

▼ Lighthouse Report



<https://www.randomwebbits.com/pages/dom.html>



97

Performance

92

Accessibility

100

Best Practices

100

SEO



PWA

97

Performance

Values are estimated and may vary. The [performance score is calculated](#) directly from these metrics. [See calculator.](#)

▲ 0–49

■ 50–89

● 90–100



METRICS

[Expand view](#)

- First Contentful Paint

0.5 s

- Total Blocking Time

20 ms

- Speed Index

0.6 s



[View Treemap](#)

- Largest Contentful Paint

0.5 s

- Cumulative Layout Shift

0.105



DIAGNOSTICS

▲ Ensure text remains visible during webfont load ^

Leverage the `font-display` CSS feature to ensure text is user-visible while webfonts are loading. [Learn more about `font-display`](#). FCP LCP

URL	Potential Savings
randomwebbits.com 1st Party	230 ms
...fonts/REM-SemiBold.ttf (www.randomwebbits.com)	120 ms
...fonts/REM-Regular.ttf (www.randomwebbits.com)	110 ms

■ Serve static assets with an efficient cache policy — 3 resources found ^

A long cache lifetime can speed up repeat visits to your page. [Learn more about efficient cache policies.](#)

URL	Cache TTL	Transfer Size
randomwebbits.com 1st Party		109 KiB
...fonts/REM-SemiBold.ttf (www.randomwebbits.com)	1d	51 KiB
...fonts/REM-Regular.ttf (www.randomwebbits.com)	1d	49 KiB
/css/styles.css (www.randomwebbits.com)	1d	9 KiB

○ Avoid chaining critical requests — 5 chains found ^

The Critical Request Chains below show you what resources are loaded with a high priority. Consider reducing the length of chains, reducing the download size of resources, or deferring the download of unnecessary resources to improve page load. [Learn how to avoid chaining critical requests.](#) FCP LCP

Maximum critical path latency: **529.775 ms**

Initial Navigation

- /pages/dom.html (www.randomwebbits.com)
- /css/styles.css (www.randomwebbits.com)
- /css?family=Merriweather:wght@900&display=swap (fonts.googleapis.com) - 47.689 ms, 0.96 KiB
- /css?family=Merriweather:wght@700;900&display=swap (fonts.googleapis.com)
 - ...v30/u-4n0qyri....woff2 (fonts.gstatic.com) - 20.778 ms, 13.00 KiB
- ...fonts/REM-SemiBold.ttf (www.randomwebbits.com) - 118.576 ms, 50.98 KiB
- ...fonts/REM-Regular.ttf (www.randomwebbits.com) - 112.971 ms, 49.15 KiB
- /typescript.js (www.randomwebbits.com) - 249.788 ms, 336.43 KiB

>User Timing marks and measures — 18 user timings

Consider instrumenting your app with the User Timing API to measure your app's real-world performance during key user experiences. [Learn more about User Timing marks.](#)

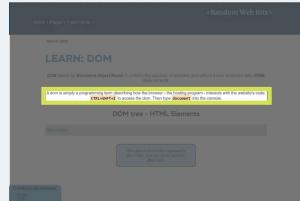
Name	Type	Start Time	Duration
main	Measure	417.90 ms	16.13 ms
Header	Measure	419.04 ms	2.47 ms
Footer	Measure	422.48 ms	1.02 ms
Pagecomponents	Measure	424.33 ms	5.91 ms
Classcomponents	Measure	430.88 ms	2.66 ms
Mobileabbrperf	Measure	431.16 ms	0.19 ms
main-start	Mark	417.90 ms	
Header-start	Mark	419.04 ms	
Header-end	Mark	421.51 ms	
Footer-start	Mark	422.48 ms	
Footer-end	Mark	423.50 ms	
Pagecomponents-start	Mark	424.33 ms	
Pagecomponents-end	Mark	430.25 ms	
Classcomponents-start	Mark	430.88 ms	
Mobileabbrperf-start	Mark	431.16 ms	

Name	Type	Start Time	Duration
Mobileabbrperf-end	Mark	431.35 ms	
Classcomponents-end	Mark	433.54 ms	
main-end	Mark	434.03 ms	

○ Largest Contentful Paint element — 540 ms ^

This is the largest contentful element painted within the viewport. [Learn more about the Largest Contentful Paint element](#) LCP

Element



A dom is simply a programming term describing how the browser - the hosting pro...

<p>

Phase	% of LCP	Timing
TTFB	40%	220 ms
Load Delay	0%	0 ms
Load Time	0%	0 ms
Render Delay	60%	320 ms

○ Avoid large layout shifts — 4 elements found ^

These DOM elements contribute most to the CLS of the page. [Learn how to improve CLS](#)

CLS

Element

CLS Contribution



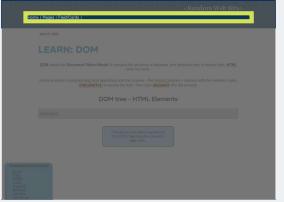
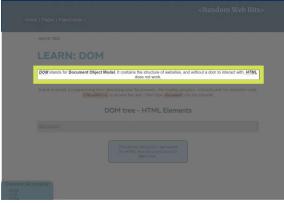
April 27, 2023 LEARN: DOM DOM stands for Document Object Model. It contains the structure of an website, and allows a site to interact with HTML.

