unicorn, a car, a gear, and a network graph.

We <3 people who code

We build products that empower developers and connect them to solutions that enable productivity, growth, and discovery.

For developers For businesses

For developers, by developers

Stack Overflow is an **open community** for anyone that codes. We help you get answers to your toughest coding questions, share knowledge with your coworkers in private, and find your next dream job.

Accessibility Insights

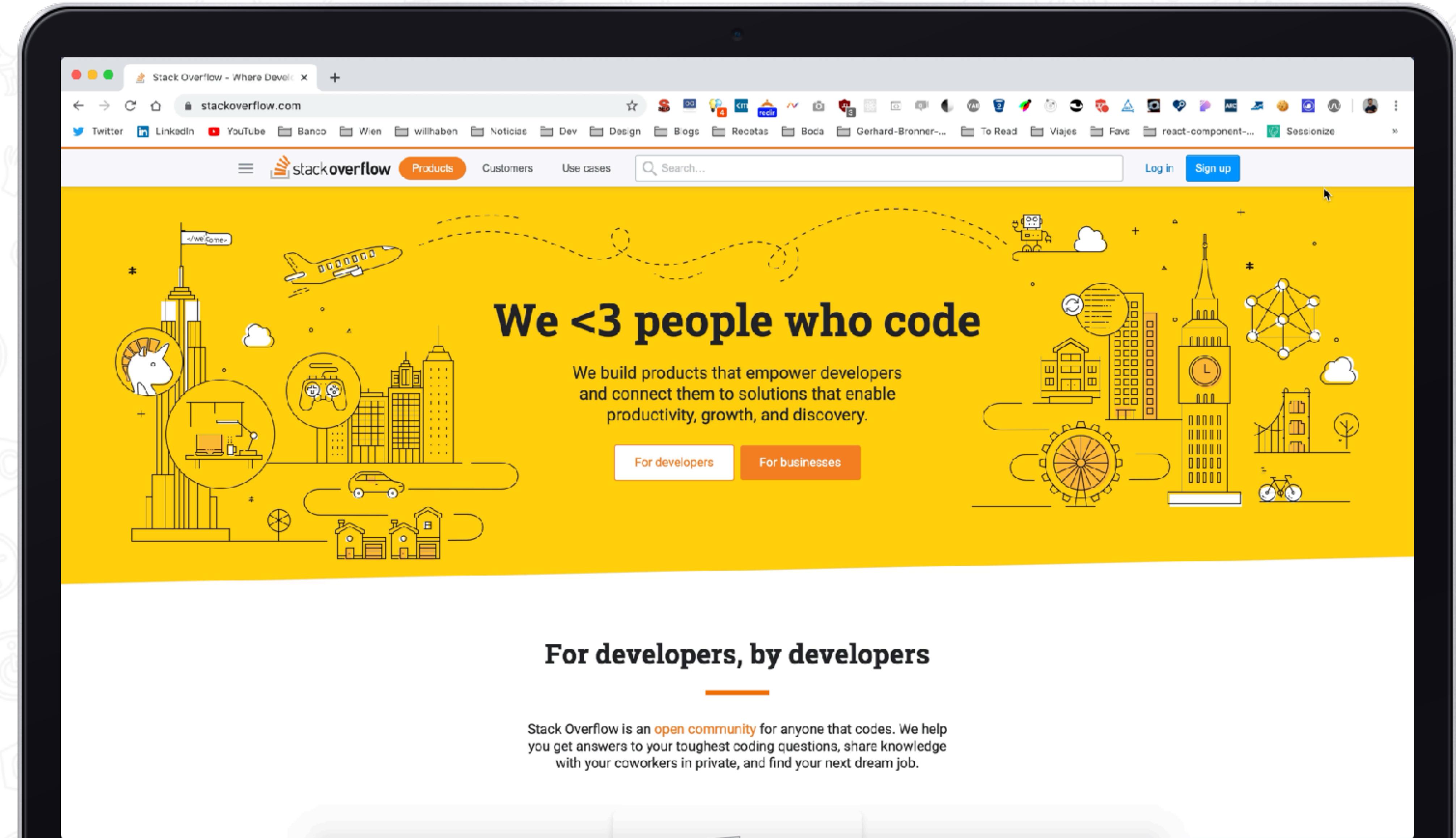
<https://accessibilityinsights.io/>

The screenshot shows the homepage of Stack Overflow. The background is a vibrant yellow. On the left, there's an illustration of a city skyline with various icons like a unicorn, a flag labeled '</welcome>', a plane, a video game controller, a car, and houses. On the right, there's another illustration featuring a robot, a cloud, a large building with a clock tower (resembling Big Ben), a network graph, a gear, and a bicycle. In the center, the text "We <3 people who code" is displayed in a bold, dark font. Below it, a smaller text reads: "We build products that empower developers and connect them to solutions that enable productivity, growth, and discovery." At the bottom, two buttons are visible: "For developers" (white background) and "For businesses" (orange background). At the very bottom of the page, there's a section titled "For developers, by developers" with a short explanatory text about the community.

