Publication date : 02/20/2024

Course : RxJS, the fundamentals of reactive programming

Practical course - 2d - 14h00 - Ref. RXJ
Price : 1610 CHF E.T.

Adopted in the Angular framework, and usable with other frameworks such as ReactJS or Vue.js as well as independently, RxJS is an essential tool. You'll get hands-on experience with this JavaScript library for reactive programming, facilitating the orchestration and manipulation of asynchronous operations.

Teaching objectives

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

- Understanding the principles of reactive programming
- Controlling observables and subscriptions
- Design a pipeline of operators to orchestrate or manipulate an asynchronous data stream
- Choosing the right strategy for managing concurrent asynchronous operations

Intended audience

Front-end developers, back-end developers, web architects and project managers.

Prerequisites

Good knowledge of web technologies and JavaScript.

Course schedule

1 Introduction to RxJS

- The reactive programming paradigm.
- History of the ReactiveX project.
- Introducing the RxJS library.
- The concepts of observable, observer, subscription and operators.
- Implementation in front and back projects.

Hands-on work
Setting up an exercise environment (Node.js).

PARTICIPANTS
Front-end developers, back-end developers, web architects and project managers.

PREREQUISITES
Good knowledge of web technologies and JavaScript.

TRAINER QUALIFICATIONS
The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS
The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 RxJS fundamentals

- Introducing the Design Pattern Observer.
- Create observables manually or from data.
- Encapsulation of native asynchronous functionalities in an observable.
- Observation of an observable.
- Management of observable subscriptions.

Hands-on work
Creation of different observables, either manual or based on data or browser functions.

3 Operators, data flow manipulation

- The operator pipeline principle.
- Marble diagrams.
- Filter operators.
- Conditional operators.
- Processing operators.
- Aggregation operators.
- Utility operators.
- Create your own operators.

Hands-on work
Set up simple and compound pipelines to manipulate data sequences.

4 Hot] observables[(or "hot observables")

- Differences with an observable "cold".
- The functions and operators for transforming a "cold" observable into a "hot" observable.
- Subjects and multicasting.

Hands-on work
Implementation of observable with several observers.

5 Observable transformations

- Combination of observables.
- Partition of observables.

Hands-on work
Experiment with observable combinations and partitions.

6 Observables of order 2

- The problem of observables of observables.
- Parallel management strategy.
- Queuing strategy.
- The failover strategy.
- The strategy of ignorance.
- Choose the right strategy for your needs.

Hands-on work
Management of concurrent API calls in response to browser events.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

7 Error management

- Stop, retry or switch to a new asynchronous operation.
- Handle transient errors in the context of a second-order observable.

Hands-on work
Error handling in different scenarios.

8 Testing your code with RxJS

- Introducing the TestScheduler.
- Help functions (observable generation, observable testing, etc.).
- Figurative syntax (observables, subscriptions, tenses, etc.).

Hands-on work
Observable tests based on different scenarios.

Dates and locations

REMOTE CLASS
2026 : 2 Apr., 11 June, 12 Oct.