https://spacex-launcher-ui.herokuapp.com/

| 93 | 100 | 100 | 100 | PWA |
|---|---|---|---|---|
| Performance | Accessibility | Best Practices | SEO | Progressive Web App |

| 0–49 | 50–89 | 90–100 |
|---|---|---|

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## 93

# Performance

**Metrics**

| | | | |
|---|---|---|---|
| First Contentful Paint | 1.1 s | Time to Interactive | 1.1 s |
| Speed Index | 1.3 s | Total Blocking Time | 0 ms |
| Largest Contentful Paint | 1.3 s | Cumulative Layout Shift | 0.033 |

Values are estimated and may vary. The performance score is calculated directly from these metrics. See calculator.

[ View Original Trace ]

**Opportunities** — These suggestions can help your page load faster. They don't directly affect the Performance score.

| Opportunity | Estimated Savings |
|---|---|
| Use HTTP/2 | 0.54 s ∧ |

HTTP/2 offers many benefits over HTTP/1.1, including binary headers, multiplexing, and server push. Learn more.

☑ Show 3rd-party resources (20)

| URL | Protocol |
|---|---|
| https://spacex-launcher-ui.herokuapp.com | http/1.1 |
| /spacex.947f015….css (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /spacex00f6294….js (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /4377063….js (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /3e809b7….js (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /155c4d8….js (spacex-launcher-ui.herokuapp.com) | http/1.1 |

| URL | Protocol |
|---|---|
| /2a07a4d….js  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| …0e/T8iJcSN3_o.png  (images2.imgbox.com) | http/1.1 |
| …e3/I0IkuJ2e_o.png  (images2.imgbox.com) | http/1.1 |
| …86/cnu0pan8_o.png  (images2.imgbox.com) | http/1.1 |
| …c9/T8CfiSYb_o.png  (images2.imgbox.com) | http/1.1 |
| …ba/NBZSw3Ho_o.png  (images2.imgbox.com) | http/1.1 |
| …36/gbDKf6Y7_o.png  (images2.imgbox.com) | http/1.1 |
| …3e/FfrN88ry_o.png  (images2.imgbox.com) | http/1.1 |
| …7a/r9ITwL12_o.png  (images2.imgbox.com) | http/1.1 |
| …33/2eLGEejP_o.png  (images2.imgbox.com) | http/1.1 |
| …b6/Z4oktZeR_o.png  (images2.imgbox.com) | http/1.1 |
| …27/VhC1TTYN_o.png  (images2.imgbox.com) | http/1.1 |
| …b0/vP0sk3d5_o.png  (images2.imgbox.com) | http/1.1 |
| …6d/fnqIBEJh_o.png  (images2.imgbox.com) | http/1.1 |
| …cb/s1h2RuR0_o.png  (images2.imgbox.com) | http/1.1 |
| …b4/bcMrHMey_o.png  (images2.imgbox.com) | http/1.1 |
| …12/oSP2EwNz_o.png  (images2.imgbox.com) | http/1.1 |
| …c0/D3Owbmpo_o.png  (images2.imgbox.com) | http/1.1 |
| …28/cQwcs8qz_o.png  (images2.imgbox.com) | http/1.1 |
| …b6/RhNppyL3_o.png  (images2.imgbox.com) | http/1.1 |
| …c5/0OIpD59z_o.png  (images2.imgbox.com) | http/1.1 |
| /service-worker.js  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /workbox-d9851aed.js  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /asset-manifest.json  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /index.html  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /robots.txt  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /static/favicon.ico  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /static/icon.png  (spacex-launcher-ui.herokuapp.com) | http/1.1 |
| /static/manifest.json  (spacex-launcher-ui.herokuapp.com) | http/1.1 |

Eliminate render-blocking resources                    0.44 s  ⌃

Resources are blocking the first paint of your page. Consider delivering critical JS/CSS inline and deferring all non-critical JS/styles. Learn more.

