

2

Introduction to the Visual Basic Express 2008 IDE



Seeing is believing.

– Proverb

Form ever follows function.

– Louis Henri Sullivan

*Intelligence ...is the faculty of making
artificial objects, especially tools to make tools.*

– Henri-Louis Bergson



OBJECTIVES

In this chapter you will learn:

- The basics of the Visual Studio Integrated Development Environment (IDE) that assists you in writing, running and debugging your Visual Basic programs.
- Visual Studio's help features.
- Key commands contained in the IDE's menus and toolbars.



OBJECTIVES

- The purpose of the various kinds of windows in the Visual Studio 2008 IDE.
- What visual programming is and how it simplifies and speeds program development.
- To create, compile and execute a simple Visual Basic program that displays text and an image using the Visual Studio IDE and the technique of visual programming.



Outline

- 2.1 Introduction**
- 2.2 Overview of the Visual Studio 2008 IDE**
- 2.3 Menu Bar and Toolbar**
- 2.4 Navigating the Visual Studio IDE**
- 2.5 Using Help**
- 2.6 Using Visual Programming to Create a Simple Program that Displays Text and an Image**



2.1 Introduction

- Visual Studio 2008 is Microsoft's Integrated Development Environment (IDE) for creating, running and debugging programs.
- A simple Visual Basic program can be created by dragging and dropping predefined blocks into place through visual programming.



2.2 Overview of the Visual Studio 2008 IDE

- Start Microsoft Visual Basic 2008 Express Edition. (Fig. 2.1)

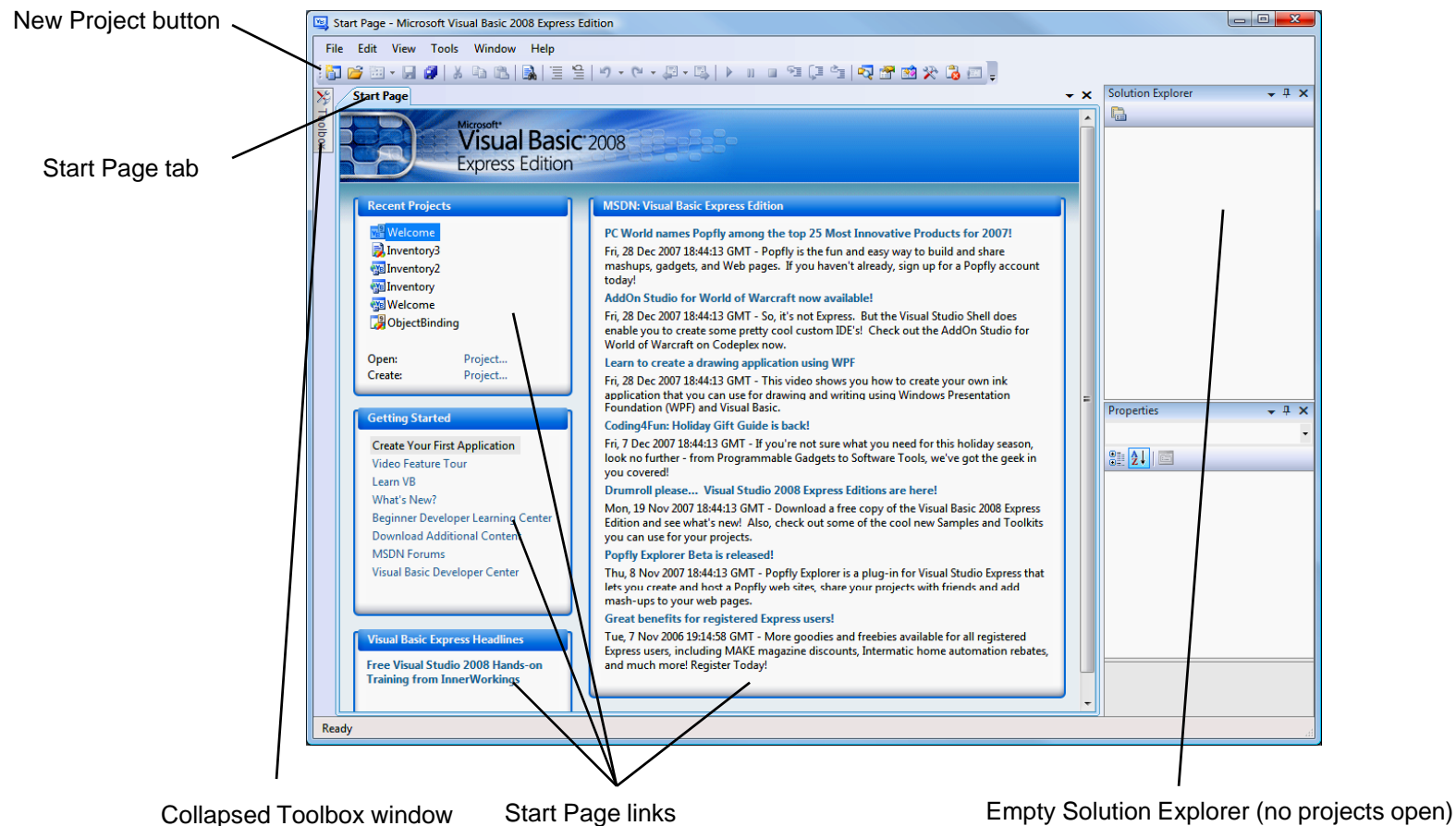


Fig. 2.1 | Start Page in Visual Basic 2008 Express Edition.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- The **Recent Projects** section shows solutions you have been working on.
- **Getting Started** focuses on using the IDE for creating programs, learning Visual Basic, connecting to the developer community and providing development tools.
- **Visual Basic Express Headlines** and **MSDN: Visual Basic Express Edition** link to information about Visual Basic.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- The IDE also has an **internal web browser**.
- To request a web page, enter its URL into the location bar (Fig. 2.2).

Requested web page (URL in location bar drop-down menu) Selected tab for requested web page

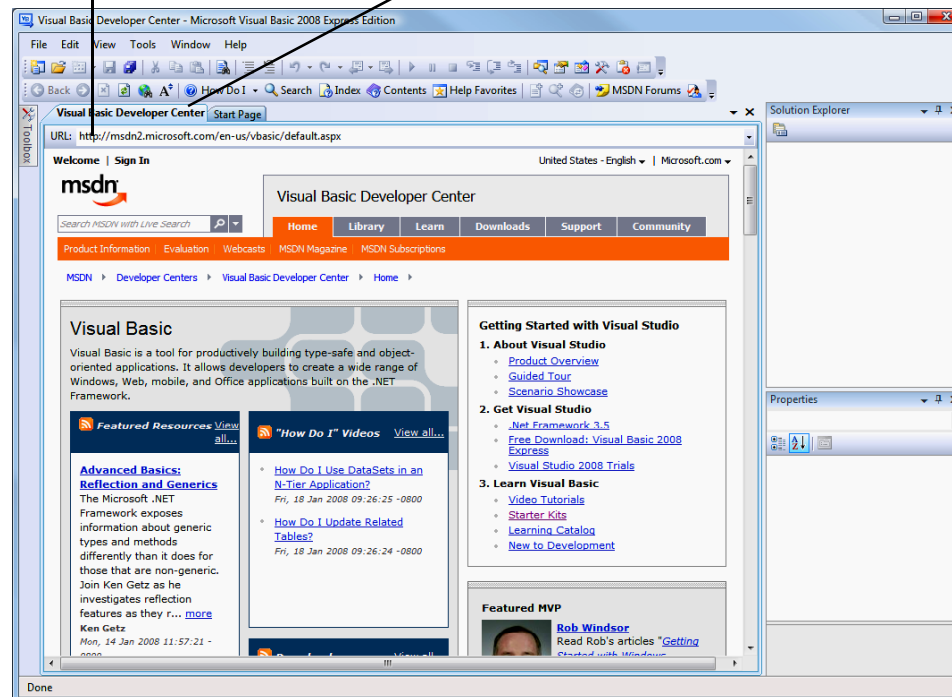


Fig. 2.2 | Displaying a web page in Visual Studio.



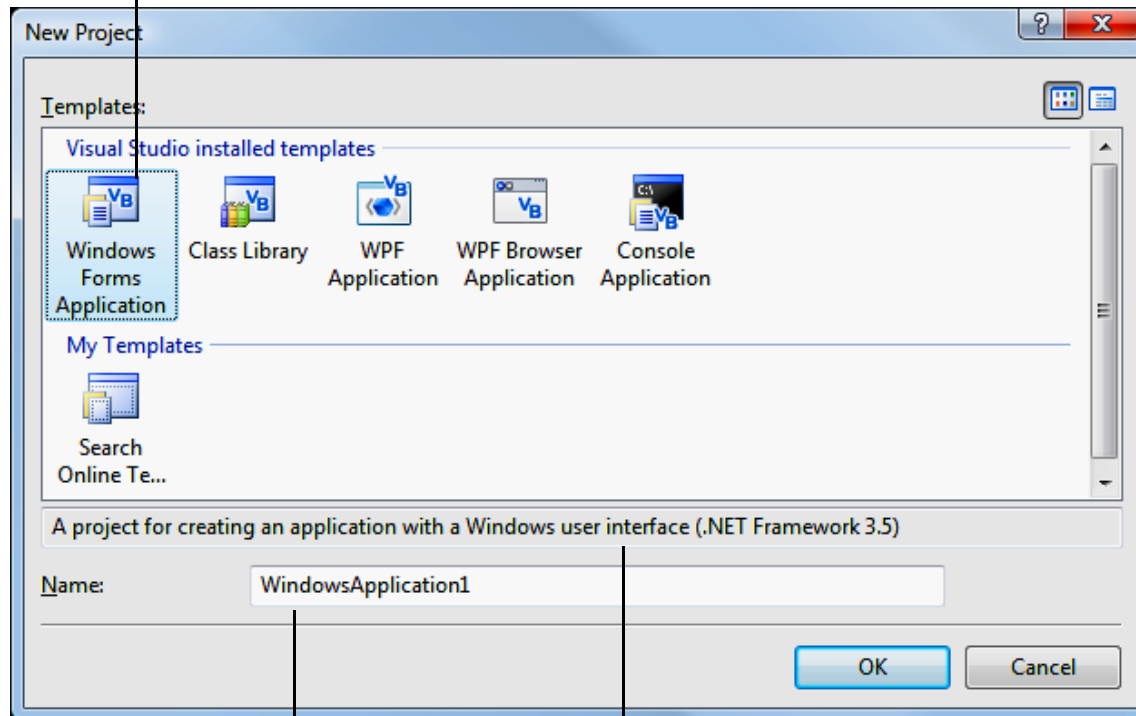
2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- Select **File > New Project...** to create a new project (Fig. 2.3).
- Project **templates** are the project types users can create in Visual Basic.
 - A **Windows Forms application** has a **graphical user interface (GUI)**.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

Windows Forms **Application** (selected)



Default project name
(provided by Visual Studio)

Description of selected project
(provided by Visual Studio)

Fig. 2.3 | New Project dialog.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- Click **OK** to display the IDE in **Design view** (Fig. 2.4).

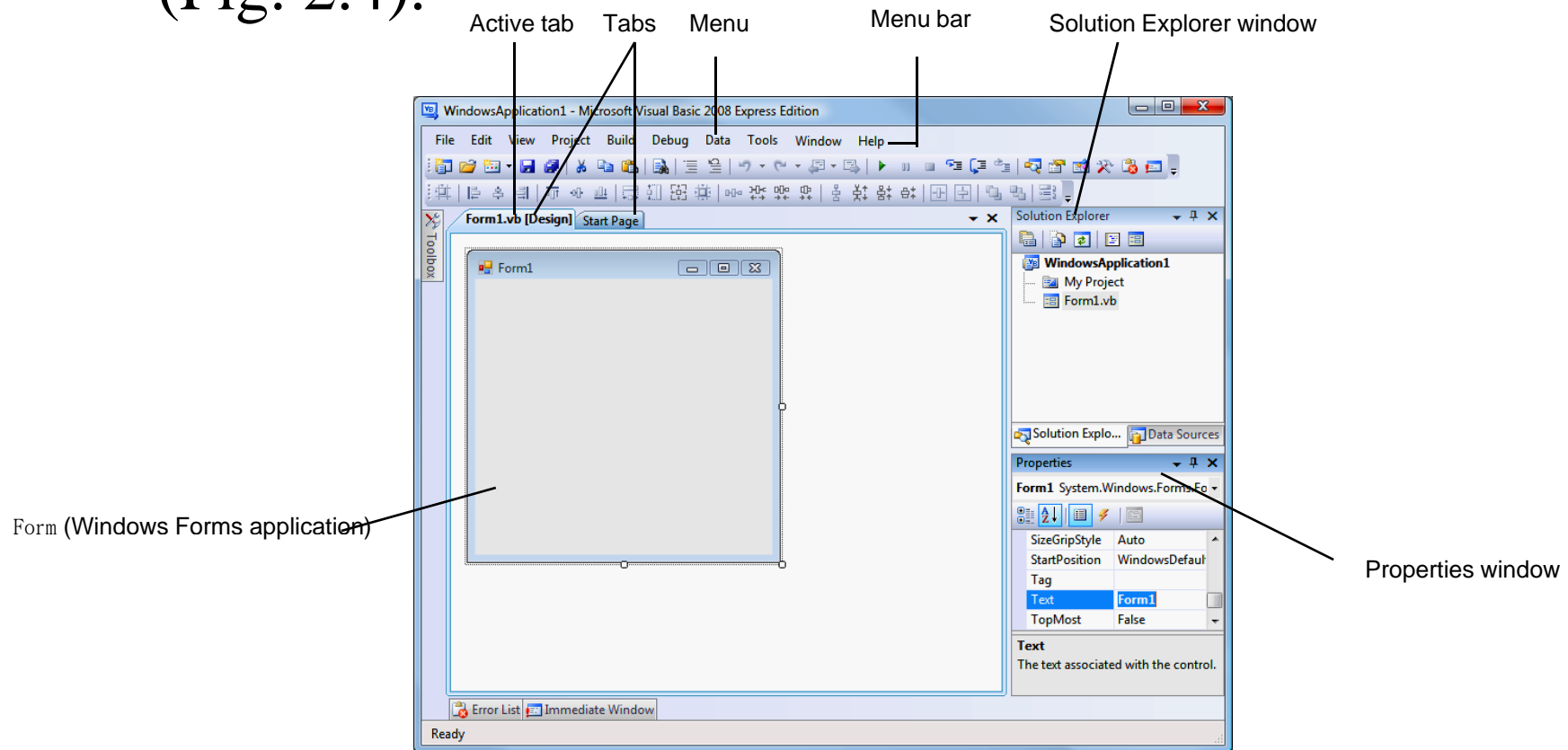
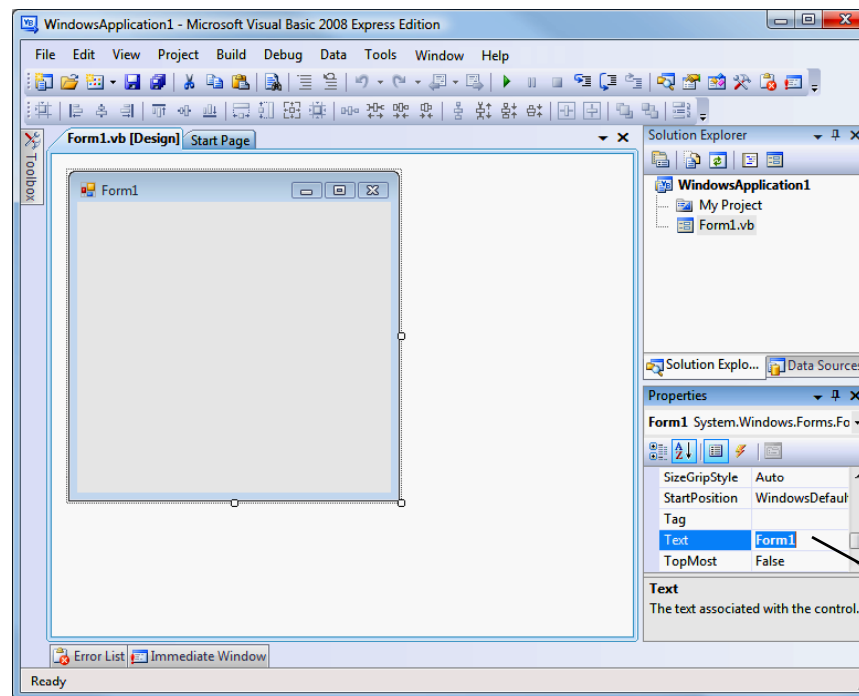


