

REVIEW LESSON

MTA Course: Windows Development Fundamentals

Lesson name: Windows Development Fundamentals 4.1

Topic: Understand data access methods for a Windows application (One 50-minute class period)

File name: WinDevFund_RL_4.1

Lesson Objective:

4.1: Understand data access methods for a Windows application. *This objective may include but is not limited to:* connecting to a database

Preparation Details

Prerequisite student experiences and knowledge

This MTA Certification Exam Review lesson is written for students who have learned about Windows[®] application programming. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the Microsoft[®] resources and Web links at the end of this review lesson.

Note that this review focuses on high-level data access concepts, as well as the steps for connecting to data sources in Microsoft Visual Studio[®]. Data-binding is reviewed in Lesson 4.2, but students should also be familiar with general database concepts (tables, relationships, queries, etc.). The resources listed in these materials provide more information.

Instructor preparation activities

- Be sure that students have access to a database so they can try to add a connection.
- If students are not experienced in creating their own database (as in the Anticipatory Set), you should create a database or provide access to the Northwind sample database.

- In this case, use the time allotted for the Anticipatory Set to get students up and running with a database.

Resources, software, and additional files needed for this lesson:

- WinDevFund_PPT_4.1
- Visual Studio 2008®, or
 - Microsoft Visual Basic® 2008, Express Edition
(<http://www.microsoft.com/express/downloads/#2008-Visual-Basic>)
 - Microsoft Visual C#® 2008, Express Edition
(<http://www.microsoft.com/express/downloads/#2008-Visual-CS>)
- Microsoft SQL Server® 2008, Express Edition
(<http://www.microsoft.com/express/database/default.aspx>), or
- Microsoft SQL Server 2008, Compact Edition
(<http://www.microsoft.com/sqlserver/2008/en/us/compact.aspx>)

Teaching Guide

Essential vocabulary:

Dataset—an in-memory representation of data, including tables and relationships.

ADO.NET—a set of classes that provide data access functionality to .NET developers; also referred to as the System.Data Namespace.

Server Explorer—the user interface that allows the developer to manage server (or database) connections; in Express editions, this is known as the Database Explorer.

Lesson Sequence

Activating prior knowledge/lesson staging (Anticipatory Set—5–10 minutes)

1. *Student instruction (as directed in the slideshow):* Create a small database to hold basic information about students, such as name (first and last), age, grade level, and gender.
 - Fill in some sample data so the database is not empty.

Lesson activity (30–40 minutes)

1. Using the PowerPoint® presentation, review data access and connections. As directed in the slideshow's notes, pause to allow students to try the steps on their own applications.

Assessment/lesson reflection (5 minutes)

1. Direct each student to summarize how data is accessed from a .NET application.
 - Responses will vary, but check to see that students understand the high-level concepts related to data access, and that they are aware of the processes for adding connections and sources within Visual Studio.

Microsoft resources and Web links

MSDN Library: Connecting to Data in Visual Studio Overview

(<http://msdn.microsoft.com/en-us/library/wxt2cwcc.aspx>)

MSDN Library: Creating Data Applications by Using Visual Studio

(<http://msdn.microsoft.com/en-us/library/0wxwcakt.aspx>)

How Do I: Connect to a Database in Visual Studio 2005?

(<http://msdn.microsoft.com/en-us/vbasic/bb643826.aspx>)

MSDN: Windows Development for Beginners Tier 3

(<http://msdn.microsoft.com/en-us/beginner/bb308806.aspx>)

Lesson 9 covers data access and databinding

Use of Datasets in Visual Studio 2005

(<http://windowsclient.net/learn/video.aspx?v=4979>)