

testing accessibility

browsers

- Firefox Developer Edition
- Chrome DevTools (Audits, Lighthouse)



moz://a

Firefox

Pocket

Internet Health

Technology

About Us

Get Involved



Desktop

Mobile

Extensions

Support

Blog

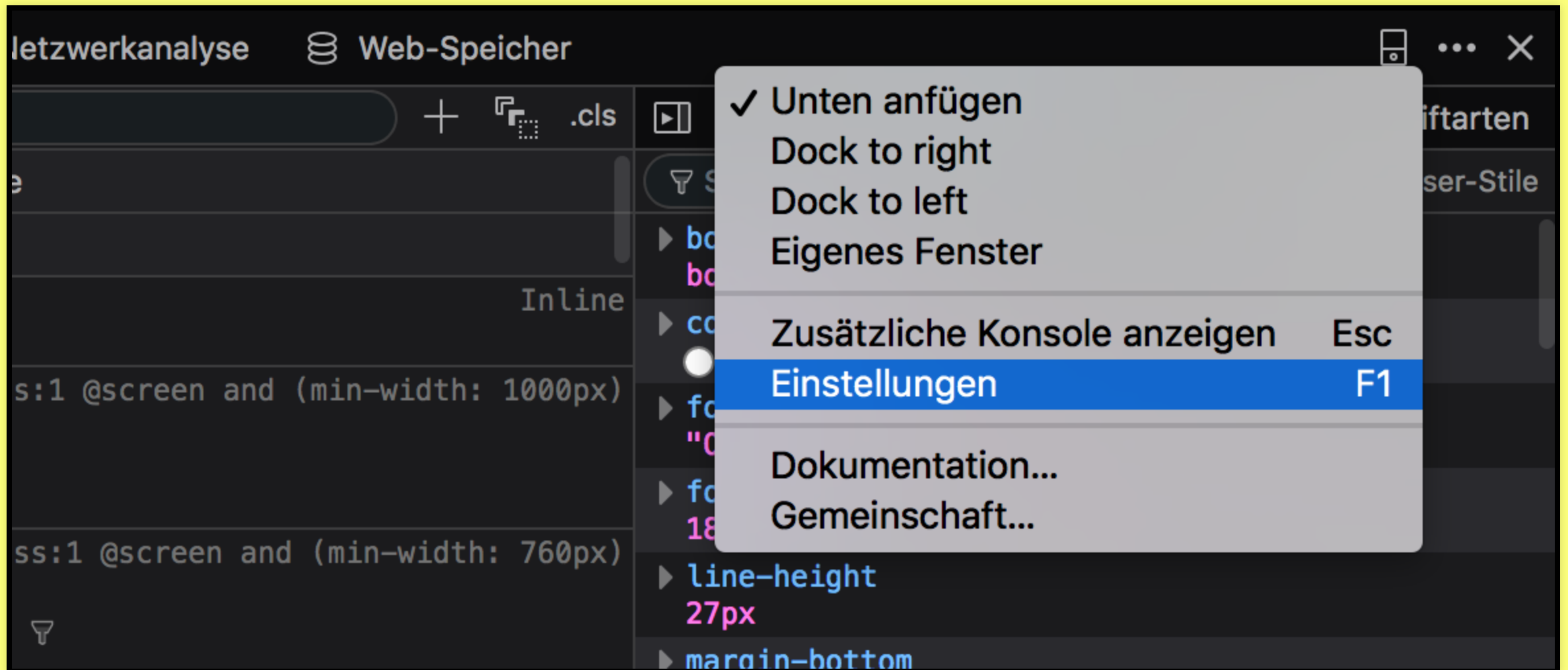
Firefox Quantum: Developer Edition

Welcome to your new favorite browser. Get the latest features, fast performance, and the development tools you need to build for the open web.