DOM tree - HTML Elements

A dom is simply a programming term describing how the browser - the hosting program - interacts with the website code.

The above section represents the entire document.

0.101

Element	CLS Contribution
	<Random Web Bits> <h1 id="RandomWebBits"> 0.002
	Home Pages FlashCards <nav> 0.002
	DOM stands for Document Object Model. It contains the structure of websites, an... <p> 0.000

○ Avoid long main-thread tasks — 2 long tasks found ^

Lists the longest tasks on the main thread, useful for identifying worst contributors to input delay. [Learn how to avoid long main-thread tasks](#) [TBT]

URL	Start Time	Duration
Unattributable	913 ms	77 ms
Unattributable	318 ms	60 ms

More information about the performance of your application. These numbers don't [directly affect](#) the Performance score.

PASSED AUDITS (32) Hide

● Eliminate render-blocking resources ^

Resources are blocking the first paint of your page. Consider delivering critical JS/CSS inline and deferring all non-critical JS/styles. [Learn how to eliminate render-blocking resources.](#)

[FCP](#) [LCP](#)

- Properly size images

Serve images that are appropriately-sized to save cellular data and improve load time. [Learn how to size images.](#)

- Defer offscreen images

Consider lazy-loading offscreen and hidden images after all critical resources have finished loading to lower time to interactive. [Learn how to defer offscreen images.](#)

- Minify CSS — Potential savings of 3 KiB

Minifying CSS files can reduce network payload sizes. [Learn how to minify CSS.](#) [FCP](#) [LCP](#)

URL	Transfer Size	Potential Savings
randomwebbits.com 1st Party	8.6 KiB	2.5 KiB
/css/styles.css (www.randomwebbits.com)	8.6 KiB	2.5 KiB

- Minify JavaScript — Potential savings of 285 KiB

Minifying JavaScript files can reduce payload sizes and script parse time. [Learn how to minify JavaScript.](#) [FCP](#) [LCP](#)

URL	Transfer Size	Potential Savings
randomwebbits.com 1st Party	336.4 KiB	284.6 KiB

URL	Transfer Size	Potential Savings																		
/typescript.js (www.randomwebbits.com)	336.4 KiB	284.6 KiB																		
<ul style="list-style-type: none">● Reduce unused CSS																				
<p>Reduce unused rules from stylesheets and defer CSS not used for above-the-fold content to decrease bytes consumed by network activity. Learn how to reduce unused CSS. <small>FCP</small></p>																				
<small>LCP</small>																				
<ul style="list-style-type: none">● Reduce unused JavaScript — Potential savings of 132 KiB																				
<p>Reduce unused JavaScript and defer loading scripts until they are required to decrease bytes consumed by network activity. Learn how to reduce unused JavaScript. <small>LCP</small></p>																				
<table border="1"><thead><tr><th>URL</th><th>Transfer Size</th><th>Potential Savings</th></tr></thead><tbody><tr><td>randomwebbits.com <small>1st Party</small></td><td>336.4 KiB</td><td>66.9 KiB</td></tr><tr><td>/typescript.js (www.randomwebbits.com)</td><td>336.4 KiB</td><td>66.9 KiB</td></tr><tr><td>Unattributable</td><td>149.5 KiB</td><td>64.7 KiB</td></tr><tr><td><</td><td>89.3 KiB</td><td>34.1 KiB</td></tr><tr><td><</td><td>60.2 KiB</td><td>30.6 KiB</td></tr></tbody></table>			URL	Transfer Size	Potential Savings	randomwebbits.com <small>1st Party</small>	336.4 KiB	66.9 KiB	/typescript.js (www.randomwebbits.com)	336.4 KiB	66.9 KiB	Unattributable	149.5 KiB	64.7 KiB	<	89.3 KiB	34.1 KiB	<	60.2 KiB	30.6 KiB
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<ul style="list-style-type: none">● Efficiently encode images																				
<p>Optimized images load faster and consume less cellular data. Learn how to efficiently encode images.</p>																				
<ul style="list-style-type: none">● Serve images in next-gen formats																				

Image formats like WebP and AVIF often provide better compression than PNG or JPEG, which means faster downloads and less data consumption. [Learn more about modern image formats.](#)

- Enable text compression

Text-based resources should be served with compression (gzip, deflate or brotli) to minimize total network bytes. [Learn more about text compression.](#) [FCP](#) [LCP](#)

- Preconnect to required origins

Consider adding `preconnect` or `dns-prefetch` resource hints to establish early connections to important third-party origins. [Learn how to preconnect to required origins.](#) [FCP](#) [LCP](#)

