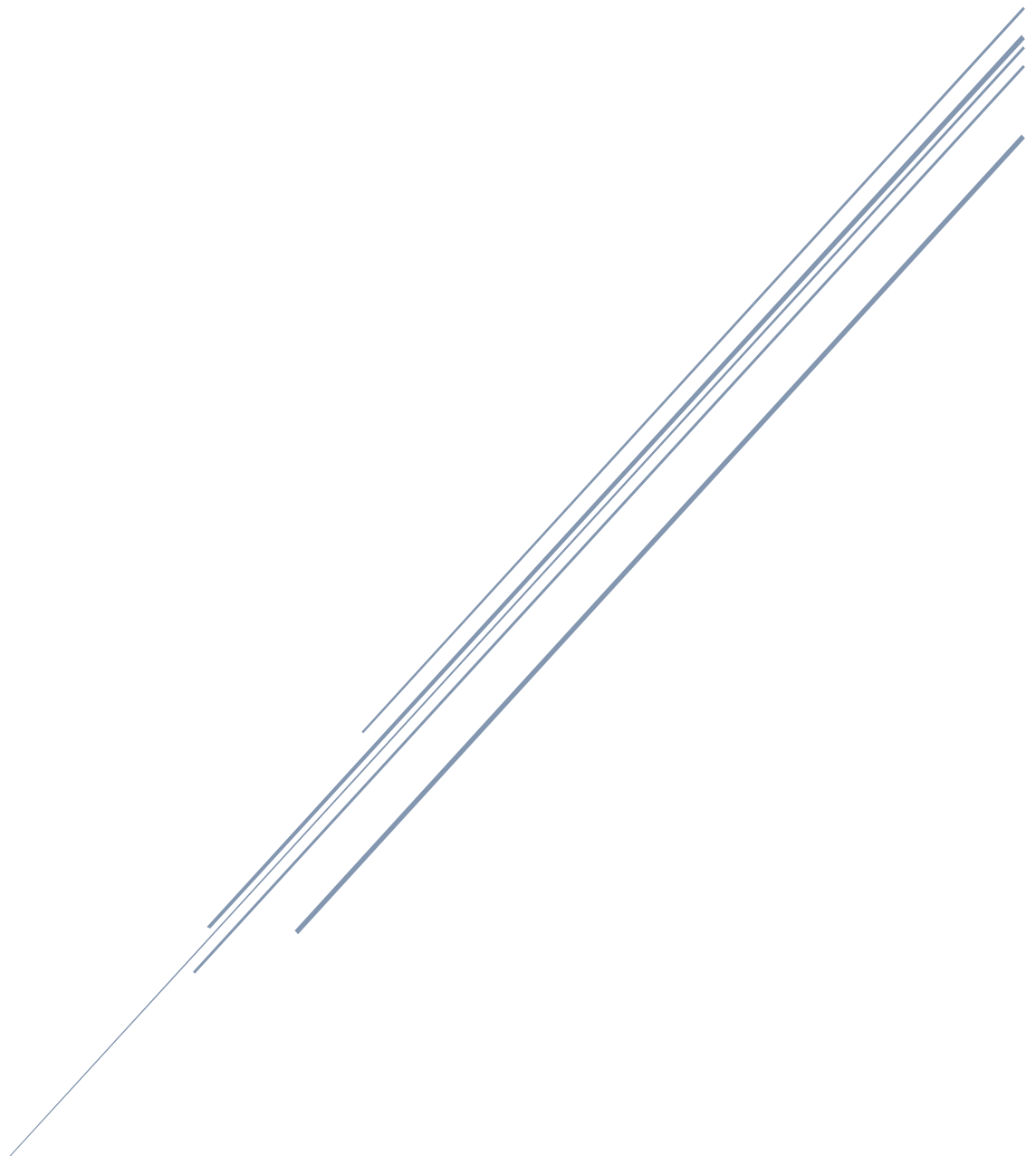# PERFORMANCE REPORT

Project: Public transport lookup application

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Contents

Introduction

Performance testing is an important part of ensuring quality in a product. The performance was performed using Google Lighthouse, an open-source, automated tool for measuring the quality of web pages. This document summarizes the review and draws conclusion of the given facts.

Summary

Performance benchmarking has been done on the home page, where the main activity of users will be, and the administrator CRUD page, where administrative tasks are fulfilled. Notably, the PWA scoring is not shown, however it is by design like that by Google.