↓ **Firefox Developer Edition**

[Firefox Privacy Notice](#)

Firefox Developer Edition automatically sends feedback to Mozilla. [Learn more](#) ▶





Inspektor



Konsole



Debugger



Stilbearbeitung

Standard-Entwicklerwerkzeuge

- ☒ Stilbearbeitung
- ☐ Shader-Bearbeitung
- ☐ Canvas
- ☒ Laufzeitanalyse
- ☒ Speicher
- ☒ Netzwerkanalyse
- ☒ Web-Speicher
- ☐ Web-Audio
- ☐ JS-Umgebung
- ☐ DOM
- ☐ Barrierefreiheit

Debugger

{ } Stilbearbeitung

⌚ Laufzeitanalyse

📁 Speicher

🔌 Netzwerkanalyse

🌐 Web-Speicher

♿ **Barrierefreiheit**



Barrierefreiheitsfunktionen sind standardmäßig deaktiviert, da sie sich negativ auf die Leistung auswirken. Ziehen Sie das Deaktivieren der Barrierefreiheitsfunktionen in Erwägung, bevor Sie andere Ansichten der Entwicklerwerkzeuge verwenden.

Barrierefreiheitsfunktionen aktivieren

Inspektor

Konsole

Debugger

{ }

Stilbearbeitung

⌚

Laufzeitanalyse

📁

Speicher

≡

Netzwerkanalyse

📁

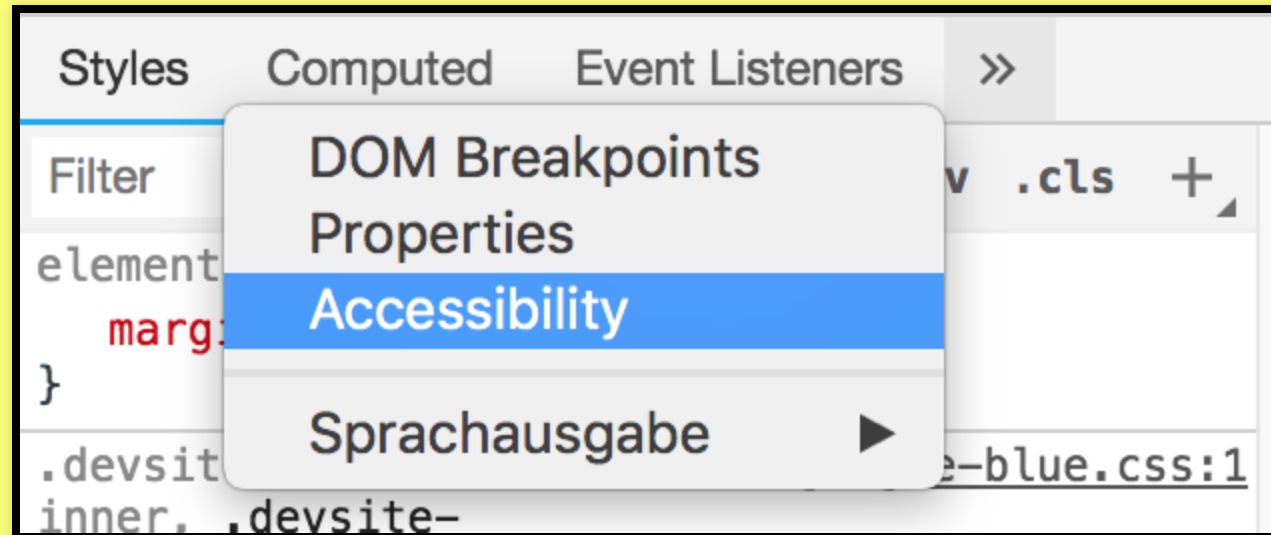
Web-Speicher

🚧

Barrierefreiheit

Barrierefreiheitsfunktionen deaktivieren

Role	Name	Eigenschaften
▼ document:	"Firefox Developer Edition"	name: "Mozilla"
▼ header:	""	role: "heading"
▼ section:	""	▶ actions: {}
▼ heading:	"Mozilla"	value: ""
▼ link:	"Mozilla"	DOMNode: h2.masthead-logo 📍
graphic:	"Mozilla"	description: ""
text leaf:	" "	keyboardShortcut: ""
▶ section:	""	childCount: 1
▶ section:	""	indexInParent: 0
		▶ states: {}
		▶ attributes: {}