- Initial server response time was short — Root document took 40 ms

Keep the server response time for the main document short because all other requests depend on it. [Learn more about the Time to First Byte metric.](#) [FCP](#) [LCP](#)

URL	Time Spent
randomwebbits.com 1st Party	40 ms
/pages/dom.html (www.randomwebbits.com)	40 ms

- Avoid multiple page redirects

Redirects introduce additional delays before the page can be loaded. [Learn how to avoid page redirects.](#) [FCP](#) [LCP](#)

- Preload key requests

Consider using `<link rel=preload>` to prioritize fetching resources that are currently requested later in page load. [Learn how to preload key requests.](#) FCP LCP

- Use HTTP/2

HTTP/2 offers many benefits over HTTP/1.1, including binary headers and multiplexing. [Learn more about HTTP/2.](#)

- Use video formats for animated content

Large GIFs are inefficient for delivering animated content. Consider using MPEG4/WebM videos for animations and PNG/WebP for static images instead of GIF to save network bytes.

[Learn more about efficient video formats](#) LCP

- Remove duplicate modules in JavaScript bundles

Remove large, duplicate JavaScript modules from bundles to reduce unnecessary bytes consumed by network activity. TBT

- Avoid serving legacy JavaScript to modern browsers

Polyfills and transforms enable legacy browsers to use new JavaScript features. However, many aren't necessary for modern browsers. For your bundled JavaScript, adopt a modern script deployment strategy using module/nomodule feature detection to reduce the amount of code shipped to modern browsers, while retaining support for legacy browsers. [Learn how to use modern JavaScript](#) TBT

- Preload Largest Contentful Paint image

If the LCP element is dynamically added to the page, you should preload the image in order to improve LCP. [Learn more about preloading LCP elements.](#) LCP

- Avoids enormous network payloads — Total size was 612 KiB

Large network payloads cost users real money and are highly correlated with long load times.

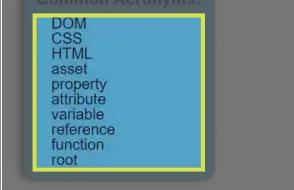
[Learn how to reduce payload sizes.](#) LCP

Show 3rd-party resources (2)

URL	Transfer Size
randomwebbits.com 1st Party	447.6 KiB
/typescript.js (www.randomwebbits.com)	336.4 KiB
...fonts/REM-SemiBold.ttf (www.randomwebbits.com)	51.0 KiB
...fonts/REM-Regular.ttf (www.randomwebbits.com)	49.2 KiB
/css/styles.css (www.randomwebbits.com)	8.6 KiB
/pages/dom.html (www.randomwebbits.com)	1.6 KiB
...favicon/ImageHome_Favicon.png (www.randomwebbits.com)	0.9 KiB
Unattributable	149.5 KiB
«	89.3 KiB
«	60.2 KiB
Google Fonts Cdn	14.0 KiB
...v30/u-4n0qryi....woff2 (fonts.gstatic.com)	13.0 KiB
/css2?family=Merriweather:wght@900&display=swap (fonts.googleapis.com)	1.0 KiB

- Avoids an excessive DOM size — 82 elements

A large DOM will increase memory usage, cause longer [style calculations](#), and produce costly [layout reflows](#). [Learn how to avoid an excessive DOM size.](#) TBT

Statistic	Element	Value
Total DOM Elements		82
Maximum DOM Depth	codecademy 	12
Maximum Child Elements		DOM CSS HTML asset property attribute variable reference function root <ul id="acr-dom">

● JavaScript execution time — 0.2 s

Consider reducing the time spent parsing, compiling, and executing JS. You may find delivering smaller JS payloads helps with this. [Learn how to reduce Javascript execution time](#). TBT

URL	Total CPU Time	Script Evaluation	Script Parse
Unattributable	312 ms	164 ms	14 ms
Unattributable	148 ms	24 ms	0 ms
Unattributable	85 ms	69 ms	6 ms
Unattributable	79 ms	71 ms	8 ms
randomwebbits.com <small>1st Party</small>	179 ms	4 ms	1 ms
/pages/dom.html (www.randomwebbits.com)	179 ms	4 ms	1 ms

● Minimizes main-thread work — 0.6 s

Consider reducing the time spent parsing, compiling and executing JS. You may find delivering smaller JS payloads helps with this. [Learn how to minimize main-thread work](#) TBT

Category	Time Spent
Script Evaluation	209 ms
Other	173 ms
Style & Layout	122 ms
Script Parsing & Compilation	18 ms
Rendering	15 ms
Parse HTML & CSS	9 ms
Garbage Collection	3 ms

● Minimize third-party usage — [Third-party code blocked the main thread for 20 ms](#) ^

Third-party code can significantly impact load performance. Limit the number of redundant third-party providers and try to load third-party code after your page has primarily finished loading. [Learn how to minimize third-party impact.](#) TBT

Show 3rd-party resources (0)

