

Experiment 9

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

Output:-

Code:-

Serviceworker.js

```
const CACHE_NAME = "pwa-cache-v1";
```

```
const ASSETS_TO_CACHE = [
```

```
  "./",
```

```
  "./index.html",
```

```
  "./styles.css",
```

```
  "./app.js",
```

```
  "./manifest.json",
```

```
  "./images/shop_icon.png",
```

```
];
```

```
//  Install event - Cache important assets
```

```
self.addEventListener("install", (event) => {
```

```
  console.log(" Service Worker Installed");
```

```
  event.waitUntil(
```

```
    caches.open(CACHE_NAME).then((cache) => {
```

```
      console.log(" Caching assets");
```

```
      return cache.addAll(ASSETS_TO_CACHE);
```

```
    })
```

```
  );
```

```
});
```

```
//  Activate event - Cleanup old caches
```

```
self.addEventListener("activate", (event) => {
```

```
  console.log(" Service Worker Activated");
```

```
  event.waitUntil(
```

```
    caches.keys().then((cacheNames) =>
```

```
      Promise.all(
```

```
        cacheNames.map((cache) => {
```

```
          if (cache !== CACHE_NAME) {
```

```
            console.log(" Deleting old cache:", cache);
```

```
            return caches.delete(cache);
```

```
          }
```

```
        })
```

```
      )
```

```
    )
```

```
);  
});
```

```
// ✅ Fetch event - Serve cached files when offline
```

```
self.addEventListener("fetch", (event) => {  
  console.log("🔄 Fetching:", event.request.url);  
  event.respondWith(  
    caches  
      .match(event.request)  
      .then((response) => response || fetch(event.request))  
      .catch(() => caches.match("./index.html")) // Fallback to homepage  
  );  
});
```

```
// ✅ Sync event - Background sync for failed actions (like syncing cart)
```

```
self.addEventListener("sync", (event) => {  
  if (event.tag === "sync-cart") {  
    event.waitUntil(syncCart());  
  }  
});
```

```
async function syncCart() {  
  console.log("🔄 Syncing cart data with the server");  
  // Add IndexedDB sync logic here  
}
```

```
// ✅ Push event - Notification handling
```

```
self.addEventListener("push", (event) => {  
  const data = event.data ? event.data.json() : {  
    title: "Default Title",  
    body: "This is a default push notification",  
  };  
});
```

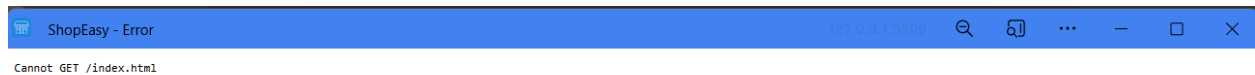
```
console.log("🔔 Push notification received:", data);
```

```
const options = {  
  body: data.body,  
  icon: "./images/shop_icon.png",  
  badge: "./images/shop_icon.png",  
};
```

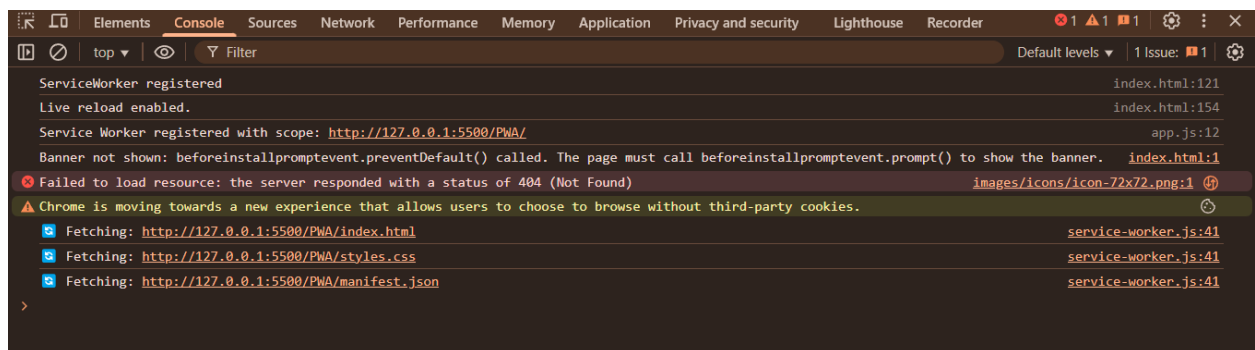
```
event.waitUntil(  
  self.registration.showNotification(data.title, options)  
);
```

```
});
```

When offline



Fetch :-



Sync:-

The screenshot shows the Chrome DevTools Application tab. The left sidebar has 'Service workers' selected. The main panel shows the status of two service workers: #1455 is activated and running, while #1578 is waiting to activate. Below this, the 'Clients' section shows the current client is 'http://127.0.0.1:5500/PWA/index.html'. The 'Push' and 'Sync' sections show test notifications. The console at the bottom displays several log messages, including 'ServiceWorker registered', 'Live reload enabled.', 'Service Worker registered with scope: http://127.0.0.1:5500/PWA/', and several 'Push notification received' messages with titles like 'Hello from PWA!' and 'Hello from PWA!'. There is also an error message: 'Failed to load resource: the server responded with a status of 404 (Not Found)' for 'images/icons/icon-72x72.png:1'.

The screenshot shows the Chrome DevTools Application tab with 'Cache storage' selected in the left sidebar. The main panel displays details for the 'pwa-cache-v1 - http://127.0.0.1:5500/' cache. It shows the origin as 'http://127.0.0.1:5500', bucket name as 'default', and various settings like 'Is persistent: No', 'Durability: relaxed', 'Quota: 0 B', and 'Expiration: None'. Below this is a table listing the cached resources.

#	Name	Response-T...	Content-Ty...	Content-Le...	Time Cached	Vary Header
0	/PWA/	basic	text/html	7,037	4/16/2025, ...	Origin
1	/PWA/app.js	basic	application...	1,996	4/16/2025, ...	Origin
2	/PWA/images/shop_icon.png	basic	image/png	15,904	4/16/2025, ...	Origin
3	/PWA/index.html	basic	text/html	7,037	4/16/2025, ...	Origin
4	/PWA/manifest.json	basic	application...	686	4/16/2025, ...	Origin
5	/PWA/styles.css	basic	text/css	4,946	4/16/2025, ...	Origin