☐ ~~Show 3rd-party resources~~ (0)

| URL | Transfer Size | Potential Savings |
|---|---|---|
| /spacex.947f015….css (spacex-launcher-ui.herokuapp.com) | 1.5 KiB | 130 ms |

**Enable text compression**      0.36 s ⌃

Text-based resources should be served with compression (gzip, deflate or brotli) to minimize total network bytes. Learn more.

☐ ~~Show 3rd-party resources~~ (0)

| URL | Transfer Size | Potential Savings |
|---|---|---|
| https://spacex-launcher-ui.herokuapp.com | 812.2 KiB | 746.8 KiB |

**Diagnostics** — More information about the performance of your application. These numbers don't directly affect the Performance score.

**Avoid an excessive DOM size**    —    1,396 elements      ⌃

A large DOM will increase memory usage, cause longer style calculations, and produce costly layout reflows. Learn more.

Consider using a "windowing" library like `react-window` to minimize the number of DOM nodes created if you are rendering many repeated elements on the page. Learn more. Also, minimize unecessary re-renders using shouldComponentUpdate, PureComponent, or React.memo and skip effects only until certain dependencies have changed if you are using the Effect hook to improve runtime performance.

| Statistic | Element | Value |
|---|---|---|
| Total DOM Elements | | NaN |
| Maximum DOM Depth | `<button aria-label="2006" class="filterItem ">` | 8 |
| Maximum Child Elements | `<div class="missionContainer">` | 100 |

**Avoid chaining critical requests**    —    2 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 more.

Maximum critical path latency: **760 ms**

*Initial Navigation*

> https://spacex-launcher-ui.herokuapp.com
>> /spacex.947f015….css (spacex-launcher-ui.herokuapp.com)
>>> /css2?family=Roboto&display=swap (fonts.googleapis.com)
>>>> …v20/KFOmCnqEu….woff2 (fonts.gstatic.com) **- 20 ms, 17.46 KiB**
>> /spacex00f6294….js (spacex-launcher-ui.herokuapp.com) **- 300 ms, 45.53 KiB**

**Keep request counts low and transfer sizes small**    —    42 requests • 1,035 KiB      ⌃

To set budgets for the quantity and size of page resources, add a budget.json file. Learn more.

| Resource Type | Requests | Transfer Size |
|---|---|---|
| Total | 42 | 1,035 KiB |
| Image | 20 | 490.7 KiB |
| Document | 1 | 406.3 KiB |
| Other | 13 | 62.1 KiB |
| Script | 5 | 56.4 KiB |
| Font | 1 | 17.5 KiB |
| Stylesheet | 2 | 2.1 KiB |
| Media | 0 | 0 KiB |
| Third-party | 22 | 508.8 KiB |

### Largest Contentful Paint element  —  1 element found  ⌃

This is the largest contentful element painted within the viewport. Learn More

**Element**

img.loaded

### Avoid large layout shifts  —  2 elements found  ⌃

These DOM elements contribute most to the CLS of the page.

| Element | CLS Contribution |
|---|---|
| div.footerText | 0.032 |
| div.footerText | 0 |

### Avoid long main-thread tasks  —  1 long task found  ⌃

Lists the longest tasks on the main thread, useful for identifying worst contributors to input delay. Learn more

☐ ~~Show 3rd-party resources~~ (0)

| URL | Start Time | Duration |
|---|---|---|
| /2a07a4d….js  (spacex-launcher-ui.herokuapp.com) | 690 ms | 72 ms |

## Passed audits (26)  ⌃

### Properly size images  —  Potential savings of 274 KiB  ⌃

Serve images that are appropriately-sized to save cellular data and improve load time. Learn more.

☑ ~~Show 3rd-party resources~~ (20)

