Galala University
Faculty of Computer Science and Engineering
CSE211 Web Programming Fall-2025/2026

Performance Analysis Report

CSE211 Web Programming, Fall Semester 25/26

Instructor: Prof. Samy

Group04

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Introduction

This report presents a detailed analysis of the web project's performance, focusing on Core Web Vitals and real-world optimization challenges. Using professional-grade tools such as Google PageSpeed Insights and Chrome Lighthouse, the project was evaluated for load time, responsiveness, visual stability, and overall efficiency. The goal is to identify bottlenecks, provide comparative analysis, and propose actionable optimization strategies.

Complete homepage URL:

Server location (if identifiable):

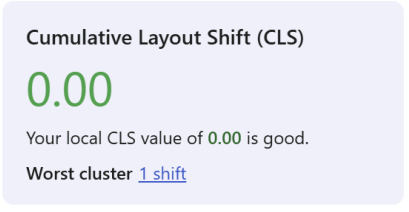
Technology Stack Identification

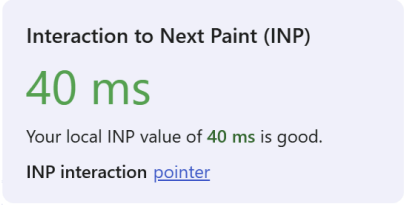
Frontend

- Markup & Styling: HTML5, CSS3
- Interactivity / Behavior: JavaScript (all custom scripts like auth.js, main.js, budget-calculator.js)

Backend

- Server-side Language: PHP
- Database:
- Server:

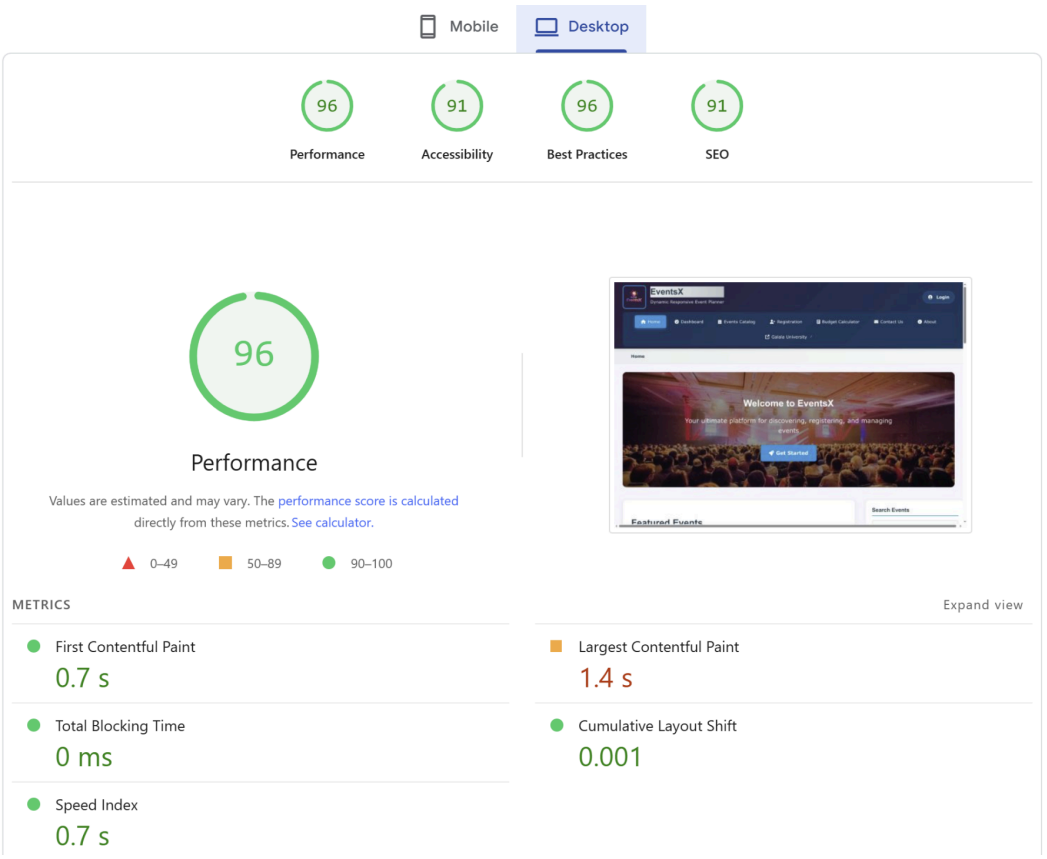




Largest Contentful Paint (LCP)
Target: < 2.5 seconds (Good), 2.5-4.0s (Needs Improvement), > 4.0s (Poor)
Interaction to Next Paint (INP)
Target: < 200ms (Good), 200-500ms (Needs Improvement), > 500ms (Poor)
Cumulative Layout Shift (CLS)
Target: < 0.1 (Good), 0.1-0.25 (Needs Improvement), > 0.25 (Poor)

