

REVIEW LESSON

MTA Course: Windows Development Fundamentals

Lesson name: Windows Development Fundamentals 4.2B

Topic: Validate databound controls (One 50-minute class period)

File name: WinDevFund_RL_4.2B

Lesson Objective:

4.2: Understand databound controls. *This objective may include but is not limited to:* how data is bound to controls; how to display the data in the appropriate manner; forms and WPF binding; validating databound items.

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.

This lesson is intended to be completed after students have finished Lessons 4.1 and 4.2A, and it uses the databases from those lessons.

It is also recommended that students review input validation (covered in Lesson 2.4B) before completing this lesson, as many of the concepts are similar.

Instructor preparation activities

For this lesson, students will need the project they created and worked with in Lessons 4.1 and 4.2A. If they have not created a database, you may create it for them or have them use the Northwind sample database. Be sure to change the Microsoft PowerPoint® slide for the Anticipatory Set if you do not use the database that students created in Lesson 4.1.

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

- WinDevFund_PPT_4.2B
- Microsoft 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>)
- Access to a server running SQL Server® 2008, Express or Compact Edition.

Teaching Guide**Essential vocabulary:**

DataGridView—a control that displays data in a customizable grid.

data validation—the process of verifying that values being added to a data object (database) are consistent with the design of the database and the requirements of the application.

primary key—the column setting that guarantees that each record contains a unique value; only one primary key can be assigned to a data table.

Windows Presentation Foundation (WPF) binding—a simple and consistent way for applications to present and interact with data; with WPF binding, elements can be bound to data from a variety of data sources in the form of common language runtime (CLR) objects and XML.

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

1. *Discussion prompt (as indicated in the slideshow):* “Open your project from Lesson 4.2A. Looking at the design of the table or tables in there, identify some columns that might require data to be entered in a specific form. For example, a U.S. telephone number might require the following format: (###) ###-####.”
 - The examples will depend on the databases the students are using. As one example, be sure to remind students that many databases use relationships that depend on primary keys—therefore, applications should not allow the user to leave such a field empty. Use this example to discuss the importance of validating data before attempting to store it in a database.

Lesson activity (30–40 minutes)

1. Using the PowerPoint slideshow, review data validation.
2. As directed in the slideshow's notes, stop and allow students to complete the "Walkthrough" on the projects they created in previous review lessons.

Microsoft resources and Web links**MSDN Library: Data Validation Overview**

(<http://msdn.microsoft.com/en-us/library/kx9x2fsb.aspx>)

MSDN Library: Validating Data

(<http://msdn.microsoft.com/en-us/library/t3b36awf.aspx>)

How Do I: Add Validation? (Forms Over Data Video Series)

(<http://msdn.microsoft.com/en-us/vbasic/bb643821.aspx>)

How to: Validate Data in the Windows Forms DataGridView Control

(<http://msdn.microsoft.com/en-us/library/7ehy30d4.aspx>)

Walkthrough: Validating Data in the Windows Forms DataGridView Control

(<http://msdn.microsoft.com/en-us/library/ykdx0bc.aspx>)

How to: Validate Data During Column Changes

(<http://msdn.microsoft.com/en-us/library/0f7ey06d.aspx>)

How to: Validate Data During Row Changes

(<http://msdn.microsoft.com/en-us/library/1120xds5.aspx>)

Additional activities (homework or enrichment):

- If time allows, have students look at validation with the *ColumnChanging* event, the *RowChanging* event, or both by reading and trying the following links:
 - **How to: Validate Data During Column Changes**
(<http://msdn.microsoft.com/en-us/library/0f7ey06d.aspx>)
 - **How to: Validate Data During Row Changes**
(<http://msdn.microsoft.com/en-us/library/1120xds5.aspx>)