Third-Party	Transfer Size	Main-Thread Blocking Time
	149 KiB	17 ms
Google Fonts Cdn	15 KiB	0 ms
...v30/u-4n0qryri....woff2 (fonts.gstatic.com)	13 KiB	0 ms

○ Lazy load third-party resources with facades ^

Some third-party embeds can be lazy loaded. Consider replacing them with a facade until they are required. [Learn how to defer third-parties with a facade.](#) TBT

○ Largest Contentful Paint image was not lazily loaded ^

Above-the-fold images that are lazily loaded render later in the page lifecycle, which can delay the largest contentful paint. [Learn more about optimal lazy loading.](#) LCP

- Uses passive listeners to improve scrolling performance

Consider marking your touch and wheel event listeners as **passive** to improve your page's scroll performance. [Learn more about adopting passive event listeners.](#)

- Avoids `document.write()`

For users on slow connections, external scripts dynamically injected via `document.write()` can delay page load by tens of seconds. [Learn how to avoid document.write\(\)](#).

- Avoid non-composited animations

Animations which are not composited can be janky and increase CLS. [Learn how to avoid non-composited animations](#) CLS

- Image elements have explicit `width` and `height`

Set an explicit width and height on image elements to reduce layout shifts and improve CLS.

[Learn how to set image dimensions](#) CLS

- Has a `<meta name="viewport">` tag with `width` or `initial-scale`

A `<meta name="viewport">` not only optimizes your app for mobile screen sizes, but also prevents [a 300 millisecond delay to user input](#). [Learn more about using the viewport meta tag](#). TBT

- Page didn't prevent back/forward cache restoration

Many navigations are performed by going back to a previous page, or forwards again. The back/forward cache (bfccache) can speed up these return navigations. [Learn more about the](#)

bfcache



Accessibility

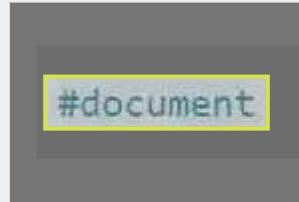
These checks highlight opportunities to [improve the accessibility of your web app](#). Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so [manual testing](#) is also encouraged.

CONTRAST

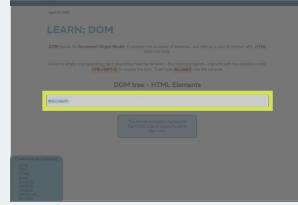
- ▲ Background and foreground colors do not have a sufficient contrast ratio.

Low-contrast text is difficult or impossible for many users to read. [Learn how to provide sufficient color contrast](#).

Failing Elements



```
#document  
<span tabindex="0" style="cursor: pointer;">
```



```
#document  
<ul is="expanding-list">
```

These are opportunities to improve the legibility of your content.

ADDITIONAL ITEMS TO MANUALLY CHECK (10)

[Hide](#)

- Interactive controls are keyboard focusable

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

- Interactive elements indicate their purpose and state

Interactive elements, such as links and buttons, should indicate their state and be distinguishable from non-interactive elements. [Learn how to decorate interactive elements with affordance hints.](#)

- The page has a logical tab order

Tabbing through the page follows the visual layout. Users cannot focus elements that are offscreen. [Learn more about logical tab ordering.](#)

- Visual order on the page follows DOM order

DOM order matches the visual order, improving navigation for assistive technology. [Learn more about DOM and visual ordering.](#)

- User focus is not accidentally trapped in a region

A user can tab into and out of any control or region without accidentally trapping their focus. [Learn how to avoid focus traps.](#)

- The user's focus is directed to new content added to the page

If new content, such as a dialog, is added to the page, the user's focus is directed to it. [Learn how to direct focus to new content.](#)

- HTML5 landmark elements are used to improve navigation ^

Landmark elements (`<main>`, `<nav>`, etc.) are used to improve the keyboard navigation of the page for assistive technology. [Learn more about landmark elements](#).

- Offscreen content is hidden from assistive technology ^

Offscreen content is hidden with `display: none` or `aria-hidden=true`. [Learn how to properly hide offscreen content](#).

- Custom controls have associated labels ^

Custom interactive controls have associated labels, provided by `aria-label` or `aria-labelledby`. [Learn more about custom controls and labels](#).

- Custom controls have ARIA roles ^

Custom interactive controls have appropriate ARIA roles. [Learn how to add roles to custom controls](#).

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

PASSED AUDITS (11)

Hide

- `[aria-hidden="true"]` is not present on the document `<body>` ^

Assistive technologies, like screen readers, work inconsistently when `aria-hidden="true"` is set on the document `<body>`. [Learn how aria-hidden affects the document body](#).

- `[user-scalable="no"]` is not used in the `<meta name="viewport">` element and the `[maximum-scale]` attribute is not 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 about the viewport meta tag](#).

- Document has a `<title>` element

The title gives screen reader users an overview of the page, and search engine users rely on it heavily to determine if a page is relevant to their search. [Learn more about document titles](#).

