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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:

A **Service Worker** is a type of web worker script that runs in the background, separate from the main browser thread. It plays a key role in enabling **Progressive Web App (PWA)** features like offline support, background sync, and push notifications.

When a service worker is registered, it goes through three phases:

1. **Install** – Triggered once when the service worker is installed for the first time. Used to cache necessary assets.
2. **Activate** – Triggered when the service worker takes control of the page. Typically used for clearing out old caches.
3. **Fetch** – Intercepts network requests and serves cached responses if available, enabling offline access.

These features help improve **performance**, **reliability**, and **user experience**, especially in unstable or no network conditions.

Output:

The screenshot shows the Chrome DevTools Application tab. The left sidebar has a tree view with categories: Application, Storage, Cache, Background Services, and Frames. Under 'Cache', the 'Cache Storage' is expanded, showing a single entry: 'offline - https://omkarsweetscorn...'. The main panel displays a table of cache entries.

#	Name	Response-Type	Content-Type	Content-Len...	Time Cached	Vary Header
32	/js/offcanvas.js	basic	application/x...	223	3/23/2022, 1...	
33	/js/share.js	basic	application/x...	276	3/23/2022, 1...	Accept-Enco...
34	/logout	opaqueredire...	text/html; ch...	214	3/20/2022, 1...	Accept-Enco...
35	/manifest.json	basic	application/js...	1,076	3/23/2022, 1...	Accept-Enco...
36	/menu	basic	text/html; ch...	5,981	3/20/2022, 1...	Accept-Enco...
37	/offline.html	basic	text/html	662	3/20/2022, 1...	Accept-Enco...
38	/removeFromCart/50786	opaqueredire...	text/html; ch...	221	3/20/2022, 1...	Accept-Enco...
39	/showCart	basic	text/html; ch...	5,791	3/20/2022, 1...	Accept-Enco...
40	/sw.js	basic	application/x...	423	3/23/2022, 1...	Accept-Enco...
41	/user/profile	basic	text/html; ch...	6,168	3/20/2022, 1...	Accept-Enco...
42	/ddkcynmus/image/upload/q_10/v1635342679/images/Angoor...	opaque	image/jpeg	218,345	3/23/2022, 1...	

Below the table, a message states: 'Select a cache entry above to preview'.

The screenshot shows the Chrome DevTools Application tab with the 'Service workers' section selected. The left sidebar shows the 'Service work...' item under the 'Application' category. The main panel displays the service worker for 'http://localhost:21897/'.

Service workers

☐ Offline ☐ Update on reload ☐ Bypass for network

http://localhost:21897/ [Network requests](#) [Update](#) [Unregister](#)

Source: [flutter_service_worker.js](#)
Received 4/10/2025, 12:38:14 PM

Status: ● #8 activated and is stopped [Start](#)

Push: [Push](#)

Sync: [Sync](#)

Periodic sync: [Periodic sync](#)

Update Cycle

Version	Update Activity	Timeline
▶ #8	Install	
▶ #8	Wait	
▶ #8	Activate	<div style="width: 100%; height: 10px; background-color: blue;"></div>

Service workers from other origins

[See all registrations](#)

Conclusion:

In this experiment, we implemented a Service Worker in our PWA to enhance performance and offline functionality. We successfully coded, registered, and completed the install and activate phases. This setup ensures that our app can cache key resources, load faster, and work in low or no network conditions, ultimately offering a more reliable and app-like experience to users.