



59

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PWA

Performance

Accessibility

Best Practices

SEO

PWA



Performance

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



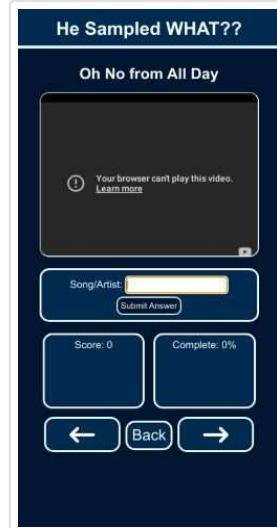
0–49



50–89



90–100



METRICS

[Expand view](#)

First Contentful Paint

2.7 s

Total Blocking Time

1,870 ms

Speed Index

6.9 s

Largest Contentful Paint

2.7 s

Cumulative Layout Shift

0.008
[View Treemap](#)


DIAGNOSTICS

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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]

Show 3rd-party resources (3)

YouTube	Video	4,726 ms	4,207 ms	209 ms
...www-embed-player.vflset/www-embed-player.js	(www.youtube.com)	2,463 ms	2,320 ms	26 ms
...en_US/base.js	(www.youtube.com)	2,072 ms	1,786 ms	171 ms
/embed/4bMM7tGV9MI	(www.youtube.com)	190 ms	101 ms	13 ms
Unattributable		280 ms	11 ms	0 ms
Unattributable		280 ms	11 ms	0 ms
URL		Total CPU Time	Script Evaluation	Script Parse

▲ Minimize main-thread work — 5.3 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]

Script Evaluation	4,338 ms
Other	397 ms
Script Parsing & Compilation	225 ms
Style & Layout	177 ms
Garbage Collection	83 ms
Parse HTML & CSS	72 ms

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▲ Reduce the impact of third-party code — Third-party code blocked the main thread for 3,570 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

Category	Transfer Size	Main-Thread Blocking Time
YouTube Video	992 KiB	3,573 ms
www-embed-player.vflset/www-embed-player.js (www.youtube.com)	96 KiB	1,865 ms
/embed/4bMM7tGV9MI (www.youtube.com)	38 KiB	27 ms
...03dc2242/www-player.css (www.youtube.com)	48 KiB	0 ms
...en_US/embed.js (www.youtube.com)	18 KiB	0 ms
...stats/qoe?cpn=... (www.youtube.com)	0 KiB	0 ms
...v1/log_event?alt=json&key=AlzaSyAO_... (www.youtube.com)	0 KiB	0 ms
/generate_204?IEhzCw (www.youtube.com)	0 KiB	0 ms
FontAwesome CDN Cdn	191 KiB	0 ms
...webfonts/free-fa-solid-900.woff2 (ka-f.fontawesome.com)	154 KiB	0 ms
...css/free.min.css?token=d2d64ef9e7 (ka-f.fontawesome.com)	24 KiB	0 ms
...css/free-v4-shims.min.css?token=d2d64ef9e7 (ka-f.fontawesome.com)	5 KiB	0 ms
/d2d64ef9e7.js (kit.fontawesome.com)	5 KiB	0 ms
...css/free-v4-font-face.min.css?token=d2d64ef9e7 (ka-f.fontawesome.com)	2 KiB	0 ms
...css/free-v5-font-face.min.css?token=d2d64ef9e7 (ka-f.fontawesome.com)	1 KiB	0 ms
Third-Party	Transfer Size	Main-Thread Blocking Time
...th/miBSy5jQP....js (www.google.com)	21 KiB	0 ms
...google.internal.waa.v1.Waa/GenerateIT (jnn-pa.googleapis.com)	1 KiB	0 ms
Google Fonts Cdn	23 KiB	0 ms

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...v18/KFOmCnqEu....woff2 (fonts.gstatic.com)

11 KiB

0 ms

Google/Doubleclick Ads Ad**2 KiB****0 ms**

/pagead/id?slf_rd=1 (googleads.g.doubleclick.net)

1 KiB

0 ms

/pagead/id (googleads.g.doubleclick.net)

1 KiB

0 ms

/instream/ad_status.js (static.doubleclick.net)

1 KiB

0 ms

⚠ Some third-party resources can be lazy loaded with a facade — 1 facade alternative available ^

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

Product	Transfer Size	Main-Thread Blocking Time
YouTube Video	992 KiB	3,573 ms
YouTube Embedded Player (Video)	992 KiB	3,573 ms
...en_US/base.js (www.youtube.com)	790 KiB	1,681 ms
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	96 KiB	1,865 ms
03dc9242/www-player.css (www.youtube.com)	48 KiB	0 ms
Third-Party	Transfer Size	Main-Thread Blocking Time