Fig. 2.4 | Design view of the IDE.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- As you place controls on the Form, you'll be able to modify their properties.
- Figure 2.5 shows where the Form's title text can be modified



Text box (displaying the text Form1)
which can be modified

Fig. 2.5 | Text box control for modifying a property in the Visual Studio IDE.



2.2 Overview of the Visual Studio 2008 IDE (Cont.)

- Figure 2.6 shows a dialog in which a control's font properties can be modified.

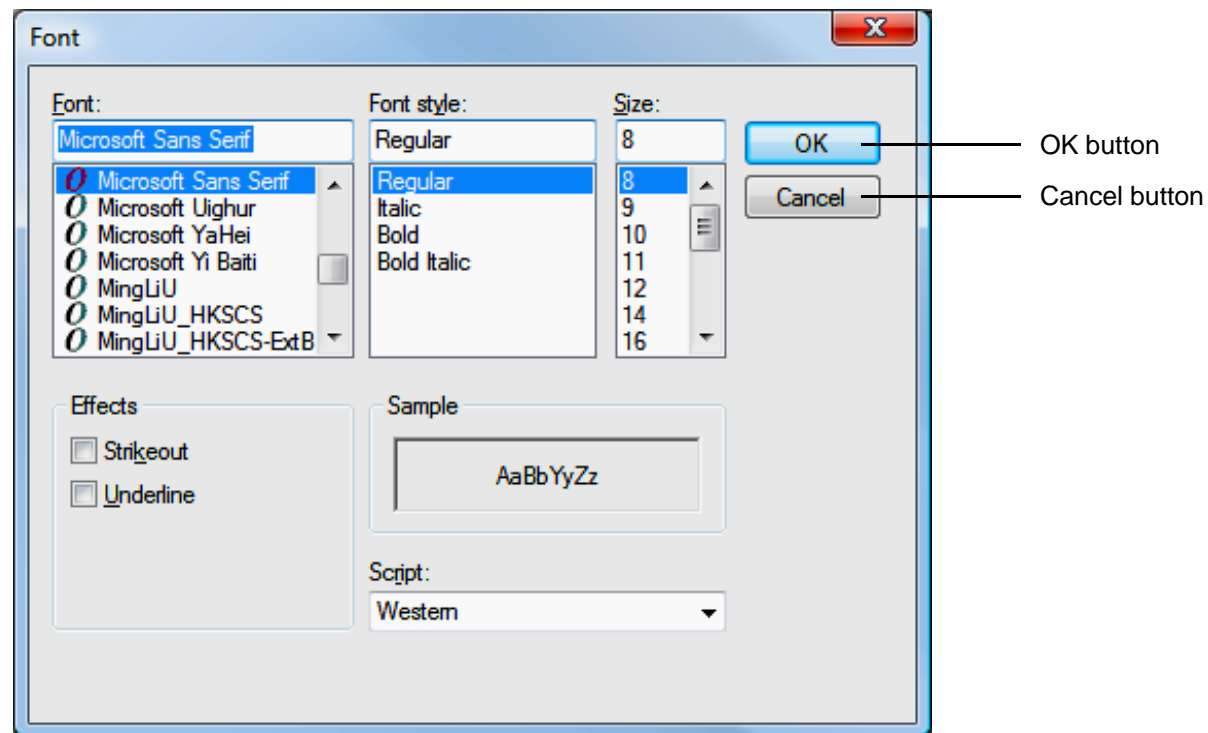


Fig. 2.6 | Dialog for modifying a control's font properties in the Visual Studio IDE.



2.3 Menu Bar and Toolbar

- Many commands are contained in **menus** (Fig. 2.7).
- The set of menus displayed depends on what you are currently doing in the IDE.

A horizontal menu bar with a light blue background. The menu items are: File, Edit, View, Project, Build, Debug, Data, Format, Tools, Window, and Help. The 'Build' menu item is highlighted in a darker blue color.

File Edit View Project Build Debug Data Format Tools Window Help

Fig. 2.7 | Visual Studio menu bar.



2.3 Menu Bar and Toolbar (Cont.)

| Menu | Description |
|----------------|--|
| File | Commands for opening, closing, adding and saving projects, as well as printing project data and exiting Visual Studio. |
| Edit | Commands for editing programs, such as cut, copy, paste, undo, redo, delete, find and select. |
| View | Commands for displaying IDE windows and for adding toolbars. |
| Project | Commands for managing projects and their files. |
| Build | Commands for compiling Visual Basic programs. |
| Debug | Commands for debugging and running programs. |
| Data | Commands for interacting with databases. |
| Format | Commands for arranging and modifying a Form's controls. |
| Tools | Commands for accessing additional IDE tools and options. |
| Window | Commands for hiding, opening, closing and displaying IDE windows. |
| Help | Commands for accessing the IDE's help features. |

Fig. 2.8 | Summary of Visual Studio 2008 IDE menus.



2.3 Menu Bar and Toolbar (Cont.)

- You can access common commands from the **toolbar** icons (Fig. 2.9).

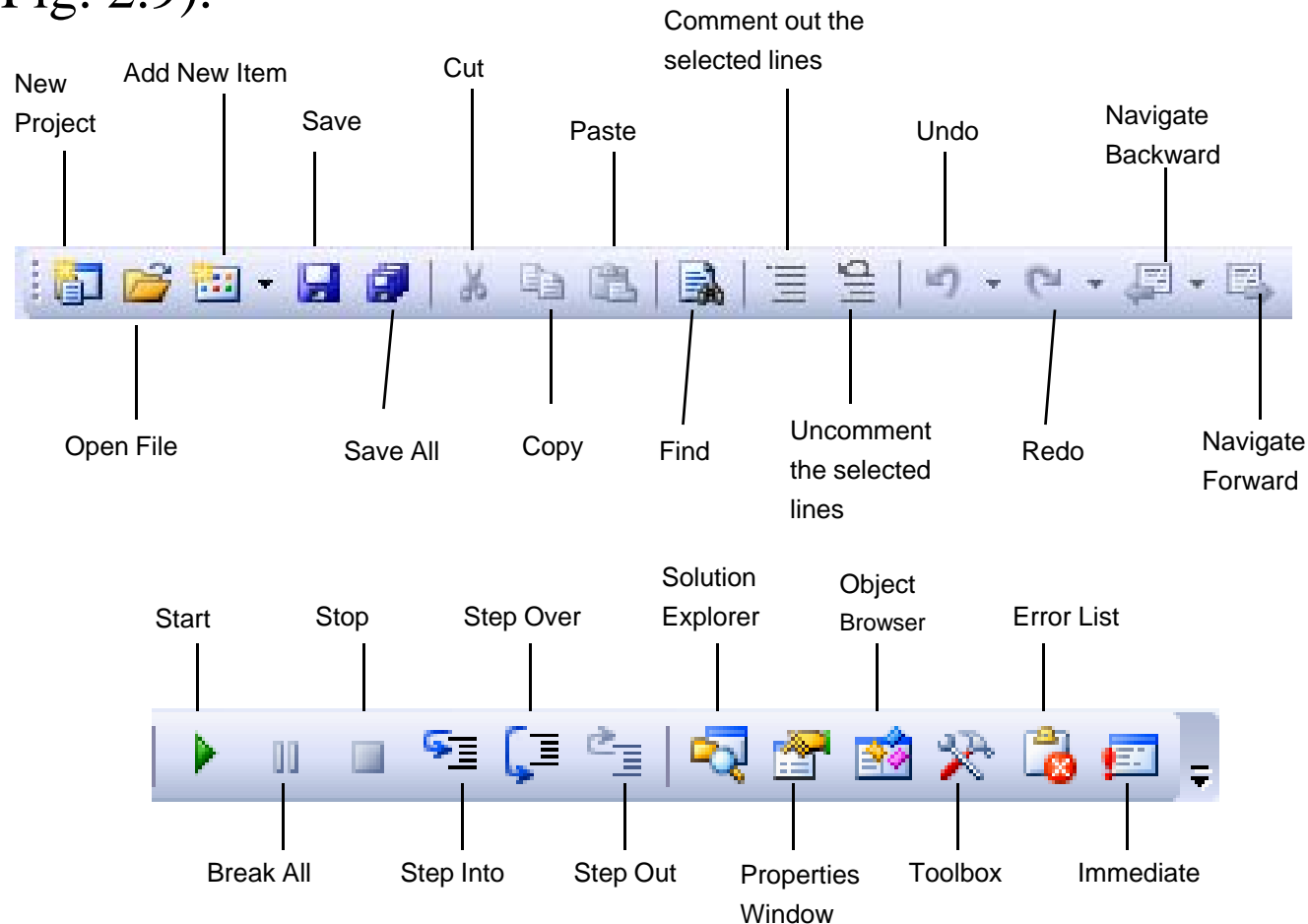
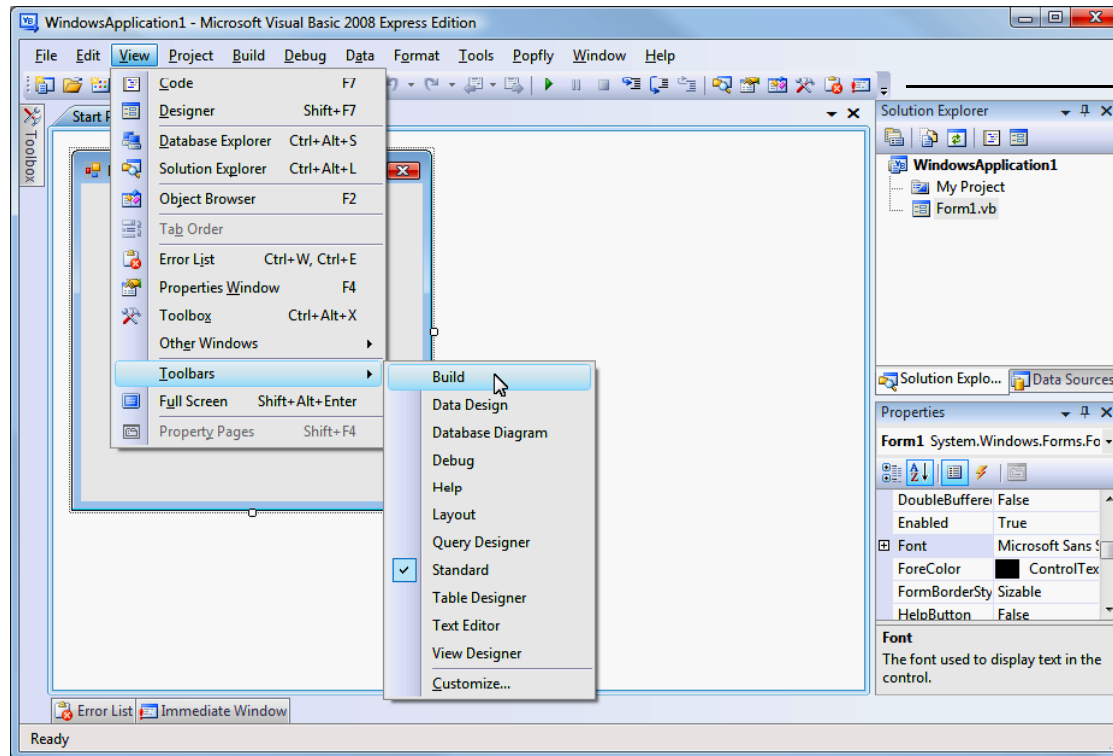


Fig. 2.9 | Standard Visual Studio toolbar.



2.3 Menu Bar and Toolbar (Cont.)

- Select **View > Toolbars** (Fig. 2.10).
- Each toolbar you select is displayed at the top of the Visual Studio window.



Additional
Toolbars appear
here

Fig. 2.10 | Adding the **Build** toolbar to the IDE.



2.3 Menu Bar and Toolbar (Cont.)

- Some icons contain a down arrow that you can click to display related or commands (Fig. 2.11).