Desktop:

Diagnose performance issues



Insights

INSIGHTS

- Improve image delivery — Est savings of 3,069 KiB
- Render blocking requests — Est savings of 470 ms
- LCP request discovery
- Network dependency tree
- Document request latency — Est savings of 16 KiB
- Font display — Est savings of 20 ms
- Layout shift culprits
- Optimize DOM size
- LCP breakdown
- 3rd parties

Diagnostics

DIAGNOSTICS

- Reduce unused CSS — Est savings of 29 KiB
- Minify CSS — Est savings of 6 KiB
- Minify JavaScript — Est savings of 7 KiB
- Avoid enormous network payloads — Total size was 6,689 KiB

Passed:

PASSED AUDITS (13) Shov

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.

NAMES AND LABELS

▲ Form elements do not have associated labels

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

CONTRAST

▲ Background and foreground colors do not have a sufficient contrast ratio.

These are opportunities to improve the legibility of your content.

BEST PRACTICES

○ Identical links have the same purpose.

These items highlight common accessibility best practices.

Best Practices

GENERAL

- ▲ Browser errors were logged to the console

TRUST AND SAFETY

- ○ Ensure CSP is effective against XSS attacks
- ○ Use a strong HSTS policy
- ○ Ensure proper origin isolation with COOP
- ○ Mitigate clickjacking with XFO or CSP
- ○ Mitigate DOM-based XSS with Trusted Types

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.

