Name : Mrudula Gotmare Class : D15A Roll no. 23

Experiment - 8

Aim : To code and register a service worker, and complete the install and activation process for a new service worker for the E-commerce PWA.

Theory :

Service Worker
Service Worker is a script that works on browser background without user interaction independently. Also, It resembles a proxy that works on the user side. With this script, you can track network traffic of the page, manage push notifications and develop “offline first” web applications with Cache API.

Things to note about Service Worker:
A service worker is a programmable network proxy that lets you control how network requests from your page are handled.
Service workers only run over HTTPS. Because service workers can intercept network requests and modify responses, "man-in-the-middle" attacks could be very bad.
The service worker becomes idle when not in use and restarts when it's next needed. You cannot rely on a global state persisting between events. If there is information that you need to persist and reuse across restarts, you can use IndexedDB databases.

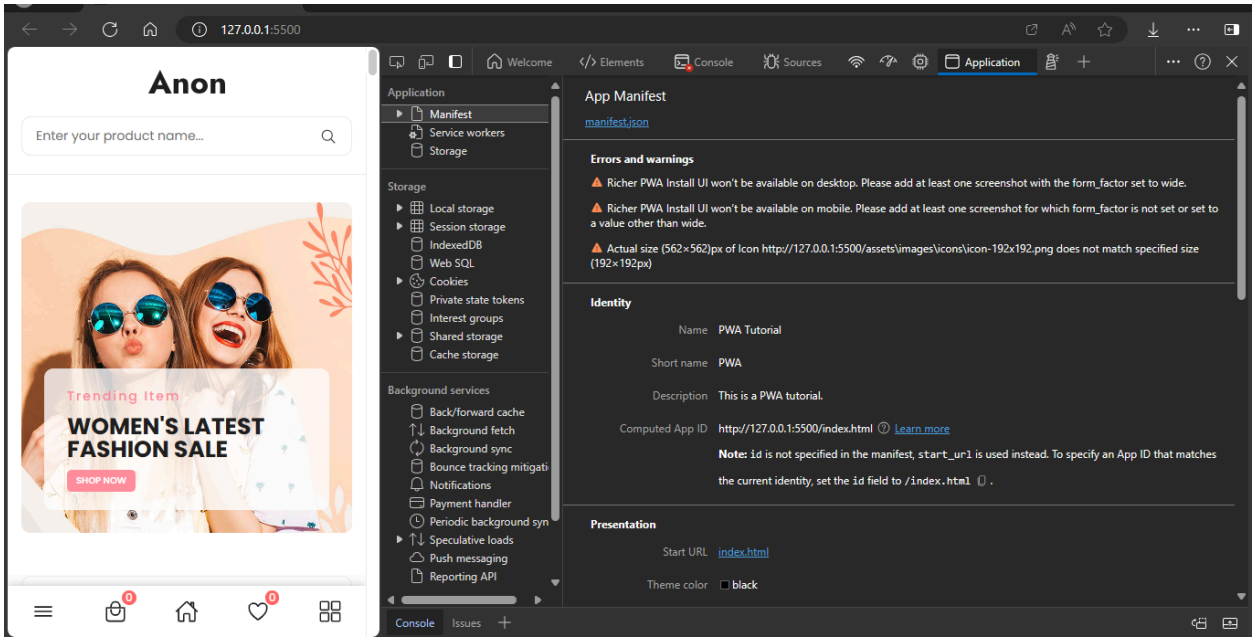
What can we do with Service Workers?
You can dominate Network Traffic
You can manage all network traffic of the page and do any manipulations. For example, when the page requests a CSS file, you can send plain text as a response or when the page requests an HTML file, you can send a png file as a response. You can also send a true response too.
You can Cache
You can cache any request/response pair with Service Worker and Cache API and you can access these offline content anytime.
You can manage Push Notifications
You can manage push notifications with Service Worker and show any information message to the user.
You can Continue
Although Internet connection is broken, you can start any process with Background Sync of Service Worker.