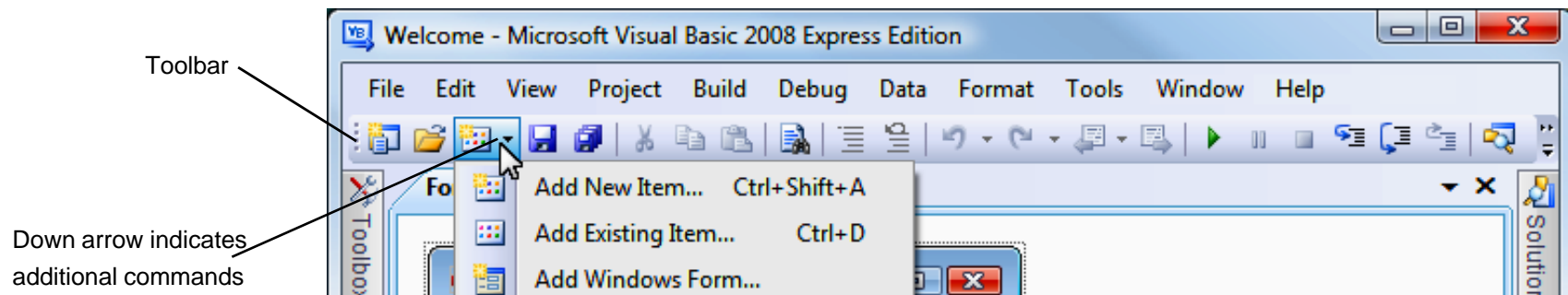


Fig. 2.11 | IDE toolbar icon showing additional commands.



2.3 Menu Bar and Toolbar (Cont.)

- Positioning the mouse pointer over an icon highlights it and, after a brief pause, displays a description called a tool tip (Fig. 2.12).

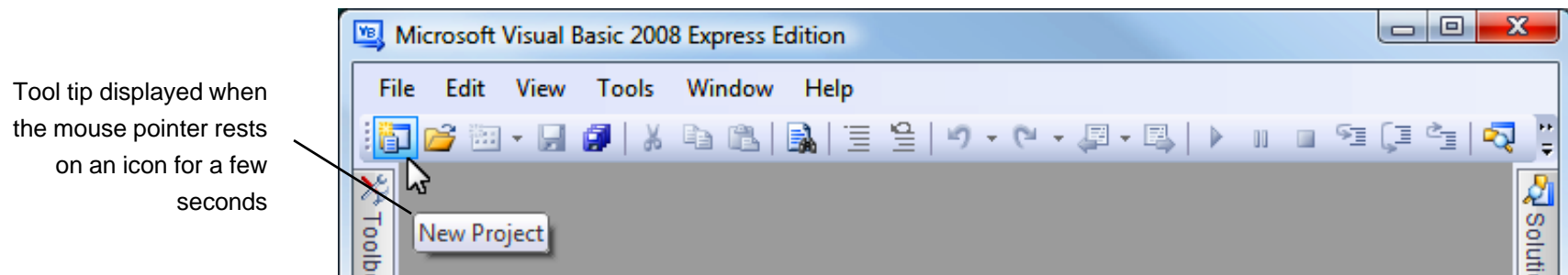


Fig. 2.12 | Tool tip demonstration.



2.4 Navigating the Visual Studio IDE

- The IDE provides windows for accessing project files and customizing controls (Fig. 2.13).

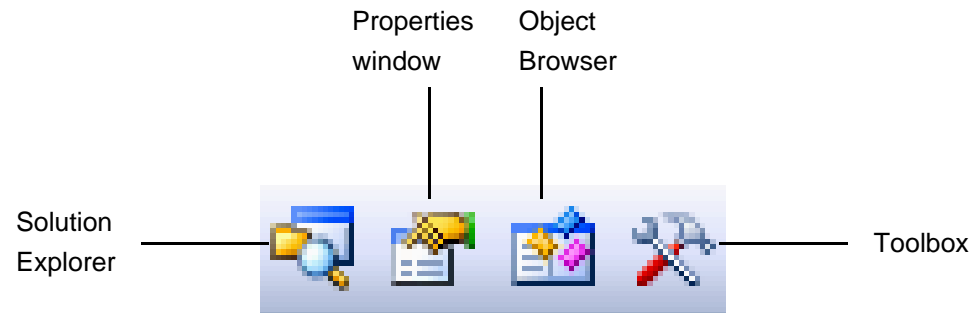


Fig. 2.13 | Toolbar icons for four Visual Studio windows.



2.4 Navigating the Visual Studio IDE (Cont.)

- Visual Studio provides a space-saving feature called **auto-hide**.
 - When auto-hide is enabled, a tab appears along the edge of the IDE window (Fig. 2.14).

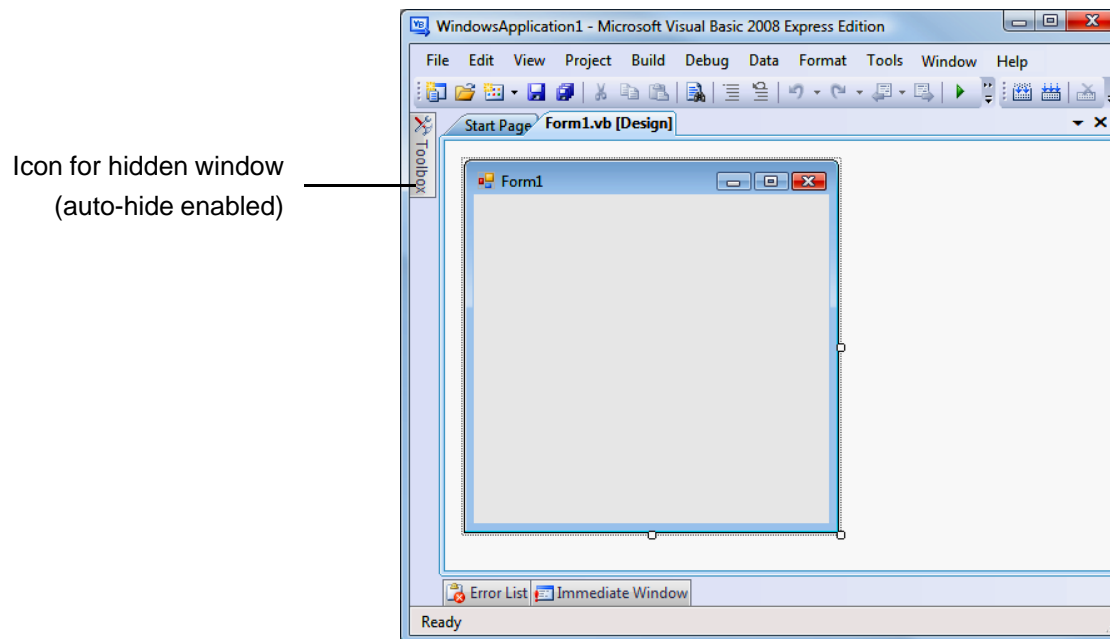


Fig. 2.14 | Auto-hide feature demonstration.



2.4 Navigating the Visual Studio IDE (Cont.)

- Placing the mouse pointer over one of these icons displays that window (Fig. 2.15).

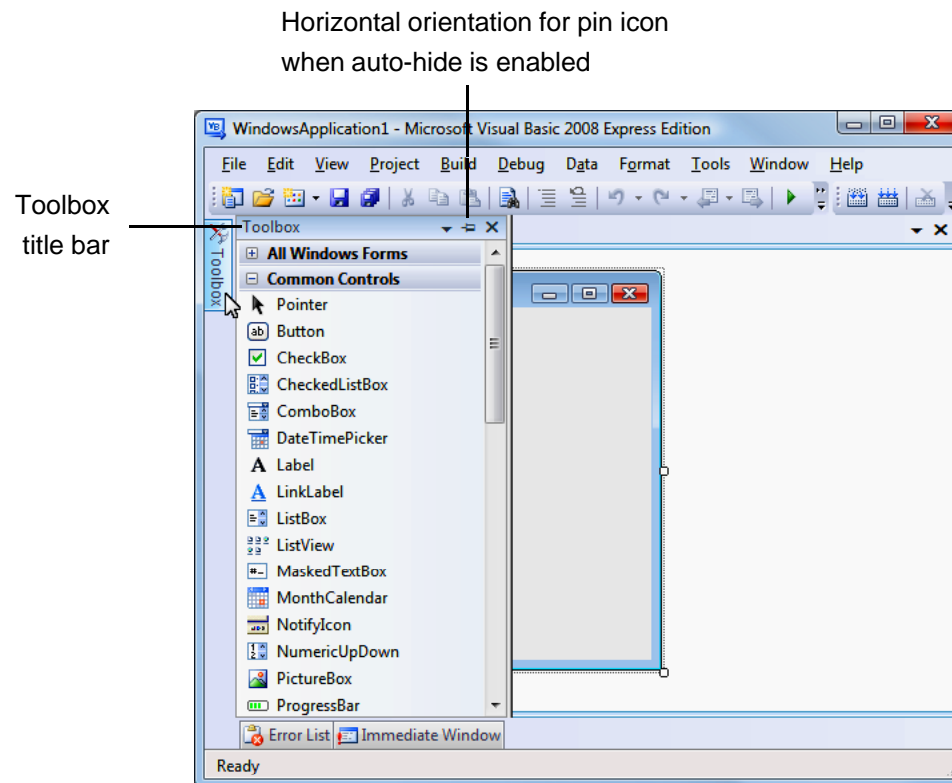


Fig. 2.15 | Displaying a hidden window when auto-hide is enabled.



2.4 Navigating the Visual Studio IDE (Cont.)

- To “pin down” a window, click its pin icon.
- When auto-hide is enabled, the pin icon is horizontal.
- When a window is “pinned down,” the pin is vertical (Fig. 2.16).

Vertical orientation for pin icon
when window is pinned down

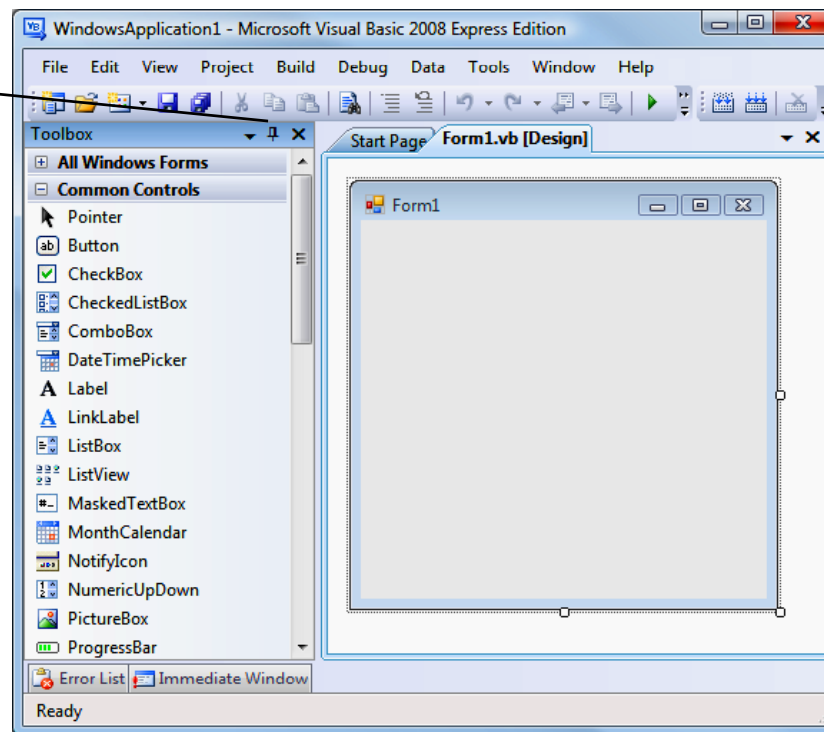


Fig. 2.16 | Disabling auto-hide (“pinning down” a window).



2.4 Navigating the Visual Studio IDE (Cont.)

2.4.1 Solution Explorer

- The **Solution Explorer** (Fig. 2.17) provides access to all of the solution's files.
- The solution's **startup project** is the one that runs when you select **Debug > Start Debugging**.

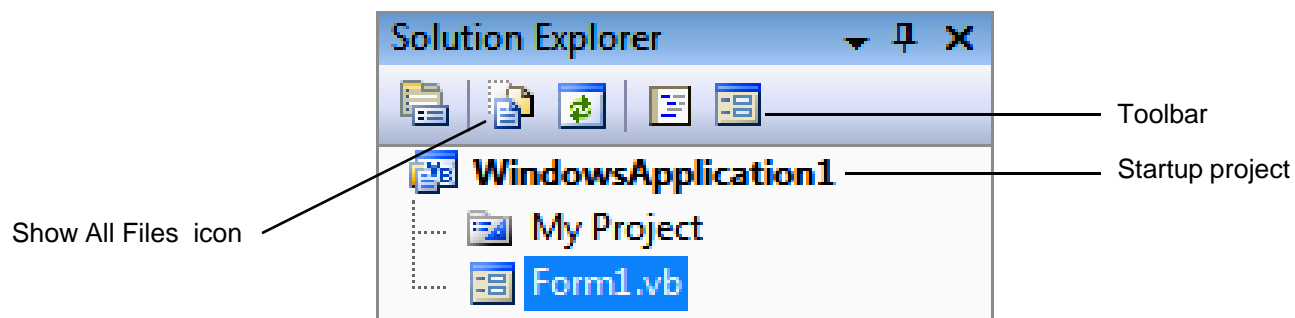


Fig. 2.17 | Solution Explorer with an open project.



2.4 Navigating the Visual Studio IDE (Cont.)

- Clicking the **Solution Explorer's Show All Files icon** displays all the files in the solution (Fig. 2.18).

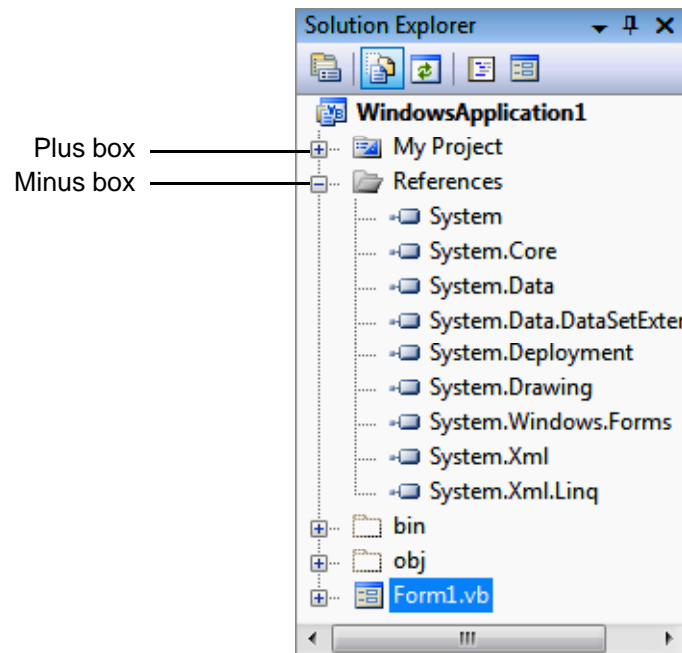


Fig. 2.18 | **Solution Explorer** showing plus boxes and minus boxes for expanding and collapsing the tree to reveal or hide project files.