Stack Overflow is an **open community** for anyone that codes. We help you get answers to your toughest coding questions, share knowledge with your coworkers in private, and find your next dream job.

WAVE (web accessibility evaluation tool)

<https://wave.webaim.org/>



Chrome Development Tools

Vision deficiencies emulation

The screenshot shows a laptop screen with the Stack Overflow homepage loaded in a browser window. The developer tools are open, with the 'Elements' tab selected. The right panel displays the page's HTML code. A green box highlights the 'Rendering' tab in the bottom right corner of the developer tools, which contains options for emulating vision deficiencies such as 'Blurred vision' and 'Color gamut'. The background features a repeating pattern of various accessibility-related icons.

Firefox Development Tools

Vision deficiencies simulation

The screenshot shows the Firefox Developer Tools interface with a green box highlighting the Accessibility panel. The Accessibility panel is open, displaying a dropdown menu under the 'Role' section. The 'Tritanopia (no blue)' option is selected, indicated by a checked checkbox. Other options listed include 'None', 'Protanopia (no red)', 'Deutanopia (no green)', 'Achromatopsia (no color)', and 'Contrast loss'. The 'document' node is selected in the main pane. The status bar at the bottom of the developer tools window shows two warning messages: 'Some cookies are misusing the recommended "SameSite" attribute' and 'Cookie "fkey" has been rejected because it is already expired.'

Stack Overflow - Where Developers Learn, Share, & Build Careers

Find the best answer to your technical question, help others answer theirs

Join the community

Want a secure, private space for your technical knowledge?

Get started

For large organizations

For small teams

Every developer has a tab open to Stack Overflow

100+ million monthly visitors to Stack Overflow & Slack Exchange

45.1+ billion times a developer got help since 2008

179% ROI from companies using Stack Overflow for Teams

5,000+ Stack Overflow for Teams instances active every day

Check for issues: None Simulate Tritanopia (no blue) Show Tabbing Order

Role

document

None

Protanopia (no red)

Deutanopia (no green)

Tritanopia (no blue)

Achromatopsia (no color)

Contrast loss

Documentation...

document

name: "Stack Overflow - Where Developers Learn, S..."

role: "document"

actions: []

value: ""

DOMNode: #document

description: ""

keyboardShortcut: ""

childCount: 6

indexInParent: 0

states: []

relations: []

attributes: []

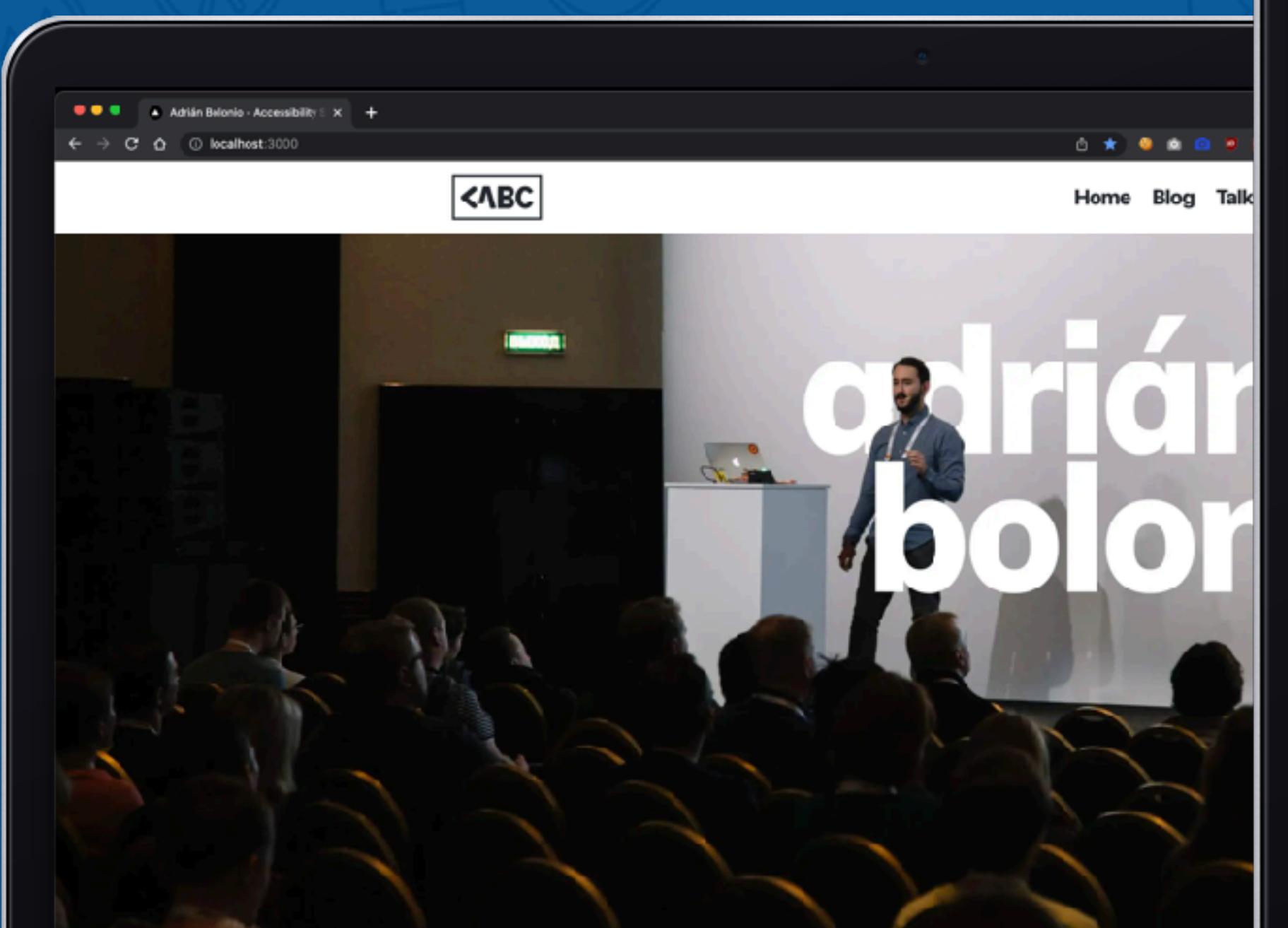
Some cookies are misusing the recommended "SameSite" attribute