- `<html>` element has a `[lang]` attribute

If a page doesn't specify a `lang` attribute, a screen reader assumes that the page is in the default language that the user chose when setting up the screen reader. If the page isn't actually in the default language, then the screen reader might not announce the page's text correctly. [Learn more about the lang attribute](#).

- `<html>` element has a valid value for its `[lang]` attribute

Specifying a valid [BCP 47 language](#) helps screen readers announce text properly. [Learn how to use the lang attribute](#).

- Links are distinguishable without relying on color.

Low-contrast text is difficult or impossible for many users to read. Link text that is discernible improves the experience for users with low vision. [Learn how to make links distinguishable](#).

- Links have a discernible name

Link text (and alternate text for images, when used as links) that is discernible, unique, and focusable improves the navigation experience for screen reader users. [Learn how to make links accessible.](#)

- Lists contain only `` elements and script supporting elements (`<script>` and `<template>`).

Screen readers have a specific way of announcing lists. Ensuring proper list structure aids screen reader output. [Learn more about proper list structure.](#)

- List items (``) are contained within ``, `` or `<menu>` parent elements

Screen readers require list items (``) to be contained within a parent ``, `` or `<menu>` to be announced properly. [Learn more about proper list structure.](#)

- No element has a `[tabindex]` value greater than 0

A value greater than 0 implies an explicit navigation ordering. Although technically valid, this often creates frustrating experiences for users who rely on assistive technologies. [Learn more about the tabindex attribute.](#)

- Heading elements appear in a sequentially-descending order

Properly ordered headings that do not skip levels convey the semantic structure of the page, making it easier to navigate and understand when using assistive technologies. [Learn more about heading order.](#)

- [\[accesskey\] values are unique](#)

Access keys let users quickly focus a part of the page. For proper navigation, each access key must be unique. [Learn more about access keys.](#)

- [\[aria-*\] attributes match their roles](#)

Each ARIA **role** supports a specific subset of **aria-*** attributes. Mismatching these invalidates the **aria-*** attributes. [Learn how to match ARIA attributes to their roles.](#)

- [Values assigned to **role=""** are valid ARIA roles.](#)

ARIA **roles** enable assistive technologies to know the role of each element on the web page. If the **role** values are misspelled, not existing ARIA **role** values, or abstract roles, then the purpose of the element will not be communicated to users of assistive technologies. [Learn more about ARIA roles.](#)

- [button, link, and menuitem elements have accessible names](#)

When an element doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn how to make command elements more accessible.](#)

- [Elements with **role="dialog"** or **role="alertdialog"** have accessible names.](#)

ARIA dialog elements without accessible names may prevent screen readers users from discerning the purpose of these elements. [Learn how to make ARIA dialog elements more accessible.](#)

- [\[aria-hidden="true"\] elements do not contain focusable descendants](#)

Focusable descendants within an **[aria-hidden="true"]** element prevent those interactive elements from being available to users of assistive technologies like screen readers. [Learn how aria-hidden affects focusable elements.](#)

- ARIA input fields have accessible names ^

When an input field doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn more about input field labels.](#)

- ARIA `meter` elements have accessible names ^

When a meter element doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn how to name meter elements.](#)

- ARIA `progressbar` elements have accessible names ^

When a `progressbar` element doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn how to label progressbar elements.](#)

- `[role]`s have all required `[aria-*]` attributes ^

Some ARIA roles have required attributes that describe the state of the element to screen readers. [Learn more about roles and required attributes.](#)

- Elements with an ARIA `[role]` that require children to contain a specific `[role]` have all required children. ^

Some ARIA parent roles must contain specific child roles to perform their intended accessibility functions. [Learn more about roles and required children elements.](#)

- `[role]`s are contained by their required parent element ^

Some ARIA child roles must be contained by specific parent roles to properly perform their intended accessibility functions. [Learn more about ARIA roles and required parent element.](#)

- [\[role\] values are valid](#)

ARIA roles must have valid values in order to perform their intended accessibility functions.

[Learn more about valid ARIA roles.](#)

- Elements with the `role=text` attribute do not have focusable descendants.

Adding `role=text` around a text node split by markup enables VoiceOver to treat it as one phrase, but the element's focusable descendants will not be announced. [Learn more about the role=text attribute.](#)

- ARIA toggle fields have accessible names

When a toggle field doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn more about toggle fields.](#)

- ARIA `tooltip` elements have accessible names

When a tooltip element doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn how to name tooltip elements.](#)

- ARIA `treeitem` elements have accessible names

When a `treeitem` element doesn't have an accessible name, screen readers announce it with a generic name, making it unusable for users who rely on screen readers. [Learn more about labeling treeitem elements.](#)

- `[aria-*]` attributes have valid values

Assistive technologies, like screen readers, can't interpret ARIA attributes with invalid values.

[Learn more about valid values for ARIA attributes.](#)

- `[aria-*]` attributes are valid and not misspelled

Assistive technologies, like screen readers, can't interpret ARIA attributes with invalid names.

