



Course 452: ADO.NET & Application Development

Course Description...

This course, is an intermediate level course in .NET and a beginning course in ADO.NET. The course describes the role of both vendor neutral and vendor specific managed providers in the data access world and explores the use of ADO.NET using both Visual Studio.NET visual designers and programming concepts.

Learning Objectives...

- Understand both the connected and disconnected ADO.NET data access model
- Explore Visual Studio.NET's visual designers
- Explore ADO.NET programmatically
- The interdependence of ADO.NET objects and XML is exploited to build robust data aware applications.
- Server-based and ADO.NET-based transactions are described and the role of Component Services in Distributed Transactions briefly explored.
- Data binding in both Windows and Web Form controls is explained and used.

Who should attend...

Audience includes individuals who are familiar with the .NET Framework and wish to extend their knowledge of .NET data access technologies.

Prerequisites...

Course 451 or its equivalent.

See next page for a detailed course outline...



Course Outline...

Unit 1: Review of Prerequisite Material (Optional)

What Is .NET?

- .NET Framework
- Microsoft Intermediate Language
- Common Language Runtime

Why Is .NET?

- Safer, more secure and more stable
- Run once, run always
- XCOPY installation

Introduction to Visual Studio .NET

- Tour of RAD Environment
- Tour of important files
- Tour of important project types

Expectations, You Know How To

- Write simple object oriented code in the .NET Framework
- Use the Visual Studio.NET debugger to step through code and watch variables

Unit 2: A Brief History of Data Access at Microsoft

The early years

- ODBC and RDO
- OLEDB and ADO

Universal Data Access

- OLEDB as an example of interface inheritance
- ADO as a robust class library for accessing OLEDB methods

Recordsets

- The four recordset objects and their roles
- Forward-only cursors and traditional client-server models
- Static cursors and multi-tier architectures

Unit 3: Overview of ADO.NET

What Happened to the Recordset?

- Forward-only to DataReader
- Static to DataSet
- Keyset and Dynamic recordsets to oblivion (and why!)

Managed Providers

- Vendor neutral providers (ODBC and OLEDB)
- Vendor specific providers (SQL Server, Oracle, etc.)
- Introduction to provider specific objects (Connections, Commands, DataReaders and DataAdapters)
- Introduction to a provider neutral object (DataSet)
- Tour of the Data namespace with the Object Browser



Unit 4: Visual Aids for ADO.NET Programmers

Server Explorer

- Connections
- Servers
- Others

Query Designer

Form Designer Controls

- Using the Form Designer to build Connections, Commands, etc.
- Code review of Form Designer actions

Unit 5: The Connection Object

Connection Strings

Security

Members, and especially

- ConnectionString
- BeginTransaction
- Open and Close

Unit 6: The Command Object

Overview

- SQL: Client-side vs. Stored Procedures
- Retrieving data vs. modifying data

Members, and especially

- Connection
- CommandText
- CommandType
- Transaction
- Parameters
- ExecuteNonQuery, ExecuteReader, ExecuteScalar

Managing Transactions

- The Transaction object
- Server-based transactions (briefly)
- Distributed transactions and Component Services (briefly)



Unit 7: The DataReader Object

- The Read method
- The GetXXX methods

Unit 8: DataAdapters and DataSets

- The DataAdapter's four Command properties
- The DataAdapter's Fill and Update Methods
- Constraints and DataRelations
- How to use a DataAdapter effectively
- Concurrency issues

Unit 9: Programming the DataSet

- Typed vs. Untyped Datasets
- Retrieving and modifying DataSet data
- Detecting and accepting DataSet changes
- TheDataSet and XML

Unit 10: Handling Exceptions

Unit 11: Stored Procedures

- Using Server Explorer and/or Enterprise Manager
- Command Object Parameters

Unit 12: Data Binding

- Windows Form Controls
- Web Form Controls
- Web Form binding expressions
-

Unit 13: Putting It All Together

What Has Been Learned

- Understand both the connected and disconnected ADO.NET data access model
- Explore Visual Studio.NET's visual designers
- Explore ADO.NET programmatically
- The interdependence of ADO.NET objects and XML is exploited to build robust data aware applications.
- Server-based and ADO.NET-based transactions are described and the role of Component Services in Distributed Transactions briefly explored.
- Data binding in both Windows and Web Form controls is explained and used.

Please contact your ROI representative to discuss course tailoring!!!