⚠ Largest Contentful Paint element — 2,680 ms ^

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

Element
<p>He Sampled WHAT?? Oh No from All Day <h1 id="logo"></p>

Phase	% of LCP	Timing
	59 100 96 91	
Load Delay	0%	0 ms
Load Time	0%	0 ms
Render Delay	73%	1,970 ms

Reduce unused CSS — Potential savings of 66 KiB

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.](#) FCP LCP

Show 3rd-party resources (1)

URL	Transfer Size	Potential Savings
YouTube Video	46.9 KiB	45.5 KiB
...03dc2242/www-player.css (www.youtube.com)	46.9 KiB	45.5 KiB
Unattributable	20.4 KiB	20.3 KiB
/*! * Font Awesome Free 6.5.2 by @fontawesome - https://fontawesome.com * License - https://fonta...	20.4 KiB	20.3 KiB

Reduce unused JavaScript — Potential savings of 599 KiB

Reduce unused JavaScript and defer loading scripts until they are required to decrease bytes consumed by network activity. [Learn how to reduce unused JavaScript.](#) LCP

URL	Transfer Size	Potential Savings
YouTube Video	884.9 KiB	598.6 KiB
...en_US/base.js (www.youtube.com)	789.4 KiB	543.9 KiB
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	95.5 KiB	54.7 KiB

Serve static assets with an efficient cache policy — 5 resources found

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

[policies.](#)

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URL	Cache TTL	Size
GitHub Utility 1st Party		20 KiB
...js/database.js (smtilson.github.io)	10m	10 KiB
...js/scripts.js (smtilson.github.io)	10m	4 KiB
...js/utility.js (smtilson.github.io)	10m	3 KiB
...css/styles.css (smtilson.github.io)	10m	2 KiB
Google/Doubleclick Ads Ad		1 KiB
/instream/ad_status.js (static.doubleclick.net)	15m	1 KiB

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
Google Fonts Cdn	10 ms
...v18/KFOmCnqEu....woff2 (fonts.gstatic.com)	0 ms
...v18/KFOICnqEu....woff2 (fonts.gstatic.com)	0 ms

Does not use 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.](#)

Source
YouTube Video
...en_US/base.js:8786:199 (www.youtube.com)
...en_US/base.js:6128:111 (www.youtube.com)

- Initial server response time was short — Root document took 110 ms

59 100 96 91



URL

Time Spent

GitHub Utility 1st Party

110 ms

/pp2-quiz-project/game.html (smtilson.github.io)

110 ms

- Avoids enormous network payloads — Total size was 1,293 KiB

Large network payloads cost users real money and are highly correlated with long load times. [Learn how to reduce payload sizes.](#) LCP

URL

Transfer Size

YouTube Video

991.0 KiB

...en_US/base.js (www.youtube.com)

790.2 KiB

...www-embed-player.vflset/www-embed-player.js (www.youtube.com)

96.2 KiB

...03dc2242/www-player.css (www.youtube.com)

47.7 KiB

/embed/4bMM7tGV9MI (www.youtube.com)

38.5 KiB

...en_US/embed.js (www.youtube.com)

18.4 KiB

FontAwesome CDN Cdn

177.7 KiB

...webfonts/free-fa-solid-900.woff2 (ka-f.fontawesome.com)

153.8 KiB

...css/free.min.css?token=d2d64ef9e7 (ka-f.fontawesome.com)

23.9 KiB

Other Google APIs/SDKs Utility

62.0 KiB

...google.internal.waa.v1.Waa/Create (jnn-pa.googleapis.com)

41.4 KiB

...th/miBSy5jQP....js (www.google.com)

20.6 KiB

Google Fonts Cdn

11.3 KiB

...v18/KFOICnqEu....woff2 (fonts.gstatic.com)

11.3 KiB

- Avoids an excessive DOM size — 42 elements

A large DOM will increase memory usage, cause longer [style calculations](#), and produce costly [layout](#)

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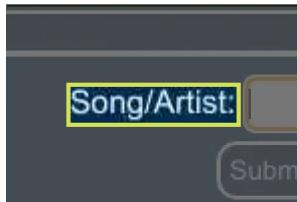
91