[Learn more about valid ARIA attributes.](#)

- Buttons have an accessible name

When a button doesn't have an accessible name, screen readers announce it as "button", making it unusable for users who rely on screen readers. [Learn how to make buttons more accessible.](#)

- The page contains a heading, skip link, or landmark region

Adding ways to bypass repetitive content lets keyboard users navigate the page more efficiently. [Learn more about bypass blocks.](#)

- `<dl>`'s contain only properly-ordered `<dt>` and `<dd>` groups, `<script>`, `<template>` or `<div>` elements.

When definition lists are not properly marked up, screen readers may produce confusing or inaccurate output. [Learn how to structure definition lists correctly.](#)

- Definition list items are wrapped in `<dl>` elements

Definition list items (`<dt>` and `<dd>`) must be wrapped in a parent `<dl>` element to ensure that screen readers can properly announce them. [Learn how to structure definition lists correctly.](#)

- `[id]` attributes on active, focusable elements are unique

All focusable elements must have a unique `id` to ensure that they're visible to assistive technologies. [Learn how to fix duplicate ids.](#)

- ARIA IDs are unique

The value of an ARIA ID must be unique to prevent other instances from being overlooked by assistive technologies. [Learn how to fix duplicate ARIA IDs.](#)

- No form fields have multiple labels

Form fields with multiple labels can be confusingly announced by assistive technologies like screen readers which use either the first, the last, or all of the labels. [Learn how to use form labels.](#)

- <frame> or <iframe> elements have a title

Screen reader users rely on frame titles to describe the contents of frames. [Learn more about frame titles.](#)

- <html> element has an `[xml:lang]` attribute with the same base language as the `[lang]` attribute.

If the webpage does not specify a consistent language, then the screen reader might not announce the page's text correctly. [Learn more about the lang attribute.](#)

- Image elements have `[alt]` attributes

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

- Image elements do not have `[alt]` attributes that are redundant text.

Informative elements should aim for short, descriptive alternative text. Alternative text that is exactly the same as the text adjacent to the link or image is potentially confusing for screen reader users, because the text will be read twice. [Learn more about the alt attribute.](#)

- Input buttons have discernible text.

Adding discernable and accessible text to input buttons may help screen reader users understand the purpose of the input button. [Learn more about input buttons](#).

- `<input type="image">` elements have [alt] text

When an image is being used as an `<input>` button, providing alternative text can help screen reader users understand the purpose of the button. [Learn about input image alt text](#).

- Elements with visible text labels have matching accessible names.

Visible text labels that do not match the accessible name can result in a confusing experience for screen reader users. [Learn more about accessible names](#).

- Form elements have associated labels

Labels ensure that form controls are announced properly by assistive technologies, like screen readers. [Learn more about form element labels](#).

- The document does not use `<meta http-equiv="refresh">`

Users do not expect a page to refresh automatically, and doing so will move focus back to the top of the page. This may create a frustrating or confusing experience. [Learn more about the refresh meta tag](#).

- `<object>` elements have alternate text

Screen readers cannot translate non-text content. Adding alternate text to `<object>` elements helps screen readers convey meaning to users. [Learn more about alt text for object elements](#).

- Select elements have associated label elements.

Form elements without effective labels can create frustrating experiences for screen reader users. [Learn more about the select element.](#)

- Skip links are focusable. ^

Including a skip link can help users skip to the main content to save time. [Learn more about skip links.](#)

- Tables have different content in the summary attribute and `<caption>`. ^

The summary attribute should describe the table structure, while `<caption>` should have the onscreen title. Accurate table mark-up helps users of screen readers. [Learn more about summary and caption.](#)

- Tables use `<caption>` instead of cells with the `[colspan]` attribute to indicate a caption. ^

Screen readers have features to make navigating tables easier. Ensuring that tables use the actual caption element instead of cells with the `[colspan]` attribute may improve the experience for screen reader users. [Learn more about captions.](#)

- `<td>` elements in a large `<table>` have one or more table headers. ^

Screen readers have features to make navigating tables easier. Ensuring that `<td>` elements in a large table (3 or more cells in width and height) have an associated table header may improve the experience for screen reader users. [Learn more about table headers.](#)

- Cells in a `<table>` element that use the `[headers]` attribute refer to table cells within the same table. ^

Screen readers have features to make navigating tables easier. Ensuring `<td>` cells using the `[headers]` attribute only refer to other cells in the same table may improve the experience for screen reader users. [Learn more about the headers attribute.](#)

- <th> elements and elements with [role="columnheader"/"rowheader"] have data cells they describe.

Screen readers have features to make navigating tables easier. Ensuring table headers always refer to some set of cells may improve the experience for screen reader users. [Learn more about table headers.](#)

- [lang] attributes have a valid value

Specifying a valid [BCP 47 language](#) on elements helps ensure that text is pronounced correctly by a screen reader. [Learn how to use the lang attribute.](#)

- <video> elements contain a <track> element with [kind="captions"]

When a video provides a caption it is easier for deaf and hearing impaired users to access its information. [Learn more about video captions.](#)

- All heading elements contain content.

