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YOUR COURSE, YOUR WAY - MORE EFFECTIVE IT TRAINING

# ADO.NET For .NET Developers

## Duration: 3 days

### Overview:

Aspect Training's ADO.NET training course teaches the essential elements of ADO.NET to enable a developer to build effective database applications.

Following an overview of ADO.NET and its relation to previous Microsoft data access technologies, including ADO, the ADO.NET architecture, main interfaces and classes, and programming with both the connected and disconnected models are discussed.

The course covers in detail the core ADO.NET classes including Connection and Command objects, which are essential in both connected and disconnected database access scenarios, and DataReaders, which provide a fast, forward-only reading capability.

The course focus then moves to the DataSet and its related classes, such as DataAdapter, DataTable, DataRow, DataColumn, DataRelation, TableMappings and ColumnMappings.

### Prerequisites:

Students should have a basic knowledge of SQL and of programming the .NET Framework using a .NET language. The student should also understand the fundamentals of XML.

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### Topics:

**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

**2 - ADO.NET Connections**

.NET Data Providers

IDbConnection

Connection Classes

Connection Strings

Connection Pooling

Connection Events

Error Handling

**3 - ADO.NET Commands**

IDbCommand

Command Objects

Creating Commands

Executing Commands

Parameterized Queries

Command Types

Using Stored Procedures

Batch Queries

**4 - DataReaders and Connected Access**

DataReaders

IDataReader

IDataRecord

Type-Safe Accessors

Null Columns

ExecuteReader Options

Multiple Result Sets

Obtaining Schema Information

**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

**6 - More About DataSets**

Filtering DataTables

Multiple Table DataSets

Schema

Constraints

Relations

Navigating a DataSet

DataMapping

Creating a DataSet Programmatically

**7 - XML and ADO.NET**

Strong Coupling Between ADO.NET and XML

Rendering XML from a DataSet

Controlling XML Output

Reading XML into a DataSet

XML Schema and DataSets

Typed DataSets

Table Adapters

Synchronizing DataSets and XML

XML Serialization

**8 - Data Binding**

Data Binding in Windows Forms

Simple Data Binding

Complex Data Binding

DataGrid Binding

DataView

Filtering and Sorting

Data Binding with .NET

**9 - Concurrency and Transactions**

DataSets and Concurrency

Optimistic Concurrency

Pessimistic Concurrency

Handling Concurrency Violations

ADO.NET Transactions

Database Transactions

**10 - LINQ to ADO.NET**

Language Integrated Query (LINQ)

Bridging Objects and Data

Using Object Relational Designer

Filtering, Ordering and Aggregation

Inserts, Deletes and Updates

LINQ to SQL

LINQ to Dataset

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