

This intensive, hands-on five-day course teaches programmers how to develop activities, services, content providers, and broadcast receivers for the Android platform. Students will first learn how to create activities using views, layouts, fragments, dialogs, and menus. Next, they will learn about intents, broadcast receivers, and services. Coverage of data storage is next with chapters on preferences, files, SQLite, data adapters, and content providers. Finally, the course ends with coverage of location-based services and application publishing. This course is focused on Android 4.2 – Jelly Bean.

Course Objectives:

- Create an Android application.
- Create an activity and manage its lifecycle.
- Access resources programmatically to optimize maintenance and localization.
- Create full-featured graphical user interfaces with widgets, dialogs, menus, and event handlers.
- Control the organization of your screen with layouts.
- Design flexible user interfaces for multiple form factors using fragments.
- Communicate between applications in a loosely-coupled way with intents.
- Create a service to handle background tasks and use notifications to indicate the status of those tasks.
- Persist application state using preferences, files, and SQLite.
- Use both ArrayAdapter and CursorAdapter to bind data to widgets.
- Share data with other applications with content providers.
- Use the LoaderManager and CursorLoaders to display provider data.
- Access Contacts and other built-in Android providers.
- Determine the current location and leverage Google Maps.
- Publish an application to an Android device.

Audience: Programmers who are new to developing applications for the Android platform.

Prerequisites: *Introduction to Java* or equivalent experience is required. Basic understanding of XML is required.

Number of Days: 5 days

<p>1 Course Introduction Course Objectives Course Overview Using the Workbook Suggested References</p>	<p>2 Getting Started Android Overview Android Architecture The Dalvik VM Android Components Android Installation</p>	<p>SDK Platform-tools and the SDK Manager Eclipse and the ADT Plugin A Simple Android Application The Android Emulator User Interface Layouts Android Event Handlers LogCat</p> <p>3 Activities Activities Creating an Activity Activity Lifecycle</p>
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	Resource Conservation		Fragment Lifecycle
	Intents		ListFragment
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	Packaging	8	Dialogs
4	Resources		Toast
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	R.java		Dialogs
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	StringArrays		Alert Dialog Buttons
	Boolean and Integer Resources		Dismissing a Dialog
	Color and Dimension Resources		AlertDialog Items
	Style Resources		Event Notifications
	Image Resources		Custom Dialogs
	System Resources		ProgressDialog
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5	Views and Event Handlers		Menus and Menu Items
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	Common Properties		Reacting to Menu Item Selections
	Text View		ContextMenu
	Edit Text		Contextual Action Mode
	TextChanged Events		Defining Contextual Actions
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	Check Box and Toggle Button		Submenus
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	AsyncTask		Explicit Intents
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	Inflation		Activities with Results
	Linear Layout		Implicit Intents
	FrameLayout		Intent Types and Categories
	RelativeLayout		Intent Filters
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	CombiningLayouts		Intent Filter Data
	Scrolling		Broadcast Receivers
	Screen Orientation Changes		Registering Broadcast Receivers Programmatically
	Graphical Layout Tool		Registering Broadcast Receivers via the Manifest
7	Fragments		Broadcasting Intents
	What are Fragments?		
	Creating a Fragment		Services
	Add a Fragment to an Activity via XML	11	What is a Service?
	Add a Fragment Programmatically		Defining a Service: Extend IntentService
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	Defining a Service: Extend Service		Adapters
	Registering and Starting a Service		ArrayAdapter
	Stopping a Service		CursorAdapter
	Creating a Bound Service		Simple Cursor Adapter
	Binding to a Service		ListView
	Remote Bound Services		ListActivity
	Call a Remote Service		AdapterView Events
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12	Notifications		AutoCompleteTextView
	Notifications		GridView
	Creating a Notification Builder		ViewPager and PagerAdapter
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	Pending Intents	16	Implementing a Content Provider
	NotificationManager		Content Providers
	Updating a Notification		Content URIs and MIME Types
	More Notification Properties		Implement the ContentProvider Interface
13	Data Storage: Preferences and Files		Sharing Your Data
	The Android File System		Register your Provider and Permissions
	Preferences		Accessing a Content Provider
	Creating Preferences	17	Accessing Contacts and Other
	Reading Preferences		Android Providers
	Updating and Deleting Preferences		Built-In Content Providers
	Using PreferenceScreen		Accessing Content Providers
	PreferenceActivity and		Content URIs
	PreferenceFragment		LoaderManager and CursorLoader
	Working with Files		Settings
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	External Storage		MediaStore
	The cache Directory		Contacts
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14	Data Storage: SQLite Database	18	Location-Based Services
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	Android SQLite Classes		Registering a LocationListener
	Executing SQL Statements		Location
	The.rawQuery() and query() Methods		Permissions
	Cursors		Determining Distance and Bearing
	Managed Cursors and LoaderManager		Geocoding and Reverse Geocoding
	Encapsulate Data Access with an		Proximity Alerts
	Adapter		Using Google's Map Service
	Using SQLiteOpenHelper		Google Maps Android API
	Managing Database Upgrades		Displaying a Google Map
	Inserting and Updating Data		withMapFragment
	Deleting Data		GoogleMap Gestures and Events
	Transactions		LatLng and the GoogleMap Camera
15	Data Adapter Widgets		Markers and BitmapDescriptors
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19 Publishing an Application

- Publishing
- Packaging and Signing
- Distribution
- Updates