

ADO.NET 3.5 Workshop

Description

A hands-on course for application developers who need to develop database applications in .NET:

- covers the creation and use of all database objects, both by coding and by using wizards
- 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#
- 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*
- assumes the student is familiar with some relational database (Access, Oracle, SQL Server, DB2, etc)
- this course covers both Visual Studio 2005 (.NET 2.0) and Visual Studio 2008 (.NET 3.5)

Length

4 days

Outline

- **Overview**; ADO.NET object model; comparison to ADO classic; OleDb, SQL, Oracle and ODBC classes in the .NET Framework; managed providers; disconnected data environment; use of XML to transmit data
- **Connections and providers**; the `ConnectionString`; using a config file for the connection string; open and closing connections; connection pooling
- **Reading data efficiently**; creating a `Command`; returning scalar values with `ExecuteScalar`; using Parameters with a command; using a `DataReader`; populating various types of controls; handling null values; handling multiple result sets with a `DataReader`
- **Updating data**; using a `Command` and Parameters; handling null values and identity keys; exceptions and other feedback values; using Transactions; Isolation settings; using nested transactions and save points
- **Creating DataSets**; `DataSet` object model; `DataAdapter` purpose, properties and methods; generic (untyped) versus strongly-typed `DataSets`; other ways of filling `DataSets` and `DataTables`, e.g. from `DataReader`, XML, etc; ASP.NET considerations, including caching `DataSets`
- **Reading and searching DataSets**; creating primary key constraints and relationships on a table; adding and removing columns; computing expressions; using the `Find` method; using parent-child relationships to find parent and child rows; creating subsets of tables using `Select` or `DataViews`; using various types of controls to help the user search a `DataSet`

- **Updating DataSets**; the purpose of constraints, including primary key, unique, foreign keys and relationships; RowState and RowStateFilter settings; updating, inserting and deleting single rows; accepting or rejecting changes in the DataSet, coordinating with Commit and Rollback; executing the update command yourself, or letting the DataAdapter do it; concurrency issues; batch updating
- **Using Large Objects**; reading and updating Binary and Character Large Objects, e.g. graphics
- **Using XML**; transferring data between DataSets and XML files; using XML classes to write and append to XML files

**Hardware,
software**

One workstation per student and the instructor, with Windows 2000 or higher, and Visual Studio.NET 2005 or 2008 Professional or higher

Exercises

Students spend the majority of class time developing windows and/or web database applications; the course is accompanied by a library of 50+ detailed sample applications, including solutions to all exercises