

Updated on 16/01/2025

Sign up

Concurrency Swift training

1 day (7 hours)

Presentation

Our Concurrency Swift training course will help you master concurrent programming in Swift. SwiftUI is a framework that complements the Swift language, enabling the construction of graphical user interfaces based on the declarative programming paradigm.

Thanks to this Concurrency Swift training course, your team will learn about reactive programming and its basic principles, as well as how to use Combine to refactor and rework existing code.

Our program also covers the use of `async/await` to efficiently structure concurrency and run multiple tasks in parallel.

For this course, we use [Xcode 15](#) and the latest version of Swift: [Swift 5.10](#).

Objectives

- Learn the fundamentals of concurrent programming in Swift
- Enhance your existing Swift projects with concurrent programming
- Mastering the use of `async/await`

Target audience

- **Developer**
- iOS developer
- Swift Developer

Prerequisites

- Know the basics of Swift: it is preferable to have taken our [SWIFT training course](#) beforehand.
- [Test My Knowledge](#)

Software requirements

A Mac with Xcode 14 installed.

Swift Concurrency training program

Introduction to Swift Concurrency

- How does async/await work?
- Threading with Swift concurrency
- Asynchronous task execution and error handling

Networking with async/await

- Using URLSession with async/await to make network calls
- Mixing asynchronous code with synchronous operations, such as JSON decoding
- Use of cache and prevention of competition conditions

Structured competition

- Use async let to execute several structured operations in parallel
- Using players to protect themselves against competitive conditions

Asynchronous sequences

- Consumption and construction of asynchronous sequences
- Relationship between asynchronous sequences, Combine and reactive programming in general

Migration to Swift 6

- Resolve common errors related to concurrency and actor isolation in Swift 6
- How the Sendable protocol works and how to conform code to it
- When and how to use MainActor

Make existing code compatible with async/await

- Using async/await with existing APIs based on closures
- Migrating delegate-based APIs to async/await

UI integration

- async/await integration with UIKit
- async/await integration with SwiftUI

Unit testing

- Testing async/await-based code
- Testing actors

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire enabling us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives with regard to the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

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

Organization

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

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

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