| URL | Resource Size | Potential Savings |
|---|---|---|

| URL | Resource Size | Potential Savings |
|---|---|---|
| …86/cnu0pan8_o.png  (images2.imgbox.com) | 49 KiB | 27.4 KiB |
| …ba/NBZSw3Ho_o.png  (images2.imgbox.com) | 48.4 KiB | 27 KiB |
| …c9/T8CfiSYb_o.png  (images2.imgbox.com) | 43.3 KiB | 24.2 KiB |
| …0e/T8iJcSN3_o.png  (images2.imgbox.com) | 38.5 KiB | 21.5 KiB |
| …36/gbDKf6Y7_o.png  (images2.imgbox.com) | 29.6 KiB | 16.5 KiB |
| …e3/I0lkuJ2e_o.png  (images2.imgbox.com) | 27.4 KiB | 15.3 KiB |
| …b6/RhNppyL3_o.png  (images2.imgbox.com) | 24 KiB | 13.4 KiB |
| …3e/FfrN88ry_o.png  (images2.imgbox.com) | 23.7 KiB | 13.2 KiB |
| …b0/vP0sk3d5_o.png  (images2.imgbox.com) | 21.8 KiB | 12.2 KiB |
| …12/oSP2EwNz_o.png  (images2.imgbox.com) | 20.9 KiB | 11.7 KiB |
| …28/cQwcs8qz_o.png  (images2.imgbox.com) | 20.4 KiB | 11.4 KiB |
| …cb/s1h2RuR0_o.png  (images2.imgbox.com) | 20.3 KiB | 11.3 KiB |
| …27/VhC1TTYN_o.png  (images2.imgbox.com) | 17 KiB | 9.5 KiB |
| …b6/Z4oktZeR_o.png  (images2.imgbox.com) | 16.7 KiB | 9.3 KiB |
| …33/2eLGEejP_o.png  (images2.imgbox.com) | 16.7 KiB | 9.3 KiB |
| …7a/r9ITwL12_o.png  (images2.imgbox.com) | 16.2 KiB | 9 KiB |
| …c5/0OIpD59z_o.png  (images2.imgbox.com) | 15.8 KiB | 8.8 KiB |
| …c0/D3Owbmpo_o.png  (images2.imgbox.com) | 15.2 KiB | 8.5 KiB |
| …b4/bcMrHMey_o.png  (images2.imgbox.com) | 13.1 KiB | 7.3 KiB |
| …6d/fnqIBEJh_o.png  (images2.imgbox.com) | 12.9 KiB | 7.2 KiB |

Defer offscreen images  ⌄

Consider lazy-loading offscreen and hidden images after all critical resources have finished loading to lower time to interactive. Learn more.

### Minify CSS ⌃

Minifying CSS files can reduce network payload sizes. Learn more.

> If your build system minifies your CSS files automatically, ensure that you are deploying the production build of your application. You can check this with the React Developer Tools extension. Learn more.

### Minify JavaScript ⌃

Minifying JavaScript files can reduce payload sizes and script parse time. Learn more.

> If your build system minifies your JS files automatically, ensure that you are deploying the production build of your application. You can check this with the React Developer Tools extension. Learn more.

### Remove unused CSS ⌃

Remove dead rules from stylesheets and defer the loading of CSS not used for above-the-fold content to reduce unnecessary bytes consumed by network activity. Learn more.

### Remove unused JavaScript ⌃

Remove unused JavaScript to reduce bytes consumed by network activity. Learn more.

> If you are not server-side rendering, split your JavaScript bundles with `React.lazy()`. Otherwise, code-split using a third-party library such as loadable-components.

### Efficiently encode images ⌃

Optimized images load faster and consume less cellular data. Learn more.

### Serve images in next-gen formats — Potential savings of 118 KiB ⌃

Image formats like JPEG 2000, JPEG XR, and WebP often provide better compression than PNG or JPEG, which means faster downloads and less data consumption. Learn more.

☑ ~~Show 3rd-party resources~~ (6)

| URL | Resource Size | Potential Savings |
|---|---|---|
| …ba/NBZSw3Ho_o.png  (images2.imgbox.com) | 48.4 KiB | 28.1 KiB |
| …86/cnu0pan8_o.png  (images2.imgbox.com) | 49 KiB | 25.4 KiB |
| …0e/T8iJcSN3_o.png  (images2.imgbox.com) | 38.5 KiB | 24 KiB |
| …c9/T8CfiSYb_o.png  (images2.imgbox.com) | 43.3 KiB | 15.9 KiB |
| …36/gbDKf6Y7_o.png  (images2.imgbox.com) | 29.6 KiB | 13 KiB |
| …e3/I0lkuJ2e_o.png  (images2.imgbox.com) | 27.4 KiB | 12.2 KiB |

Preconnect to required origins ⌃

Consider adding `preconnect` or `dns-prefetch` resource hints to establish early connections to important third-party origins. Learn more.