Home page
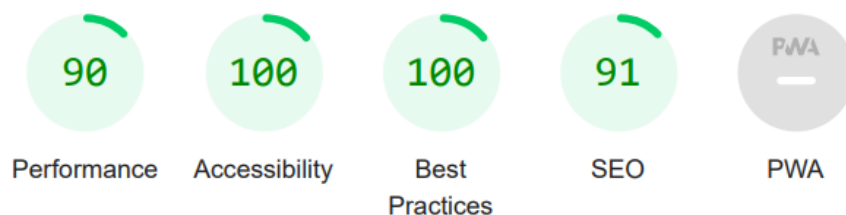
Overall, all aspects score 90 or higher, which indicates Good quality per Google's specification. The lower scoring on the Performance category can be explained by the Leaflet map included to draw on page load. Accessibility and Best practices are scored with maximum points, which indicates excellent health performance-wise. Notably, PWA indicator is grayed out, but it is by

design like that. Here is the full report on Progressive Web App (PWA) scoring.

PWA

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

INSTALLABLE

⚠ Web app manifest or service worker do not meet the installability requirements — 3 reasons ⌄

PWA OPTIMIZED

⚠ Does not register a service worker that controls page and `start_url` ⌄

⚠ Is not configured for a custom splash screen Failures: Manifest does not have a PNG icon of at least 512px. ⌄

Sets a theme color for the address bar. ⌄

○ Content is sized correctly for the viewport ⌄

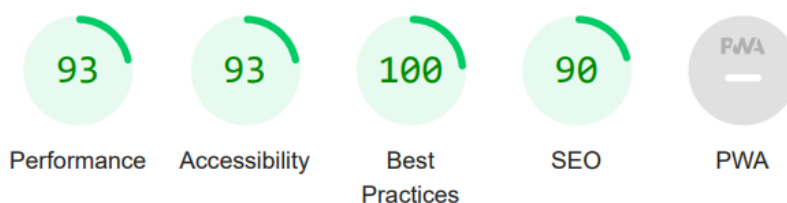Has a `<meta name="viewport">` tag with `width` or `initial-scale` ⌄

Provides a valid `apple-touch-icon` ⌄

⚠ Manifest doesn't have a maskable icon ⌄

We can conclude that there is still work to be done in reference to PWA.

You can find the detailed summary here: https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Performance%20review%20Lighthouse/Home%20page%20summary.pdf

Admin page

Similarly, the overall quality is Good, with scores over 90 points.

The Performance category is slightly affected by the necessity of a caching policy, according to the report.

Accessibility score is affected by the lack of labels on most buttons. That is true, although it is by design for them to have icons instead of labels to simplify the structure of the CRUD table.

Further, Best practices are met with 100 points.

SEO can be improved by adding a meta-description, as per the report.

PWA can be viewed at the bottom of the report:

PWA

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

INSTALLABLE

⚠ Web app manifest or service worker do not meet the installability requirements — 3 reasons

PWA OPTIMIZED

ıt:blank

/23, 1:20 PM   about:blank

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

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

Provides a valid `apple-touch-icon`

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We can conclude that there is still work to be done in reference to PWA.

You can find the detailed summary here: https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Performance%20review%20Lighthouse/CRUD%20page%20summary.pdf

Conclusion

Each benchmark run on the home page and administrator page scored at least 90 points on all quality aspects. The home page's reduction in performance is explained by the involvement of the map. Similarly, the slight performance issue with the administrator page is due to the display and load of large data.

Minor accessibility issues in the administrator page are due to the lack of labels on some buttons, but this can be ignored, as adding labels to the buttons (create, update, delete) would make the user overwhelmed, in contrast to simply including icons.

Overall, the Lighthouse benchmark measures excellent app quality, with slight non-severe issues, related to PWA, Performance, and Accessibility.

Links

Git repository - https://git.fhict.nl/I478158/s3-indiv

Project plan - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Project%20plan.pdf

Design document - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Design%20document.pdf

UML diagram - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/UML.pdf

C4 diagram - https://structurizr.com/share/77232/diagrams

Pipeline diagram - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Pipeline%20diagram.png

Research paper on SQL vs NoSQL regarding the project - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Applied%20research.pdf

Test plan - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/Test%20plan.pdf

UX Feedback & Report - https://git.fhict.nl/I478158/s3-indiv/-/blob/main/doc/UX%20Feedback%20&%20Report.pdf

Research paper for justifying technology stack used -
https://git.fhict.nl/I478158/s3-indiv/-
/blob/main/doc/Research%20paper%20for%20justifying%20technology%20sta
ck%20used.pdf

OWASP Security report - https://git.fhict.nl/I478158/s3-indiv/-
/blob/main/doc/OWASP%20Security%20report.pdf

API documentation with Swagger – Start the app and open the link
localhost:8080/swagger-ui/