Total DOM Elements

42

Maximum DOM Depth



Song/Artist:
`<label for="user-answer">`

8

Maximum Child Elements



body
`<body>`

10

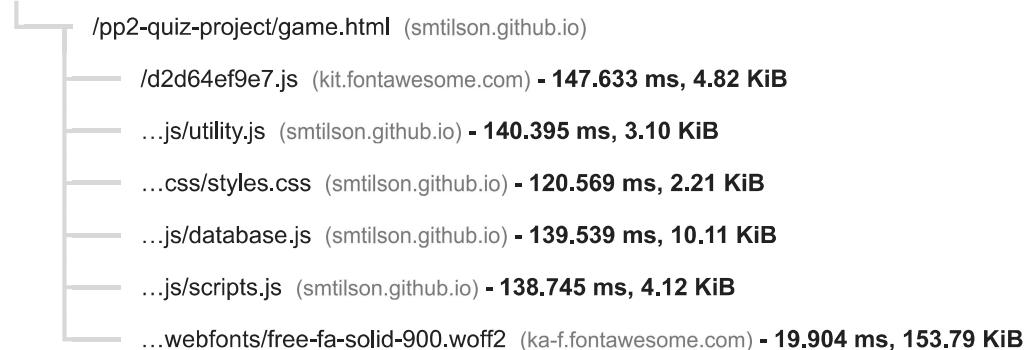
Avoid chaining critical requests — 6 chains found ^

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

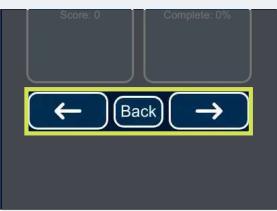
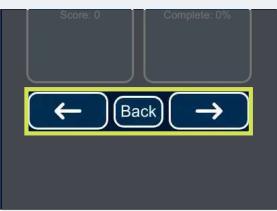
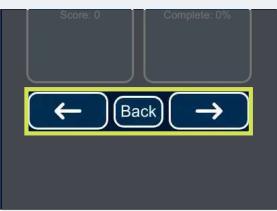
Maximum critical path latency: **414.399 ms**

Initial Navigation



User Timing marks and measures — 13 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												
mark_pot_js	Mark		560.57 ms													
																
mark_pot_ist	Mark		561.45 ms													
mark_pot_csms	Mark		566.45 ms													
mark_pot_csmf	Mark		567.95 ms													
mark_fs	Mark		587.06 ms													
mark_qoes	Mark		597.62 ms													
mark_ep_init_pr	Mark		689.96 ms													
mark_pot_if	Mark		1,132.14 ms													
mark_pot_cms	Mark		1,132.65 ms													
mark_pot_cmf	Mark		1,134.18 ms													
mark_ol	Mark		1,554.23 ms													
mark.ol	Mark		1,554.87 ms													
																
○ Avoid large layout shifts — 1 layout shift found																
<p>These are the largest layout shifts observed on the page. Each table item represents a single layout shift, and shows the element that shifted the most. Below each item are possible root causes that led to the layout shift. Some of these layout shifts may not be included in the CLS metric value due to windowing. Learn how to improve CLS CLS</p>																
<table border="1"> <thead> <tr> <th>Element</th> <th>Layout shift score</th> </tr> </thead> <tbody> <tr> <td>  Back <code><div id="outer-arrow-section"></code> </td> <td>0.008</td> </tr> <tr> <td>...v18/KFOICnqEu....woff2 (fonts.gstatic.com)</td> <td>Web font loaded</td> </tr> <tr> <td>...v18/KFOMCnqEu....woff2 (fonts.gstatic.com)</td> <td>Web font loaded</td> </tr> <tr> <td></td> <td>Injected iframe</td> </tr> <tr> <td>/d2d64ef9e7.js (kit.fontawesome.com)</td> <td>A late network request adjusted the page layout</td> </tr> </tbody> </table>					Element	Layout shift score	 Back <code><div id="outer-arrow-section"></code>	0.008	...v18/KFOICnqEu....woff2 (fonts.gstatic.com)	Web font loaded	...v18/KFOMCnqEu....woff2 (fonts.gstatic.com)	Web font loaded		Injected iframe	/d2d64ef9e7.js (kit.fontawesome.com)	A late network request adjusted the page layout
Element	Layout shift score															
 Back <code><div id="outer-arrow-section"></code>	0.008															
...v18/KFOICnqEu....woff2 (fonts.gstatic.com)	Web font loaded															
...v18/KFOMCnqEu....woff2 (fonts.gstatic.com)	Web font loaded															
	Injected iframe															
/d2d64ef9e7.js (kit.fontawesome.com)	A late network request adjusted the page layout															