Styles

Computed

Accessibility

>>

▼ Accessibility Tree

▼ WebArea "Lighthouse | Tools for Web Developers | Goo

▼ GenericContainer

▼ GenericContainer

▼ GenericContainer

▼ GenericContainer

▼ navigation

▼ list

▼ listitem

> link "Overview"

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

▼ Name: ""

aria-labelledby: Not specified

aria-label: Not specified

title: Not specified

Role: listitem

Performance

Memory

Application

Security

Audits

JavaScript Profiler

File ▼ 3G w/ CPU slowdown ▼ Clear storage ▼



Audits help you identify and fix common problems that affect your site's performance, accessibility, and user experience. [Learn more](#)

Perform an audit...



Audits to perform

- ☐ **Performance**
How long does this app take to show content and become usable
- ☐ **Progressive Web App**
Does this page meet the standard of a Progressive Web App
- ☐ **Best practices**
Does this page follow best practices for modern web development
- ☒ **Accessibility**
Is this page usable by people with disabilities or impairments
- ☐ **SEO**
Is this page optimized for search engine results ranking

Run audit

Cancel

Auditing developers.google.com...



💡 1MB takes a minimum of 5 seconds to download on a typical 3G connection
[Source: WebPageTest and DevTools 3G definition].

Cancel

Perform an audit...

17:13:15 - developers.google. | Emulation: Mobile | 3G w/ CPU slowdown | Clear storage

Accessibility

50

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.

Elements Use Attributes Correctly

These are opportunities to improve the configuration of your HTML elements.

▶ Image elements do not have [alt] attributes

✖

Elements Have Discernible Names

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.

▶ Buttons do not have an accessible name

✖

▶ Links do not have a discernible name

✖

Elements Describe Contents Well

These are opportunities to make your content easier to understand for a user of assistive technology, like a screen reader.

▶ <frame> or <iframe> elements do not have a title

✖

Color Contrast Is Satisfactory

These are opportunities to improve the legibility of your content.

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

✖

▶ 9 Passed Audits

▶ 21 Not Applicable Audits

▶ Additional items to manually check

Generated by **Lighthouse** 2.9.1 on Jul 17, 2018, 5:13 PM GMT+2 | [File an issue](#)

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.

50

Elements Use Attributes Correctly

These are opportunities to improve the configuration of your HTML elements.

▼ 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](#).

×

▼ View failing elements

`img.devsite-user-avatar.gc-analytics-event`

`img.devsite-footer-promo-icon`

`img.devsite-footer-promo-icon`

`img.devsite-footer-promo-icon`

`img.devsite-footer-promo-icon`

online / standalone

- Lighthouse
- webhint (Sonarwhal)
- sitespeed.io
- aXe
- wave

Try Lighthouse



Take [Lighthouse](#) for a spin. Enter the URL of any site to get started.

status Evaluating: Avoids WebSQL DB
status Evaluating: Avoids requesting the notification permission on page load
status Evaluating: Allows users to paste into password fields
status Evaluating: Uses HTTP/2 for its own resources
status Evaluating: Uses passive listeners to improve scrolling performance
status Evaluating: Document has a meta description
status Evaluating: Page has successful HTTP status code
status Evaluating: Document uses legible font sizes
status Evaluating: Links have descriptive text
status Evaluating: Page isn't blocked from indexing
status Evaluating: robots.txt is valid
status Evaluating: Document has a valid `href`
status Evaluating: Document avoids plugins
status Evaluating: Document has a valid `rel`
status Evaluating: Page is mobile friendly
status Evaluating: Structured data is valid
status Generating results...
ChromeLauncher Killing Chrome instance 4707
Printer html output written to ./home/chrome/reports/report.153208320953
CLI Protip: Run lighthouse with `--view` to immediately open the HTML report in your browser



