

ADO.NET Using C#

(3 Days) CTI 413

This course is an introduction to developing effective database applications using ADO.NET and C#. It is current to .NET 2.0, Visual Studio 2005 and SQL Server 2005.

Prerequisites: Basic knowledge of SQL and of programming the .NET Framework using C#; understanding of fundamentals of XML. Able to write simple Windows Forms applications. Working knowledge of SQL Server is desirable.

Minimum software requirements: Microsoft Windows XP Professional with Service Pack 2, SQL Server 2005 Express Edition, Visual Studio.NET 2005 or Visual C# 2005 Express Edition.

Minimum hardware requirements for all machines: Pentium PC running at 600 MHz; 256 Mb RAM; 4 GB free hard disk space before installation; Internet access; machines must be networked.

Microsoft PowerPoint and Internet access on instructor's workstation for presentation purposes.

Module 1: Introduction to ADO.NET

- Microsoft Data Access Technologies
- From ADO to ADO.NET
- ADO.NET Architecture
- Namespaces and Classes
- Interfaces
- DataSets and Disconnected Access
- First ADO.NET Programs
- Acme Computer Case Study

Module 2: ADO.NET Connections

- .NET Data Providers
- SqlConnection
- Connection Classes
- Connection Strings
- Connection Pooling
- Connection Events
- Error Handling

Module 3: ADO.NET Commands

- SqlCommand
- Command Objects
- Creating Commands
- Executing Commands
- Parameterized Queries
- Command Types
- Using Stored Procedures
- Batch Queries

Module 4: DataReaders and Connected Access

- DataReaders
- IDataReader
- IDataRecord
- Type-Safe Accessors
- Null Columns
- ExecuteReader Options
- Multiple Result Sets
- Obtaining Schema Information

Module 5: Data Sets and Disconnected Access

- DataSet
- DataAdapter
- Command Objects
- DataTable
- DataColumn
- DataRow
- Row States and Versions
- Accept or Reject Changes
- DataTable Events
- Updating a Database from a DataSet
- Command Builders

Module 6: More About DataSets

- Filtering DataTables
- Multiple Table DataSets
- Schema
- Constraints
- Relations
- Navigating a DataSet
- DataMapping
- Creating a DataSet Programmatically