

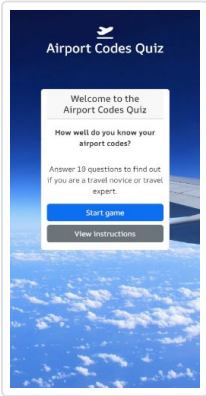
## Performance

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

2.5 s

Largest Contentful Paint

2.5 s

Total Blocking Time

0 ms

Cumulative Layout Shift

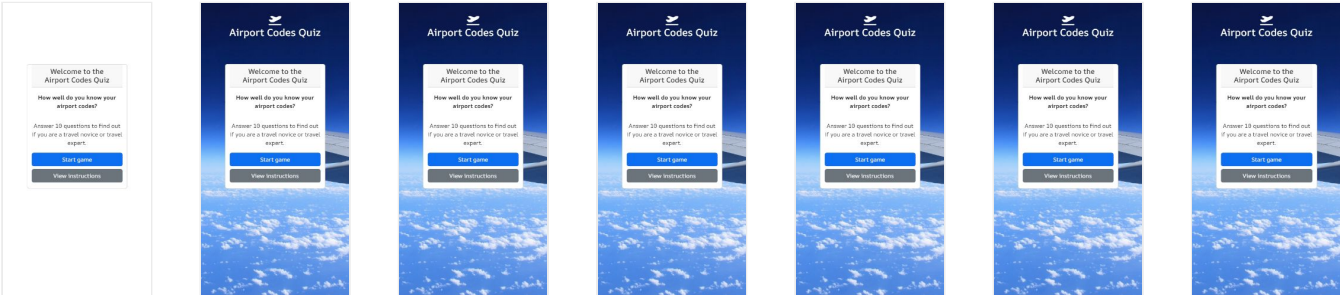
0.004

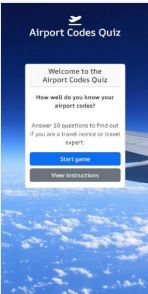
Speed Index

2.5 s

[View Treemap](#)

[View Original Trace](#)






Show audits relevant to: [All](#) [FCP](#) [LCP](#) [TBT](#) [CLS](#)

OPPORTUNITIES

Opportunity Estimated Savings

Serve images in next-gen formats 0.60s

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.](#)

URL		Resource Size	Potential Savings
<div><div>GitHub</div><div>Utility</div><div>1st Party</div></div> <div></div> <div>body</div>		215.2 KiB	125.3 KiB
	...image/aircraft-bg.jpg (cshimvin.github.io)	215.2 KiB	125.3 KiB

Reduce unused JavaScript 0.30s

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
jQuery CDN <span>Cdn</span>	81.8 KiB	61.4 KiB
/jquery-3.7.1.js (code.jquery.com)	81.8 KiB	61.4 KiB
JSDelivr CDN <span>Cdn</span>	24.6 KiB	20.2 KiB
...js/bootstrap.bundle.min.js (cdn.jsdelivr.net)	24.6 KiB	20.2 KiB
...js/src/tooltip.js	2.5 KiB	2.2 KiB
...js/src/dropdown.js	1.7 KiB	1.4 KiB

URL	Transfer Size	Potential Savings
...js/src/carousel.js	1.6 KiB	1.3 KiB
...js/src/modal.js	1.4 KiB	1.2 KiB
...js/src/collapse.js	1.1 KiB	1.0 KiB

These suggestions can help your page load faster. They don't [directly affect](#) the Performance score.

DIAGNOSTICS

▲ Page prevented back/forward cache restoration — 2 failure reasons ^

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

Failure reason	Failure type
Back/forward cache is disabled by flags. Visit chrome://flags/#back-forward-cache to enable it locally on this device.  /quiz-ms-2/index.html (cshimvin.github.io)	Not actionable
Pages that `JavaScript` is injected into by extensions are not currently eligible for back/forward cache.  /quiz-ms-2/index.html (cshimvin.github.io)	Not actionable

▲ 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
GitHub <span>Utility</span> <span>1st Party</span>		218 KiB
...image/aircraft-bg.jpg (cshimvin.github.io)	10m	216 KiB
...js/script.js (cshimvin.github.io)	10m	2 KiB
...css/style.css (cshimvin.github.io)	10m	0 KiB

○ Avoid chaining critical requests — 8 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: **331.27 ms**