<https://google.com>



Start over ↺

Open report ➤

Results powered by Lighthouse

developers.google.com/web/tools/lighthouse/run

<https://www.google.com/>

Jul 19, 2018, 5:28 PM GMT+2

Emulated Nexus 5X, Simulated Fast 3G network



94

Performance

58

Progressive Web App

90

Accessibility

93

Best Practices

90

SEO

Score scale: 0-44 45-74 75-100

Performance

94

Metrics

First Contentful Paint

1.740 ms ✓

First Meaningful Paint

1.760 ms ✓

Speed Index

1.920 ms ✓

First CPU Idle

3.770 ms ✓

Time to Interactive

4.030 ms ✓

Estimated Input Latency

31 ms ✓

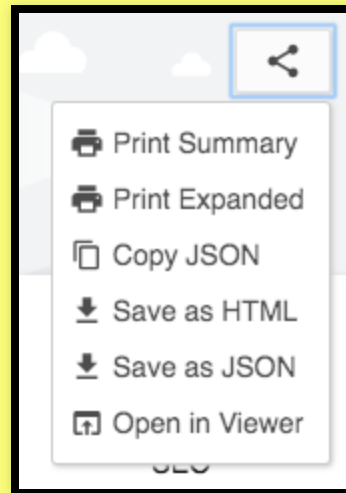
Values are estimated and may vary.



Opportunities

These are opportunities to speed up your application by optimizing the following resources.

Resource to optimize	Estimated Savings
1 Avoid multiple, costly round trips to any origin	0,3 s



Accessibility

90

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Color Contrast Is Satisfactory

These are opportunities to improve the legibility of your content.

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



Meta Tags Used Properly

These are opportunities to improve the user experience of your site.

- 1 [user-scalable="no"] is used in the <meta name="viewport"> element or the [maximum-scale] attribute is less than 5.



Additional items to manually check

10 audits ^

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

- 1 The page has a logical tab order
- 2 Interactive controls are keyboard focusable
- 3 The user's focus is directed to new content added to the page
- 4 User focus is not accidentally trapped in a region
- 5 Custom controls have associated labels
- 6 Custom controls have ARIA roles
- 7 Visual order on the page follows DOM order
- 8 Offscreen content is hidden from assistive technology
- 9 Headings don't skip levels
- 10 HTML5 landmark elements are used to improve navigation

```
$ yarn global add lighthouse  
$ npm i -g lighthouse
```

```
$ lighthouse https://google.com --view
```



<https://www.google.com/>

Jul 19, 2018, 5:28 PM GMT+2

Emulated Nexus 5X, Simulated Fast 3G network



Performance



Progressive Web App



Accessibility



Best Practices



SEO

Score scale: 0-44 45-74 75-100

Performance



Metrics

First Contentful Paint

1.740 ms ✓

First Meaningful Paint

1.760 ms ✓

Speed Index

1.920 ms ✓

First CPU Idle

3.770 ms ✓

Time to Interactive

4.030 ms ✓

Estimated Input Latency

31 ms ✓

Values are estimated and may vary.



Opportunities

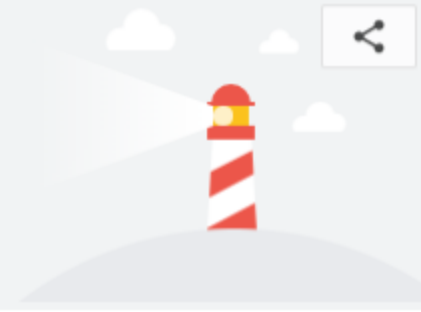
```
$ lighthouse --list-all-audits
{
  "audits": [
    "accessibility/accesskeys",
    "accessibility/aria-allowed-attr",
    "accessibility/aria-required-attr",
    "accessibility/aria-required-children",
    "accessibility/aria-required-parent",
    "accessibility/aria-roles",
    "accessibility/aria-valid-attr-value",
    "accessibility/aria-valid-attr",
    "accessibility/audio-caption",
    "accessibility/button-name",
    "accessibility/bypass",
    "accessibility/color-contrast",
```

```
$ lighthouse https://google.com --only-categories accessibility --view
```


<https://www.google.com/>

Jul 22, 2018, 7:30 PM GMT+2

Emulated Nexus 5X, Simulated Fast 3G network



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.



