

Chapter 2 – Introduction to the Visual Studio .NET IDE

1

Outline

- 2.1 Introduction
- 2.2 Visual Studio .NET Integrated Development Environment (IDE) Overview
- 2.3 Menu Bar and Toolbar
- 2.4 Visual Studio .NET Windows
 - 2.4.1 Solution Explorer
 - 2.4.2 Toolbox
 - 2.4.3 Properties Window
- 2.5 Using Help
- 2.6 Simple Program: Displaying Text and an Image



2.1 Introduction

2

- Visual Studio .NET
 - Microsoft's Integrated Development Environment (IDE)
 - Program in a variety of .NET languages
 - Tools to edit and manipulate several file types



2.2 Visual Studio .NET Integrated Development Environment (IDE)

- The **Start Page** (Fig. 2.1)
 - Helpful links appear on left side
 - Each has a sub screen
 - The **Getting Started** screen
 - Links to recent projects
 - The **Open Project** button
 - The **New Project** button
 - The **What's New** screen
 - New features and updates for Visual Studio .NET
 - Downloadable code samples
 - New tools
 - The **Online Community** screen
 - Ways to contact other programmers



2.2 Visual Studio .NET Integrated Development Environment (IDE) Overview

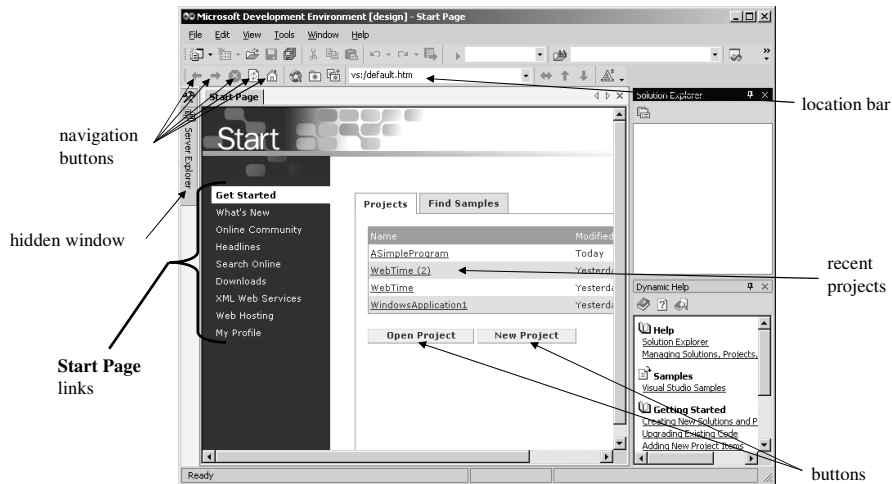


Fig. 2.1 Start Page in Visual Studio .NET.



2.2 Visual Studio .NET Integrated Development Environment (IDE)

- The **Headlines** screen
 - Ways to browse new articles and get guides
- The **Search Online** screen
 - Use the MSDN library which has article and tutorials
 - Microsoft Developer Network (MSDN)
- The **Downloads** screen
 - Updates
 - Code samples
- The **XML Web Services** screen
 - Information about Web services (Chapter 21)
 - Reusable software available on the internet
- The **Web Hosting** screen
 - Programmers can post software for public use

2.2 Visual Studio .NET Integrated Development Environment (IDE)

- The **My Profile** screen
 - Allows Visual Studio .NET customization
 - Keyboard preferences
 - Window layout preferences
- **New project dialogue (Fig. 2.2)**
 - C# .NET project
 - Group of related files, images, and documentations
 - C# .NET solution
 - Group of projects creating one or a group of applications
 - Windows Applications
 - Anything that runs in the Windows OS
 - Microsoft Word
 - Microsoft Internet Explorer

