

REVIEW LESSON

MTA Course: Windows Development Fundamentals
Lesson name: Windows Development Fundamentals 2.5A
Topic: Debug in Visual Studio (One 50-minute class period)
File name: WinDevFund_RL_2.5A

Lesson Objective:

2.5: Debug a Windows-based application. *This objective may include but is not limited to:* using breakpoints and debugging techniques to identify issues in code; debugging a Windows Services application.

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.

Instructor preparation activities

- None

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

- WinDevFund_PPT_2.5A
- 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>)

Teaching Guide

Essential vocabulary:

breakpoint—a signal that tells the debugger to suspend execution of a program temporarily at a designated point; this allows the developer to examine a variety of data related to the program.

Debug class—a class that provides methods and properties to help debug code.

Step Into—executes a single instruction in the Debugger. If the instruction is a function call, the debugger steps into the function.

Step Out—resumes running the application through the end of the current function, and then breaks.

Step Over—execute a single instruction in the Debugger. If the instruction is a function call, the whole function is executed.

Lesson Sequence

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

1. *Discussion prompt (as indicated in the slideshow):* “Describe a time when you’ve been stumped by a bug in one of your programs. How did you try to solve the problem? What was the solution?”

Lesson activity (40 minutes)

1. Teacher Instruction
 - Use the Microsoft PowerPoint® slideshow to discuss Visual Studio’s debugging tools.
2. Walkthrough
 - Have students complete the walkthrough indicated in the slideshow.
3. Guided Practice
 - Lead students through the addition of a method and method call, as indicated in the slideshow.

Assessment/lesson reflection (5 minutes)

1. Direct students to work with a partner to answer the two questions on the last slide of the slideshow. Answers are provided in the slide’s Notes.

Microsoft resources and Web links

MSDN Library: Debugging Managed Code

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

MSDN Library: Using the Debugger

(<http://msdn.microsoft.com/en-us/library/k0k771bt.aspx>)

Walkthrough: Debugging a Windows Form

(<http://msdn.microsoft.com/en-us/library/kya29xtx.aspx>)