2.4 Navigating the Visual Studio IDE (Cont.)

- The plus and minus boxes can be clicked to expand and collapse the project tree.
 - Click the plus box to the left of **My Project** (Fig. 2.19).

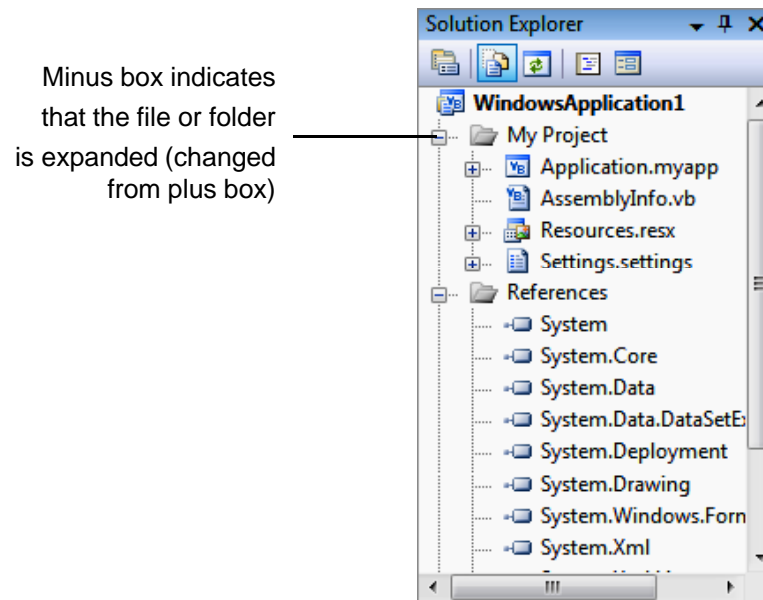


Fig. 2.19 | Solution Explorer expanding the **My Project** file after clicking its plus box.



2.4 Navigating the Visual Studio IDE (Cont.)

- Click the minus box to collapse the tree from its expanded state (Fig. 2.20).

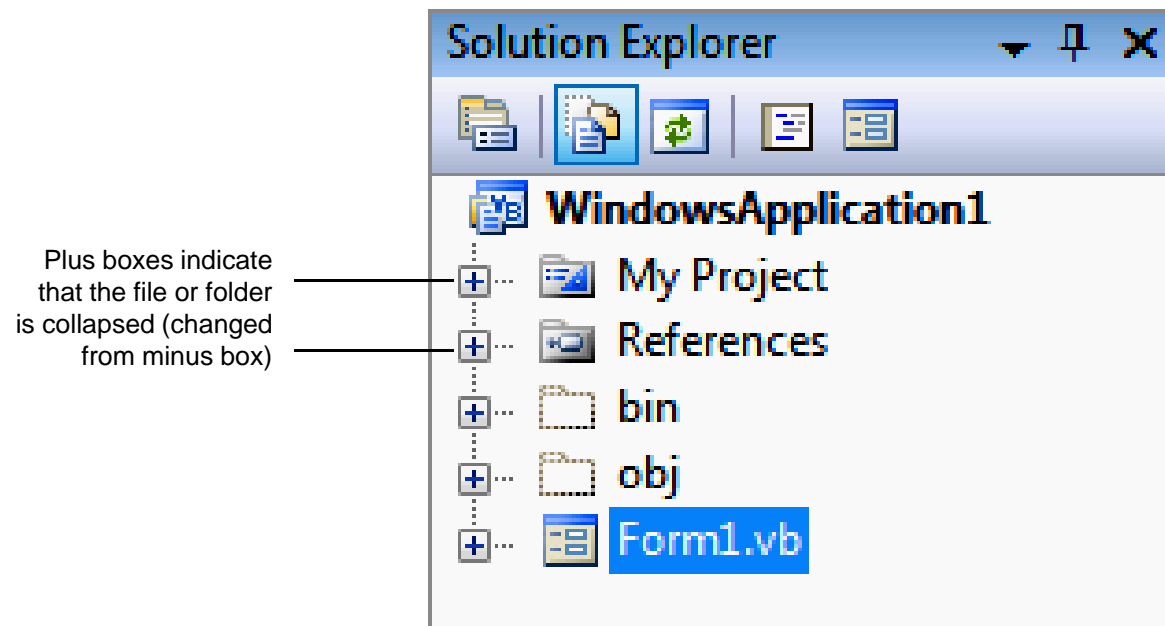


Fig. 2.20 | **Solution Explorer** showing collapsed nodes after all minus boxes are clicked.



2.4 Navigating the Visual Studio IDE (Cont.)

2.4.2 Toolbox

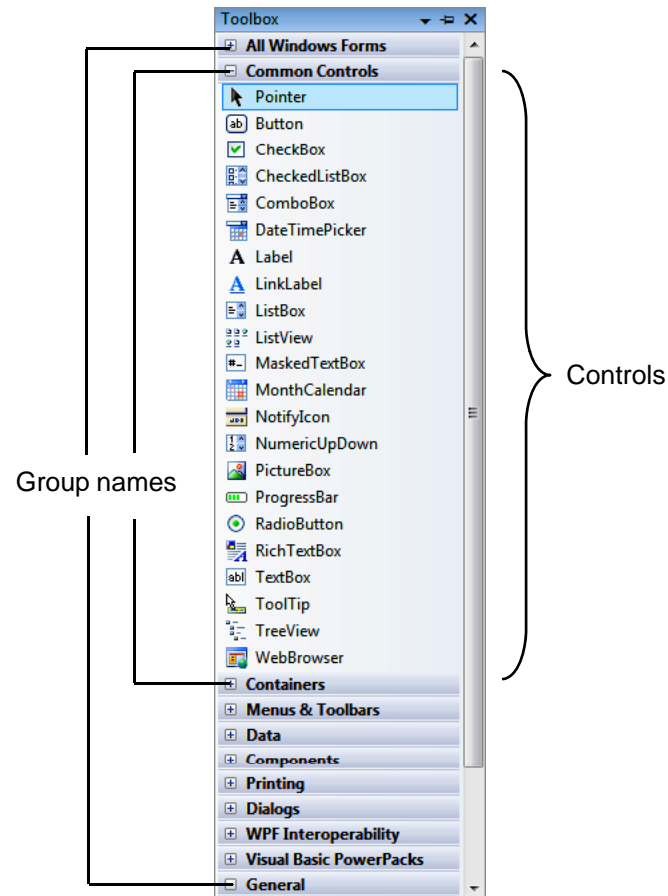


Fig. 2.21 | **Toolbox** window displaying controls for the **Common Controls** group.



2.4 Navigating the Visual Studio IDE (Cont.)

2.4.3 Properties Window

- Select **View > Properties Window** (Fig. 2.22).
 - The **Properties** window allows you to modify a control's properties visually, without writing code.
 - At the top of the **Properties** window is the **component selection drop-down list**.



2.4 Navigating the Visual Studio IDE (Cont.)

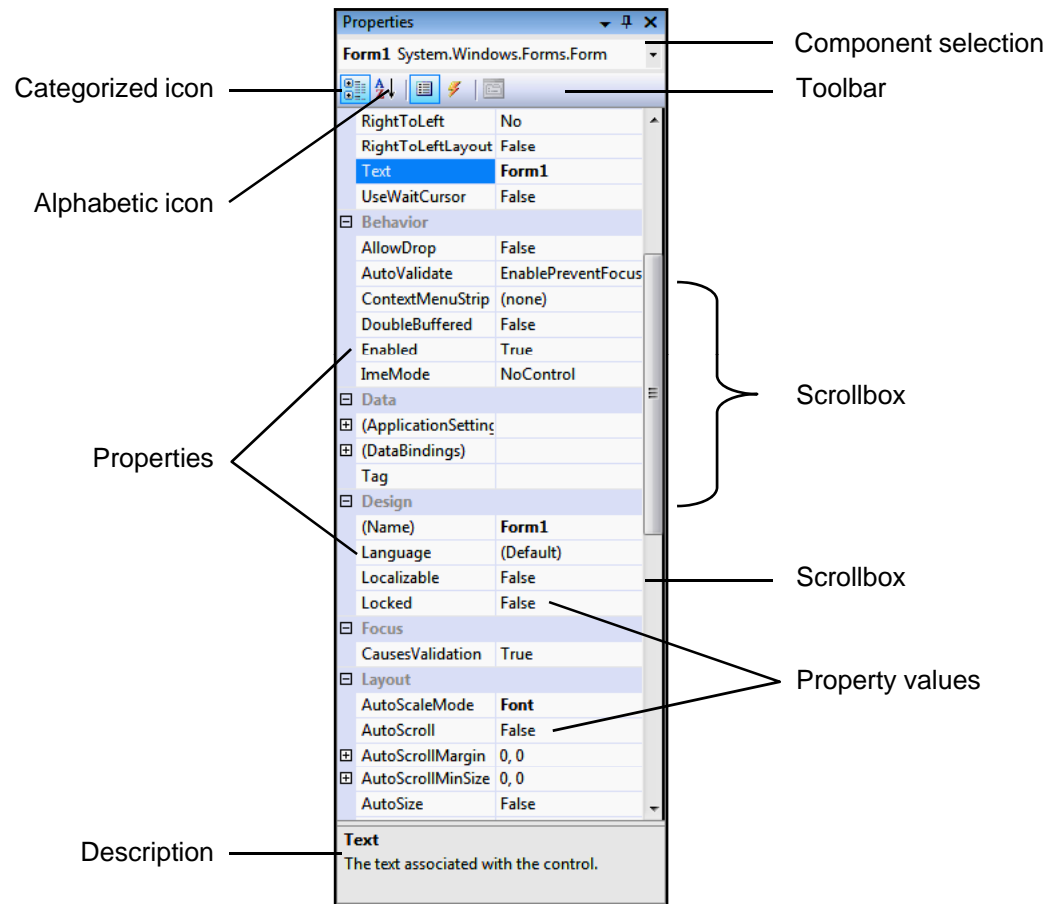


Fig. 2.22 | Properties window.



2.5 Using Help

- Some **Help menu** commands are summarized in Fig. 2.23.

| Command | Description |
|------------------|---|
| How Do I? | Contains links to relevant topics, including how to upgrade programs and learn more about Web services, architecture and design, files and I/O, data, debugging and more. |
| Search | Finds help articles based on search keywords. |
| Index | Displays an alphabetized list of topics you can browse. |
| Contents | Displays a categorized table of contents in which help articles are organized by topic. |

Fig. 2.23 | **Help** menu commands.



2.5 Using Help (Cont.)

- To use context-sensitive help, click an item, then press the *F1* key (Fig. 2.24).

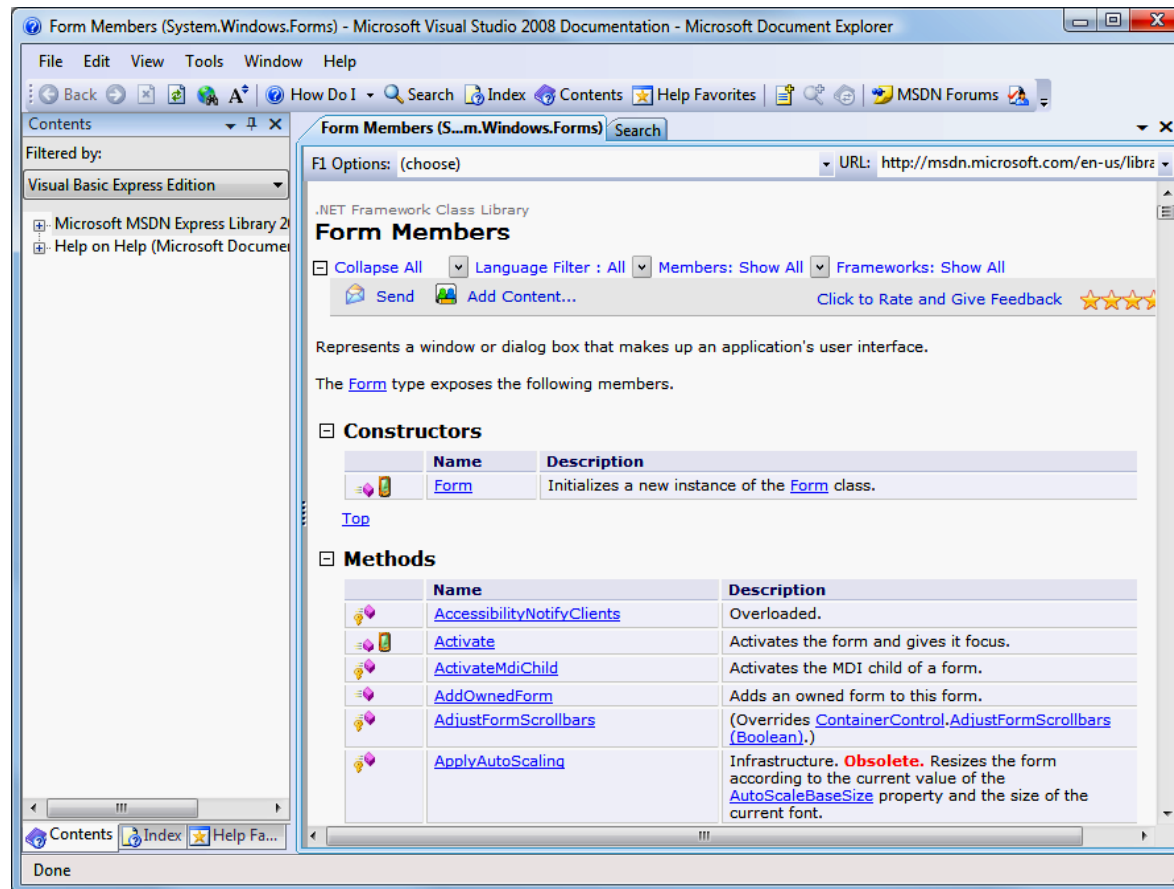


Fig. 2.24 | Using context-sensitive help.



2.5 Using Help (Cont.)

- The **Help** options can be set by selecting **Tools > Options**
- Make sure that **Show all settings** is checked (Fig. 2.25).
- Select **Help**, then set the **Show Help using:** drop-down list to External Help.