A heading with no content or inaccessible text prevent screen reader users from accessing information on the page's structure. [Learn more about headings.](#)

- Identical links have the same purpose.

Links with the same destination should have the same description, to help users understand the link's purpose and decide whether to follow it. [Learn more about identical links.](#)

- Document has a main landmark.

One main landmark helps screen reader users navigate a web page. [Learn more about landmarks.](#)

- Touch targets have sufficient size and spacing.

Touch targets with sufficient size and spacing help users who may have difficulty targeting small controls to activate the targets. [Learn more about touch targets.](#)



Best Practices

TRUST AND SAFETY

○ Ensure CSP is effective against XSS attacks

A strong Content Security Policy (CSP) significantly reduces the risk of cross-site scripting (XSS) attacks. [Learn how to use a CSP to prevent XSS](#)

Description	Directive	Severity
Missing object-src allows the injection of plugins that execute unsafe scripts. Consider setting object-src to 'none' if you can.	object-src	High
Host allowlists can frequently be bypassed. Consider using CSP nonces or hashes instead, along with 'strict-dynamic' if necessary.	script-src	High
'unsafe-inline' allows the execution of unsafe in-page scripts and event handlers. Consider using CSP nonces or hashes to allow scripts individually.	script-src	High

GENERAL

○ Detected JavaScript libraries

All front-end JavaScript libraries detected on the page. [Learn more about this JavaScript library detection diagnostic audit.](#)

Name	Version
LitElement	3.3.3
lit-html	2.8.0

PASSED AUDITS (13)

[Hide](#)

- Uses HTTPS

All sites should be protected with HTTPS, even ones that don't handle sensitive data. This includes avoiding [mixed content](#), where some resources are loaded over HTTP despite the initial request being served over HTTPS. HTTPS prevents intruders from tampering with or passively listening in on the communications between your app and your users, and is a prerequisite for HTTP/2 and many new web platform APIs. [Learn more about HTTPS](#).

- Avoids deprecated APIs

Deprecated APIs will eventually be removed from the browser. [Learn more about deprecated APIs](#).

- Allows users to paste into input fields

Preventing input pasting is a bad practice for the UX, and weakens security by blocking password managers. [Learn more about user-friendly input fields](#).

- Avoids requesting the geolocation permission on page load

Users are mistrustful of or confused by sites that request their location without context. Consider tying the request to a user action instead. [Learn more about the geolocation](#)

permission

- Avoids requesting the notification permission on page load

Users are mistrustful of or confused by sites that request to send notifications without context. Consider tying the request to user gestures instead. [Learn more about responsibly getting permission for notifications](#).

- Displays images with correct aspect ratio

Image display dimensions should match natural aspect ratio. [Learn more about image aspect ratio](#).

- Serves images with appropriate resolution

Image natural dimensions should be proportional to the display size and the pixel ratio to maximize image clarity. [Learn how to provide responsive images](#).

- Page has the HTML doctype

Specifying a doctype prevents the browser from switching to quirks-mode. [Learn more about the doctype declaration](#).

- Properly defines charset

A character encoding declaration is required. It can be done with a `<meta>` tag in the first 1024 bytes of the HTML or in the Content-Type HTTP response header. [Learn more about declaring the character encoding](#).

- Avoids `unload` event listeners

The `unload` event does not fire reliably and listening for it can prevent browser optimizations like the Back-Forward Cache. Use `pagehide` or `visibilitychange` events instead. [Learn more about `unload` event listeners](#)

- No browser errors logged to the console

Errors logged to the console indicate unresolved problems. They can come from network request failures and other browser concerns. [Learn more about this errors in console diagnostic audit](#)

- No issues in the [Issues](#) panel in Chrome Devtools

Issues logged to the [Issues](#) panel in Chrome Devtools indicate unresolved problems. They can come from network request failures, insufficient security controls, and other browser concerns. Open up the Issues panel in Chrome DevTools for more details on each issue.

- Page has valid source maps

Source maps translate minified code to the original source code. This helps developers debug in production. In addition, Lighthouse is able to provide further insights. Consider deploying source maps to take advantage of these benefits. [Learn more about source maps](#).

URL	Map URL
randomwebbits.com	1st Party
/typescript.js	(www.randomwebbits.com)

NOT APPLICABLE (1)

Hide

- Fonts with `font-display: optional` are preloaded

Preload **optional** fonts so first-time visitors may use them. [Learn more about preloading fonts](#)



SEO

These checks ensure that your page is following basic search engine optimization advice. There are many additional factors Lighthouse does not score here that may affect your search ranking, including performance on [Core Web Vitals](#). [Learn more about Google Search Essentials](#).

ADDITIONAL ITEMS TO MANUALLY CHECK (1)

[Hide](#)

- Structured data is valid

^

Run the [Structured Data Testing Tool](#) and the [Structured Data Linter](#) to validate structured data. [Learn more about Structured Data](#).

Run these additional validators on your site to check additional SEO best practices.