2.2 Visual Studio .NET Integrated Development Environment (IDE) Overview

7

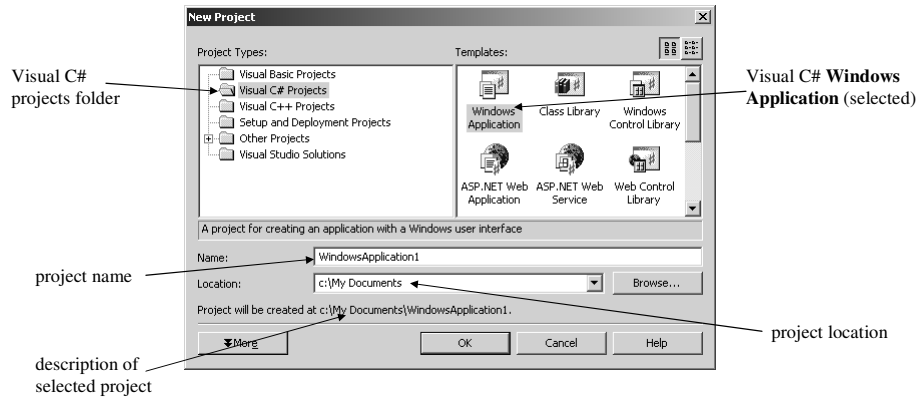


Fig. 2.2 New Project dialog.

© 2002 Prentice Hall. All rights reserved.

2.2 Visual Studio .NET Integrated Development Environment (IDE)

8

- IDE after a new project (Fig. 2.3)
 - The form
 - Grey rectangle in window
 - Represents the project's window
 - Part of the GUI or Graphical User Interface
 - Graphical components for user interaction
 - User can enter data (input)
 - Shows user instructions or results (output)
 - Tabs
 - One tab appears for each open document
 - Used to save space in the IDE

© 2002 Prentice Hall. All rights reserved.

2.2 Visual Studio .NET Integrated Development Environment (IDE) Overview

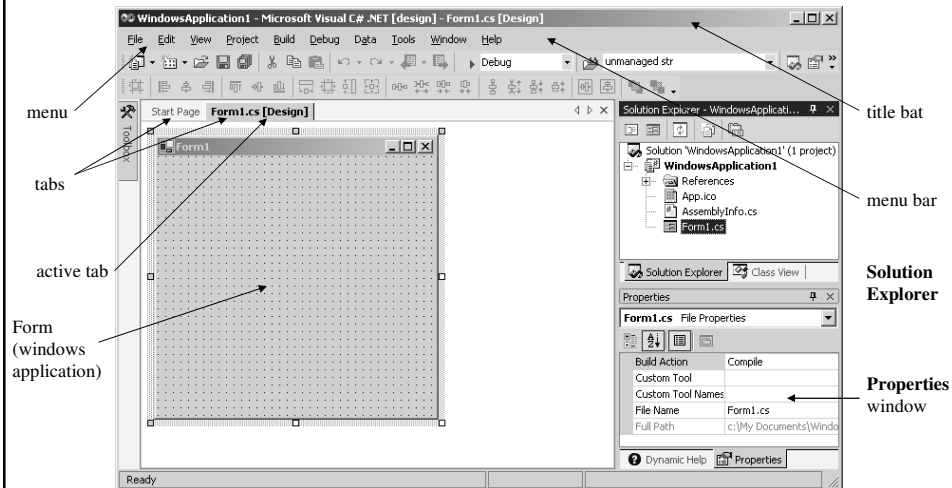


Fig. 2.3 Visual Studio .NET environment after a new project has been created.

© 2002 Prentice Hall. All rights reserved.

10

2.3 Menu Bar and Toolbar

- The menu bar (Fig. 2.4)
 - Commands for developing and executing programs
 - Create new projects by going to **File > New > Project**
 - Certain menu options only appear in specific IDE modes
 - Each menu is summarized in Fig. 2.5
- The toolbar (Fig. 2.6)
 - Contains commonly used commands as icons (Fig. 2.8)
 - Used rather than navigating through menus
 - Simply click the icon to use the command
 - Some icons have down arrows that offer additional commands
 - Holding the mouse over an icon displays a tool tip (Fig. 2.7)
 - Tool tips briefly state what the icons are or do.

