Experiment - 8

AIM:

To code and register a service worker, and complete the install and activation process for a new service worker for the PWA.

Theory:

1. What is a Service Worker?

A **Service Worker** is a type of background script that runs in the browser, but **separately from your web pages**. It helps your web app work even when there's **no internet**, and enables features like **background sync** and **push notifications**. It's a key part of making **Progressive Web Apps (PWAs)** more reliable.

It works like a **middleman between the app and the internet**, handling how requests are made and what to do when the app is offline — such as showing cached content.

2. Service Worker Lifecycle

The service worker goes through **three main steps**:

- **Registration**: The service worker file is linked to the browser from your main code.
- **Installation**: Important files like HTML, CSS, and images are saved (cached) so they can be used later.
- **Activation**: The service worker starts working, takes control of pages, and removes any outdated cache.

3. How Registration Works

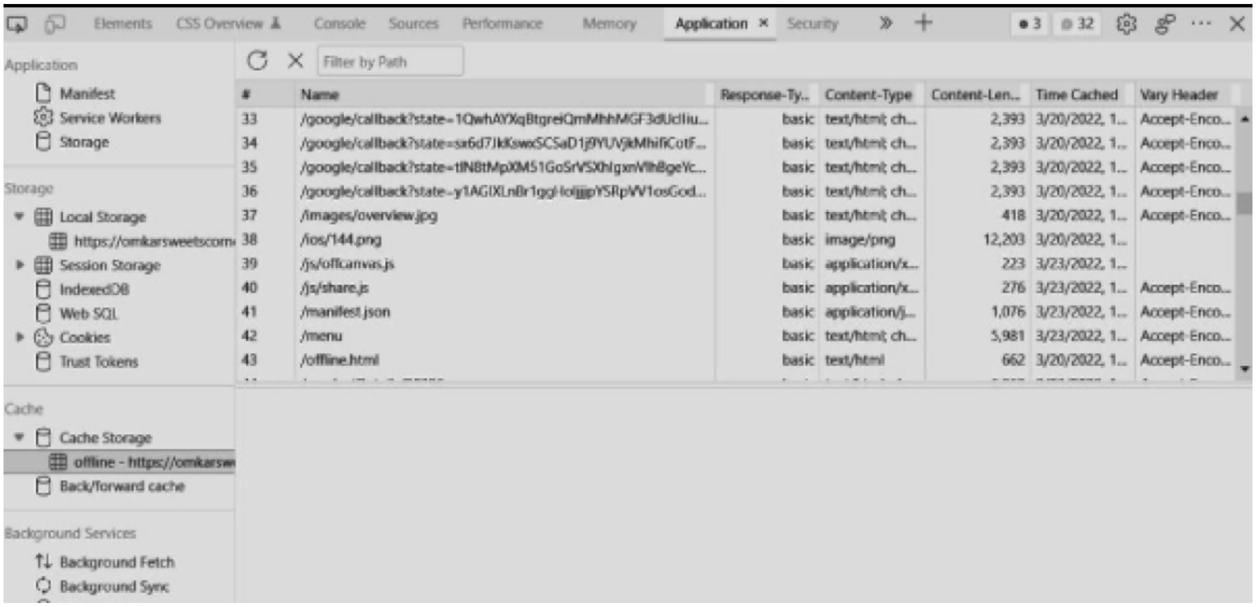
You **register the service worker** in your main JavaScript file. After that, the browser takes care of the rest — like installing and activating it — if everything is done correctly.

4. Why Service Workers Matter for PWAs

- Your app keeps working even when the internet is slow or unavailable.
- It loads faster by using saved (cached) content.

Experiment - 8

- It gives a smoother, more reliable experience, keeping users happy and more likely to return.
- Enables "Add to Homescreen" and background features.



#	Name	Response-Ty...	Content-Type	Content-Len...	Time Cached	Vary Header
33	/google/callback?state=1QwhAYXqBtgreiQmMhhMGF3dUclIiu...	basic	text/html; ch...	2,393	3/20/2022, 1...	Accept-Enco...
34	/google/callback?state=sx6d7JkKswxSCSaD1j9YUVjkMhifiCotF...	basic	text/html; ch...	2,393	3/20/2022, 1...	Accept-Enco...
35	/google/callback?state=tIN8tMpXM51GoSrVSXhlgxnVlhBgeYc...	basic	text/html; ch...	2,393	3/20/2022, 1...	Accept-Enco...
36	/google/callback?state=y1AGIXLnBr1ggHoljjjpYSRpVV1osGod...	basic	text/html; ch...	2,393	3/20/2022, 1...	Accept-Enco...
37	/images/overview.jpg	basic	text/html; ch...	418	3/20/2022, 1...	Accept-Enco...
38	/ios/144.png	basic	image/png	12,203	3/20/2022, 1...	
39	/js/offcanvas.js	basic	application/x...	223	3/23/2022, 1...	
40	/js/share.js	basic	application/x...	276	3/23/2022, 1...	Accept-Enco...
41	/manifest.json	basic	application/j...	1,076	3/23/2022, 1...	Accept-Enco...
42	/menu	basic	text/html; ch...	5,981	3/23/2022, 1...	Accept-Enco...
43	/offline.html	basic	text/html	662	3/20/2022, 1...	Accept-Enco...

Conclusion:
Coding and registering a service worker is crucial in transforming a traditional web app into a fully functional PWA. It enhances user experience by providing offline capabilities, faster performance, and better engagement for applications.