Initial server response time was short — Root document took 280 ms ⌃

Keep the server response time for the main document short because all other requests depend on it. Learn more.

⚛ If you are server-side rendering any React components, consider using `renderToNodeStream()` or `renderToStaticNodeStream()` to allow the client to receive and hydrate different parts of the markup instead of all at once. Learn more.

Avoid multiple page redirects ⌃

Redirects introduce additional delays before the page can be loaded. Learn more.

⚛ If you are using React Router, minimize usage of the `<Redirect>` component for route navigations.

Preload key requests ⌃

Consider using `<link rel=preload>` to prioritize fetching resources that are currently requested later in page load. Learn more.

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

Remove duplicate modules in JavaScript bundles ⌃

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

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 More

Avoids enormous network payloads — Total size was 1,048 KiB ⌃

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

☑ Show 3rd-party resources (7)

| URL | Transfer Size |
| --- | --- |
| https://spacex-launcher-ui.herokuapp.com | 406.3 KiB |
| …86/cnu0pan8_o.png (images2.imgbox.com) | 49 KiB |
| …ba/NBZSw3Ho_o.png (images2.imgbox.com) | 48.4 KiB |
| /spacex00f6294….js (spacex-launcher-ui.herokuapp.com) | 45.5 KiB |
| /spacex00f6294….js (spacex-launcher-ui.herokuapp.com) | 45.5 KiB |
| …c9/T8CfiSYb_o.png (images2.imgbox.com) | 43.3 KiB |
| …0e/T8iJcSN3_o.png (images2.imgbox.com) | 38.5 KiB |

| URL | Transfer Size |
| --- | --- |
| …36/gbDKf6Y7_o.png  (images2.imgbox.com) | 29.6 KiB |
| …e3/I0lkuJ2e_o.png  (images2.imgbox.com) | 27.4 KiB |
| …b6/RhNppyL3_o.png  (images2.imgbox.com) | 24 KiB |

Uses efficient cache policy on static assets  — 0 resources found    ⌃

A long cache lifetime can speed up repeat visits to your page. Learn more.

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.

Use the React DevTools Profiler, which makes use of the Profiler API, to measure the rendering performance of your components. Learn more.

JavaScript execution time  — 0.1 s    ⌃

Consider reducing the time spent parsing, compiling, and executing JS. You may find delivering smaller JS payloads helps with this. Learn more.

☐ Show 3rd party resources (0)

| URL | Total CPU Time | Script Evaluation | Script Parse |
| --- | --- | --- | --- |
| https://spacex-launcher-ui.herokuapp.com | 165 ms | 1 ms | 4 ms |
| /2a07a4d….js  (spacex-launcher-ui.herokuapp.com) | 72 ms | 67 ms | 0 ms |
| Unattributable | 69 ms | 1 ms | 0 ms |
| /spacex00f6294….js  (spacex-launcher-ui.herokuapp.com) | 56 ms | 50 ms | 1 ms |

Minimizes main-thread work  — 0.4 s    ⌃

Consider reducing the time spent parsing, compiling and executing JS. You may find delivering smaller JS payloads helps with this. Learn more

| Category | Time Spent |
| --- | --- |
| Script Evaluation | 131 ms |
| Other | 100 ms |
| Rendering | 79 ms |
| Style & Layout | 48 ms |
| Parse HTML & CSS | 9 ms |
| Script Parsing & Compilation | 7 ms |
| Garbage Collection | 5 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.

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 more.

| Third-Party | Transfer Size | Main-Thread Blocking Time |
|---|---|---|
| Google Fonts | 18 KiB | 0 ms |

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.

Avoids `document.write()`  ⌃

For users on slow connections, external scripts dynamically injected via `document.write()` can delay page load by tens of seconds. Learn more.

