MOB200 : Android Programming

Code : MOB200 **Duration :** 3 days **Category :** Mobile

Audience :

This course is intended for experienced Java developers who want to learn how apps can be programmed for Android.

Prerequisites :

To participate in this course knowledge of and experience with programming in Java is required.

Realization :

The theory is discussed on the basis of presentation slides. Demos provide an illustrative clarification of the discussed concepts. The theory is interspersed with exercises. The course material is in English.

Android Programming

Contents :

In the course Android Programming participants learn app development for the Android operating system. First a global overview of the Android platform is given and it is explained what makes Android unique and how it fundamentally differs from other platforms. Then the main building blocks of Android apps are on the agenda such as Activities and User Interface. Also Files and Preferences will get attention. During the course the participants develop an app that has a nice user interface, which uses web services for accessing cloud applications and which has a database for local data storage. The app is made with security in mind and works on any form factor from smartphone to tablet and TV. During the course, participants learn when and how the main building blocks of Android app development can be used. The participants come into contact with many facets of app development for Android such as activities, services, providers and receivers. Also best practices of Android development and debugging and testing apps is discussed. The latest version of the Android OS is used in the course with Eclipse as IDE and emulators for devices.

Module 1 : Android Overview

History of Android
Android Stack
Android Architecture
Dissecting Android apps
Building blocks
Debugging
Testing
Android Security
Creating your first project
The manifest file
Layout resource
Running your app on Emulator

Module 2 : Main Building Blocks

Activities
Activity lifecycle
Intents
Services
Content Providers
Broadcast Receivers

Module 3 : Activities and User Interface

Understand the Lifecycle Callbacks
Specify Your App's Launcher Activity
Create a New Instance
Destroy the Activity
Pause Your Activity
Resume Your Activity
Stop Your Activity
Start/Restart Your Activity
Save Your Activity State
Restore Your Activity State
XML versus Java UI
Dips and sps
Views and layouts
Common UI components
Handling user events

Module 4 : Preferences and Files

Get a Handle to a SharedPreferences
Write to Shared Preferences
Read from Shared Preferences
Choose Internal or External Storage
Obtain Permissions for External Storage
Save a File on Internal Storage
Save a File on External Storage
Query Free Space
Delete a File

Module 5 : Advanced UI

Support Libraries
Selection components
Adapters
Complex UI components
Building UI for performance
Menus and Dialogs
Graphics and animations

Module 6 : Device Support

Create Locale Directories and String Files
Use the String Resources
Create Different Layouts
Create Different Bitmaps
Specify Minimum and Target API Levels
Check System Version at Runtime
Use Platform Styles and Themes

Module 7 : SQL Database

Introducing SQLite
SQLiteOpenHelper and creating a database
Opening and closing a database
Working with cursors
Inserts, updates, and deletes

Module 8 : Content Providers

Content provider MIME types
Searching for content
Adding, changing, and removing content
Working with content files

Module 9 : Multimedia in Android

Multimedia Supported audio formats
Simple media playback
Supported video formats
Simple video playback