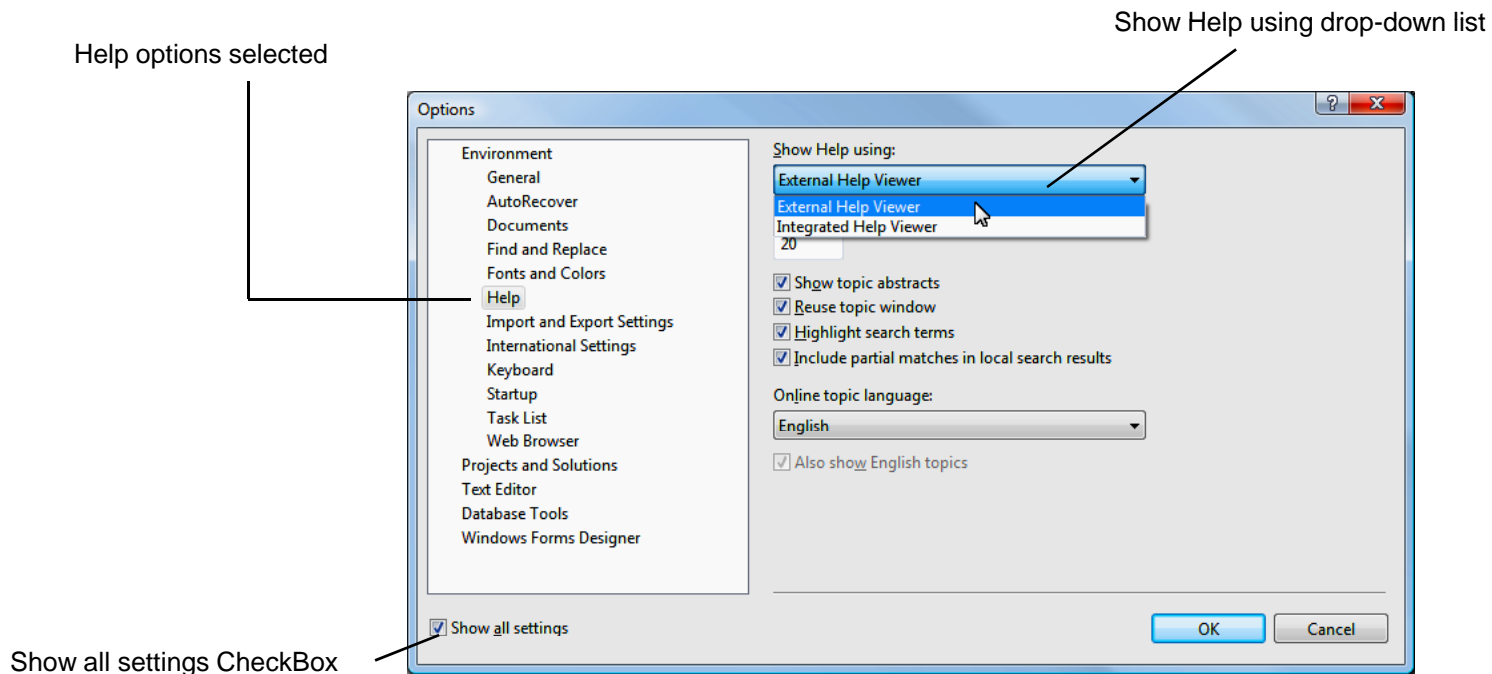


Fig. 2.25 | Options dialog displaying Help settings.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Figure 2.26 shows the result of a program as it executes.

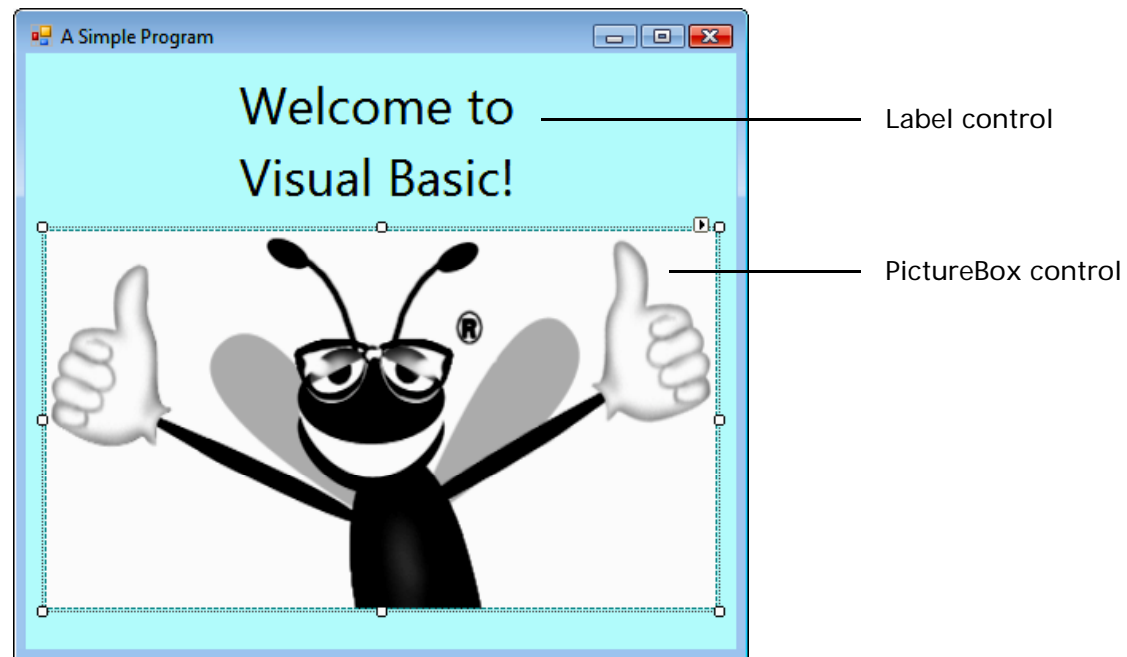


Fig. 2.26 | Simple program executing.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Select **File > New Project** (Fig. 2.27).
- From the template options, select **Windows Forms Application**.
 - Name the project **ASimpleProgram** and click **OK**.

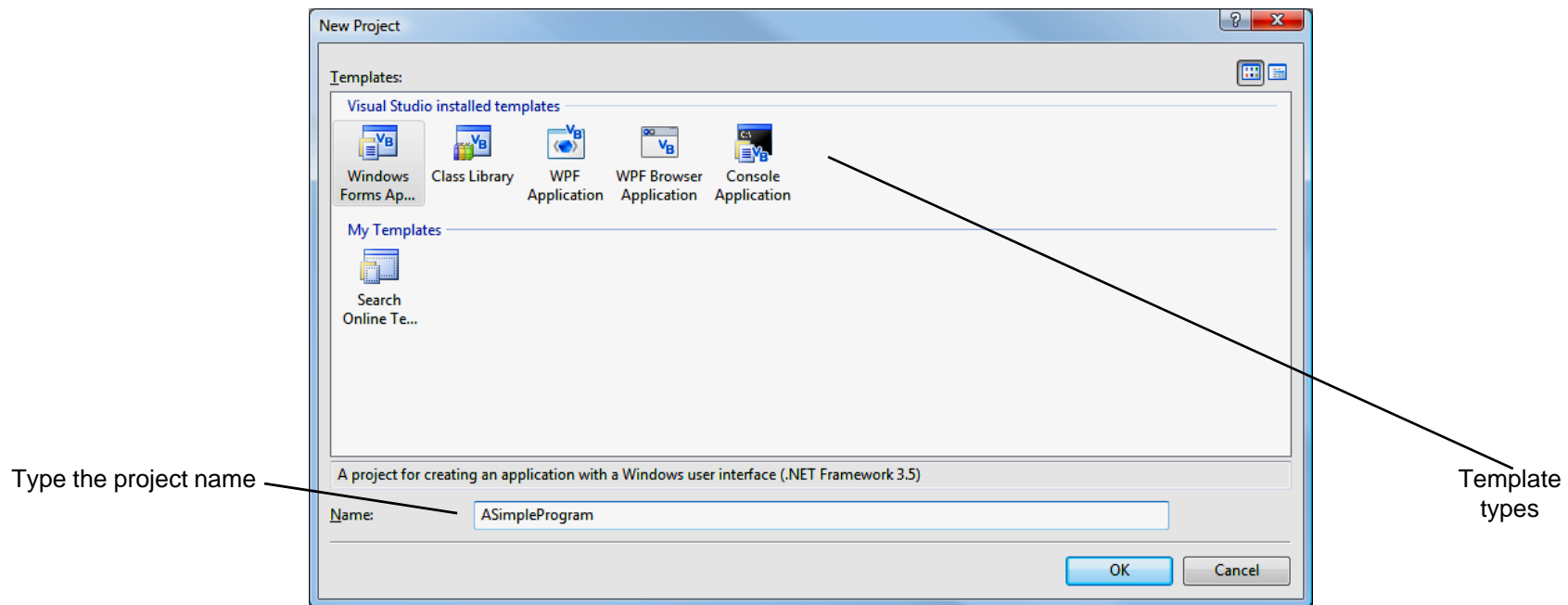


Fig. 2.27 | New Project dialog.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Select **File > Save All** to display the **Save Project dialog** (Fig. 2.28).

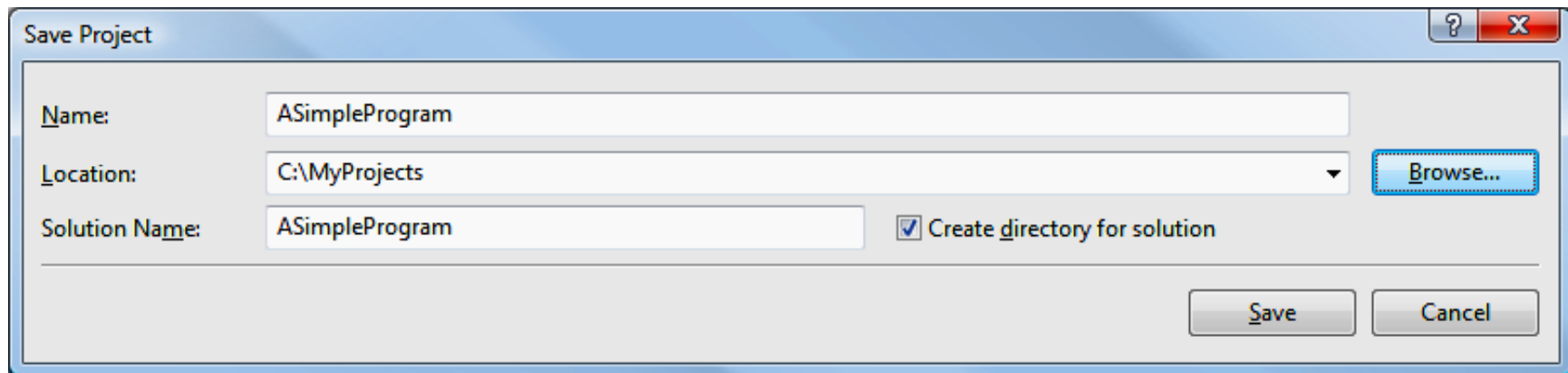


Fig. 2.28 | Save Project dialog.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- To set the project location, click the **Browse...** button (Fig. 2.29).

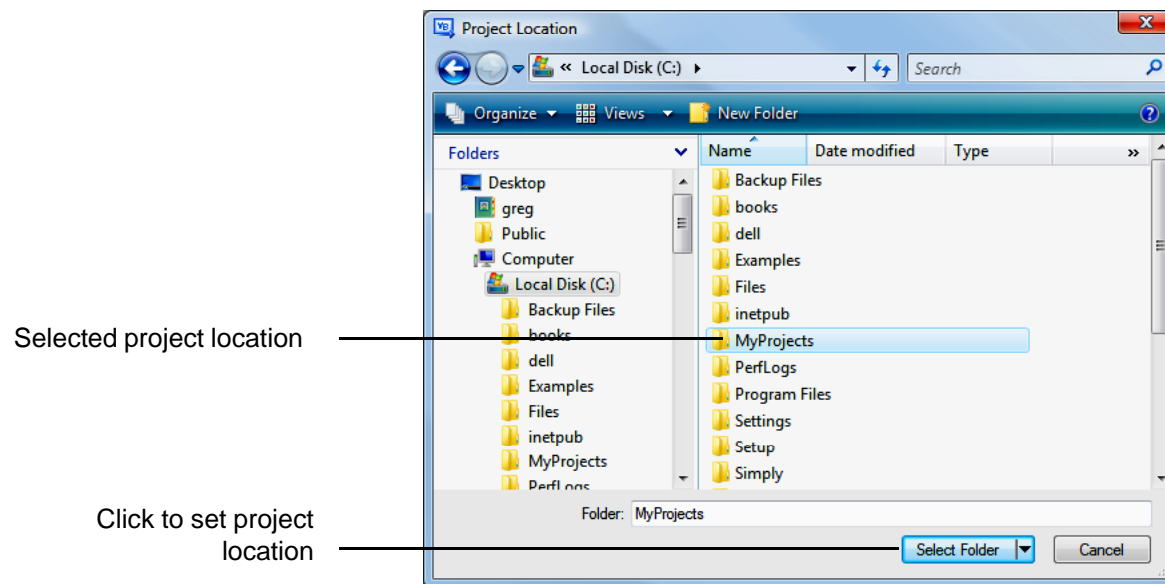


Fig. 2.29 | Setting the project location in the **Project Location** dialog.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- When you first begin working in the IDE, it is in **Design Mode**.
 - The text in the Form's title bar is determined by the Form's **Text property** (Fig. 2.30).

