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React training: Develop high-performance Web Applications

4 days (28 hours)

Presentation

With our React training course, one of the most comprehensive on the market, you'll discover how to make the most of this Web technology to optimise your users' experience and improve the fluidity and quality of your Web Apps.

In fact, this JavaScript library is one of the most widely used by developers and one of the most powerful. During our course, you will learn how to exploit the full potential of this open-source library, which is supported by Facebook and developed by the best engineers on the planet.

Initially, our course will cover the basic concepts of : ES6, ESNext, the Virtual DOM and the limitations of JavaScript applications. You will then learn about Reactjs and its components.

You will learn how to optimise your digital products thanks to memoisation and the notion of purity, as well as how to manage authentication and contexts.

Our React training course will also enable you to create modern Web Apps efficiently, thanks in particular to good testing and debugging practices.

Like all our programmes, our course is based on the latest version of this library, ReactJS 18.

Objectives

- Master the features of the latest version of React, Meta's JavaScript technology
- Develop web applications with React
- Create complex web components quickly

- SinglePage application with React.JS and Typescript
- Optimising the performance of a React application
- Using Redux for state management

Target audience

- Web developers
- Lead Developer

Prerequisites

- Basic knowledge of HTML / CSS / JS

Software requirements

- Machine
 - At least 8 GB RAM (16 GB recommended)
 - Windows 11, MacOS or Linux
- The latest version of React installed
- An IDE such as Visual Studio Code

Our React training programme

Introduction

- Reminders, from ES6 to ESNext
- JavaScript, DOM and VirtualDOM
- Limitations of JavaScript applications
- The ecosystem of modern JavaScript web frameworks
- The new vision of ReactJS
- Development environment: IDE, tools and plug-ins

Introducing ReactJS

- Virtual Dom, a performance choice
- Create-react-app VS Vite
- Stateful components, simple rendering function, performance
- JavaScript or JSX
- Understanding JSX
- Creating view components
- Initializing props
- Understanding the passing of props
- Lifting up state - advantages and disadvantages
- React and CSS: css-in-js, CSS modules or styled-component and style scopestyle

ESNEXT, ES2015 and TypeScript

- TypeScript: Création et configuration with ESLint (TSLint)
- Maintaining the same code standards and quality within the project.t
- Implementing husky and lint-staged

Components

- Fragments
- Breaking down an application by component
- Props VS state
- Component Data Flow: information flow between components
- Reusable components: control and transfer of ownership
- Form component control: proprietary solution or use of libraries (Formik, react-hook-form)
- Form validation with yup
- DOM manipulation
- Portals

HOOKS

- useState
- useEffect - comprendre le cycle de vie et les désabonnements
- useEffect
- useReducer
- Separating the logic of a component to increase its reusability.
- Creating a customHook
- useRef

Optimising performance

- Understanding memoization and the notion of purity
- useCallback
- useMemo
- React Memo

NEWS FROM REACT 18 & 17

- useId
- useTransition
- useDeferredValue
- Suspense API
- Lazy loading and code splitting
- Easier transition for future React updates
- Event modifications to better support hybrid React applications.
- Removal of certain obsolete APIs

- React Concurrent Mode: parallel components to improve performance
- React Server Components, enabling server-side rendering with client-side interaction
- Progressive Update: which allows developers to set priorities for user interface updates.
- Improved debugging tools
- Improved Suspense support for managing data loads.données

ROUTING WITH REACT ROUTER

- Principle of a SPA
- Installing react-router-dom (v6)
- Creating routes
- Route configuration and organisation
- The different navigation modes
- Redirection and history
- Page 404
- Data fetching with React-Router

Authentication

- Private route and redirection
- Creation of a layout according to the user role
- Persistence of a token via the creation of a customHook

REACT CONTEXT

- Definition and use cases
- Creation of several contexts
- Use of different contexts

COMPONENT LIBRARIES

- Using a SemanticUI/MaterialUI/AntDesign/React-Bootstrap library
- How to use a library without creating technical debt?

REDUX

- Understanding Redux
- Installing redux-toolkit
- Actions, creators and dispatchers
- Using providers and component injection to organise a Store
- DataFetching with RTK Query
- Integrating redux into our project
- Redux VS Context? When to use which one?

Companies concerned

This course is aimed at companies, large or small, wishing to train their teams in a new advanced computer technology.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organisation

The course alternates between theoretical input from the trainer, supported by examples, and brainstorming and group work sessions.

Validation

At the end of the session, a multiple-choice questionnaire is used to check that the skills have been correctly acquired.

Sanction

A certificate will be issued to each trainee who completes the course.