be an
ANDROID
professional

Android Training Course Outline

What you will learn

- Create and deploy Android apps
- Develop well optimised, good looking and functional GUI applications
- Utilise existing APIs and libraries
- Tap into GPS to create location-sensitive apps
- Android application design approach
- Coding Best Practices

Day 1 - Introduction to Android

The tools and environment required to create Android Apps. A practical session to create a very simple Android App.

- Android and Linux
- Android Architecture
- Activities (Overview)
- Services (Overview)
- Content Providers (Overview)
- Broadcast Receivers (Overview)
- Useful resources

Activities and Fragments

What are they?

The Development Environment

Introducing eclipse and UI tools

Tools for debugging/UI development/testing

Practical Session - Create Hello World in eclipse

Common Android Design Patterns

Getting Input

Expand hello world - add interaction e.g. Buttons and text boxes

Useful debugging tips.

Code Refactoring

Rapid Development Techniques

Android Interface Development Basics

Declaring Layout

Controls

Menus (Overview)

Dialogs (Overview)

Event Handling (UI)

Feeding back to the User

Day 2 - Design

Looking at design and how that translates into real world Graphical User Interface on Android. Further practical sessions to expand the user interface and allow users to navigate between screens.

Common Android Design Patterns

Navigation

Overall design Patterns (Model View Controller)

Design Approach

Using Iterative design - design,model,review

Translation Considerations - Designing for German

Android GUI Development - continued

Common Layout Objects - More controls

How Android Draws Views

Applying Styles and Themes

How to add another screen - new activity

How to pass data to/from it.

Life cycle - i.e what gets called when.

Android Application concepts - how Intents allow app co-operation.

How to handle threads. (UI perspective)

Images and memory gotchas.

List view

Day 3 - Dealing With Data

Creating and utilising data sources to populate Android apps. Examining custom views and how to handle asynchronous tasks to display the data.

Common Design Patterns

Allowing Users to sort Data

Users Searching Data

Data Drilling Down

Static and Dynamic lists

Screen Interactions for moving,scrolling and zooming in on data

More Lists - Custom views.

Content providers

Content Resolvers

Cursors

Data

Persistent data

Data adapters

Using Web Services

XML/JSON parsing

Http/Https

Asynchronous tasks and threads in Android

Day 4 - Services

Using services, communication and hardware capabilities within Android. Design considerations to keep users informed and allow easy access to app components. The practical session will develop an app populated from an RSS feed.

Consuming Web services

RSS feed app created as an example

More Data

SQLite - How to use, when to use.

Custom controls - how to make them usable via xml.

Common Design Patterns

Notifications

Status bar Notifications

App Widgets - how to make one, best practice in updates etc

Services

Using IntentService class

Starting and stopping services.

Bound services

Hardware and Communication

Broadcast Receivers - examples.

MultiMedia - camera/video/audio

Contacts - how to use it

Day 5 - Completing an Android App, Advanced Techniques and Android Tablets

Examining the remaining Android smartphone features, looking at the differences when developing for a tablet rather than a smartphone and where to go next.

Android GPS / Location

Location-based Service APIs

Android maps

Overlays and Zoom to

App Deployment

Deploying an app to the market.

Understanding dMaifest.xml

Security and Permissions

Security best practices

Android Tablets

Differences in Android phones and Android Tablets

Loaders

Action Bar

Drag and Drop

Future Android Versions and Fragmentation

Ice cream sandwich. What it means.

Android compatibility libraries.

Advanced Development

3D Rendering - Renderscript (Overview)

Graphics - 2D and 3D graphics with OpenGL (Overview)

NDK - What is it?

Third Party Uses

 3rd party library uses

Open source.

Augmented reality libraries.