

ADO.NET 3.5 Workshop Course Summary

Description

This course covers the creation and use of Connections, Commands, DataReaders, DataAdapters, DataSets, etc, for query and update, both by coding and by using wizards; it also covers LINQ, the Entity Framework, and Data Services. Exercises can be done with Windows and/or Web applications, depending on the student's needs. All examples and exercises are in both Visual Basic and C#.

Topics

- Overview
- Connections and providers
- Reading data efficiently
- Updating data
- Creating, searching and updating DataSets
- LINQ (Language Integrated Query)
- Entity Framework

Audience

This course was designed for application developers who need to develop database applications in .NET:

Prerequisites

Students must have taken one of the .NET Programming courses in either VB or C#, and, if creating web-based database applications, ASP.NET Workshop. Students should be familiar with some relational databases. (Access, Oracle, SQL Server, DB2, Access, etc)

Duration

Five days

ADO.NET 3.5 Workshop

Course Outline

I. Overview

- A. The original ADO.NET object model, including OleDb, SQL, Oracle and ODBC classes in the .NET Framework
- B. LINQ (Language Integrated Query)
- C. The Entity Framework
- D. Entity SQL and Data Services

II. Connections and providers

- A. The Connection String
- B. Using a config file for the connection string
- C. Open and closing connections
- D. Connection pooling

III. Reading data efficiently

- A. Creating a Command
- B. Returning scalar values with ExecuteScalar
- C. Using Parameters with a command
- D. Using a DataReader
- E. Populating various types of controls
- F. Handling null values
- G. Handling multiple result sets with a DataReader

IV. Updating data

- A. Using a Command and Parameters
- B. Handling null values and identity keys
- C. Exceptions and other feedback values;
- D. Using Transactions
- E. Isolation settings
- F. Using nested transactions and save points

V. Creating DataSets

- A. DataSet object mode
- B. DataAdapter purpose, properties and methods
- C. Generic (untyped) versus strongly-typed DataSets
- D. Binding datasets to various types of controls
- E. ASP.NET considerations, including caching DataSets
- F. Constraints and relationships
- G. Searching and filtering the contents of a DataSet; updating, inserting and deleting single rows or batches

- H. Accepting or rejecting changes in the DataSet

- I. Coordinating with Commit and Rollback
- J. Concurrency issues

VI. LINQ (Language Integrated Query)

- A. Purpose and examples of LINQ syntax
- B. Creating LINQ-to-SQL classes
- C. Querying databases with LINQ
- D. Querying other types of data with LINQ, including DataSets, XML files, arrays and Lists
- E. Collections of objects joins, subqueries, grouping, and updating with LINQ

VII. Entity Framework

- A. Purpose and overview of EF
- B. Creating an Entity Data Model
- C. Examples of LINQ and Entity SQL queries against entities
- D. Using navigation properties to navigate from many to one and one to many
- E. Subqueries and grouping in Entity SQL
- F. Using ADO.NET Data Services to query data