

Visual Studio 2008: ADO.NET 3.5

Course 6464A: Two days; Instructor-Led

Introduction

This two-day instructor-led course provides students with the knowledge and skills to access and modify data by using ADO.NET 3.5.

Audience

This course is intended for application developers who know how to create applications in Visual Studio 2005 or 2008.

At Course Completion

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

Prerequisites

Before attending this course, students should have intermediate experience developing applications by using previous versions of Microsoft Visual Studio at level 200.

Course Outline

Module 1: Getting Started with ADO.NET 3.5

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

Lessons

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

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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 a Parameter

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 : Querying and Maintaining Data by Using LINQ to SQL

- Defining Entity Classes
- Retrieving Data by Using LINQ to SQL
- 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 : Implementing an Entity Data Model by Using the ADO.NET Entity Framework

- Creating an Entity Data Model
- Querying Entities in an Entity Data Model
- Modifying Entities in an Entity Data Model

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.

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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.