

04/05

Q.1 Define Progressive Web App (PWA) and explain its significance in modern web development. Discuss the key characteristics that differentiate PWA from traditional mobile apps.

Ans PWA is a type of web app that utilizes modern web capabilities to deliver an app-like experience to users. It combines the best features of the web app and mobile app to offer offline functionality, push notifications and installation on devices.

Key characteristics of PWA:

- 1) Response: PWAs are designed to work seamlessly across various devices and screen sizes adapting to user's device.
- 2) Connectivity: They can work offline as with a poor internet connection, leveraging service worker to cache resources and provide basic functionality.
- 3) App like experience: PWAs mimic the look and feel of native mobile apps, offering smooth animations.
- 4) Discoverable: PWAs can be found through search engines and don't require installation from an app store.
- 5) Secure: PWAs are served over HTTPS to ensure data privacy and security.





Q. 3 Describe the lifecycle of service worker, including registration and activation process.

Ans- 1) Registration: Service-Service worker are registered by the web app through javascript code in the main page. This registration typically occurs in the background and involves specifying the path to the service worker script.

2) Installation: Once registered, the browser downloads and installs the service worker script. During installation, the service worker can cache static assets and other resources needed for offline functionality.

3) Activation: After installation, the service worker enters the activation phase. During activation, the service worker can clean up old caches, initialize necessary data and start intercepting network requests. Once activated, the service worker can control various aspects of the web app such as handling fetch events and managing cache storage.

Q. 4

To Explain the use of IndexedDB in the service worker for data storage

Ans.

IndexedDB is a client-side storage mechanism that allows service workers to store structured data locally within the browser. It enables web apps, including those utilizing service worker to store and retrieve data efficiently providing offline functionality and enhancing performance by reducing the need for constant network requests. IndexedDB is ~~part~~ particularly useful in service workers for tasks such as caching dynamic content, managing user preferences and supporting offline capabilities.