

MOB100 : Android Fundamentals

Code : MOB100 **Duration :** 1 day

Category : Mobile

Audience :

This course is intended for developers, managers and others who want to get an overview of the capabilities and operation of the Android platform.

Prerequisites :

To participate in this course knowledge of the basics of Java programming is required.

Realization :

The theory is discussed on the basis of presentation slides. Demos are used to clarify the concepts. The theory is interspersed with practical exercises. The course material is in English.



Contents :

In the course Android Fundamentals participants learn the fundamentals of the Android platform and how to develop apps for Android. Next it is discussed how a development environment for Android can be installed and arranged under Eclipse. Attention is paid in this respect to the Android SDK, the Eclipse IDE plugin and device emulators. The function and use of XML resource files is discussed as well as the implementation of the user interface. An important element of the course is the life cycle of processes or activities. And further it is discussed how to debug Android apps, how to access databases and how to use threads and content providers. Finally the participants learn how to publish their app on Google Play. With the knowledge gained in this course, participants will be able to write their own simple apps and they will understand the architecture and operation of the Android platform.

Module 1 : Android Intro

- The Basics
- What is Android?
- Architecture Explained
- Role of Java
- Android SDK
- Eclipse IDE Plugin
- Device Emulator
- Profiling Tools
- Hello World Application

Module 2 : Android Development

- Unit Testing and Debugging
- Creating Unit Tests
- Android Development Tools (ADT)
- Using the Emulator
- TraceView
- Analyzing the Heap

Module 3 : Android GUI

- Android User Interface
- View Hierarchy
- Menus
- Fragments
- Styling Widgets
- Defining Styles
- Applying Styles to the UI
- Platform Styles and Themes
- Layout
- Layout Containers
- Weight and Gravity
- Layout Techniques
- Handling Events
- Advanced Widgets
- ScrollView
- ViewPager
- TabView
- Custom Views

Module 4 : Android Persistence

- Storing and Retrieving Data
- Internal and External Storage
- Preferences
- SQLite Database
- Content Providers
- Querying Content Providers
- Modifying Data
- Creating a Content Provider

Module 5 : Android Threads

- Asynchronous Tasks
- Main UI Thread
- Using AsyncTask
- Location Services and Maps
- Location Services
- Mock Location Data
- Google Map Libraries

Module 6 : Android Service

- Accessing Remote Services
- HTTP
- DOM Parsing
- SAX Parsing
- JSON Parsing
- Application Fundamentals
- Alarm Manager
- Broadcast Receivers
- Services
- Notification Manager

Module 7 : Best Practices

- Web Apps Overview
- Targeting Screens from Web Apps
- WebView
- Debugging Web Apps
- Best Practices for Web Apps
- Compatibility
- Supporting multiple screens
- Optimizing for Other Android Versions