Dynamic web training
The Ultimate Training Experience

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Mobile Websites and Apps

Android App Development

Introduction

Android is the most widely used operating system designed primarily for touchscreen mobile devices such as smartphones and tablet computers. The user interface of Android is based on direct manipulation, using touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching and reverse pinching to manipulate on-screen objects.

Who Should Do This Course?

This Android programming course is designed for programmers who want to gain hands-on experience with writing code that can run on the widest spectrum of devices while still leveraging Android's newest features.

Duration: 3 days

Class size: 10 students max

Times: 9:00am - 5:00pm

Price: *Refer to our website for current course and package pricing*

After the course?

Each student will receive:

- Certificate of completion
- Training manual
- 12 months FREE email support
- FREE class re-sit (if necessary)

About The Course

During this 3 day course, participants will learn a range of skills from setting up the Android development enviornment, building a functional user interface, making your app location aware, highly efficient threaded apps, integrating database support, memory and power management as well as testing and debugging.

Prerequisites

To get the most out of this course participants should have some programming skills in Java or any other programming language prior to attending this course.

Content

Unit 1: An Introduction to Android Development

- Understanding the Android Difference
- Building Native Applications
- Understanding the History of Android
- Using the Android User Interface
- Understanding Android Applications
- Introducing Google Play

Unit 2: Setting Up Your Development Environment

- Installing the Java JDK and JRE on Windows
- Understanding Java Versions
- Installing the Eclipse IDE on Windows
- Configuring the Java JRE in Eclipse
- Getting Familiar with Eclipse
- Installing the Android SDK on Windows
- Installing the Android Developer Tools Plug-in on Windows

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Unit 3: Creating Your First Android Application

- Creating an Android Application
- Running Your Android Project
- Creating an Android Virtual Device (AVD)
- Running an Application on the AVD
- Best Practices for Using an Android Virtual Device
- Installing an Android Application on an Actual Device
- Working with Lint in an Android Project
- Understanding the Android Project Files
- Understanding the Layout XML Files
- Understanding the Resource XML File
- Using IDs in XML Files and Their Effect on Generated Files
- Understanding the Activity File
- Understanding the Activity Lifecycle
- Getting Access to the TextView Within the Activity
- Using Logging in Your Application
- Understanding the Android Manifest File Summary

Unit 4: Creating an Android User Interface

- Refactoring Your Code
- Implementing Strict Mode
- Creating a Simple User Interface
- Using Linear Layouts
- Creating Button Event Handlers
- Updating the Timer Display
- Displaying a Running Timer
- Understanding the Activity Lifecycle
- Exploring the Android Activity Lifecycle
- Fixing Activity Lifecycle Issues
- Making an Android Device Vibrate
- Saving User Preferences
- Creating a New Activity
- Showing a New Activity
- Saving an Application's State
- Using Shared Preferences

Unit 5: Improving Android Application Usability

- Refactoring Your Code
- Improving the Setting Activity Showing Toast Pop-Ups
- Returning from the Settings Activity with a Back Button
- Action Bars and Menus
- Creating a Menu Creating an Action Bar
- Using Notifications
- Creating a Notification
- Showing or Replacing a New Notification
- Showing Notifications at Regular Intervals
- Creating a Data Model
- Creating a Database and Its Tables
- Checking Table Creation
- Creating Relationships Between Tables
- Creating a Routes ListView

Unit 6: Styling an Android Application

- Refactoring Your Application
- Understanding Screen Differences
- Understanding Screen Sizes and Densities
- Making your Application Resolution Independent
- Using Configuration Qualifiers
- Creating Launcher Icons
- Creating Notification Icons
- Making Apps Look Good on Different Screen Sizes
- Using Resource Dimensions
- Changing Text Size in Java
- Changing the Layout for Landscape Mode
- Changing the Layout for Tablets
- Creating a Side-by-Side View
- Using Styles and Themes
- Enabling Night Mode
- Changing Themes
- Detecting Light Levels
- Dealing with Erratic Sensor Values Summary

Unit 7: Making Your Application Location Aware

- Finding the Device's Location
- Testing GPS in a Virtual Device
- Improving the User Experience When Using GPS Location
- Displaying Google Maps
- Dealing with Inaccurate Location Data
- Storing GPS Data
- Inserting, Updating, and Deleting Data
- Updating the Model
- Using the Database in Your Application
- Displaying GPS Data
- Working with List Activities
- Displaying GPS Data in Google Maps

Unit 8: Social Network Integration

- Integrating Photos into an Android Application
- Taking a Photograph
- Checking Whether You Can Take a Photograph
- Displaying a Photograph in Your Application Getting Results from Activities
- Sharing Content with Friends
- Displaying a Chooser
- Sharing Text and Photos Summary

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Unit 9: Optimizing Performance, Memory, and Power

- Running Your Application as a Service Handling Orientation Changes
- Creating a Service
- Improving Battery Life
- Determining Power Usage
- Reacting to Power Levels Checking the Battery Regularly Speeding Up Databases Speeding Up Databases with Indexes Speeding Up Databases with Asynchronous Tasks

Unit 10: Testing Your Application

- Testing with JUnit
- Creating a New Test Application
- Increasing Test Coverage
- Speeding Up Your Tests
- Making Testing Easier by Refactoring
- Testing with Android JUnit Extensions
- Testing Android Activities
- Creating a Mock Application
- Testing an Activity Lifecycle Testing by Interacting with the UI
- Using Monkey Testing
- Running Tests Automatically
- Running Tests from the Command Line
- Installing & Using Jenkins
- Using Version Control with Git
- Overview of Git Bash Commands

Unit 11: Optimizing for Various Devices and Countries

- Refactoring Your Code
- Supporting Various Languages
- Starting with a Rough Machine Translation
- Improving the Translation with Help from Users
- Adding More Languages
- Accommodating Various Dialects
- Adding Language Region Codes
- Dealing with Word Variations: Route, Path, Trail, and Track
- Handling Various Language Formats
- Supporting Right-to-Left Layouts
- Dealing with Variations in Dates, Numbers, and Currencies
- Enabling Backward Compatibility
- Using the Android Support Library
- Android Version Checking
- Building for Various Screen Sizes
- Using Fragments