Initial Navigation

- /quiz-ms-2/index.html (cshimvin.github.io)
- ...css/bootstrap.min.css (cdn.jsdelivr.net) - **20.76 ms, 34.17 KiB**
- /css2?family=AR+One+Sans:wght@400;500;700&display=swap (fonts.googleapis.com)
- ...v2/TUZjzwhrm....woff2 (fonts.gstatic.com) - **16.038 ms, 37.21 KiB**
- ...css/style.css (cshimvin.github.io) - **125.903 ms, 0.35 KiB**
- /jquery-3.7.1.js (code.jquery.com) - **22.862 ms, 81.80 KiB**
- /c942d42d0a.js (kit.fontawesome.com) - **132.181 ms, 4.22 KiB**
- ...js/bootstrap.bundle.min.js (cdn.jsdelivr.net) - **23.189 ms, 24.58 KiB**
- ...js/script.js (cshimvin.github.io) - **118.729 ms, 2.41 KiB**
- ...webfonts/free-fa-solid-900.woff2 (ka-f.fontawesome.com) - **30.107 ms, 147.11 KiB**

Keep request counts low and transfer sizes small — 15 requests • 579 KiB ^

To set budgets for the quantity and size of page resources, add a budget.json file. [Learn more about performance budgets.](#)

Resource Type	Requests	Transfer Size
Total	15.0	579.1 KiB
Image	1.0	215.5 KiB
Font	2.0	184.3 KiB
Script	4.0	113.0 KiB
Stylesheet	3.0	35.1 KiB
Other	4.0	29.6 KiB
Document	1.0	1.5 KiB
Media	0.0	0.0 KiB
Third-party	15.0	579.1 KiB

Largest Contentful Paint element — 2,530 ms ^

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

LCP

Element
<div><div></div><p>p</p></div>

Phase	% of LCP	Timing
TTFB	28%	720 ms
Load Delay	0%	0 ms
Load Time	0%	0 ms
Render Delay	72%	1,810 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
<div><div></div><h1>h1.white-text.text-center</h1></div>	0.001
<div><div></div><h5>h5#question-number.card-header</h5></div>	0.001
<div><div></div><strong>strong</strong></div>	0.001
<div><div></div><i>i.fa-solid.fa-plane-departure</i></div>	0.000

Element	CLS Contribution

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 — Potential savings of 150 ms

^

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

URL	Transfer Size	Potential Savings
JSDelivr CDN <span>Cdn</span>	34.2 KiB	1,220 ms
...css/bootstrap.min.css (cdn.jsdelivr.net)	34.2 KiB	1,220 ms
Google Fonts <span>Cdn</span>	0.6 KiB	780 ms
/css2?family=AR+One+Sans:wght@400;500;700&display=swap (fonts.googleapis.com)	0.6 KiB	780 ms

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 — Potential savings of 42 KiB

^

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

URL	Transfer Size	Potential Savings
jQuery CDN <span>Cdn</span>	81.8 KiB	41.8 KiB
/jquery-3.7.1.js (code.jquery.com)	81.8 KiB	41.8 KiB

Reduce unused CSS — Potential savings of 53 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
JSDelivr CDN <span>Cdn</span>	34.2 KiB	32.8 KiB
...css/bootstrap.min.css (cdn.jsdelivr.net)	34.2 KiB	32.8 KiB
Unattributable	20.3 KiB	20.1 KiB
/*! * Font Awesome Free 6.4.2 by @fontawesome - https://fontawesome.com * License - https://fonta...	20.3 KiB	20.1 KiB

Efficiently encode images



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

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 110 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
GitHub <span>Utility</span> <span>1st Party</span>	110 ms
/quiz-ms-2/index.html (cshimvin.github.io)	110 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 579 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
GitHub <span>Utility</span> <span>1st Party</span>	217.9 KiB
...image/aircraft-bg.jpg (cshimvin.github.io)	215.5 KiB
...js/script.js (cshimvin.github.io)	2.4 KiB
FontAwesome CDN <span>Cdn</span>	179.4 KiB
...webfonts/free-fa-solid-900.woff2 (ka-f.fontawesome.com)	147.1 KiB
...css/free.min.css?token=c942d42d0a (ka-f.fontawesome.com)	23.1 KiB
...css/free-v4-shims.min.css?token=c942d42d0a (ka-f.fontawesome.com)	4.9 KiB
/c942d42d0a.js (kit.fontawesome.com)	4.2 KiB
jQuery CDN <span>Cdn</span>	81.8 KiB
/jquery-3.7.1.js (code.jquery.com)	81.8 KiB
JSDelivr CDN <span>Cdn</span>	58.8 KiB
...css/bootstrap.min.css (cdn.jsdelivr.net)	34.2 KiB
...js/bootstrap.bundle.min.js (cdn.jsdelivr.net)	24.6 KiB
Google Fonts <span>Cdn</span>	37.2 KiB
...v2/TUZjzwhrm....woff2 (fonts.gstatic.com)	37.2 KiB

