Updated on 19/06/2023

Sign up

Scala training

3 days (21 hours)

Presentation

Scala is a multi-paradigm programming language, both object-oriented and functional. It is strongly typed, compiled and runs on the JVM.

Designed and maintained at the École Polytechnique Fédérale de Lausanne (EPFL), it has gradually carved out its own niche in the enterprise, mainly for back-end applications and Big Data processing.

If you can get past its relative complexity at first glance, Scala quickly reveals its strengths: an elegant, concise, high-performance language, whose powerful type system enables the vast majority of programming errors to be detected at compile time rather than at runtime.

Our training covers the latest version of this language (V2.13, at the time of writing).

Objectives

- Understand what Scala is, what makes it different from other languages
- Know and master all the main features and syntaxes encountered in Scala
- How to write and run your first programs in Scala

Target audience

Developers, Architects

Prerequisites

Knowledge of at least one other programming language.

Scala training program

Introduction to Scala and functional programming

- What is Scala?
- Key features
- Advantages and disadvantages
- When to use it
- Who uses it?

First program

- REPL
- SBT
- First "Hello World" program

First elements of syntax

- Declaring variables
- Declaring functions
- Blocks and expressions
- Operators and infix notation
- if / else
- Type notation and type inference

Object-oriented hierarchy

- Classes
- Objects
- Companions objects
- Features
- Case classes

Advanced syntax elements

- The apply() method: everything is an object
- Tuples
- Pattern matching
- Curried functions
- Call-by-name
- Generic types
- Default parameters
- Implicit conversions

Collections

- Review of the collection hierarchy
- Essential methods: map, filter, flatMap, collect, foreach, folds, etc.
- Lazy collections

Other essential tools

- Option: avoid nulls
- Try: tolerate mistakes
- Futures: writing concurrent programs in Scala

The Scala ecosystem

- Overview of the main frameworks

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.

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, with 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.