Element

Layout shift score

59

100

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PWA

...js/utility.js (smtilson.github.io)

A late network request adjusted the page layout

...js/scripts.js (smtilson.github.io)

A late network request adjusted the page layout

...03dc2242/www-player.css (www.youtube.com)

A late network request adjusted the page layout

...www-embed-player.vflset/www-embed-player.js (www.youtube.com)

A late network request adjusted the page layout

...css/styles.css (smtilson.github.io)

A late network request adjusted the page layout

Avoid long main-thread tasks — 8 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

Show 3rd-party resources (7)

URL	Start Time	Duration
YouTube Video		2,294 ms
...en_US/base.js (www.youtube.com)	11,187 ms	829 ms
...en_US/base.js (www.youtube.com)	10,371 ms	765 ms
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	9,446 ms	325 ms
...en_US/base.js (www.youtube.com)	9,276 ms	170 ms
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	4,550 ms	81 ms
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	4,476 ms	74 ms
...www-embed-player.vflset/www-embed-player.js (www.youtube.com)	11,136 ms	50 ms
Unattributable		59 ms
Unattributable	875 ms	59 ms

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

PASSED AUDITS (20)

Hide

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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

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

● Minify JavaScript

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

● Efficiently encode images

Optimized images load faster and consume less cellular data. [Learn how to efficiently encode images.](#)

● 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

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● 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

● 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 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

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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]

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]

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]

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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.

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](#)

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~~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 (16)

[Hide](#)

● `[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](#).

● `[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](#).

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

Assistive technologies, like screen readers, can't interpret ARIA attributes with invalid values. [Learn more about valid ARIA attributes.](#)

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● [\[aria-*\] 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.](#)

● [\[user-scalable="no"\] 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.](#)

● [\[aria-hidden="true"\] 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.](#)

● [Background and foreground colors have a sufficient contrast ratio](#)

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

● [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.](#)

- [\[id\] attributes on active, focusable elements are unique](#)

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- [<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 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.](#)

- [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.](#)

- [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.](#)

- [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.

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NOT APPLICABLE (45)

Hide

 [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](#).

 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 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

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[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

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[treeitem](#) elements.

- 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](#).

- 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](#).

- `<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.

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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.](#)

- 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.](#)

- 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.](#)

- 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.

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- Skip links are focusable.

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

- 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.](#)

- 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.](#)

- 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

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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](#).

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](#).

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.

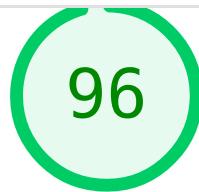
Screen readers have features to make navigating tables easier. Ensuring that `<td>` elements in a large table (3 or more cells in width and height) have an associated table header may improve the experience for screen reader users. [Learn more about table headers](#).

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Best Practices

GENERAL

⚠ Issues were logged 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.

Issue type

Cookie

/embed/4bMM7tGV9MI (www.youtube.com)

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

No CSP found in enforcement mode

High

PASSED AUDITS (13)

Hide

- Uses HTTPS

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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](#).

- Avoids third-party cookies

Support for third-party cookies will be removed in a future version of Chrome. [Learn more about phasing out third-party cookies](#).

- 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.](#)

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● 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](#)

● 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

Other Google APIs/SDKs Utility

URL

Map URL

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NOT APPLICABLE (2)

Hide

 Fonts with `font-display: optional` are preloaded

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

 Detected JavaScript libraries

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



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](#).

CONTENT BEST PRACTICES

 Document does not have a meta description

Meta descriptions may be included in search results to concisely summarize page content. [Learn more about the meta description](#).

Format your HTML in a way that enables crawlers to better understand your app's content.

Hide

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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 (10)

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](#).

- 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

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● 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 uses legible font sizes — 100% legible text

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](#).

Source	Selector	% of Page Text	Font Size
Legible text		100.00%	$\geq 12\text{px}$

● 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](#).

● Tap targets are sized appropriately — 100% appropriately sized tap targets

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](#).

NOT APPLICABLE (3)

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

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

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

As per [Chrome's updated Installability Criteria](#), Lighthouse will be deprecating the PWA category in a future release. Please refer to the [updated PWA documentation](#) for future PWA testing.



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

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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



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 Apr 17, 2024, 10:46 AM

Emulated Desktop with Lighthouse

Single page session

GMT+2

11.5.0

Initial page load

Unknown

Using HeadlessChromium

122.0.6261.94 with Ir

Generated by **Lighthouse** 11.5.0 | [File an issue](#)