Color Contrast Is Satisfactory

These are opportunities to improve the legibility of your content.

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



Meta Tags Used Properly

These are opportunities to improve the user experience of your site.

- 1 `[user-scalable="no"]` is used in the `<meta name="viewport">` element or the `[maximum-scale]` attribute is less than 5.



Disabling zooming is problematic for users with low vision who rely on screen magnification to properly see the contents of a web page. [Learn more](#).



sonarwhal

SCANNER

DOCUMENTATION ▾

ABOUT ▾

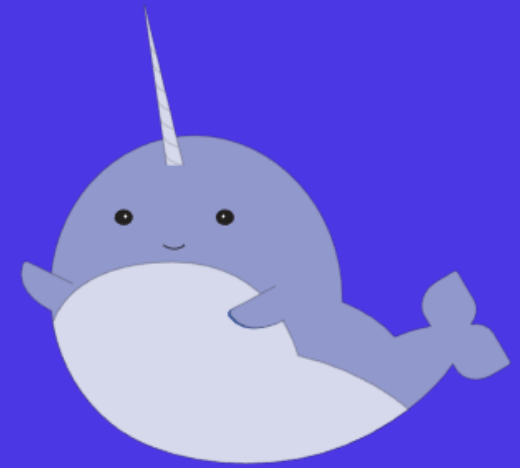
Search Documentation



Use sonarwhal to improve your website

RUN SCAN

sonarwhal is a linting tool that will help you with your site's accessibility, speed, security and more, by checking your code for best practices and common errors.



sonarwhal.com

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

Finished

WARNINGS

1

ERRORS

202

SCAN TIME

02:23

VERSION

1.10.0

SCAN CONFIGURATION

[View JSON file](#)

PERMALINK

<https://sonarwhal.com/scanner/05d39f0f-7e1b-4652-a48c-0b24827d6916>



ACCESSIBILITY



0 ERRORS
0 WARNINGS

INTEROPERABILITY



22 ERRORS
0 WARNINGS

PERFORMANCE



109 ERRORS
0 WARNINGS

PWA



0 ERRORS
1 WARNING

SECURITY



71 ERRORS
0 WARNINGS

Errors & Warnings

Accessibility



No issues

[The coach](#) helps you find performance problems on your web page using web performance best practice rules. And gives you advice on accessibility and best practices.



Coach score

Total score **79**

Performance score **78**

Accessibility score **78**

Best practice score **85**

Accessibility advice (78)

Accessibility advice (78)

SHOW/HIDE DETAILS

Title	Advice	Score
Always use an alt attribute on image tags (altImages)	The page has 1 image that lack alt attribute(s) and 1 of them are unique.	90
<ul style="list-style-type: none">https://consent.google.com/status?continue=https://www.google.de&pc=s&timestamp=1500031011		
Always set labels on inputs in forms (labelOnInput)	There are 4 input(s) that are missing labels on a form.	60
<ul style="list-style-type: none">csilst-ibgs_taif0gs_htif0		
Structure your content by using landmarks (landmarks)	The page doesn't use any landmarks.	0
Use headings tags within section tags to better structure your page (sections)	The page doesn't use sections. You could use them to get a better structure of your content.	0

browser extensions

- aXe (axe-core.org)
- wave (wave.webaim.org/extension)

libraries, GUIs

- ally.js
- pa11y
- koa11y

➔ ~ pa11y https://google.com

[Welcome to Pa11y](#)

