

# Professional Android development agenda

## Android Architecture

- System architecture and Android Components
- Important configuration files

## Building user interfaces development

- Views and Layouts
- View interaction
- Component lifecycle

## Component communication via Intents

- Intents and intent filter
- Android component integration via intents

## Using Gradle as the Android build system

- What is Gradle?
- Running a headless build
- Defining dependencies
- Extending the build system

## Using Libraries

- Using Java and Android libraries
- Using the support library
- Targeting Android 2.x with compatibility libraries

## Multi-screen and multi-pane development

- Screen sizes and densities
- Resource selectors
- Multi-pane layouts with fragments
- Designing layouts for tablets and phones

## Using the toolbar

- User interaction concepts
- Defining and using actions
- Using the Toolbar

## Displaying lists and grids

- Using RecyclerView and ListView
- Performance optimization tips

## Styling and Themes

- Using existing styles and themes
- Creating own themes
- Material design

### **Security**

- Android security concept
- Using and defining permissions

### **Asynchronous processing in Android**

- Multitasking in Android
- Using Handler for message communication
- Using AsyncTask

### **Network Communication**

- Accessing the Internet
- Processing JSON and XML
- Efficient image downloading with external libraries
- Optimizing network access with libraries like OkHttp, GSON, Moshi
- Accessing REST based webservice with Retrofit

### **File based persistence**

- Preferences
- File and Access restrictions
- Permissions

### **SQLite and ContentProvider**

- Using the SQLite database
- Outlook: Using and defining ContentProvider
- Outlook: Loader

### **Services**

- Using Android system services
- Defining local services
- Communicating with services
- Outlook: Definition cross component communication

### **Event processing via broadcast receiver**

- Androids event system
- Registering broadcast receiver for system events
- Registering and triggering custom events

### **Notifications**

- Using the notification manager
- Building rich notifications
- Outlook: Notifications and Google Wear

### **The Android lifecycle**

- Application lifecycle
- Activity lifecycle
- Fragments lifecycle
- Service lifecycle

### **Custom widgets and the canvas API**

- Defining custom widgets
- Compound widgets
- Canvas API
- View state persistence

### **Google Play services and backend integration**

- Using Google Play services
- Location based services and Geocoding

### **Deployment**

- Deployment to Google Play
- Deployment Options
- Markets (Google Play / Amazon)

### **Outlook: Trends and libraries in Android development**

- Using Kotlin
- Using Dagger 2 for dependency injection
- Using RxJava