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DOP:	DOS:
Sign:	Grade:

Experiment 09

Aim: To implement Service worker events like fetch, sync and push for E-commerce PWA

Theory:

A **Service Worker** is a background JavaScript file in a PWA that acts as a proxy between the app and the network. It enables:

- Offline caching (fetch event)
- Background sync (sync event)
- Push notifications (push event)

These features enhance speed, updates, and user engagement, even with poor or no internet.

Output:

Fetch Event:

```
self.addEventListener('fetch', (event) => {
  event.respondWith(
    caches.match(event.request).then(response => {
      return response || fetch(event.request);
    })
  );
});
```

Sync Event:

```
self.addEventListener('sync', (event) => {
  if (event.tag === 'sync-data') {
    event.waitUntil(syncDataWithServer());
  }
});
```

Push Event

```
self.addEventListener('push', (event) => {
  const data = event.data.json();
  self.registration.showNotification(data.title, {
    body: data.body,
    icon: 'icon.png'
  });
});
```

Conclusion:

In this experiment, we successfully implemented the core Service Worker events (fetch, sync, and push). This enhanced the app's ability to:

- Work offline using cache (fetch)
- Automatically sync data in the background (sync)
- Engage users with notifications (push)

These features are crucial for improving reliability, performance, and user engagement in modern web applications.