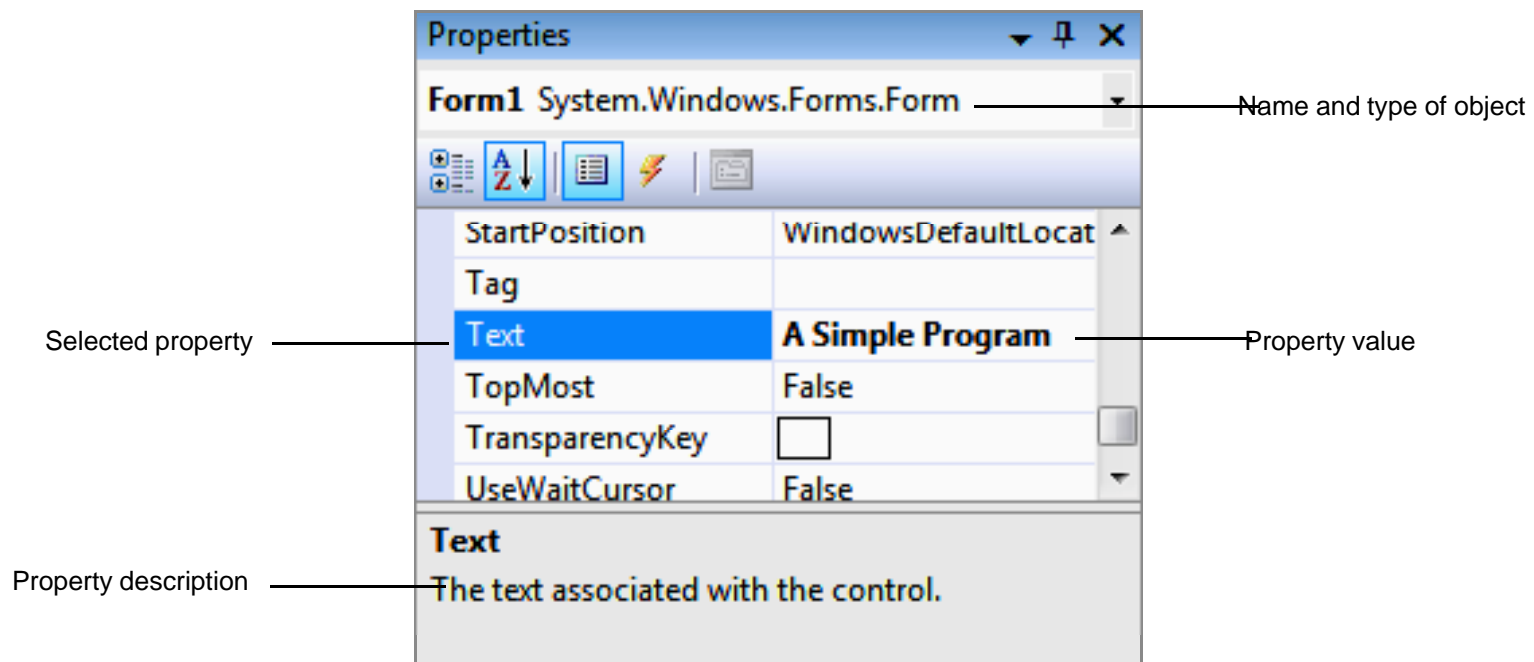


Fig. 2.30 | Setting the Form's Text property in the **Properties** window.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Press the *Enter* key when finished (Fig. 2.31).
- Click and drag sizing handles to resize the Form.

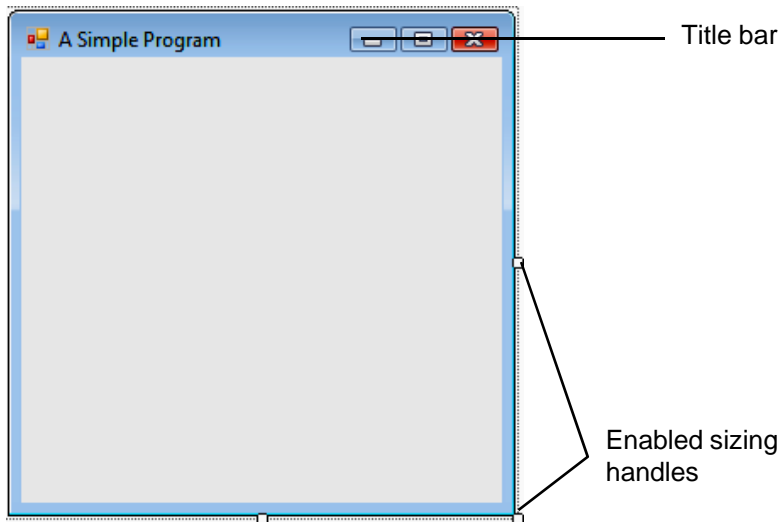


Fig. 2.31 | Form with enabled sizing handles.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Click and drag one of the Form's **enabled sizing handles** to make the Form larger (Fig. 2.32).

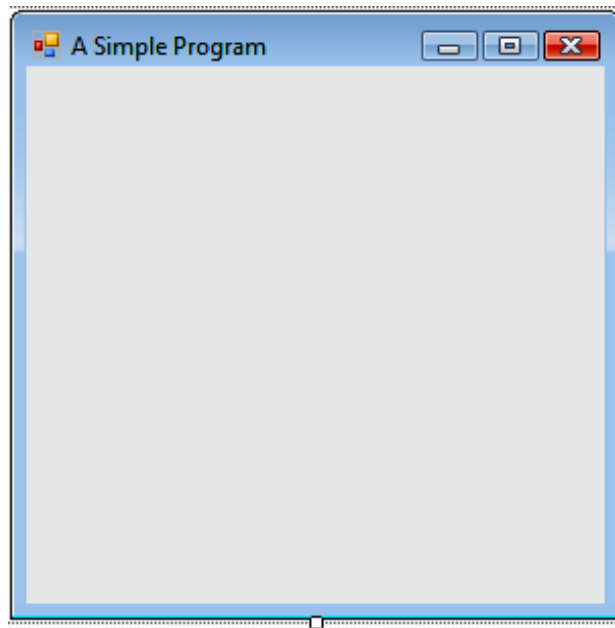


Fig. 2.32 | Resized Form.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Clicking BackCol or in the **Properties** window causes a down-arrow button to appear (Fig. 2.33).
- The arrow displays tabs for **Custom**, **Web** and **System**. Click the **Custom tab** to display the **palette**.

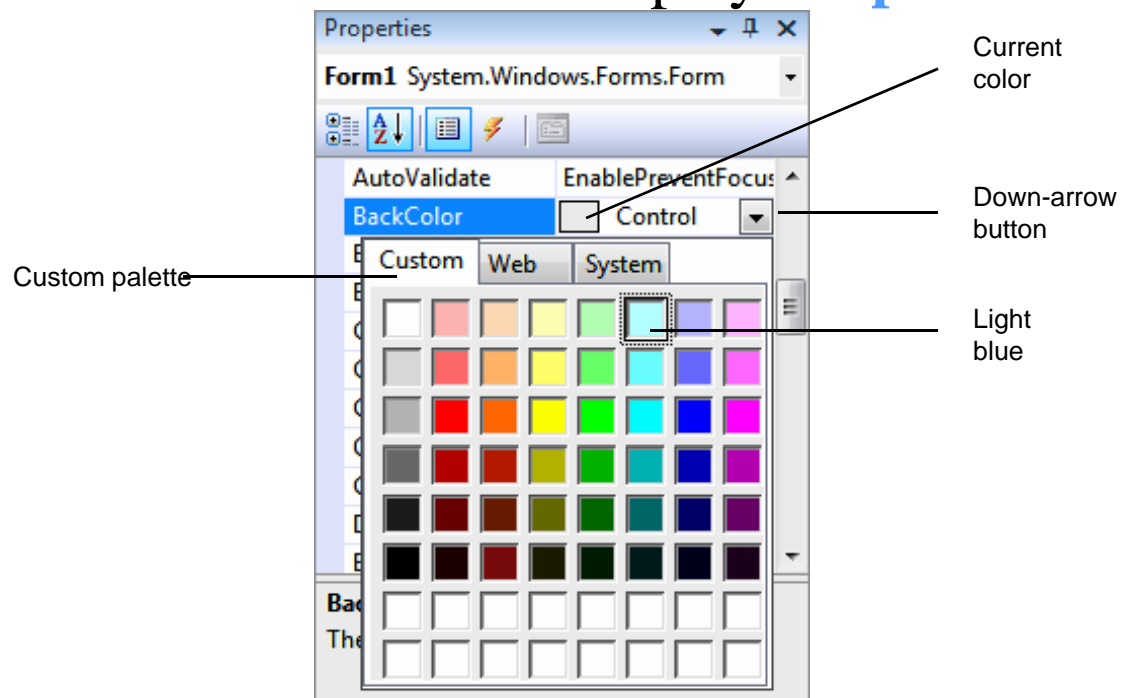


Fig. 2.33 | Changing the Form's BackColor property.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Once you select a color, the palette closes and the Form's background color changes (Fig. 2.34).

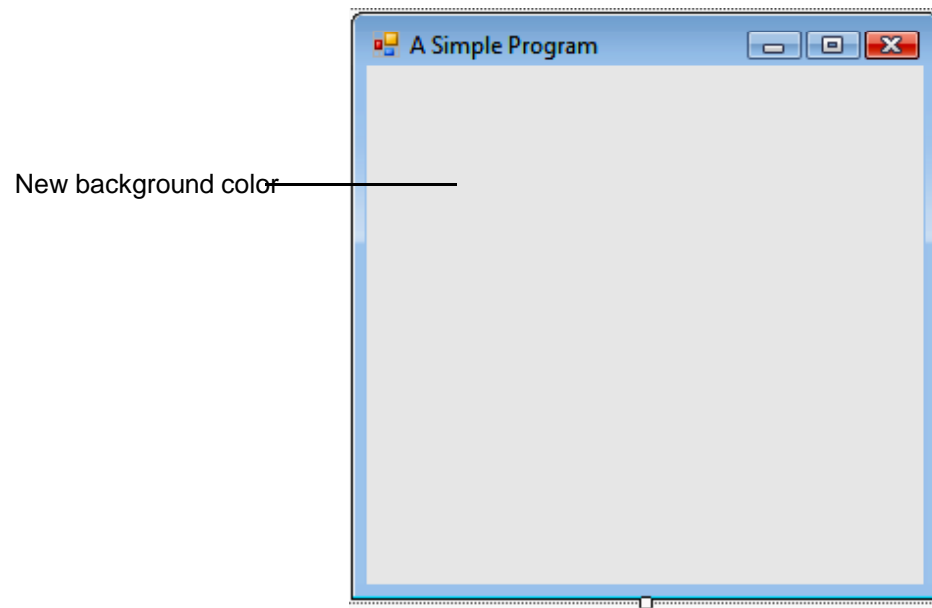


Fig. 2.34 | Form with new BackCol or property applied.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Select **View > Toolbox** to display the set of controls.
- Double click the Label control in the **Toolbox** (Fig. 2.35).

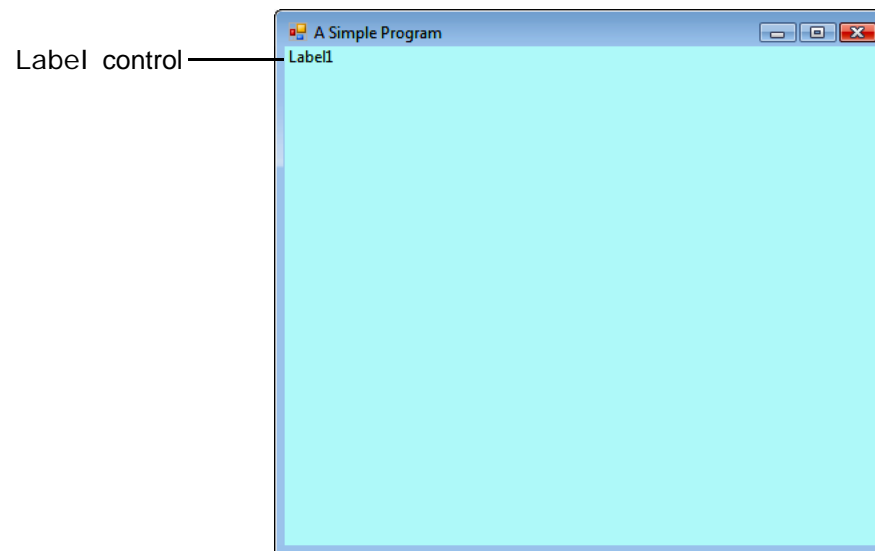


Fig. 2.35 | Adding a Label to the Form.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Set the Label 's Text property to **Welcome to Visual Basic!**.
- Set the AutoSi ze property to Fal se (Fig. 2.36) so that you can resize the Label on your own.

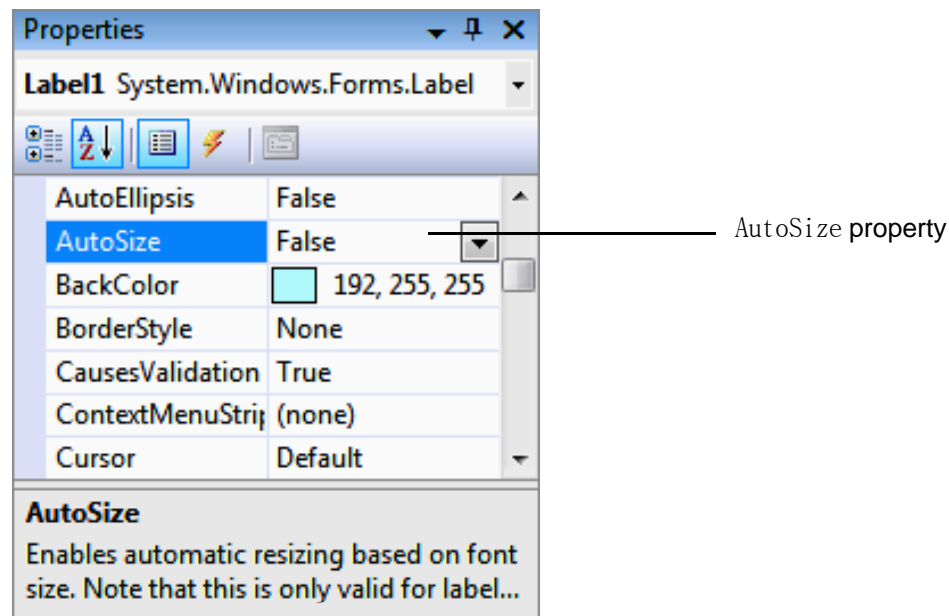


Fig. 2.36 | Changing the Label 's AutoSi ze property to Fal se.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Resize the Label so that the text fits.
- Center the Label control horizontally by selecting **Format > Center In Form > Horizontally** (Fig. 2.37).