Cookie "fkey" has been rejected because it is already expired.

Testing Web Accessibility

- Test your code while you develop
- Use the browser development tools
- Automate your accessibility tests
- Do manual tests and simulation tests

www.adrianbolonio.com



Hello

Hi, my name is Adrián Bolonio. I currently work as an Accessibility Software Engineering a talented, diverse, and motivated team that will work on making GitHub and the Internet a

Blog

Writing accessibility unit tests with cypress and axe
10 Jun 2022 [Accessibility](#) [React](#)
Automatizar tus test de accesibilidad con librerías como axe, pa11y, lighthouse, o test unitarios directamente en tu repositorio de GitHub es realmente fácil con GitHub Actions.

Writing accessibility unit tests with playwright and axe
1 Feb 2022 [Accessibility](#) [React](#)
Automatizar tus test de accesibilidad con librerías como axe, pa11y, lighthouse, o test unitarios directamente en tu repositorio de GitHub es realmente fácil con GitHub Actions.

Automating the accessibility tests of your source code with GitHub Actions
22 Feb 2021 [Accessibility](#) [React](#)
Automatizing your accessibility tests with libraries like axe, pa11y, lighthouse, or unit tests directly in your GitHub repository is really easy with GitHub Actions. But first, let's define what GitHub Actions are and their workflows.

Creating a React library based on the collection of accessible PUXL SVG icons
25 May 2020 [Accesibilidad](#) [React](#)
I decided to create a React library based on the collection of accessible PUXL icons library, an open source collection of more than 300 SVG icons custom tailored for PUXL framework, each with its own accessible title and description.

Introduction to Web Accessibility

<https://www.edx.org/course/web-accessibility-introduction>

The screenshot shows the edX course landing page for 'Introduction to Web Accessibility'. The page features the edX logo and navigation links for Courses, Programs & Degrees, Schools & Partners, and edX for Business. A blue banner below the header reads 'Change. We like how that sounds. Learn more.' Below this, a breadcrumb trail shows 'Catalog > Computer Science Courses'. The main title 'Introduction to Web Accessibility' is displayed in bold black text. A brief description follows: 'Get a strong foundation in digital accessibility to make your websites and apps work well for people with disabilities, meet international standards, and provide a better user experience for everyone.' To the right of the text is a small video thumbnail showing two people in a library setting. The W3C logo is present. A callout box indicates 'There is one session available:' with dates 'Starts Mar 16' and 'Ends Apr 1'. Below this, it says '20,513 already enrolled!' and a red button invites users to 'Enrolled: Go to course now'. At the bottom, there's a link to 'About this course'.



“It’s not just about disabled users being able to access your website, it’s about everyone being able to access your website.”

- Trenton Moss



Accessibility is NOT a feature

**We don't develop digital
products for companies, we
develop them for other humans**

Thanks

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