Android Development Using Mono for Android 1

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Meet the expert: Wallace McClure specializes in building applications that have large numbers of users and large amounts of data as well as user interface specific technologies such as AJAX, iPhone, and Android. He is a Microsoft MVP, ASPInsider, and a partner in Scalable Development, Inc. Wally has authored books on iPhone Programming with Mono/MonoTouch, Android Programming with Mono for Android, application architecture, ADO.NET and SQL Server, and finally AJAX.

Prerequisites: This course assumes that you are comfortable developing applications using Visual Studio 2010 and C#. Mono Android requires Visual Studio 2010 Professional or higher (and will not work with Visual Studio Express editions).

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Course description: The smart phone is quickly becoming a necessary tool for employees and customers alike. It has become necessary for highly mobile businesses to adopt this new technology. This course will show how to create applications for the Android OS, found on both smart phones and tablets, using Mono for Android. Mono for Android is an add-on for Visual Studio 2010 using C# and the.NET framework to build applications for the Android OS instead of coding in the native Java code. The course will start with an introduction to the Android OS and platforms then do an introduction to the MONO development environment. Then move onto basic UI design, screen controls and SQLite. The course follows up with the subjects of remote data, location services and Geocoding.

Course outline:

Introduction to Android
- Introduction
- Android History
- Where are we at?
- Mobile Development Issues
- Why Android?
- What is Mono for Android?
- Current Status
- What Mono for Android is Not
- How do users get the Framework
- What about Silverlight?
- Editions
- Let"s get started Installing
- Terms
- Creating a New Project
- Project Settings
- Code
- Mono for Android Settings
- Design Surface
- Select Device
- Starting Emulator
- Emulator
- Developer View
- Mono Runtime
- Hey, Your Apps are Big!
- Debugging
- Device Logging
- Error Message
- DDMS Debugging
- Summary

Getting Started
- Introduction
- Demo: Mono for Android
- Demo: Set Content View
- Demo: Android SDK
- Cross Platform
- Strategy
- Summary

Application Life Cycle
- Introduction
- Parts of an Application
- AndroidManifest.xml
- ApplicationManifest
- Application Life Cycle
- Application States
- Activity Life Cycle
- Activity Event Handlers
- Demo: Activity Event Handlers
- Types of Activities
- What"s in an APK File?
- Summary

User Interface Controls
- Introduction
- Emulator
- Issues
- New Terms
- Layouts
- ViewGroups
- Buttons
- TextView - Label
- EditText - TextBox
- Demo: TextBox
- Summary

Spinner Control
- Introduction
- Spinner - Drop Downs
- Demo: Spinner Control
- Images
- Demo: Images
- Summary

Menus, Dates and Times
- Introduction
- Menus
- Demo: Menus
- Dates & Times
- Demo: Dates and Times
- Summary

Radio Buttons and Check Boxes
- Introduction
- Radio Button / CheckBox
- Demo: Radio Buttons
- Summary

UI Building Help
- Introduction
- DroidDraw
- UI Assistance By Hand
- Demo: Android UI
- Summary

Androidisms
- Introduction
- Problems
- Virtual Keyboard
- Demo: Virtual Keyboards
- Summary

Location Introduction
- Introduction
- How Does a Device Know where it is?
- Why?
- Location
- Main Location Elements
- Emulator
- Where am I - Pattern
- Criteria
- Where Am I?
- Demo: Location
- Summary

Proximity
- Introduction
- Proximity
- Demo: Proximity
- Geocoding
- Demo: Forward Geocoding
- Summary

Data Access
- Introduction
- Businesses Run On Data
- Architecture
- Data Terms
- Data Interchange Standards
- Limitations

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- Web Services
- Web Service Options
- Web Services continued
- What is REST?
- REST over WCF
- Your WCF Interface
- JavaScript Object Notation
- XML
- Demo: Data Access Techniques
- Demo: JSON
- Demo: WCF
- Summary

Accessing Relational Data
- Introduction
- Intra-Firewall
- On Device
- SqliteOpenHelper Pattern
- Problem
- What about ORMs?
- Demo: Relational Data
- Sharing Data is Caring
- Content Providers Pattern
- Demo: Content Provider
- Summary

ListView
- Introduction
- Displaying Data
- ListView Example
- Demo: ListView
- Demo: More ListView
- YMMV
- Summary

Sensors
- Introduction
- Device Features
- Sensors
- Pattern
- Let"s go to an example
- Demo: Sensors
- Summary

Vibrations
- Introduction
- Vibration
- Pattern
- Demo: Vibrating the Device
- Summary

Voice Recognition
- Introduction
- Voice Recognition Pattern
- Demo: Voice Recognition
- Demo: Turn by Turn
- Summary

Playing Video
- Introduction
- Play Video
- Support
- MediaPlayer
- Demo: Video
- Summary

Android Services
- Introduction
- Android Services
- Scenarios
- Pattern
- Things To Do
- Start on Boot
- When Should the Service Do Something?
- Demo: Android Services
- Summary

Threading
- Introduction
- Asynch Commands
- Threading
- Demo: Threading
- On Device Data
- Scenario
- Summary