

Experiment No: - 11

Aim:- To use google Lighthouse PWA Analysis Tool to test the PWA functioning.

Theory:-

Google Lighthouse is a Google-developed automated tool integrated into Chrome browser, assessing web page performance, accessibility, best practices, and SEO. It includes a Progressive Web App (PWA) Analysis Tool, focusing on PWA-specific features like service worker, offline capabilities, app-like behavior, and responsive design.

To utilize the PWA Analysis Tool:

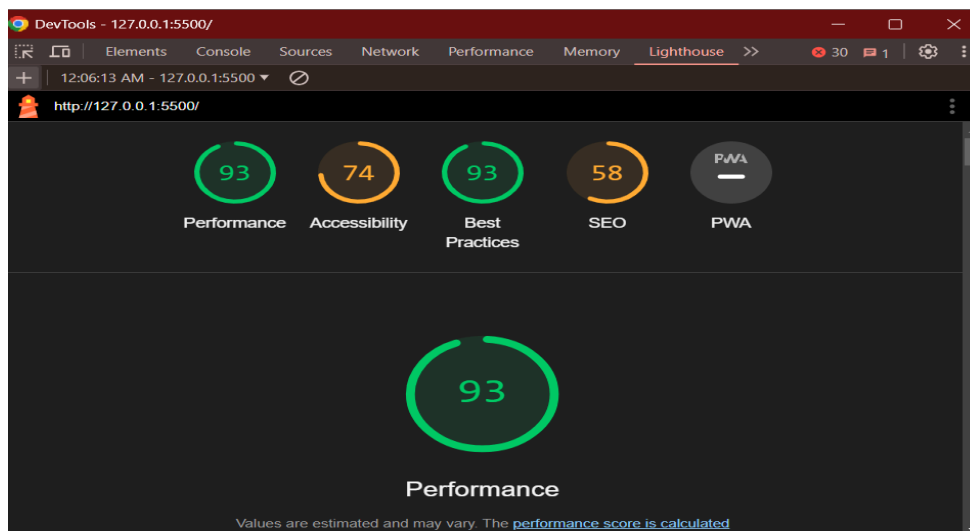
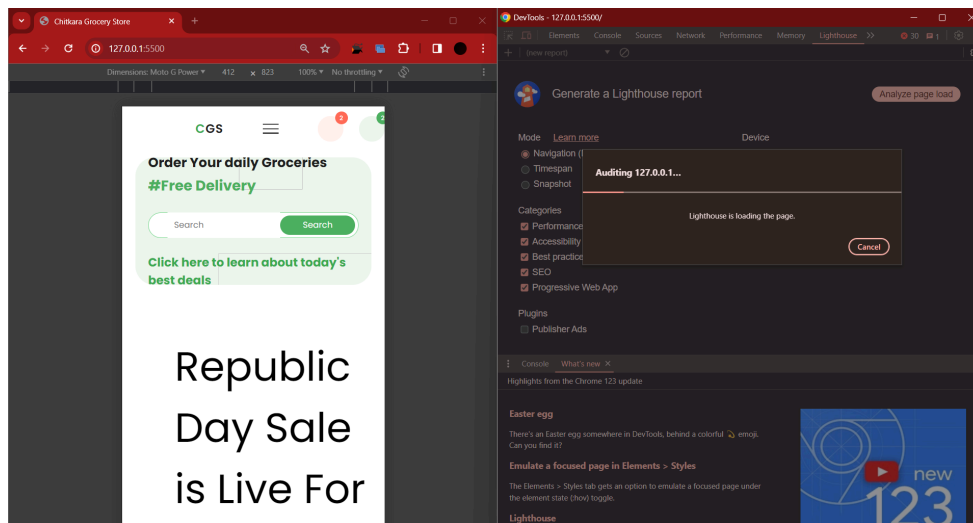
1. Launch Chrome and navigate to your PWA's webpage.
2. Right-click and select "Inspect" to open Chrome DevTools.
3. Navigate to the "Audits" tab and choose "Progressive Web App."
4. Click "Run audits" and wait for analysis completion.
5. Review results, including performance metrics and PWA-specific features.
6. Utilize feedback to optimize and enhance your PWA's functionality and user experience.

