

REVIEW LESSON

MTA Course: Software Development Fundamentals

Lesson name: Software Development Fundamentals 5.1 and 5.2

Topic: Understanding Windows Forms applications and understanding console-based applications (One 50-minute class period)

File name: SoftDevFund_RL_5.1_5.2

Lesson Objective:

5.1: Understand Windows® Forms applications. *This objective may include but is not limited to:* Windows Forms event model; visual inheritance; UI design; use of Multiple Document Interface (MDI) and Single Document Interface (SDI) applications.

Lesson Objective:

5.2: Understand console-based applications. *This objective may include but is not limited to:* characteristics and capabilities of console-based applications.

Preparation Details

Prerequisite student experiences and knowledge

Students should have had a basic experience creating Windows Forms and console-based applications. This lesson will not cover user interface (UI) design. This MTA Certification Exam Review lesson is written for students who have learned about 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:

- SoftDevFund_PPT_5.1_5.2

Teaching Guide

Essential Vocabulary:

event—an action or occurrence, often generated by the user, to which a program might respond. Examples: key presses, button clicks, or mouse movements.

user interface—the portion of a program with which a user interacts. Types of user interfaces (UIs) include command-line interfaces, menu-driven interfaces, and graphical user interfaces.

Windows Forms—a rich Windows client library for building Windows client applications.

Lesson Sequence

Activating prior knowledge/lesson staging (5 minutes)

1. Show the Activator slide in the Microsoft PowerPoint® presentation for this lesson.
 - a. *Ask:* Name multiple ways a user can interact with a program. Be specific.
 - i. Open up a program to give them a context.
 - ii. Some possible answers: typing in text, clicking buttons, sliding bars, clicking graphics, dragging the mouse.
 - iii. Explain that the Windows Forms event model is responsible for calling on the program to react to user input.

Lesson activity (35 minutes)

1. Show the PowerPoint presentation.
 - a. Review the definitions.
 - b. Describe Windows Forms applications.
 - c. Explain the role of forms and controls in creating an application. Give examples of different controls.
 - d. Demonstrate the Windows Forms event model by creating a simple button that will generate output when clicked.

- e. Explain the Windows Forms event model. Ask students to role-play the event model to understand it better. Have students act out the following roles:
 - User
 - Control
 - Event
 - Handler
- f. Explain what visual inheritance is and its purpose.
- g. Compare and contrast Single Document Interfaces (SDIs) and Multiple Document Interfaces (MDIs). Give examples.
- h. Describe the characteristics and capabilities of console-based applications.

Assessment/lesson reflection (10 minutes)

1. Show the Lesson Review slide in the PowerPoint presentation. (Refer back to the slideshow file for the answers.)
 - a. What is a Windows Form application?
 - b. What is visual inheritance and what is its purpose?
 - c. What are MDI and SDI applications?
 - d. What are the characteristics and capabilities of console-based applications?

Microsoft Resources and Web links

Multiple Document Interface Applications (MSDN)

<http://msdn.microsoft.com/en-us/library/xyhh2e7e.aspx>

Windows Forms Visual Inheritance (MSDN)

<http://msdn.microsoft.com/en-us/library/bx1155fz.aspx>

Windows Forms Overview (MSDN)

<http://msdn.microsoft.com/en-us/library/8bxxxy49h.aspx>

Suggested best practices:

- Show examples of applications to provide context for the review of the topics.

Additional notes to the instructor:

- An additional activity would be to creating a flowchart of the Windows Forms event model or a poster showing the sequence of actions.