

Name:Sahil Motiramani

Div: D15C

Roll no: 35

Experiment-11

1. Aim

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

2.Theory

Progressive Web Apps (PWAs) are web applications that combine the best of web and mobile apps to provide a native-like experience. PWAs are reliable, fast, and engaging, offering offline capabilities and installability on devices.

Google Lighthouse is an open-source tool integrated into Chrome DevTools that audits web applications for performance, accessibility, SEO, and PWA compliance. For Progressive Web Apps, it specifically checks for:

- Proper registration of the service worker
- Offline support
- Presence and correctness of the manifest file
- HTTPS availability
- App installability
- Responsive design

Steps to use Lighthouse:

1. Open the deployed profile PWA in Google Chrome.
2. Open Chrome DevTools (F12 or Ctrl+Shift+I).
3. Navigate to the "Lighthouse" tab.
4. Select the Progressive Web App category (and others as needed).
5. Click on Generate report.

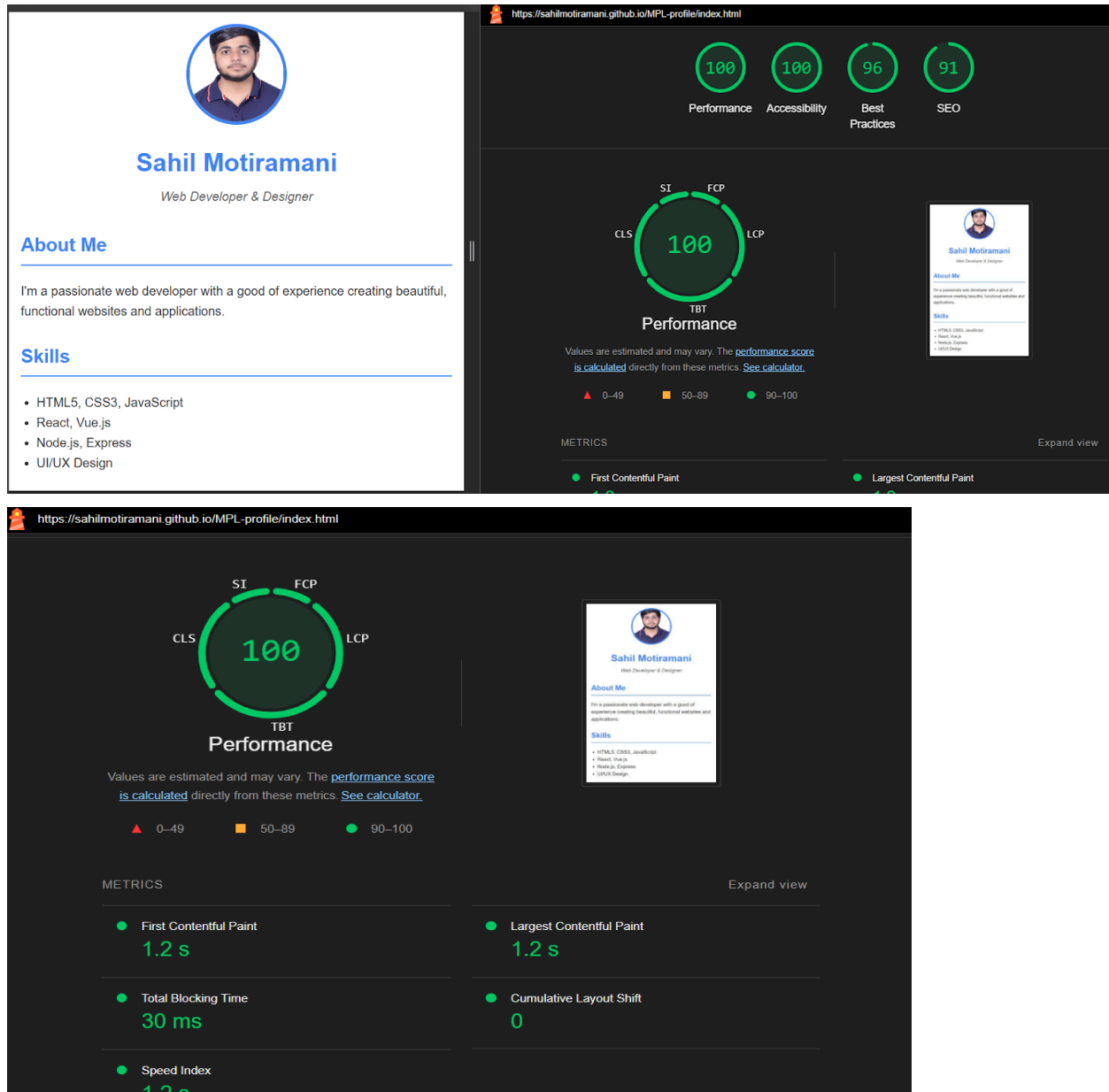
The Lighthouse report will provide scores and detailed feedback on each section, including suggestions for improvements.

Best Practices to Follow:

- All file paths must be relative (e.g., ./style.css, ./script.js).
- Place manifest.json and sw.js in the root directory.
- Icons must be correctly linked in manifest.json and accessible by the browser.
- Ensure navigator.serviceWorker.register() is correctly implemented in your script.

<https://sahilmotiramani.github.io/MPL-profile/index.html>

3. Output:



4. Conclusion

Using Google Lighthouse, we successfully audited the PWA functionality of our Profile Website. The audit confirmed proper service worker registration, offline access, manifest configuration, and installability. Lighthouse highlighted minor areas for optimization and validated our app's alignment with modern PWA standards. This experiment demonstrates how automated auditing tools ensure high performance and reliability for web applications.