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# Android Auto Training: Embedded

4 days (28 hours)

## Presentation

Android needs no introduction! The world's most widely used mobile operating system is currently in version 10, and with Oreo, released in 2018, it has achieved over 80% market share in smartphones.

The aim of this advanced training course is to learn about Android for cars and embedded hardware.

As with all our training courses, this one will introduce you to the latest version of the Android SDK (at the time of writing: [Android 11 API level 30](#) and [Android Studio 4.2](#)).

## Objectives

- Mastering the Android language: Java & Kotlin
- Learn about best practices in embedded development

## Target audience

Mobile Developer

## Prerequisites

- Knowledge of object-oriented programming

## To go further

- Become an expert with our [Kotlin training course](#)
- Our [Android Studio training course will](#) unlock all your secrets

## Android Auto training program

### ANDROID STUDIO

- Discovering the working environment (Android Studio, Gradle)
- Optimization and tuning for greater programming comfort
- Architecture of an Android Compose project
- Read a StackTrace, use the debugger, the profiler...
- Launch your application on an emulator and on a physical phone or tablet.
- Using Gradle and adding libraries
- Generate an executable and upload it to the PlayStore

### KOTLIN

- Language syntax (Variable, Function, Object...)
- Master the lambdas expressions needed to compose
- Advantages of a modern language over Java
- Using an API Rest
- Asynchronous tasks using coroutines

### GRAPHICAL INTERFACE WITH ANDROID COMPOSE

- Create reusable components to design the various screens
- Using Previews
- Understand how recomposition, states and observable data work.
- Using shared variables
- Use of Material3 for modern application design
- Taking into account the light and dark theme and internationalization

### NAVIGATION WITH ANDROID COMPOSE

- Navigate from screen to screen using components
- Set up a navigation bar (with back arrow)
- Icon and menu
- Tabbar and Floating button

### ARCHITECTURE

- Setting up a ViewModel
- MVVM architecture
- Screen rotation
- Using coroutines to fetch our data

- Error and waiting management

## ANDROID AUTO

- Requirements and configuration
- Designing for driving
- Creating multimedia applications for cars
- Using the Android for Cars application library

## 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 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.