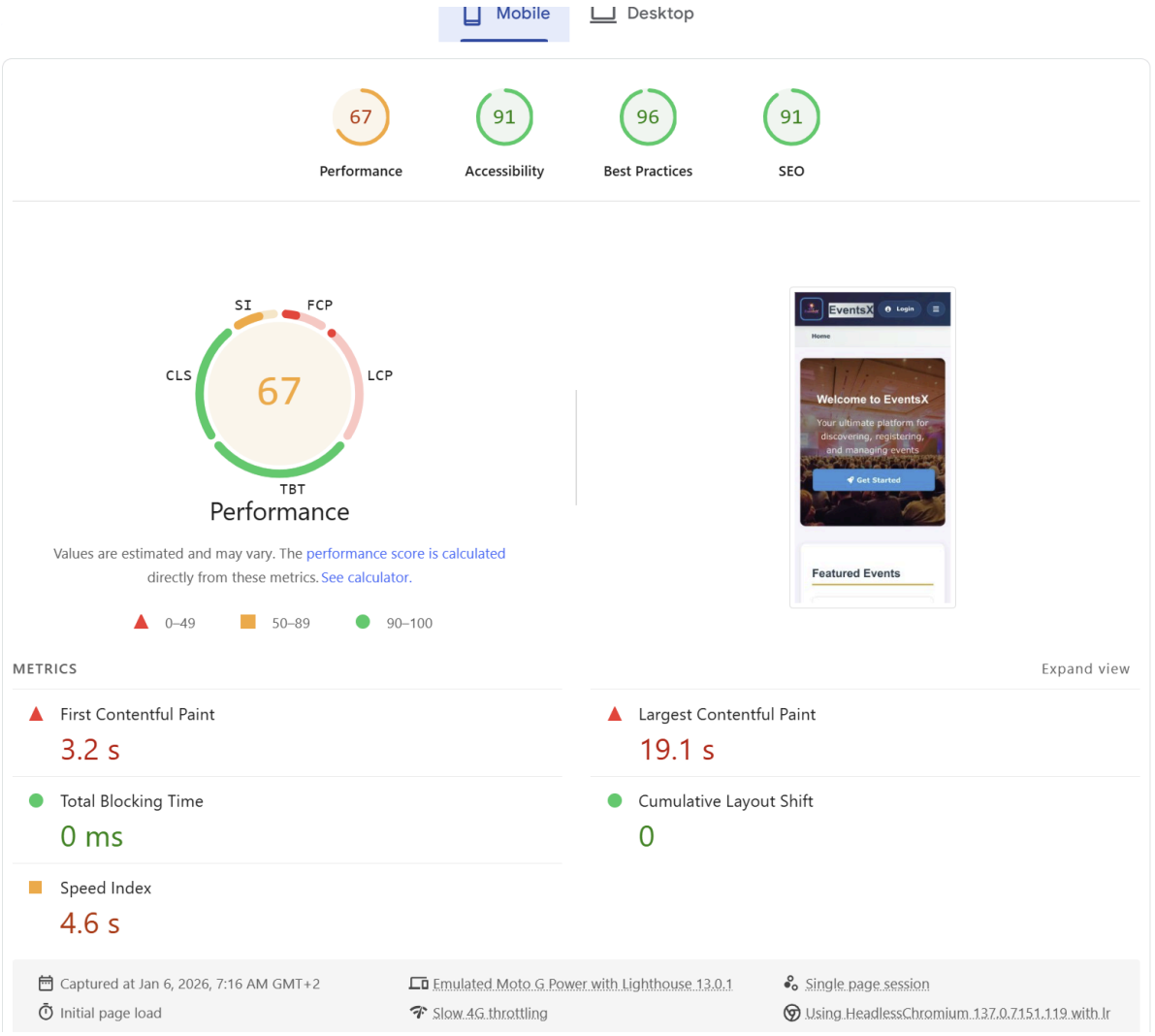
CONTENT BEST PRACTICES

- ▲ Links do not have descriptive text — 1 link found

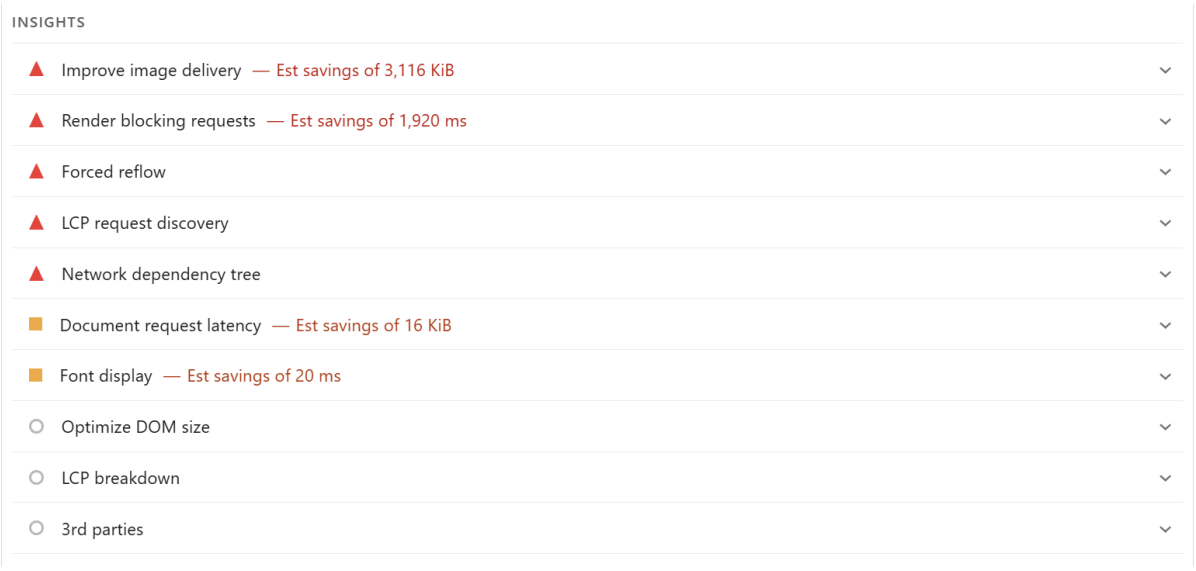
Format your HTML in a way that enables crawlers to better understand your app's content.

Mobile

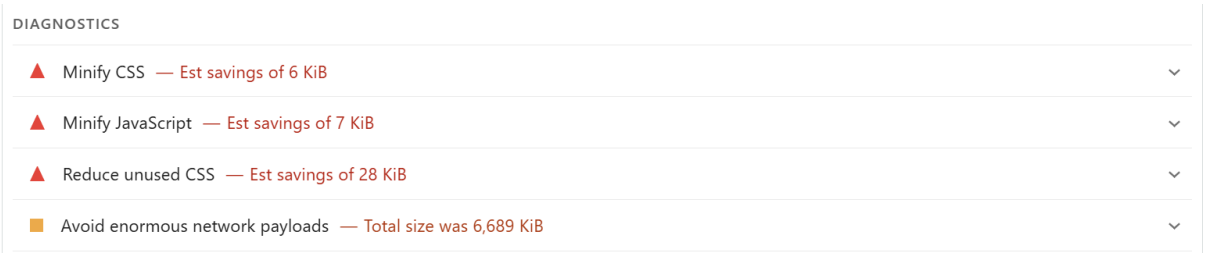
Diagnose performance issues



Insights



Diagnostics



Passed:

PASSED AUDITS (13) Show

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	Desktop	Mobile
Performance	**96**	**67**
Accessability	**91**	**91**
Best Practices	**96**	**96**
SEO	**91**	**91**
LCP	**1.4s**	**19s**
CLS	**0.001**	**0**
INP	**40ms**	**41ms**

Conclusion

This performance analysis framework provides a structured approach for evaluating the efficiency and stability of the web project. By measuring Core Web Vitals and key loading metrics on both desktop and mobile environments, potential bottlenecks can be identified and addressed. The results of this analysis will guide future optimization efforts to enhance loading speed, responsiveness, and visual stability.