Course : PWA, developing Progressive Web Apps

the best of mobile in your Web applications
Practical course - 3d - 21h00 - Ref. PWA
Price : 2150 CHF E.T.

The notion of PWA consists in implementing new Web standards to bring to Web sites and applications capabilities hitherto reserved for mobile applications (local installation, offline operation, push notifications…). This training course will provide you with the keys to implementing PWA.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the state of the art of Progressive Web Apps
- Learn about the different strategies for implementing Progressive Web Apps
- Identify the components and tools required for or facilitating the implementation of Progressive Web Apps
- Apply Progressive Web Apps design techniques

Intended audience
Anyone involved in the realization of a Web project: project managers, architects, developers.

Prerequisites
Good knowledge of HTML, CSS and JavaScript front-end integration.

Practical details
Hands-on work
Website design with progressive PWA enrichment.

Course schedule

1 Introduction

- A look back at the history of mobility.
- The impact of mobility on the Web.
- Comparing the strengths and weaknesses of native and Web-based mobile applications.

2 Basic PWA components

- A proxy in the browser with Service Workers.
- HTTPS security.
- Browser support?
- The "Progressive" dimension in PWAs.

3 The Service Worker in detail

- Review of basic principles and APIs: ES6, promises, Fetch...
- Service Worker life cycle.
- Installation: download, scope of action.
- The update.
- Triggering, events supported.

Hands-on work
Creating and installing a Service Worker.

4 Tools for implementation

- Libraries, components and frameworks: Workbox, frameworks integrating basic Service Workers.
- Development and debugging: browser tools, Lighthouse.

Hands-on work
Handling browser tools, Lighthouse.

5 API Cache: network and offline fault tolerance

- Basic operations on the Cache API from a Service Worker.
- What content can be cached?
- Cached content lifecycle management.
- Other storage options: no localStorage support, but IndexedDB.
- High-speed SPA with Application Shell architecture.
- Access the cache from a page.

Hands-on work
Cache on static resources, on pages.

6 Installing the application on the device

- The Web App Manifest.
- The Web App Install Banner.
- Behavior of mobile and desktop browsers.

Hands-on work
Focus on Manifest.

(7)   **Notifications and push data**

- Notifications API.
- Integration with native OS notifications.
- User authorization management.
- Push data from the server using the Push API.
- Background update with Background Sync API.

Hands-on work
Set up a notification.

(8)   **Other new Web capabilities to take you further**

- Simplified payment with the Payment Request API.
- QR code reading with getUserMedia/Stream and Shape Detection APIs.
- Virtual reality and augmented reality.

Hands-on work
Read a QR code.

Dates and locations

REMOTE CLASS
2026 : 4 Mar., 24 June, 9 Sep.