Avoid non-composited animations  ⌃

Animations which are not composited can be janky and contribute to CLS. Learn more

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

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

## 100

# 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.

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

The page has a logical tab order  ⌃

Tabbing through the page follows the visual layout. Users cannot focus elements that are offscreen. Learn more.

Interactive controls are keyboard focusable  ⌃

Custom interactive controls are keyboard focusable and display a focus indicator. Learn more.

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 more.

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 more.

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 more](#).

Custom controls have associated labels    ^

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

Custom controls have ARIA roles    ^

Custom interactive controls have appropriate ARIA roles. [Learn more](#).

Visual order on the page follows DOM order    ^

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

Offscreen content is hidden from assistive technology    ^

Offscreen content is hidden with display: none or aria-hidden=true. [Learn more](#).

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](#).

**Passed audits (16)**    ^

`[aria-*]` attributes match their roles    ^

Each ARIA `role` supports a specific subset of `aria-*` attributes. Mismatching these invalidates the `aria-*` attributes. [Learn more](#).

`[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 more](#).

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

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

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

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

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 more](#).

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](#).

Background and foreground colors have a sufficient contrast ratio    ^

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

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.

### 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.

### `<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.

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

Specifying a valid BCP 47 language helps screen readers announce text properly. Learn more.

### 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.

### 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 more.

### 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.

### List items (`<li>`) are contained within `<ul>` or `<ol>` parent elements

Screen readers require list items (`<li>`) to be contained within a parent `<ul>` or `<ol>` to be announced properly. Learn more.

### `[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.

## Not applicable (25)

### `[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.

### `[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 more.

### 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.

### `[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.

### 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.

### `[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.

### `[role]` values are valid ⌃

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

### 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.

### `<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 more.

### 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 more.

### `[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 more.

### ARIA IDs are unique ⌃

The value of an ARIA ID must be unique to prevent other instances from being overlooked by assistive technologies. Learn more.

### 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 more.

### `<frame>` or `<iframe>` elements have a title ⌃

Screen reader users rely on frame titles to describe the contents of frames. Learn more.

### `<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 more.

### Form elements have associated labels ⌃

Labels ensure that form controls are announced properly by assistive technologies, like screen readers. Learn more.

Presentational `<table>` elements avoid using `<th>`, `<caption>` or the `[summary]` attribute. ⌃

A table being used for layout purposes should not include data elements, such as the th or caption elements or the summary attribute, because this can create a confusing experience for screen reader users. Learn more.

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.

`<object>` elements have `[alt]` text ⌃

Screen readers cannot translate non-text content. Adding alt text to `<object>` elements helps screen readers convey meaning to users. Learn more.

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.

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.

`<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.

`[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 more.

`<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.

`<video>` elements contain a `<track>` element with `[kind="description"]` ⌃

Audio descriptions provide relevant information for videos that dialogue cannot, such as facial expressions and scenes. Learn more.

## 100

# Best Practices

**Passed audits (15)** ⌃

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 servedover 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]().

---

Links to cross-origin destinations are safe ⌃

Add `rel="noopener"` or `rel="noreferrer"` to any external links to improve performance and prevent security vulnerabilities. [Learn more]().

---

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]().

---

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]().

---

Avoids front-end JavaScript libraries with known security vulnerabilities ⌃

Some third-party scripts may contain known security vulnerabilities that are easily identified and exploited by attackers. [Learn more]().

---

Allows users to paste into password fields ⌃

Preventing password pasting undermines good security policy. [Learn more]().

---

Displays images with correct aspect ratio ⌃

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

---

Serves images with appropriate resolution ⌃

Image natural dimensions should be proportional to the display size and the pixel ratio to maximize image clarity. [Learn more]().

---

Page has the HTML doctype ⌃

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

---

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]().

---

Avoids `unload` event listeners ⌃

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

---

Avoids Application Cache ⌃

Application Cache is deprecated. [Learn more]().

---

Detected JavaScript libraries ⌃

All front-end JavaScript libraries detected on the page. [Learn more]().

| Name | Version |
|------|---------|
| React | |

### Avoids deprecated APIs ⌄

Deprecated APIs will eventually be removed from the browser. <u>Learn more</u>.

