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EXP 9

AIM: : To implement Service worker events like fetch, sync and push for Inventory Management PWA.

Description:

A Service Worker is a script that runs in the background of a browser and allows developers to intercept and manage network requests, enable offline functionality, handle background sync, and display push notifications. Service workers play a critical role in developing Progressive Web Apps (PWAs) by enhancing performance and reliability, especially in unreliable network conditions.

Key Events:

Fetch Event:

Allows the service worker to intercept network requests. It enables caching strategies like cache-first (check cache before going to network) and network-first (try network first, fallback to cache). This improves loading times and supports offline access.

Sync Event:

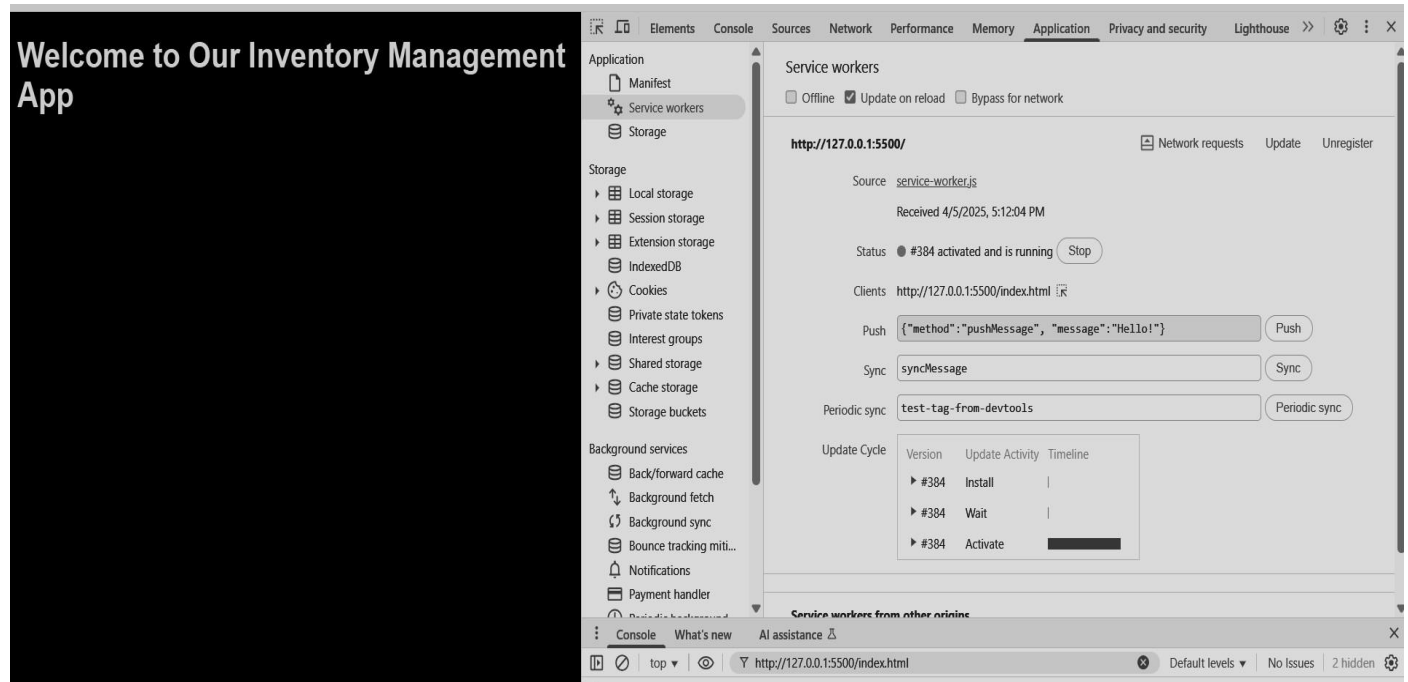
Background Sync allows processes (like sending data) to be deferred until the user has a stable internet connection. For example, if the user updates inventory data offline, the service worker can sync it automatically once back online.

Push Event:

Enables the application to receive push notifications even when it is not open. This keeps users informed with real-time updates, like low stock alerts or new order confirmations.

These service worker events significantly improve user experience by providing offline functionality, ensuring data consistency, and increasing engagement through timely notifications.

Screenshot:



Conclusion:

In this experiment, we successfully implemented Service Worker events like fetch, sync, and push in an Inventory Management PWA. The fetch event helped manage network requests using cache-first and network-first strategies, enabling offline access to cached resources. The sync event allowed background synchronization when the internet was unavailable, ensuring reliable data updates. Finally, the push event enabled real-time notifications to users. This implementation enhanced the PWA's offline capabilities, responsiveness, and user engagement.