

Web Performance Review Document

TrendTrack Design Co.



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Version History

Version	Date	Author(s)	Changes	State
0.5	13/01/25	Ivet Kalcheva	Added Lighthouse Report	Draft
1.0	16/01/25	Ivet Kalcheva	Improved based on Bart's feedback	Completed

Distribution

Version	Date	Receivers
1.0	17/01/25	Frank Coenen and Bart Rabeling

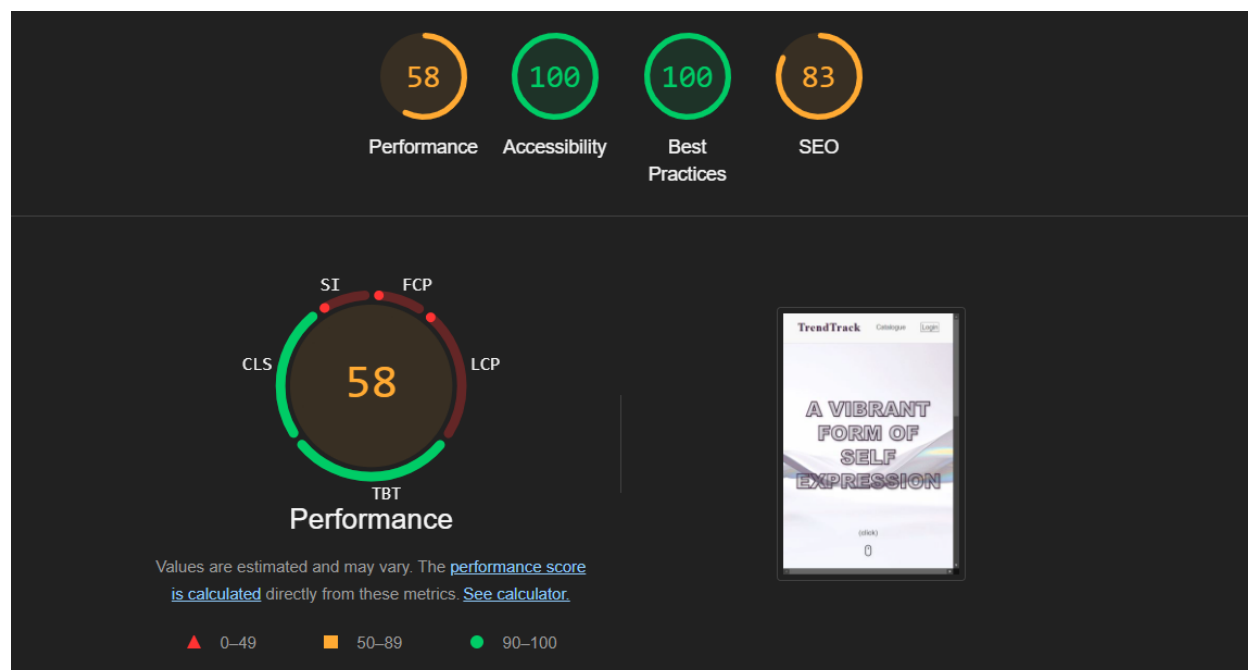
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Introduction

Document Purpose

This web performance review provides an analysis of the TrendTrack application using Lighthouse, focusing on key performance metrics, accessibility, best practices and SEO. The review highlights areas where performance can be improved and offers suggestions for optimization to ensure a smoother user experience. Addressing these issues will enhance the overall performance, responsiveness, and discoverability of the web application.



METRICS		Expand view
▲ First Contentful Paint	2.9 s	▲ Largest Contentful Paint
● Total Blocking Time	0 ms	● Cumulative Layout Shift
▲ Speed Index	3.0 s	

Issues Identified

Large Largest Contentful Paint (LCP)

- **Metric:** 12.2s
- **Details:** The largest visible element, moving_fabric.gif, takes too long to load, contributing significantly to the slow LCP. This delay impacts the perceived speed of the page.

Minification of JavaScript

- **Potential Savings:** 1,128 KiB
- **Details:** Several JavaScript files are not minified, resulting in large payloads that increase load time.

Image Optimization

- **Metric:** 115 KiB
- **Details:** Images are not optimized and lead to slower load times.

Render-blocking Resources

- **Potential Savings:** 220ms
- **Details:** The Google Fonts request is blocking the page rendering.

Excessive Network Payload

- **Metric:** 13,550 KiB
- **Details:** The total network payload is large, primarily due to images and third-party libraries, which can slow down the page load time.

Unused JavaScript

- **Potential Savings:** 2,778 KiB
- **Details:** A large amount of JavaScript is unused and can be deferred, reducing the network traffic and improving load times.

SEO Issues

- **Details:** The document lacks a meta description, which can impact search engine indexing and ranking once the application is deployed.

Accessibility

- **Metric:** 100
- **Details:** While the application passes all automated accessibility checks.

Ways to Resolve These Issues

Optimize Largest Contentful Paint (LCP)

- Optimize images, for example, converting the GIF in the hero element into a more efficient video format. As it would result faster loading times compared to current one, containing a GIF file.

Eliminate Render-blocking Resources

- Load fonts asynchronously or use font-display: swap to avoid blocking the render process. As the used Google Fonts delay the render process.
- Inline critical CSS and defer non-essential JavaScript to ensure that they do not block the first paint.

Reduce Network Payload

- As previously mentioned, compressing and optimising images. Also, lazy-loading or deferring the loading of non-critical third-party libraries.

Fix SEO Issues

- Add a meta description to the document. This will help search engines understand the page content and improve search rankings once it is deployed.

Maintain Accessibility Compliance

- Continue manual testing to ensure all accessibility standards are met, particularly for elements that automated tests cannot detect, such as visual elements and custom components.
- Review contrast ratios, alt text for images and keyboard navigation to improve accessibility.

Conclusion

The TrendTrack web application performs well in terms of accessibility and best practices, but improvements can be made in performance and SEO. By optimizing images and addressing render-blocking resources, the overall performance can be significantly improved. Resolving SEO and layout shift issues will also enhance the discoverability and user experience. Implementing these improvements will lead to faster load times, better performance scores and improved user satisfaction.