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Sign up

Kotlin training

The new JVM language

3 days (21 hours)

Presentation

Kotlin is the language that shook up the codes in the Java & JVM world, proposed by JetBrains in 2011. It has been acclaimed by developers around the world and is already being adopted by enterprises. In particular, it is the new JVM Language for Android: in May 2017, Google announced official support for Kotlin for development on Android. This announcement further facilitated its adoption and made it even more popular with the community.

This training course provides a detailed introduction to Kotlin through application development and an introduction to mobile development on Android, enabling you to discover all its features and write Kotlin code right through to production.

We start with the basics: familiarizing you with the use of Kotlin code, configuration, tools and instructions you can use to write basic programs. Then we cover object- and protocol-oriented code: functions, lambdas and properties, while using Kotlin's new features.

Then we move on to security aspects (null safety & type parameterization). We show you how to unstructure expressions and even write your own. We also take you through important topics such as testing, concurrency, microservices and much more. By the end of this course, you'll be able to create your own Kotlin applications & services.

As with all our training courses, this one will introduce you to the latest version of Kotlin (Kotlin 2 & Android13 mobile).

Objectives

- Use Kotlin's new features to write structured, readable object-oriented code
- Discover how to use lambdas and advanced functions to write clean, reusable and simple code.
- Using Kotlin extensions in the Java collections library
- Mastering Kotlin syntax

Target audience

- Developers, Architects, Lead Developers

Prerequisites

Programming basics.

Software requirements

- Install IDEA
- Install Android Studio
- The latest version of Java

RECOMMENDED READING BEFORE THE COURSE

- Kotlin fundamentals by Android Developer
- Android Studio documentation
- Official Kotlin documentation

Kotlin 2 training program

IntelliJ

- Discovering the working environment (IntelliJ, Gradle)
- Optimizations and settings for greater programming comfort
- Project architecture
- Read a StackTrace, use the debugger
- Using Gradle and adding libraries

Syntax

- Hello World

- Syntax for writing variables and methods
- Expression function, named and default parameters.
- Nullable type and NullpointerException handling
- when, Elvis Operator, if expression
- Interoperability with Java
- Top level function
- Table and list
- New for loop
- Even and Triple

Object programming

- Syntax, attributes, constructors,
- Encapsulation, polymorphism
- Inheritance and extension
- Data, sealed, nested, inner, Singeleton
- Listing
- Safe cast and Smart Cast

Lambda expression

- How it works
- High order function and inline
- Lambda and collections
- Map, filter, Let, Apply, Also, Run
- Inline

Requests

- Exception handling
- Adding external libraries
- Making a web request
- Parsing JSON (serialization / deserialization)
- Using an API
- Performing an asynchronous task with a Thread
- Performing an asynchronous task with a coroutine

Complementary module (additional 1 day) Advanced

aspects

- Lazy loading
- Genericity
- Destructuring
- Operator overload
- Introspection
- Type Safe Builder

- Advanced coroutines

Companies concerned

This training 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 which enables 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 for 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, 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.