Windows Phone 7 Adv Development Using Visual Studio 2010

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Prerequisites: This course assumes that you have some programming background and experience using Visual Studio 2010. In addition, the course assumes knowledge of C# in the Windows environment. Some basic knowledge of Silverlight 4 is helpful, as well. A very basic understanding of XML is also required.

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Course description: This Windows Phone 7 course takes a deeper look at the mobile OS from Microsoft. Starting with the use of MVVM and why you need to use MVVM. The course then moves in to unit testing so you as the developer can test your code right away. The exchange and storage of data is covered next including how to use LINQ to SQL for the phone OS. As part of any data exchange there needs to be a network, how to use WCF or OData services for this exchange is covered. Next the course moves on to tiles and notifications then search integration. Next graphics for applications and games from Silverlight and XNA are covered for application development. The final subject is on background operations and how it effects an application.

Course outline:

Introduction to MVVM
- Introduction
- Introduction to MVVM
- What MVVM Is / Is not
- MVVM Foundations
- MVVM Visualization
- When you need MVVM
- Summary

Creating a View Mode
- Introduction
- Creating A Model
- Accessing Model Instances
- The Chicken or the Egg
- Creating a ViewModel
- ViewModel Requirements
- Demo: Creating a ViewModel
- Summary

Creating a View
- Introduction
- Creating a View
- To Code Behind or Not
- Demo: Creating a View
- Summary

Creating Commands
- Introduction
- Creating Commands
- Controls That Support ICommand
- Passing Parameters to Commands
- ICommand.CanExecute() Method
- ICommand.Execute() Method
- Demo: Creating a Command
- Review
- What was cool in the demos
- What was not cool
- What can be done?
- MVVM Frameworks
- Summary

Simplifying View Models
- Introduction
- A Quick Review of MVVM
- What MVVM Is / Is not
- What is Good About MVVM
- What is difficult about MVVM
- Easing the pain
- Simplyfying ViewModel Creation
- INotifyPropertyChanged
- Visual Studio Code Snippets
- Demo: View Model and Snippets
- Summary

Simplifying Commands
- Introduction
- Simplifying Command Creation
- Creating the DelegateCommand
- Demo: DelegateCommand
- Summary

View Model Assignment
- Introduction
- Simplifying ViewModel
- Creating a Service Locator
- Demo: Service Locator
- Summary

Third Party Frameworks
- Introduction
- Using Third Party Frameworks
- Framework Choices
- MVVMLight Introduction
- Getting & Installing MVVMLight
- Demo: MVVMLight
- Summary

Unit Test Introduction
- Introduction
- Introduction to Unit Testing
- WP7(+) Unit Testing Frameworks
- Silverlight Unit Testing Framework
- Demo: Unit Testing
- Summary

Unit Test Projects
- Introduction
- Creating a WP7 Unit Test Project
- Customize the MainPage.xaml.cs
- To Run the Test Project
- Demo: Unit Test Project
- Summary

Creating Unit Tests
- Introduction
- Creating and Running Tests
- How Many Tests?
- Creating Basic Tests
- Making Assertions
- Assert Methods
- Unit Test UI
- When Tests Fail
- Demo: Writing Unit Tests
- Summary

Additional Test Scenarios
- Introduction
- Additional Test Scenarios
- Expecting Exceptions
- Accessing Internal Members
- Testing Asynchronous Methods
- Running a Subset of Tests
- Demo: Test Subsets
- Summary

Local Database Introduction
- Introduction
- Local Database Introduction
- Limitations
- LINQ to SQL on the Phone
- Database Storage
- Database Creation Options
- Demo: Database Application
- Summary

Creating the Data Context
- Introduction

(Continued on page 2)

Windows Phone 7 Adv Development Using Visual Studio 2010

- Creating the DataContext
- Creating Your Table Entities
- Creating Columns
- Creating Relationships
- Demo: Creating A DataContext
- Summary

