

## 1. Aim

To use Google Lighthouse PWA Analysis Tool to test the PWA functioning.

## 2. Theory

Progressive Web Apps (PWAs) are web applications that offer a native app-like experience through modern web capabilities. To ensure a web app meets the standards of a PWA, tools like Google Lighthouse can be used to analyze and audit the application's performance, accessibility, SEO, and adherence to PWA requirements.

Google Lighthouse is an open-source, automated tool available in Chrome DevTools. It audits web apps and generates a detailed report with scores and suggestions for improvement.

Specifically, for PWA functionality, Lighthouse checks for service worker registration, offline support, manifest file correctness, HTTPS availability, installability, and responsiveness.

To use Lighthouse:

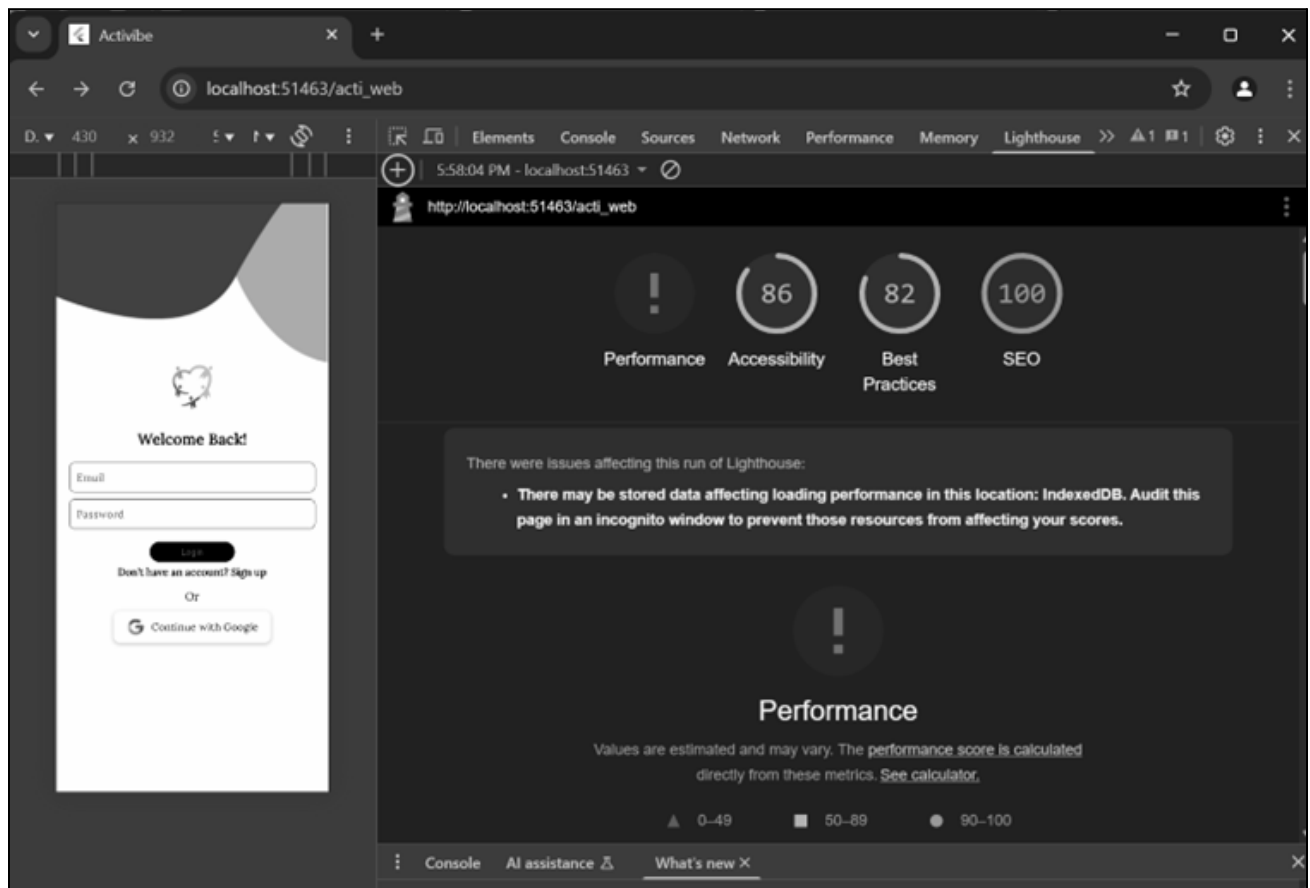
1. Open the deployed PWA in Google Chrome.
2. Open Chrome DevTools (F12 or Ctrl+Shift+I).
3. Go to the "Lighthouse" tab.
4. Select "Progressive Web App" and other desired categories.
5. Run the audit and wait for the report.

The generated report helps developers identify what aspects of their PWA meet the standards and what needs to be improved, making Lighthouse an essential tool for PWA development.

- All file paths must be **relative** (./style.css, ./script.js, etc.)
- manifest.json and sw.js must be in the **root** directory.  
Icons must be correctly linked in the manifest file and accessible by the browser.
- Make sure the serviceWorker.register() and other scripts are correctly placed and working

<https://exp7-pwa-1.onrender.com>

### 3. Output:



### 4. Conclusion

Using Google Lighthouse, we successfully audited our E-commerce PWA and confirmed its proper functioning with respect to service worker registration, offline access, and installability. Lighthouse provided insights into areas of improvement and validated our app's compliance with PWA best practices. This experiment highlighted the importance of automated tools in maintaining quality and performance in modern web applications.