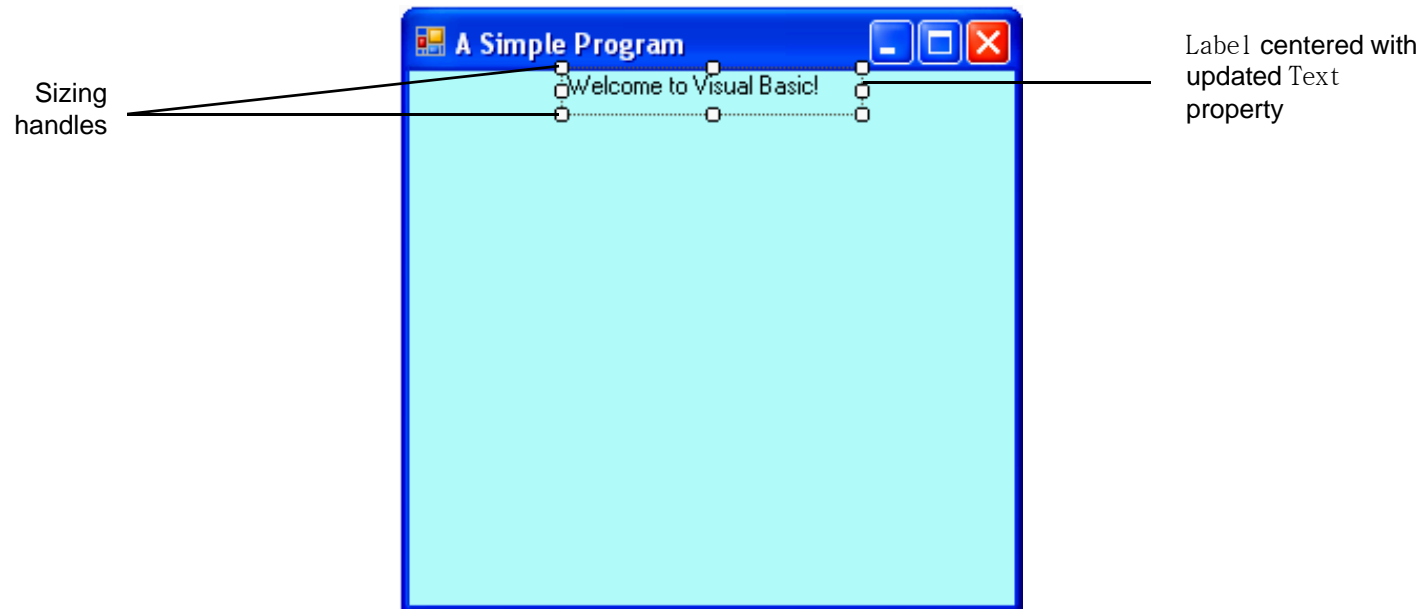


Fig. 2.37 | GUI after the Form and Label have been customized.



2.6 Using Visual Programming to Create a Simple Program that Displays Text and an Image (Cont.)

- Select the **Font property**, which causes an **ellipsis button** to appear next to the value (Fig. 2.38).

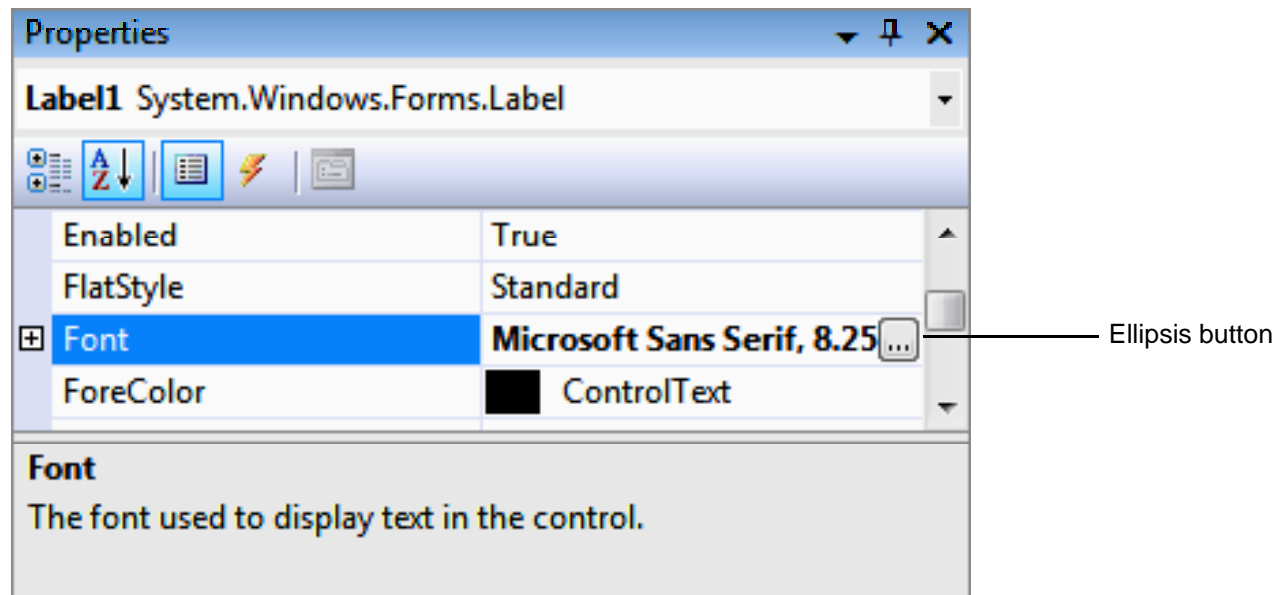


Fig. 2.38 | Properties window displaying the Label 's properties.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- When the ellipsis button is clicked, the **Font dialog** (Fig. 2.39) is displayed.
 - Under **Font**, select **Segoe UI**.
 - Under **Size**, select **24** points and click **OK**.

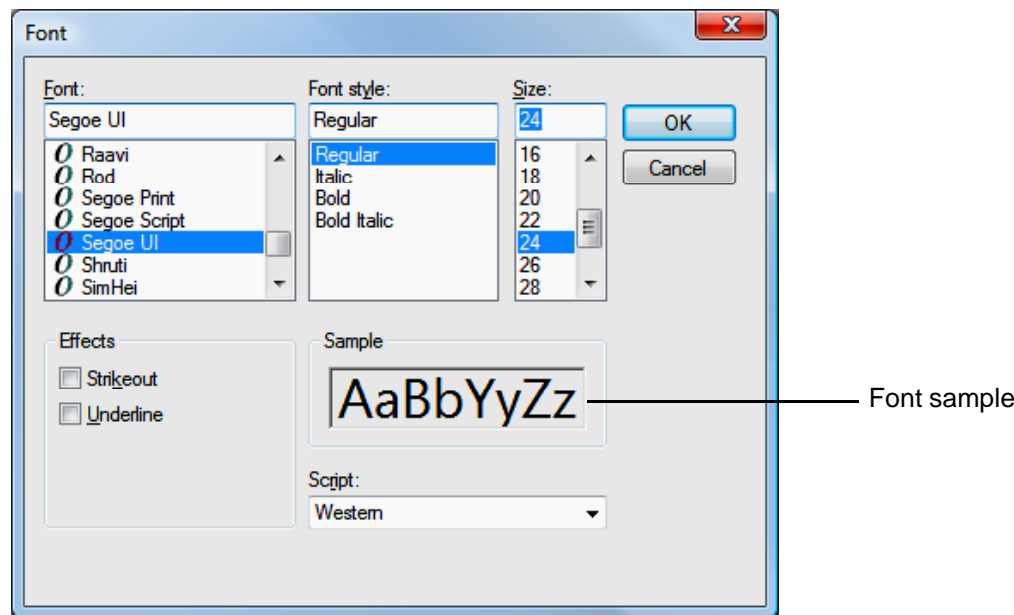


Fig. 2.39 | Font dialog for selecting fonts, styles and sizes.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Select the **TextAlign** property (Fig. 2.40).
 - Set the TextAlign property to **MiddleCenter** to have the text to appear centered in the Label .

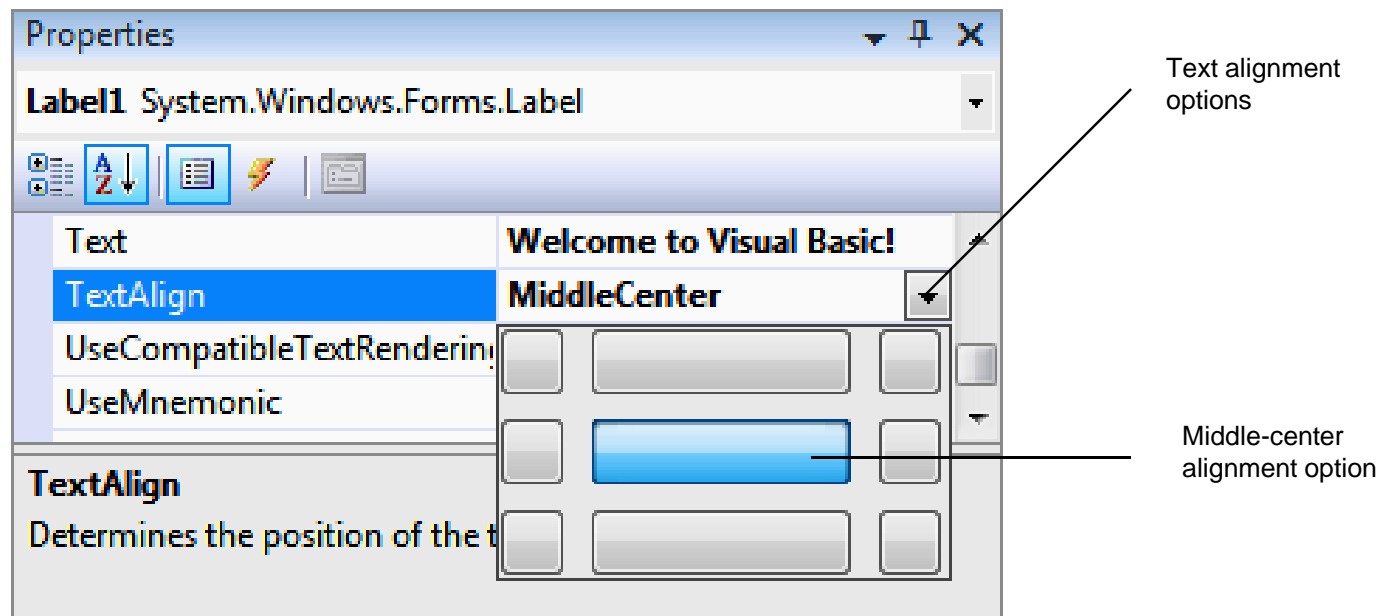


Fig. 2.40 | Centering the Label 's text.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- The PictureBox control displays images.
- Locate the PictureBox in the Toolbox and double click it to add it to the Form (Fig. 2.41).

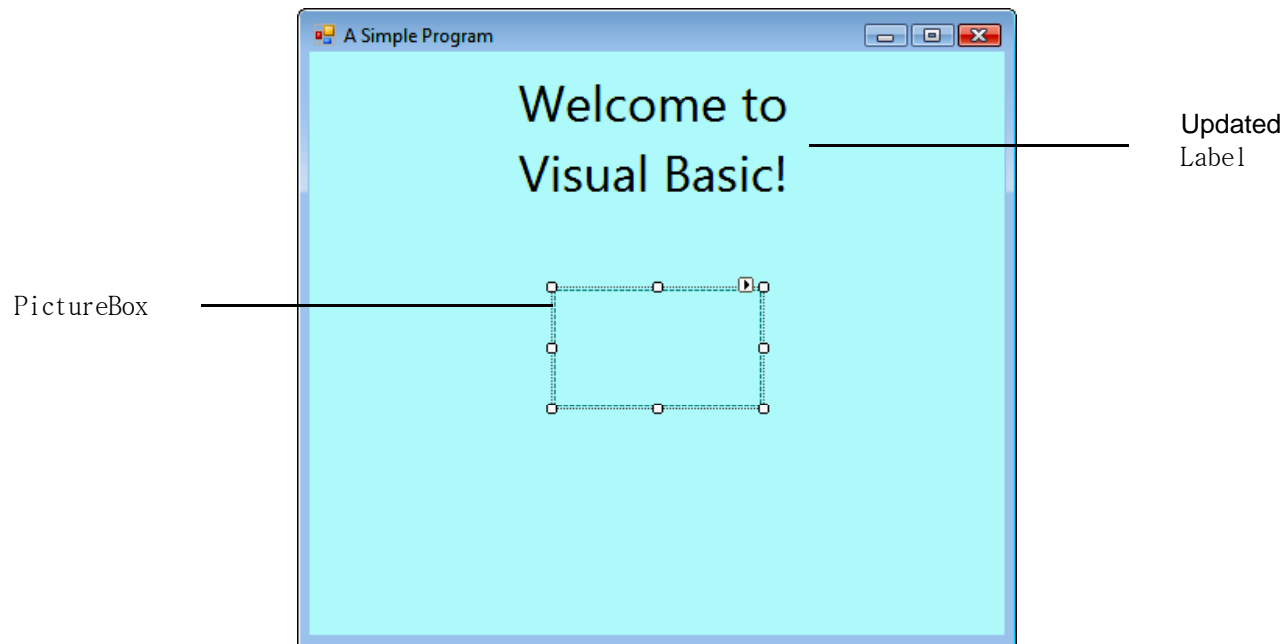


Fig. 2.41 | Inserting and aligning a PictureBox.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Locate the **Image property** (Fig. 2.42).
- No picture has been assigned, so the value of the Image property displays **(none)**.

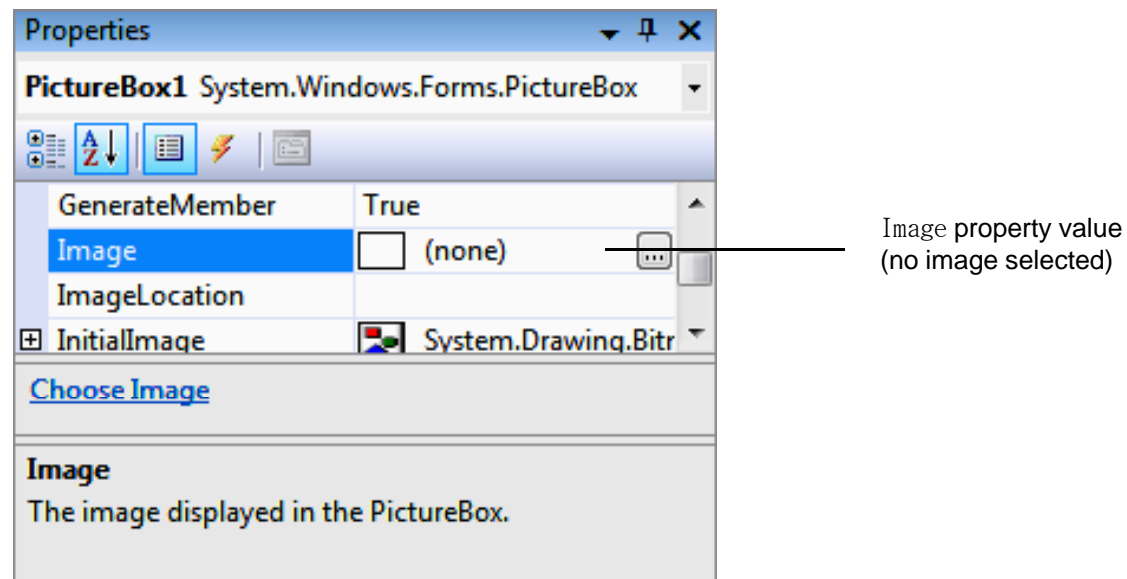


Fig. 2.42 | Image property of the PictureBox.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Click the ellipsis button to display the **Select Resource dialog** (Fig. 2.43).