Creating the DataBase
- Introduction
- Connection Strings
- Creating the Database
- Demo: Database Creation
- Summary

Querying and Updating Data
- Introduction
- Querying the Database
- Updating, Deleting & Inserting
- Summary

Networking Introduction
- Introduction
- Windows Phone Networking Intro
- Networking Options
- Network Access is Asynchronous
- Detecting Network Status
- Responding to Network Changes
- Resolving Host Name to IP
- Demo: DeviceNetworkInfo
- Summary

Connecting to the Web
- Introduction
- Connecting to Web Content
- Web Access Option
- No Cross-Domain Access Limits
- Basic WebClient Download
- Demo: Download
- Summary

Accessing Web Services
- Introduction
- Accessing Web Services
- Web Service Configuration
- Proxy Types
- Proxy Type Interfaces
- Configuring Proxy Generation
- Demo: Creating a WCF Service
- Summary

OData Services
- Introduction
- Connecting to OData Services
- Windows Phone OData Client
- Demo: OData Client
- Summary

Phone Tiles
- Introduction
- Introduction to Tiles
- Two Types of Tiles
- Tile Properties
- Background Images
- Your Application Tile Defaults
- Demo: Tiles
- Summary

Programming Tiles
- Introduction
- Working with Tiles in Code
- Getting Existing Tiles
- Creating, Updating & Deleting
- Demo: Working With Tiles
- Summary

Push Notifcations
- Introduction
- Push Notifications
- Limitations
- Push Notification Workflow
- Demo: Push Notification
- Summary

Search Integration
- Introduction
- Search Extensibility Overview
- Application Activation
- Marketplace Registration
- Demo: Application Search
- Summary

Application Connect
- Introduction
- Extending Search w/ App Connect
- You Control Search Results
- Demo: App Connect
- Summary

Application Instant Answers
- Introduction
- App Instant Answer
- Getting Search Information
- Demo: Instant Answer
- Summary

Introduction to XNA
- Introduction
- Introduction to XNA
- This is NOT Silverlight
- Retained Mode vs Immediate Mode
- XNA Game Loop
- Update, Draw
- XNA Project Structure
- XNA Blue Screen
- Demo: XNA Application
- Summary

Sprites
- Introduction
- Working with Assets
- Introducing Sprites
- Transparency in Sprites
- Drawing a Sprite
- Making Things Move
- Using Sprite Sheets
- Demo: Adding Sprites
- Demo: Moving Sprites
- Summary

Accepting Input
- Introduction
- Accepting Input
- Accelerometer
- Demo: Accelerometer
- Summary

Game Play
- Introduction
- Game Play
- Collision Detection
- Demo: Collision Detection
- Summary

Silverlight XNA
- Introduction
- Silverlight and XNA Integration
- Why Do We Need Integration?
- Silverlight and XNA Projects
- Silverlight Project Differences
- Demo: XNA and Silverlight App
- Summary

Hosting XNA in Silverlight
- Introduction
- Implementing the XNA Game
- Adding Content
- Game Logic
- Demo: XNA in Silverlight Game
- Summary

Hosting Silverlight in XNA
- Introduction
- Rendering Silverlight in XNA
- Demo: Silverlight in XNA
- Summary

Scheduled Actions
- Introduction
- Intro to Background Operations
- Scheduled Notifications & Tasks
- ScheduledActionService
- Basic Workflow
- Summary

Scheduled Notifcations
- Introduction
- Scheduled Notifications
- Demo: Notifications
- Summary

Scheduled Tasks
- Introduction
- Scheduled Tasks
- PeriodicTasks
- ResourseIntensiveTask
- The ScheduledTaskAgent
- ScheduledAgent.OnInvoke()
- Dual Purpose Agent
- Debugging Agents
- Demo: IntensiveTasks
- Demo: Debugging Agents
- Demo: ScheduledTaskAgent
- Summary