Avoids an excessive DOM size — 25 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		25
Maximum DOM Depth		i.fa-solid.fa-plane-departure 7

Statistic	Element	Value
Maximum Child Elements	<div></div>	10
	<div>body</div>	

User Timing marks and measures

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.](#)

JavaScript execution time — 0.0 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	147 ms	6 ms	0 ms
Unattributable	147 ms	6 ms	0 ms
GitHub <span>Utility</span> <span>1st Party</span>	82 ms	4 ms	2 ms
/quiz-ms-2/index.html <span>(cshimvin.github.io)</span>	82 ms	4 ms	2 ms

Minimizes main-thread work — 0.3 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

Category	Time Spent
Other	179 ms
Script Evaluation	53 ms
Style & Layout	39 ms

Category	Time Spent
Script Parsing & Compilation	20 ms
Parse HTML & CSS	13 ms
Garbage Collection	5 ms
Rendering	3 ms

All text remains visible during webfont loads



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

Minimize third-party usage — Third-party code blocked the main thread for 0 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

Third-Party	Transfer Size	Main-Thread Blocking Time
FontAwesome CDN <span>Cdn</span>	181 KiB	0 ms
...webfonts/free-fa-solid-900.woff2 (ka-f.fontawesome.com)	147 KiB	0 ms
...css/free.min.css?token=c942d42d0a (ka-f.fontawesome.com)	23 KiB	0 ms
Other resources	11 KiB	0 ms
jQuery CDN <span>Cdn</span>	82 KiB	0 ms
/jquery-3.7.1.js (code.jquery.com)	82 KiB	0 ms
JSDelivr CDN <span>Cdn</span>	59 KiB	0 ms
...css/bootstrap.min.css (cdn.jsdelivr.net)	34 KiB	0 ms
...js/bootstrap.bundle.min.js (cdn.jsdelivr.net)	25 KiB	0 ms
Google Fonts <span>Cdn</span>	38 KiB	0 ms
...v2/TUZjzwhrm....woff2 (fonts.gstatic.com)	37 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 long main-thread tasks



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

### ○ 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](#). Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

▲ Heading elements are not 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.](#)

Failing Elements



h5#question-number.card-header

These are opportunities to improve keyboard navigation in your application.

ADDITIONAL ITEMS TO MANUALLY CHECK (10)

Hide

☐ 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.](#)

☐ 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 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.](#)

☐ 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.](#)

☐ 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.](#)

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.](#)

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.](#)

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.](#)

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

PASSED AUDITS (8)

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.](#)

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 descendents

Focusable descendents 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.](#)

`<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.](#)

## NOT APPLICABLE (39)

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.](#)

☐ `[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.`

☐ `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.](#)

☐ 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.](#)

○ 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.](#)

☐ 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.](#)

☐ Input buttons have discernible text. ^

Adding discernible 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.](#)

☐ 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.](#)

☐ Lists contain only `<li>` 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 (`<li>`) are contained within `<ul>`, `<ol>` or `<menu>` parent elements ^

Screen readers require list items (`<li>`) to be contained within a parent `<ul>`, `<ol>` 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.](#)

☐ 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 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.](#)

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## 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
No CSP found in enforcement mode		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
Bootstrap	5.3.2
jQuery	3.7.1

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 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.](#)

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.](#)

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](#)

Avoids deprecated APIs



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

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
JSDelivr CDN <span>Cdn</span>	
...js/bootstrap.bundle.min.js (cdn.jsdelivr.net)	...js/bootstrap.bundle.min.js.map (cdn.jsdelivr.net)

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](#).

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.

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 (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 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 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 ≥12px. [Learn more about legible font sizes](#).

Source	Selector	% of Page Text	Font Size
Legible text		100.00%	≥ 12px

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

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.](#)



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

▲ Does not register a service worker that controls page and `start_url` ^

The 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. [Learn more about Service Workers](#).

▲ 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 Oct 17, 2023,  
10:58 PM GMT+1  
Initial page load

Emulated Moto G Power with  
Lighthouse 10.3.0  
Slow 4G throttling

Single page load  
Using Chromium 116.0.0.0 with  
devtools

Generated by **Lighthouse** 10.3.0 | [File an issue](#)