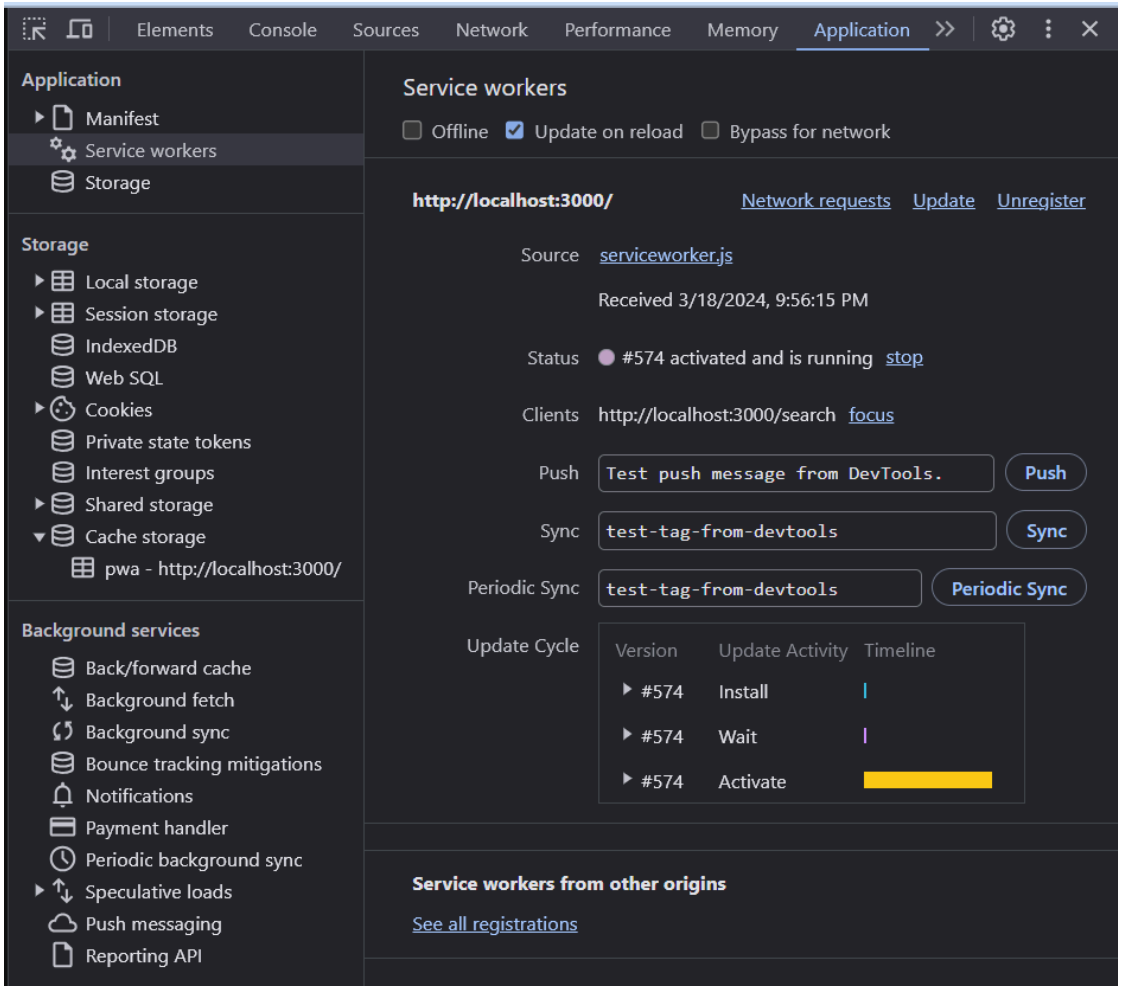
What can’t we do with Service Workers?
You can’t access the Window
You can’t access the window, therefore, You can’t manipulate DOM elements. But, you can communicate to the window through post Message and manage processes that you want.