### 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. <u>Learn more</u>

**100**

# SEO

These checks ensure that your page is optimized for search engine results ranking. There are additional factors Lighthouse does not check that may affect your search ranking. <u>Learn more</u>.

**Additional items to manually check (1)** — Run these additional validators on your site to check additional SEO best ⌄
practices.

### Structured data is valid ⌄

Run the <u>Structured Data Testing Tool</u> and the <u>Structured Data Linter</u> to validate structured data. <u>Learn more</u>.

**Passed audits (10)** ⌄

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

Add a `<meta name="viewport">` tag to optimize your app for mobile screens. <u>Learn more</u>.

### 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. <u>Learn more</u>.

### Document has a meta description ⌄

Meta descriptions may be included in search results to concisely summarize page content. <u>Learn more</u>.

### Page has successful HTTP status code ⌄

Pages with unsuccessful HTTP status codes may not be indexed properly. <u>Learn more</u>.

### Links have descriptive text ⌄

Descriptive link text helps search engines understand your content. <u>Learn more</u>.

### 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 More

### 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.

### 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.

### 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.

### Document avoids plugins ⌃

Search engines can't index plugin content, and many devices restrict plugins or don't support them. Learn more.

## Not applicable (4) ⌃

### 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.

### Document has a valid `rel=canonical` ⌃

Canonical links suggest which URL to show in search results. Learn more.

### 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 ≥12px. Learn more.

### Tap targets are sized appropriately ⌃

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

PWA

# Progressive Web App

These checks validate the aspects of a Progressive Web App. Learn more.

**Fast and reliable**

### Page load is fast enough on mobile networks ⌃

A fast page load over a cellular network ensures a good mobile user experience. Learn more.

Current page responds with a 200 when offline ∧

If you're building a Progressive Web App, consider using a service worker so that your app can work offline. [Learn more](#).

`start_url` responds with a 200 when offline ∧

A service worker enables your web app to be reliable in unpredictable network conditions. [Learn more](#).

**Installable**

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 servedover 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](#).

Registers 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](#).

Web app manifest meets the installability requirements ∧

Browsers can proactively prompt users to add your app to their homescreen, which can lead to higher engagement. [Learn more](#).

**PWA Optimized**

🔺 Does not redirect HTTP traffic to HTTPS ∧

If you've already set up HTTPS, make sure that you redirect all HTTP traffic to HTTPS in order to enable secure web features for all your users. [Learn more](#).

Configured for a custom splash screen ∧

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

Sets a theme color for the address bar. ∧

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

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 more](#).

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

Add a `<meta name="viewport">` tag to optimize your app for mobile screens. [Learn more](#).

Contains some content when JavaScript is not available ∧

Your app should display some content when JavaScript is disabled, even if it's just a warning to the user that JavaScript is required to use the app. [Learn more](#).

Provides a valid `apple-touch-icon` ∧

For ideal appearance on iOS when users add a progressive web app to the home screen, define an `apple-touch-icon`. It must point to a non-transparent 192px (or 180px) square PNG. Learn More.

Manifest has a maskable icon ⌃

A maskable icon ensures that the image fills the entire shape without being letterboxed when installing the app on a device. Learn more.

**Additional items to manually check (3)** — 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.

Site works cross-browser ⌃

To reach the most number of users, sites should work across every major browser. Learn more.

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.

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.

Runtime Settings

| | |
|---|---|
| **URL** | https://spacex-launcher-ui.herokuapp.com/ |
| **Fetch Time** | Nov 9, 2020, 8:14 PM GMT+5:30 |
| **Device** | Emulated Desktop |
| **Network throttling** | 40 ms TCP RTT, 10,240 Kbps throughput (Simulated) |
| **CPU throttling** | 1x slowdown (Simulated) |
| **Channel** | devtools |
| **User agent (host)** | Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.183 Safari/537.36 |
| **User agent (network)** | Mozilla/5.0 (Macintosh; Intel Mac OS X 10_14_6) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.4143.7 Safari/537.36 Chrome-Lighthouse |
| **CPU/Memory Power** | 2052 |

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