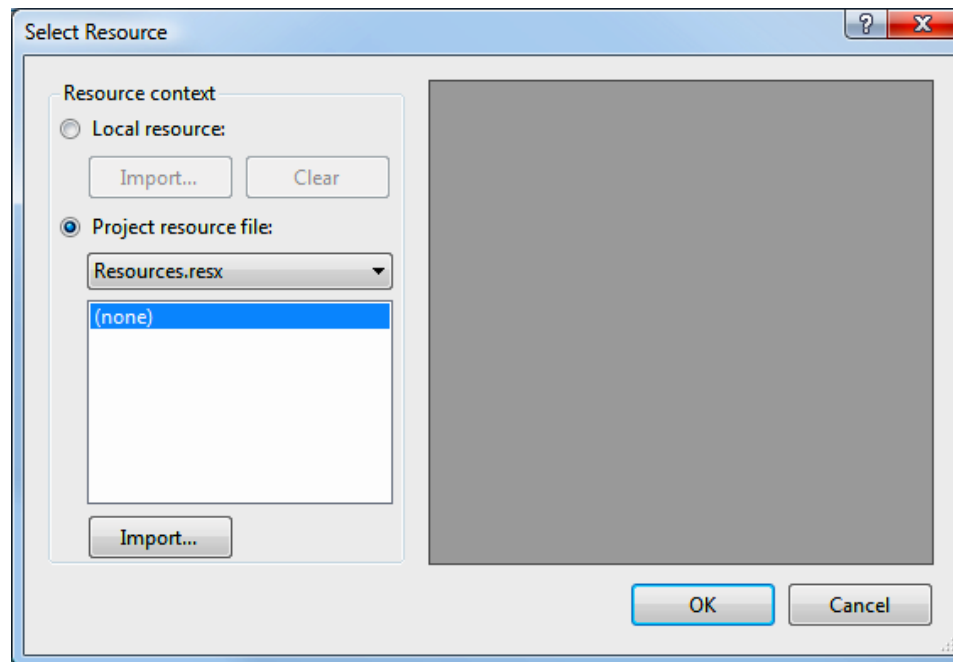


Fig. 2.43 | **Select Resource** dialog to select an image for the PictureBox.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Click the **Import...** button.
- Locate bug.png, select it and click **OK**
- The resource named bug represents bug.png (Fig. 2.44).

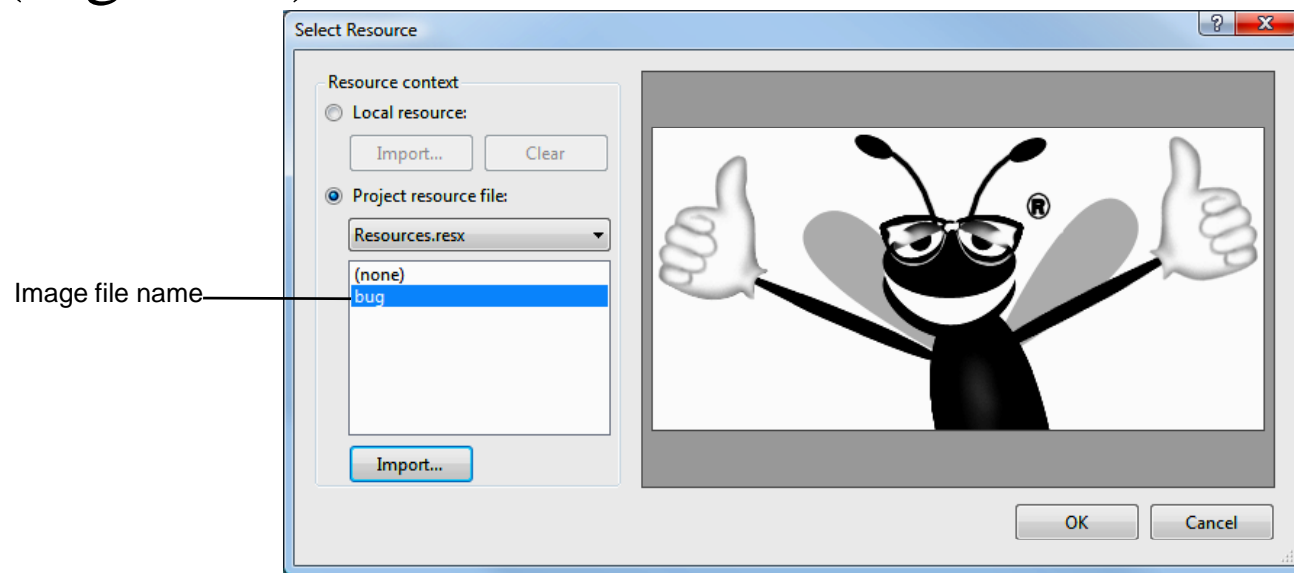


Fig. 2.44 | Select Resource dialog displaying a preview of selected image.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Click **OK** to place the image in your program. Supported image formats include PNG, GIF, JPEG and BMP.
- To size the image to the Pi ctureBox, change the **Si zeMode** property to **StretchI mage** (Fig. 2.45).

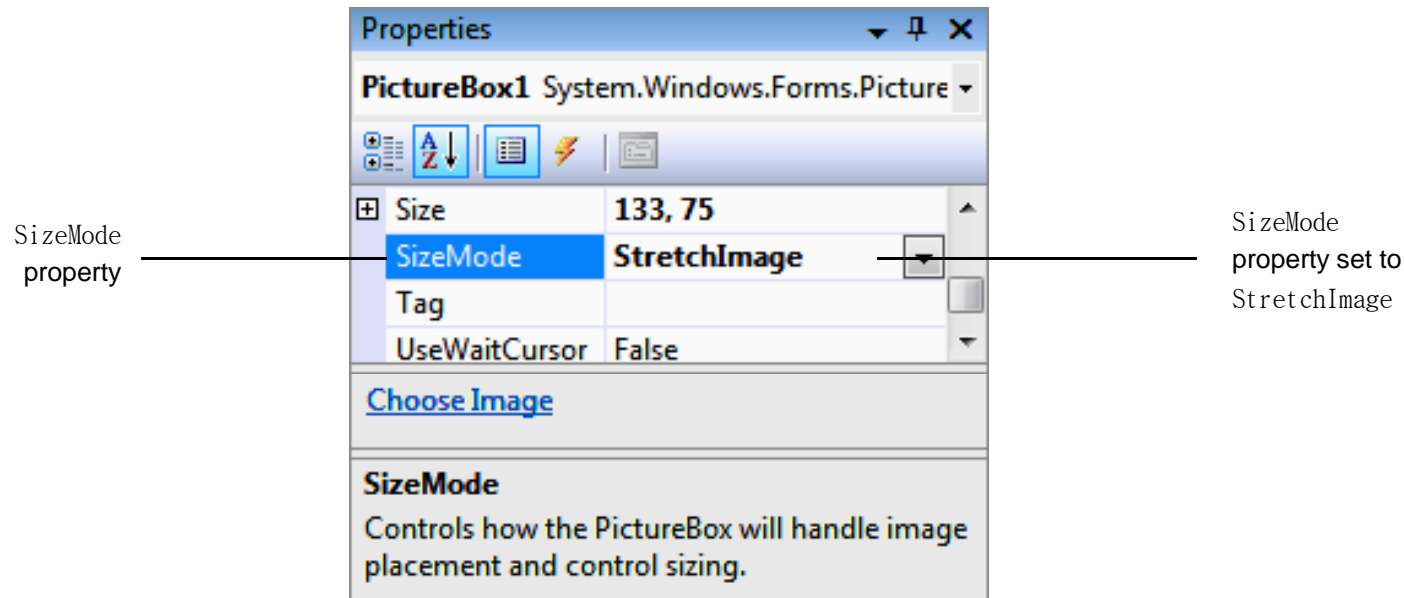


Fig. 2.45 | Scaling an image to the size of the Pi ctureBox.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Resize the Pi ctu reBox, making it larger (Fig. 2.46).
- Select **File > Save All** to save the entire solution.

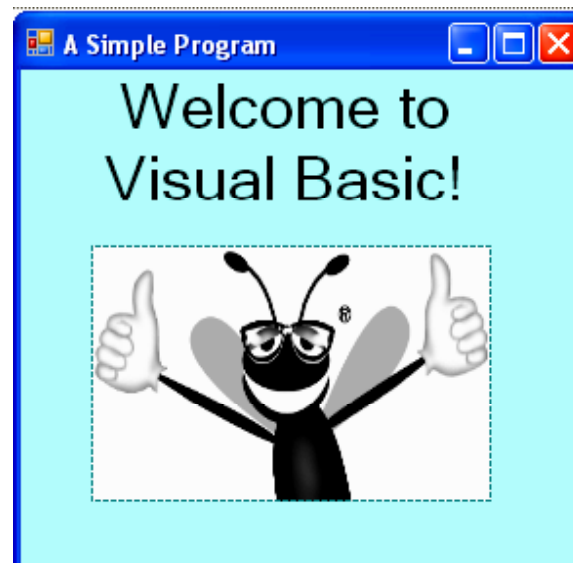


Fig. 2.46 | Pi ctu reBox displaying an image.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- Select **Debug > Start Debugging** to execute the program (Fig. 2.47).

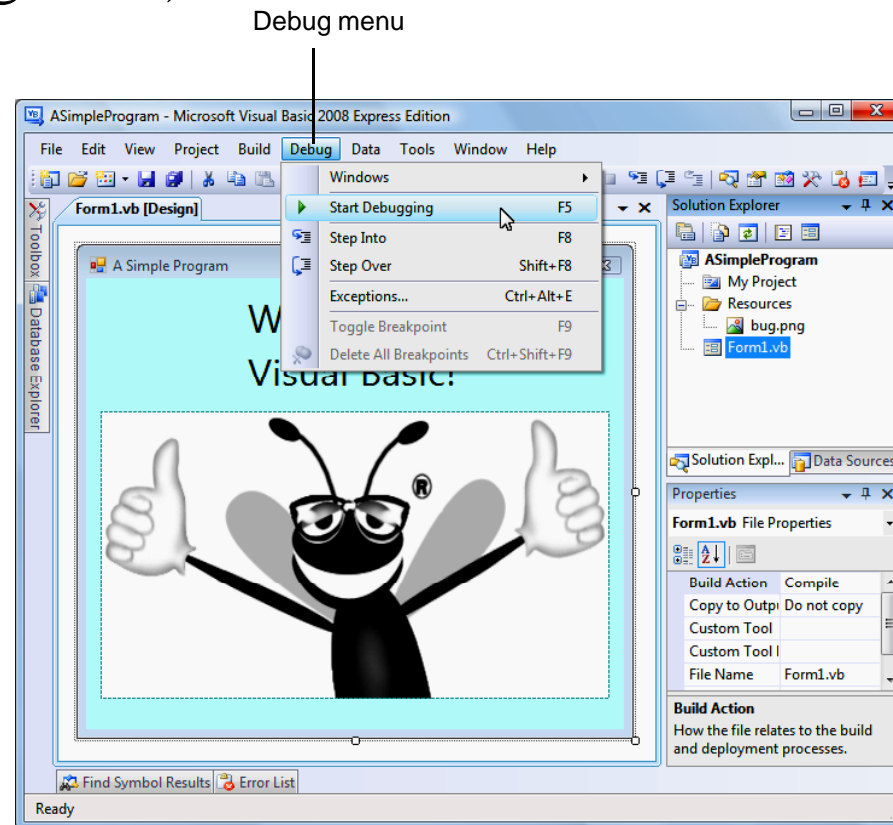


Fig. 2.47 | Debugging a solution.



2.6 Using Visual Programming to Create a Simple Program... (Cont.)

- In **run mode**, the program is executing, and you can interact with only a few of the IDE features (Fig. 2.48).

IDE displays text Running which signifies that the program is executing

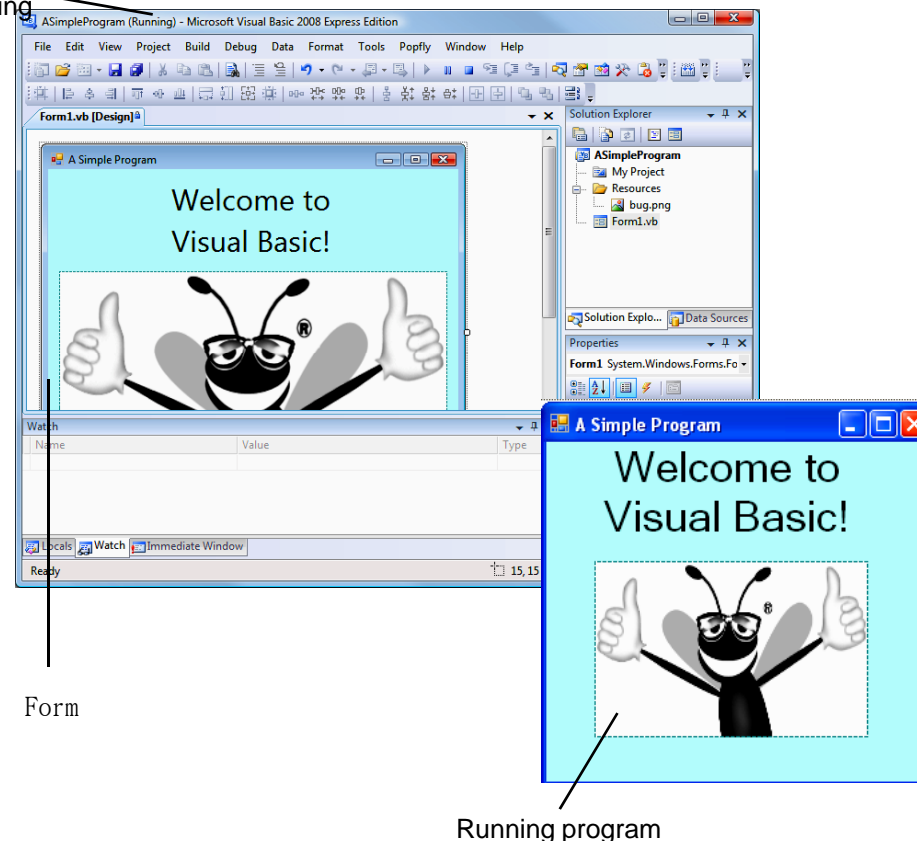


Fig. 2.48 | IDE in run mode, with the running program in the foreground.