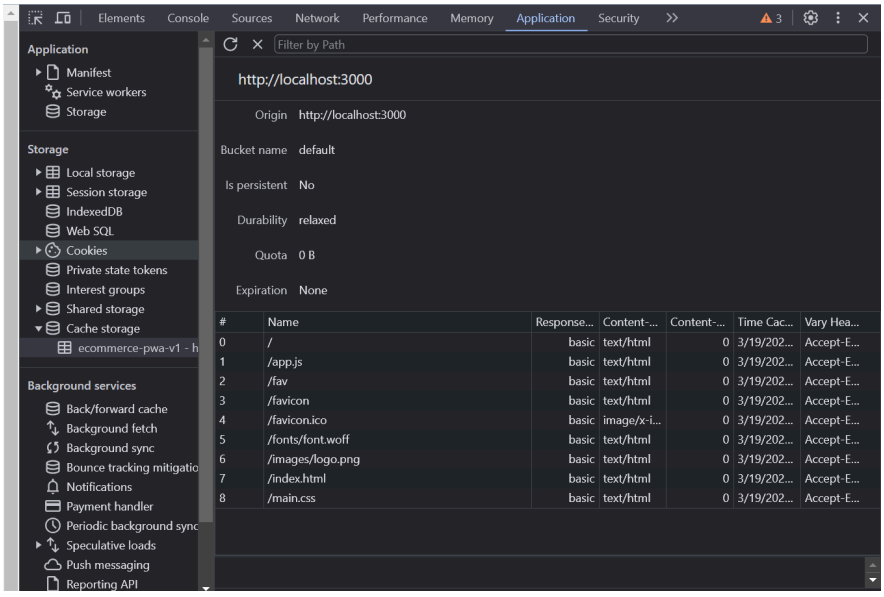
You can’t work it on 80 Port

Service Worker just can work on HTTPS protocol. But you can work on localhost during development.

Screenshots :




Elements
Console
Sources
Network
Performance
Memory
Application
Application
Manifest
Service workers
Storage
Storage
Local storage
Session storage
IndexedDB
Web SQL
Cookies
Private state tokens
Interest groups
Shared storage
Cache storage
pwa - http://localhost:3000/
Background services
Back/forward cache
Background fetch
Background sync
Bounce tracking mitigations
Notifications
Payment handler
Periodic background sync
Speculative loads
Push messaging
Reporting API
Service workers
Offline
Update on reload
Bypass for network
http://localhost:3000/
Network requests
Update
Unregister
Source
serviceworker.js
Received 3/18/2024, 9:56:15 PM
Status
#574 activated and is running
stop
Clients
http://localhost:3000/search
focus
Push
Test push message from DevTools.
Push
Sync
test-tag-from-devtools
Sync
Periodic Sync
test-tag-from-devtools
Periodic Sync
Update Cycle
Version
Update Activity
Timeline
#574
Install
#574
Wait
#574
Activate
Service workers from other origins
See all registrations


Elements
Console
Sources
Network
Performance
Memory
Application
Security
Application
Manifest
Service workers
Storage
Storage
Local storage
Session storage
IndexedDB
Web SQL
Cookies
Private state tokens
Interest groups
Shared storage
Cache storage
Background services
Back/forward cache
Background fetch
Background sync
Notifications
Payment handler
Periodic background sync
Speculative loads
Push messaging
Reporting API
Filter by Path
http://localhost:3000
Origin http://localhost:3000
Bucket name default
Is persistent No
Durability relaxed
Quota 0 B
Expiration None
Name Response... Content-... Content-... Time Cac... Vary Hea...
0 / basic text/html 0 3/19/202... Accept-E...
1 /app.js basic text/html 0 3/19/202... Accept-E...
2 /fav basic text/html 0 3/19/202... Accept-E...
3 /favicon basic text/html 0 3/19/202... Accept-E...
4 /favicon.ico basic image/x-i... 0 3/19/202... Accept-E...
5 /fonts/font.woff basic text/html 0 3/19/202... Accept-E...
6 /images/logo.png basic text/html 0 3/19/202... Accept-E...
7 /index.html basic text/html 0 3/19/202... Accept-E...
8 /main.css basic text/html 0 3/19/202... Accept-E...