

Acorn Software Training

.NET 3.5

New Features

Course version C9



Prerequisites

- ◆ prior training and/or experience in the .NET Framework, VB and/or C#, and Visual Studio .NET, in any version up to .NET 2.0
- ◆ familiarity with relational databases



Course objectives

Upon successful completion of the course, you will be able to:

- ◆ know the purpose of, and use, the major new language features in VB and C#, including:
 - implicit (inferred) variable typing
 - nullable value-type variables
 - anonymous types
 - automatic properties of classes
 - class and collection initializers
 - anonymous methods
 - lambda expressions
 - extension methods
- ◆ use LINQ queries to retrieve data from arrays, lists, XML files, collections of objects, relational database tables and stored procedures, and DataSets; write joins, subqueries, summarizing queries, and updates with LINQ
- ◆ use the Entity Framework with either LINQ or Entity SQL to create database applications, including ADO.NET Data Services
- ◆ use Ajax to create more-interactive web applications, including using browser and server-side features
- ◆ use Windows Communication Foundation (WCF) to create services that can be used by any .NET or non-.NET application
- ◆ be familiar with Windows Presentation Foundation (WPF) for creating standalone and browser-based applications, and its relation to Silverlight
- ◆ be familiar with the purpose of Windows Workflow Foundation (WF)



Hardware and software requirements

- ◆ One workstation per student, with Windows XP, or later
- ◆ Visual Studio.NET 2008 (full install, including Help)
 - .NET 3.5 Service Pack 1 is required for the Entity Framework



Course setup

The course comes with a large number of sample applications, databases, and supporting files, in a self-extracting zip file, usually on a CD. Among the files is readme.doc, which describes the purposes of all the folders and sample applications.

If you wish, you can download this setup file from www.acornsoftware.com.




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1. Introduction

 < 1 hour


- A. .NET Overview
- B. Installing the course files
- C. Starting your solution and project

2. New language features in .NET 3.5

 2 to 3 hours


- A. Overview
- B. Implicit variable typing
- C. Nullable value-type variables
- D. Anonymous types (classes)
- E. Automatic properties of classes
- F. Class and collection initializers
- G. Anonymous methods
- H. Lambda expressions
- I. Extension methods

3. LINQ (Language Integrated Query)

 6 to 8 hours

- A. Basic LINQ queries
- B. LINQ on objects
- C. LINQ to XML
- D. LINQ to SQL
- E. LINQ to DataSets
- F. LINQ joins
- G. LINQ subqueries
- H. LINQ summarization
- I. Updating with LINQ

4. The Entity Framework


 2 to 4 hours

Objectives, activities, chapter table of contents

- A. Overview
- B. Creating an Entity Data Model (EDM)
- C. Using LINQ to Entities
- D. Using Entity SQL
- E. Joins (associations)
- F. EntityDataReaders


- G. Updating
- H. ADO.NET Data Services

5. Ajax in ASP.NET

 6 to 8 hours


- A. Overview of Ajax
- B. Server-side Ajax features
- C. Browser-side Ajax calls to inline methods
- D. Ajax calls to web services
- E. Additional considerations: remote and stateful web services, history points

6. Windows Communication Foundation (WCF)

 6 to 8 hours


- A. WCF Overview
- B. Creating a service
- C. Handling collections
- D. Returning data objects
- E. Handling complex types of objects
- F. WCF Sessions
- G. Other considerations: asynchronous calls, transactions, etc

7. Windows Presentation Foundation (WPF)

 3 to 4 hours


- A. WPF Overview
- B. WPF Standalone applications
- C. WPF Browser applications
- D. WPF deployment
- E. Silverlight

8. Windows Workflow Foundation (WF)

 < 1 hour

- A. Overview of workflows
- B. Workflow implementation in .NET

9. Additional topics

 < 1 hour

- A. Service Pack 1
- B. Writing secure code

10. Final Lab



4 to 6 hours

- A. Description of the Lab
- B. Using LINQ, Ajax, WCF

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