

## **Visual Studio 2008: ADO.NET 3.5 2**

### **Module 1: Getting Started with ADO.NET 3.5**

#### **Course Outline**

This module explains how to connect to a database and retrieve data by using ADO.NET commands.

#### **Lessons**

- The Structure of ADO.NET 3.5
- Connecting to a Database and Retrieving Data
- Best Practices for Managing Connections and Performing Queries

#### **Lab: Connecting to a Database and Retrieving Data**

- Connecting to a Database
- Executing a Simple Query
- Executing a Query That Returns a Result Set
- Executing a Query That Requires Parameters

After completing this module, students will be able to:

- Describe the purpose and structure of ADO.NET 3.5.
- Explain the role of data providers in ADO.NET 3.5.
- List the technologies and techniques available for managing data with ADO.NET 3.5.

### **Module 2: Modifying Data by Using ADO.NET Commands**

This module explains how to modify data by using ADO.NET commands.

#### **Lessons**

- Inserting, Updating, and Deleting Data
- Managing Data Integrity and Concurrency

#### **Lab: Modifying Data by Using ADO.NET Commands**

- Inserting, Updating, and Deleting Data in a Database
- Implementing Transactional Updates
- Executing Commands Asynchronously

After completing this module, students will be able to:

- Insert, update, and delete data by using ADO.NET Command objects.
- Implement transactions to control data integrity and concurrency.

### **Module 3: Querying and Maintaining Data by Using DataSets**

This module explains how to use DataSets to fetch and modify data, and act as a local data cache.

#### **Lessons**

- Creating and Using a DataSet to Retrieve Data
- Updating a Database by Using a DataSet
- Using a DataSet in an Occasionally Connected Environment

#### **Lab: Using a DataSet to Retrieve and Modify Data**

- Creating a Typed DataSet
- Retrieving Data into a DataSet
- Modifying Data in a DataSet
- Saving a DataSet and Resolving Conflicts

After completing this module, students will be able to:

- Define and use a DataSet for retrieving data.

- Use a DataSet to update a database.
- Use a DataSet as a local cache in an occasionally connected environment.

#### **Module 4: Querying and Maintaining Data by Using LINQ**

This module explains how to use LINQ to retrieve and update data.

##### **Lessons**

- Querying In-Memory Data by Using LINQ Query Expressions
- Retrieving Data by Using LINQ to SQL
- Modifying Data by Using LINQ to SQL

##### **Lab: Using LINQ to SQL to Retrieve and Modify Data**

- Querying Data by Using LINQ to SQL Query Expressions
- Retrieving Data by Using LINQ to SQL Entity Classes
- Modifying Data by Using LINQ to SQL

After completing this module, students will be able to:

- Define LINQ queries for selecting data from an in-memory data structure.
- Use LINQ to SQL to query data in a database.
- Use LINQ to SQL to modify data and save changes to the database.

#### **Module 5: Implementing an Entity Model by Using the ADO.NET Entity Framework**

This module explains how to use the Entity Framework to implement an entity data model for querying and maintaining data.

##### **Lessons**

- Creating an Entity Data Model by Using the ADO.NET Entity Framework
- Querying and Modifying Data by Using the ADO.NET Entity Framework

##### **Lab: Using the ADO.NET Entity Framework to Implement an Entity Data Model**

- Creating an Entity Data Model
- Querying and Modifying Data in an Entity Data Model
- Instantiating and Manipulating Entities by Using Object Services

After completing this module, students will be able to:

- Explain how to use the ADO.NET Entity Framework to map a database schema to a logical business model.
- Use the ADO.NET Entity Framework to query and manage data.

#### **Module 6: Building Occasionally Connected Solutions by Using Synchronization Services**

This module explains how to use Synchronization Services to build occasionally connected solutions.

##### **Lessons**

- Understanding Microsoft Synchronization Services
- Downloading Data by Using Synchronization Services
- Uploading Data by Using Synchronization Services

##### **Lab: Building Occasionally Connected Solutions by Using Synchronization Services**

- Modifying a Database Schema to Support Synchronization
- Downloading Data to a Client Computer
- Uploading Data Changes to the Database

After completing this module, students will be able to:

- Explain how Synchronization Services supports occasionally-connected solutions.
- Use Synchronization Services to download data from a SQL Server database.
- Use Synchronization Services to upload data to a SQL Server database.