PASSED AUDITS (9)

[Hide](#)

- Has a `<meta name="viewport">` tag with `width` or `initial-scale`

^

A `<meta name="viewport">` not only optimizes your app for mobile screen sizes, but also prevents [a 300 millisecond delay to user input](#). [Learn more about using the viewport](#)

[meta tag](#) (TBT)

- Document has a `<title>` element

The title gives screen reader users an overview of the page, and search engine users rely on it heavily to determine if a page is relevant to their search. [Learn more about document titles](#).

- Document has a meta description

Meta descriptions may be included in search results to concisely summarize page content.

[Learn more about the meta description](#).

- Page has successful HTTP status code

Pages with unsuccessful HTTP status codes may not be indexed properly. [Learn more about HTTP status codes](#).

- Links have descriptive text

Descriptive link text helps search engines understand your content. [Learn how to make links more accessible](#).

- Links are crawlable

Search engines may use `href` attributes on links to crawl websites. Ensure that the `href` attribute of anchor elements links to an appropriate destination, so more pages of the site can be discovered. [Learn how to make links crawlable](#)

- Page isn't blocked from indexing

Search engines are unable to include your pages in search results if they don't have

permission to crawl them. [Learn more about crawler directives](#).

- Document has a valid [hreflang](#)

hreflang links tell search engines what version of a page they should list in search results for a given language or region. [Learn more about hreflang](#).

- Document avoids plugins

Search engines can't index plugin content, and many devices restrict plugins or don't support them. [Learn more about avoiding plugins](#).

NOT APPLICABLE (5)

[Hide](#)

- robots.txt is valid

If your robots.txt file is malformed, crawlers may not be able to understand how you want your website to be crawled or indexed. [Learn more about robots.txt](#).

- Image elements have [\[alt\]](#) attributes

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

- Document has a valid [rel=canonical](#)

Canonical links suggest which URL to show in search results. [Learn more about canonical links](#).

- Document uses legible font sizes

Font sizes less than 12px are too small to be legible and require mobile visitors to “pinch to zoom” in order to read. Strive to have >60% of page text $\geq 12\text{px}$. [Learn more about legible font sizes.](#)

- Tap targets are sized appropriately

Interactive elements like buttons and links should be large enough (48x48px), or have enough space around them, to be easy enough to tap without overlapping onto other elements. [Learn more about tap targets.](#)



PWA

These checks validate the aspects of a Progressive Web App. [Learn what makes a good Progressive Web App.](#)



INSTALLABLE

⚠ Web app manifest or service worker do not meet the installability requirements — 1
reason

Service worker is the technology that enables your app to use many Progressive Web App features, such as offline, add to homescreen, and push notifications. With proper service worker and manifest implementations, browsers can proactively prompt users to add your app to their homescreen, which can lead to higher engagement. [Learn more about manifest installability requirements.](#)

Failure reason

Page has no manifest <link> URL



PWA OPTIMIZED

- ▲ Is not configured for a custom splash screen **Failures: No manifest was fetched.** ^

A themed splash screen ensures a high-quality experience when users launch your app from their homescreens. [Learn more about splash screens](#).

- ▲ Does not set a theme color for the address bar.

- ▲ Failures: No manifest was fetched, No `<meta name="theme-color">` tag found. ^

The browser address bar can be themed to match your site. [Learn more about theming the address bar](#).

- Content is sized correctly for the viewport ^

If the width of your app's content doesn't match the width of the viewport, your app might not be optimized for mobile screens. [Learn how to size content for the viewport](#).

- Has a `<meta name="viewport">` tag with `width` or `initial-scale` ^

A `<meta name="viewport">` not only optimizes your app for mobile screen sizes, but also prevents [a 300 millisecond delay to user input](#). [Learn more about using the viewport meta tag](#). TBT

- ▲ Manifest doesn't have a maskable icon **No manifest was fetched** ^

A maskable icon ensures that the image fills the entire shape without being letterboxed when installing the app on a device. [Learn about maskable manifest icons](#).

ADDITIONAL ITEMS TO MANUALLY CHECK (3)

[Hide](#)

- Site works cross-browser

To reach the most number of users, sites should work across every major browser. [Learn about cross-browser compatibility.](#)

- Page transitions don't feel like they block on the network

Transitions should feel snappy as you tap around, even on a slow network. This experience is key to a user's perception of performance. [Learn more about page transitions.](#)

- Each page has a URL

Ensure individual pages are deep linkable via URL and that URLs are unique for the purpose of shareability on social media. [Learn more about providing deep links.](#)

These checks are required by the baseline [PWA Checklist](#) but are not automatically checked by Lighthouse. They do not affect your score but it's important that you verify them manually.

 Captured at Nov 19, 2023, 8:36

AM CST

 Initial page load

 Emulated Desktop with

Lighthouse 11.1.0

 Custom throttling

 Single page load

 Using Chromium 119.0.0.0 with
devtools

Generated by Lighthouse 11.1.0 | [File an issue](#)

[Top](#)

Developed by Robert Howell