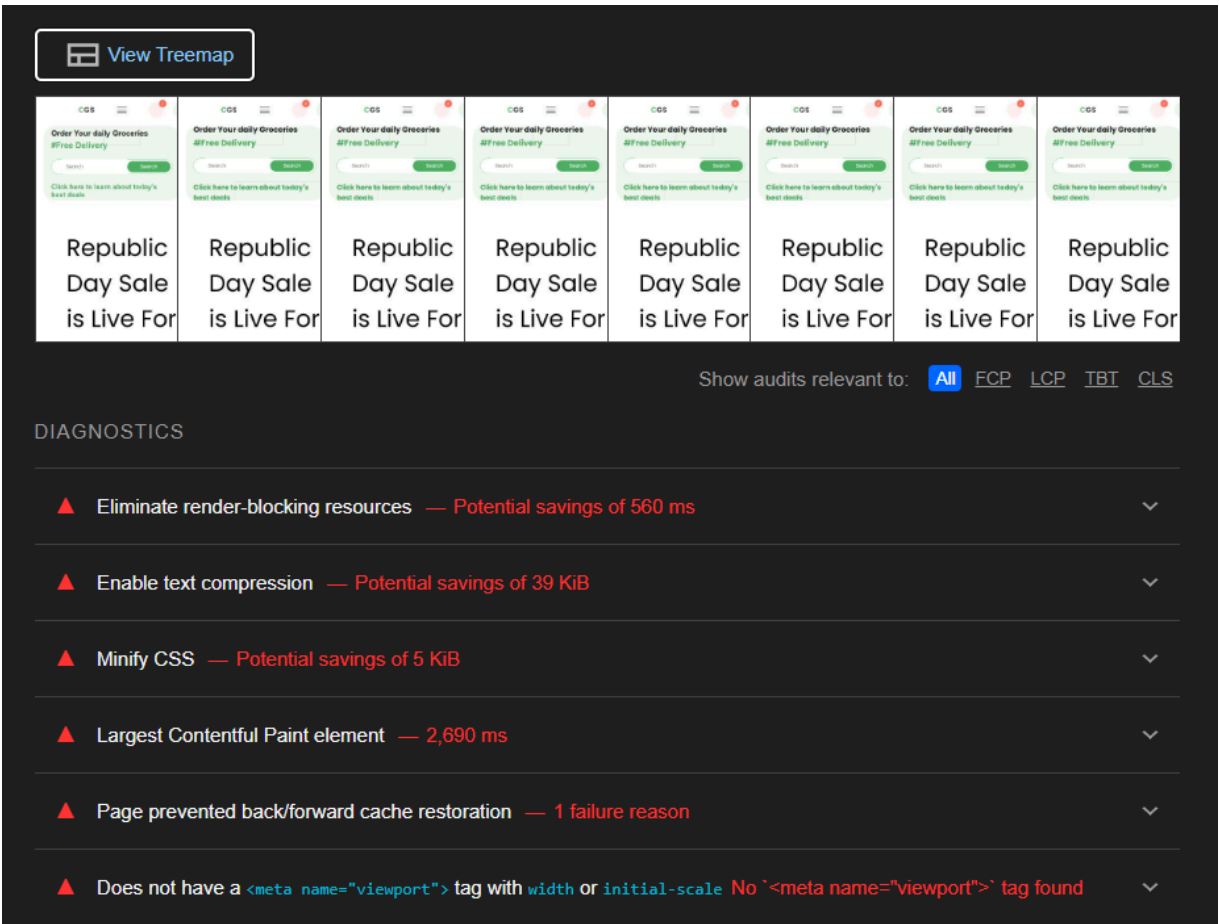
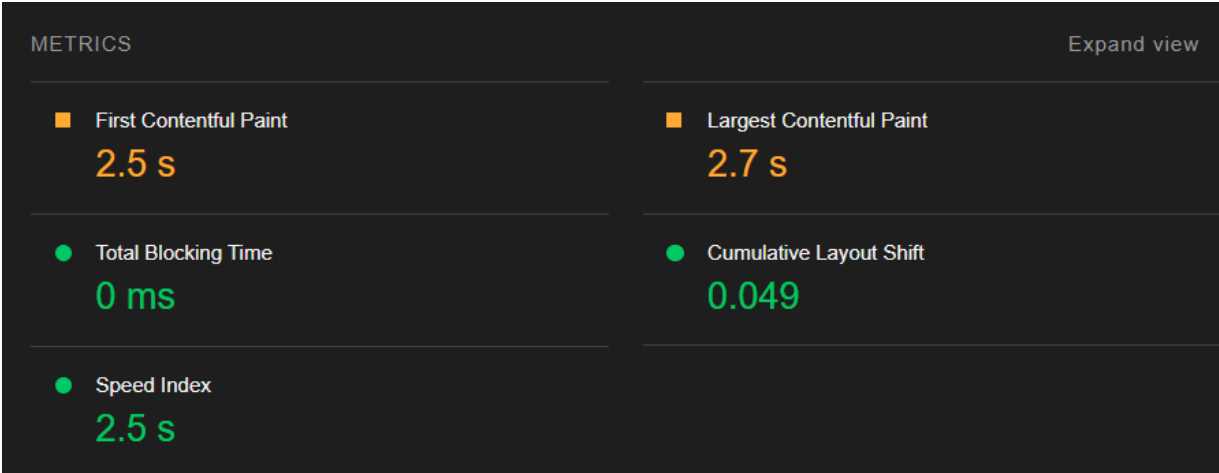
Lighthouse evaluates several key factors:

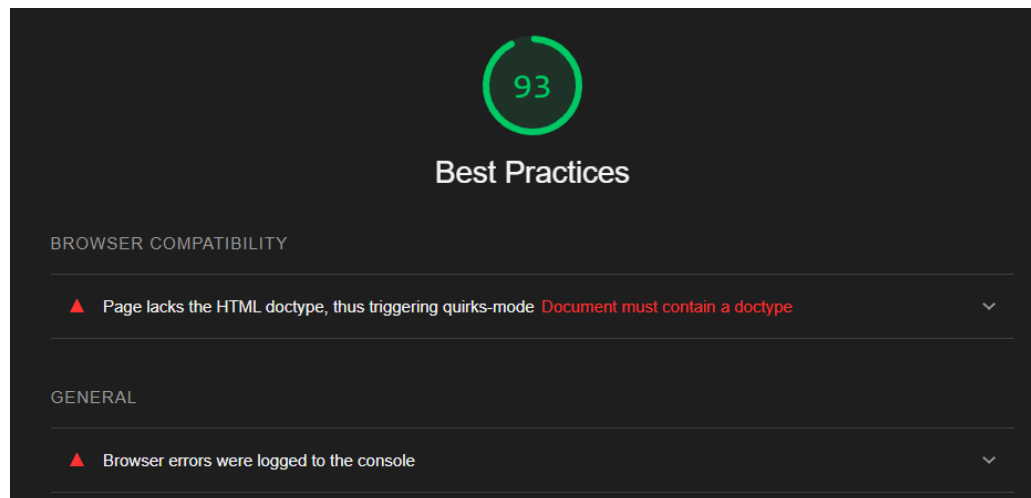
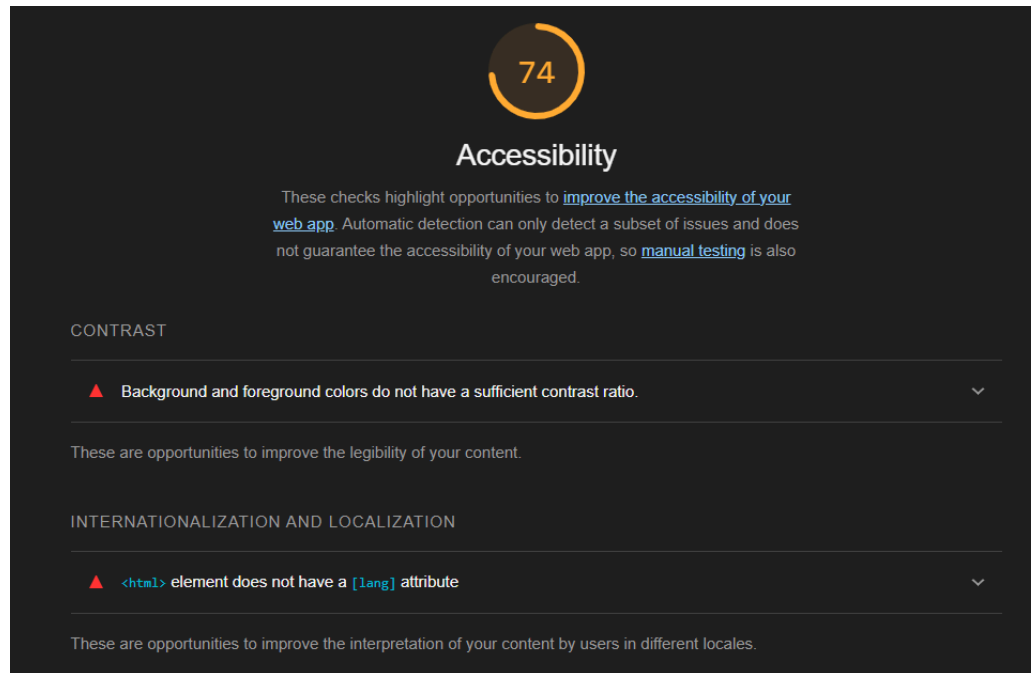
1. Service Worker: Lighthouse checks if the web page has a service worker registered and properly configured. Service workers are essential for enabling features like offline caching and background sync in PWAs.
2. Offline Capabilities: Lighthouse assesses whether the PWA can function offline by caching essential resources and providing a meaningful offline experience to users.
3. App-like Behavior: Lighthouse examines if the PWA behaves like a native app, including features such as a splash screen, full-screen mode, and home screen installation prompts.

4. Responsive Design: Lighthouse verifies that the PWA is responsive and works well across various devices and screen sizes, ensuring a consistent user experience.
5. Performance: While not specific to PWAs, Lighthouse evaluates the performance of the web page, including metrics such as load time, speed index, and time to interactive. A fast and optimized PWA enhances user engagement and satisfaction.

Output:







Conclusion:

In conclusion, utilizing Google Lighthouse PWA Analysis Tool to test the PWA functionality has provided valuable insights into its performance, accessibility, and best practices. This comprehensive analysis helps identify areas for improvement, ensuring that the PWA delivers an optimal user experience across various devices and network conditions.