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MAD-PWD Experiment - 11

AIM: To use google Lighthouse PWA Analysis Tool to test the PWA functioning.
THEORY:
Absolutely, here's a deeper dive into Google Lighthouse and its role in Progressive Web Apps (PWAs):

Lighthouse and PWAs: A Perfect Match

Progressive Web Apps (PWAs) are web applications that offer an app-like experience using modern web technologies. They combine the best of both worlds: the reach and discoverability of websites with the functionality and engagement of native apps. Google Lighthouse plays a vital role in ensuring a PWA delivers on its promise of an exceptional user experience.

Lighthouse Audits for PWAs

Within the PWA category of Lighthouse audits, there are three subcategories that assess a webpage's ability to function effectively as a PWA:

1. **Fast and Reliable:**

   ○ This subcategory focuses on performance aspects crucial for a PWA, ensuring the app:
     ■ Loads quickly, even on unstable network connections.
     ■ Remains functional offline, providing a seamless experience even without an internet connection.

2. **Installable:**

   ○ This subcategory verifies if the PWA can be easily installed on a user's device home screen, just like a native app.

- Lighthouse checks for the presence of a web app manifest file, which provides essential information for installation, such as name, icons, and start-up URL.

3. **PWA-Optimized:**

- This subcategory goes beyond the basics and evaluates if the PWA leverages features that enhance the user experience:
  - **HTTPS:** Ensures secure communication between the PWA and the server.
  - **Web App Manifest:** Checks for advanced configurations within the manifest file, such as a start-up screen to improve user engagement during initial load.
  - **Service Workers:** Verifies the use of service workers, a powerful technology that enables offline functionality, push notifications, and background sync.
  - **Responsive Design:** Confirms that the PWA adapts its layout for optimal viewing across different screen sizes and devices.

Benefits of Lighthouse for PWA Development

By using Lighthouse's PWA audits, developers can ensure their PWA:

- **Provides a Fast and Smooth User Experience:** Quick loading times and offline capabilities are essential for keeping users engaged.
- **Offers Easy Installation:** A frictionless installation process encourages users to add the PWA to their home screen for convenient access.
- **Leverages Advanced PWA Features:** Features like push notifications and background sync can significantly enhance user engagement.

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https://niyati2609.github.io/ecom/

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Performance Accessibility Best Practices SEO PWA

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Performance

Values are estimated and may vary. The performance score is calculated directly from these metrics. See calculator.
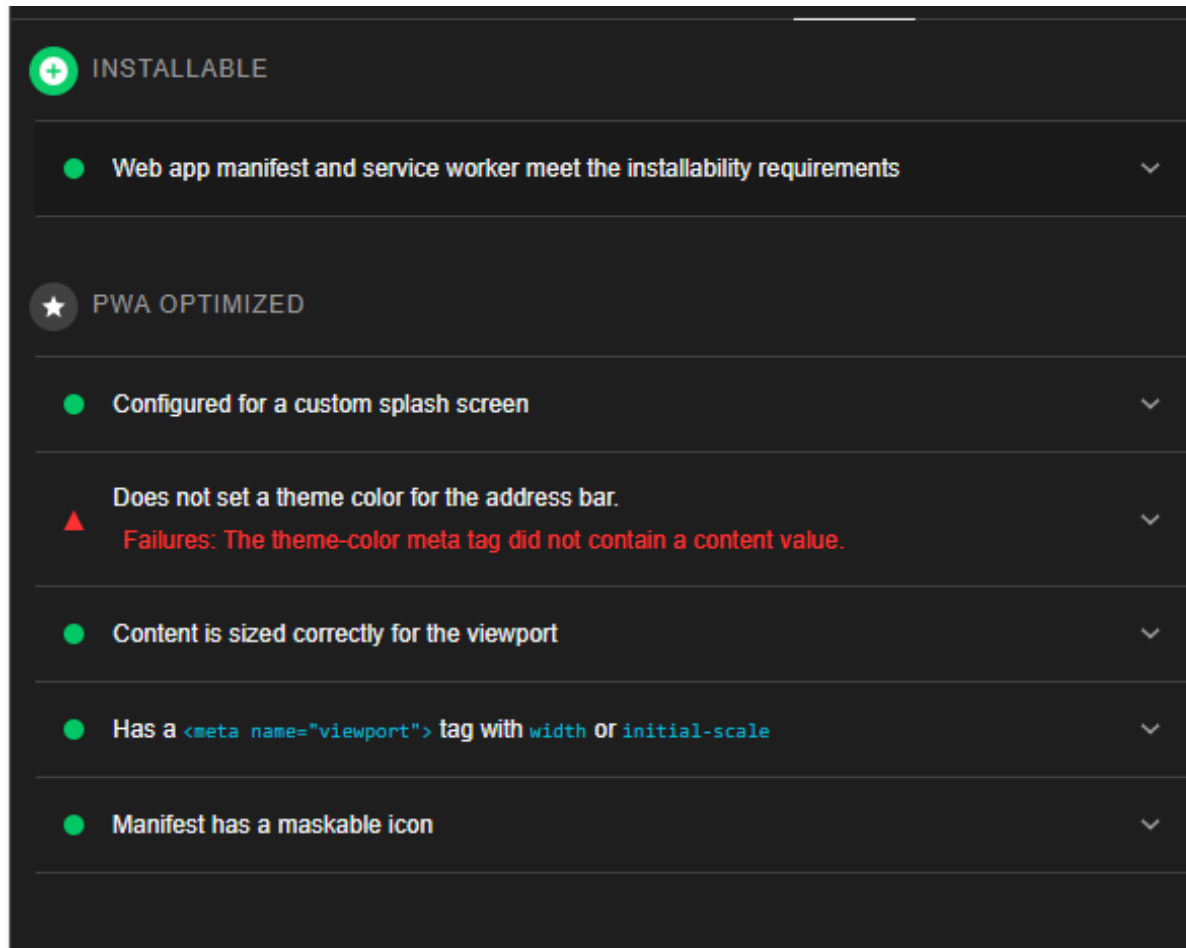
▲ 0–49 ■ 50–89 ● 90–100

METRICS Expand view

Alongside Chrome's updated Installability Criteria, Lighthouse will be deprecating the PWA category in a future release. Please refer to the updated PWA documentation for future PWA testing.

PWA

PWA

These checks validate the aspects of a Progressive Web App. Learn what makes a good Progressive Web App.

⊕ INSTALLABLE

● Web app manifest and service worker meet the installability requirements ⌄

Github repo link: https://github.com/Niyati2609/ecom

Deployed website link: https://niyati2609.github.io/ecom/

CONCLUSION: Thus we analyzed our Deployed PWA app using Google's lighthouse to check how well my PWA E-commerce app performs.