> Running Pa11y on URL https://google.com

Results for URL: <https://www.google.com/>

- **Error:** This textarea element does not have a name available to an accessibility API. Valid names are: label element, title attribute, aria-label attribute, aria-labelledby attribute.
└─ WCAG2AA.Principle4.Guideline4.1.4_1_2.H91.Textarea.Name
└─ #csi
└─ <textarea name="csi" id="csi" style="display:none"></textarea>
- **Error:** This form field should be labelled in some way. Use the label element (either with a "for" attribute or wrapped around the form field), or "title", "aria-label" or "aria-labelledby" attribute.
└─ WCAG2AA.Principle1.Guideline1.3.1_3_1.F68
└─ #csi
└─ <textarea name="csi" id="csi" style="display:none"></textarea>
- **Error:** This element has a role of "button" but does not have a name available to an accessibility API. Valid names are: element content.
└─ WCAG2AA.Principle4.Guideline4.1.4_1_2.H91.A.Name
└─ #gbwa > div:nth-child(1) > a
└─
- **Error:** Img element missing an alt attribute. Use the alt attribute to specify a short text alternative.
└─ WCAG2AA.Principle1.Guideline1.1.1_1_1.H37
└─ #gbw > div > div > div:nth-child(2) > div:nth-child(4) > div > div > div:nth-child(1) > img
└─
- **Error:** Iframe element requires a non-empty title attribute that identifies the frame.
└─ WCAG2AA.Principle2.Guideline2.4.2_4_1.H64.1
└─ #gbw > div > div > div:nth-child(2) > div:nth-child(4) > div > div > div:nth-child(1) > iframe

Koa11y

AboutExit

URL:

https://google.com

Username:

username

Password:

some_secret_password

Filename (will overwrite existing files):

google.com

HTML

Standards Format:

WCAG 2.0 AA

Output Folder:

/Users/druf/Desktop/a11y/koa11y

Image Accessibility:

Copy the console code

Paste this code in your browser's console and press enter. It will give you code you can paste into the box below, then click "Run".

Errors 0Warnings 0Notices 0

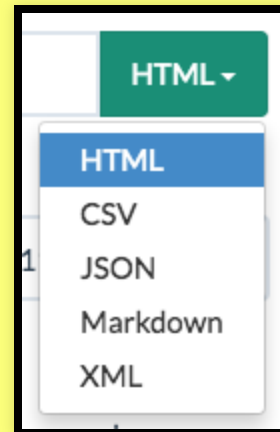
Run!

DanielRuf/Koa11y-prebuilt

Standards Format:

WCAG 2.0 AA ▾

- Section 508
- WCAG 2.0 A
- WCAG 2.0 AA (default)
- WCAG 2.0 AAA



https://google.com

Errors 10

Warnings 19

Notices 51

WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail

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 1.61:1. **Recommendation:** change text colour to #767676.

```
<span class="gbts">Google+</span>
```

#gb_119 > span:nth-child(2)

WCAG2AA.Principle1.Guideline1_4.1_4_3.G18.Fail

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 1:1. **Recommendation:** change text colour to #767676.

```
<span class="gbts">Suche</span>
```

#gb_1 > span:nth-child(2)

bookmarks, scripts

- a11y.css
- revenge.css
- tota11y.

guides

- a11y-style-guide.com/style-guide
- a11yproject.com
- accessibility-developer-guide.com
- developer.mozilla.org/en-US/docs/Web/Accessibility
- developers.google.com/web/fundamentals/accessibility
- ibm.com/able/guidelines/web/ibm508wcag.html
- webaim.org/standards/wcag/checklist
- wuhcag.com/wcag-checklist

guides

- w3.org/TR/2006/WD-WCAG20-20060427/appendixB.html
- w3.org/TR/WAET
- w3.org/WAI/WCAG21/quickref
- w3.org/WAI/WCAG21/quickref/?versions=2.0
- w3.org/WAI/tutorials
- w3.org/standards/webdesign/accessibility

ACCESSIBILITY CLUB CONFERENCE 2018

05.11.2018 (Spreespeicher, Berlin)

accessibility-club.org

Vielen Dank =)

UNKONF 2018

13.10.2018 (Mannheim)

unkonf.de



Sketch