

ADO.NET Using Visual Basic 2005

with Ken Getz and Andy Baron

Three days; Instructor-Led

Introduction:

In this course, learn about the features provided by ADO.NET 2.0. Learn to connect to data sources, retrieve and manipulate data, and perform data updates. Examine the various ADO.NET classes, including Connection, Command, DataReader, DataSet, DataTable, DataRelation, and more. See how to apply constraints and relationships to disconnected data. Learn how to update data, including how to handle stored procedures, parameters, and return values. Understand how to search, sort, and filter data stored in a DataSet or DataTable. Become familiar with strongly typed DataSets and learn their advantages. See how to leverage the power of XML through serialization, Diffgrams, and the XMLDataDocument object. Examine new ADO.NET features that support SQL Server 2005 technologies, including asynchronous commands, Multiple Active Result Sets, bulk inserts, and more.

At course completion, students will be able to:

- Connect to multiple types of data sources, including SQL Server and Microsoft Jet/Access
- Retrieve data, using the DataAdapter, Command, and DataReader classes
- Create and configure Command parameters
- Cache data using the DataTable and DataSet classes
- Apply constraints to DataTable and DataColumn objects
- Create relations between DataTable objects, using the DataRelation class
- Update data using DataAdapter and Command classes
- Work with strongly typed DataSet and DataTable classes
- Retrieve and update data using TableAdapter classes
- Handle exceptions and data errors, including concurrency errors
- Search, sort, and filter data using the DataView class
- Work with auto-increment columns in multi-user applications
- Retrieve and generate XML data
- Take advantage of new SQL Server 2005 features

Course Outline:

Accessing Data with ADO.NET

- The ADO.NET Object Model
- Connecting to Data
- Understanding Connection Pooling
- Using Provider Statistics

Retrieving Data

- Introducing Command Classes
- Working with Data Readers
- Digging Deeper into Commands and DataReaders

Caching Data in DataSets

- Populating a DataTable
- Filling DataSets Using a DataAdapter
- Using the Load Method
- Retrieving Schema Information
- DataSets and XML

Applying Constraints

- Using Constraints
- Foreign Key Constraints
- Other Constraints

Data Relations

- Creating DataRelations
- Navigation Pathways
- Expressions and Relations
- Specifying XML Nesting

Updating Data

- Creating Commands with CommandBuilders
- Creating Custom Commands
- Using Stored Procedures
- Performing Batch Updates

Using Strongly Typed DataSet Classes

- Using a Loosely Typed DataSet
- Creating a Strongly Typed DataSet
- Using a Strongly Typed DataSet
- Issues with Using a Strongly Typed DataSet

Handling Exceptions and Data Errors

- Using Structured Exception Handling
- Handling Provider Errors
- Using Transactions
- Handling Concurrency Conflicts

Searching, Sorting, and Filtering

- The Sample Project
- Working with DataTables
- Working with DataViews

Handling AutoIncrement Columns

- The AutoIncrement Property
- Retrieving New Database Values
- Avoiding Multi-User Conflicts
- Merging Inserted Rows
- Other Considerations

XML Techniques

- ADO.NET and XML
- Saving DataSet Data as XML
- Loading XML Data into a DataSet
- Working with DataSets and XML Together
- Working with XML Data in SQL Server

Features Supporting SQL Server 2005

- Enumerating Servers on a Network
- Asynchronous Processing
- Multiple Active Result Sets (MARS)
- Bulk Copy Operations
- SQL Server Max Data Types
- SQL Server User Defined Types
- SQL Server Snapshot Isolation