© 2002 Prentice Hall. All rights reserved.

2.3 Menu Bar and Toolbar

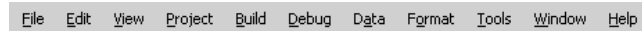


Fig. 2.4 Visual Studio .NET menu bar.

2.3 Menu Bar and Toolbar

Menu	Description
File	Contains commands for opening projects, closing projects, printing projects, etc.
Edit	Contains commands such as cut, paste, find, undo, etc.
View	Contains commands for displaying IDE windows and toolbars.
Project	Contains commands for adding features, such as forms, to the project.
Build	Contains commands for compiling a program.
Debug	Contains commands for debugging and executing a program.
Data	Contains commands for interacting with databases.
Format	Contains commands for arranging a form's controls.
Tools	Contains commands for additional IDE tools and options for customizing the environment.
Windows	Contains commands for arranging and displaying windows.
Help	Contains commands for getting help.

Fig. 2.5 Summary of Visual Studio menus.

2.3 Menu Bar and Toolbar

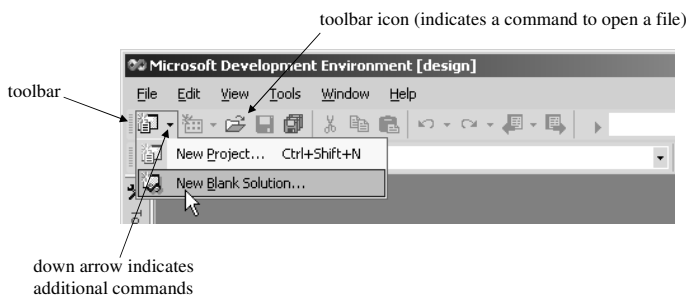


Fig. 2.6 Visual Studio .NET toolbar.

2.4.1 Solution Explorer

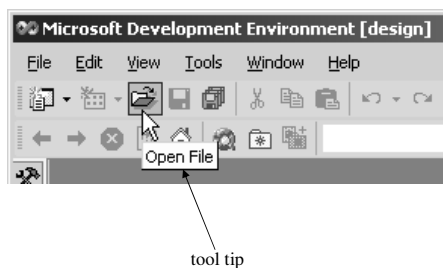


Fig. 2.7 Tool tip demonstration.

2.4.1 Solution Explorer

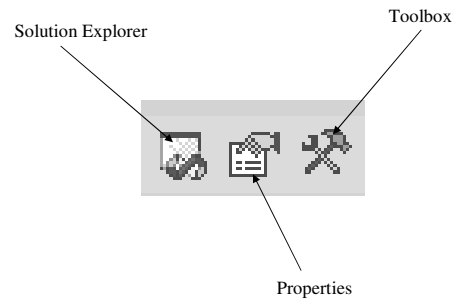


Fig. 2.8 Toolbar icons for various Visual Studio .NET windows.



2.4 Visual Studio .NET Windows

- Windows
 - Used to explore files
 - Used to customize controls
 - Accessed through the toolbar icons or right edge of toolbar
 - Also accessed through the **View** menu



2.4.1 Solution Explorer

- The **Solution Explorer** (Fig. 2.9)
 - Lists all files in the solution
 - Displays the contents of a new project or open file
 - The start up project is the project that runs when the program is executed
 - It appears in bold in the **Solution Explorer**
 - The plus and minus images expand and collapse the tree
 - Can also double click on the file name to expand/collapse
 - **Solution Explorer** toolbar
 - The **Refresh** icon reloads files in the solution
 - The **Display** icon shows all files, even the hidden ones
 - Icons change based on selected file



2.4.1 Solution Explorer

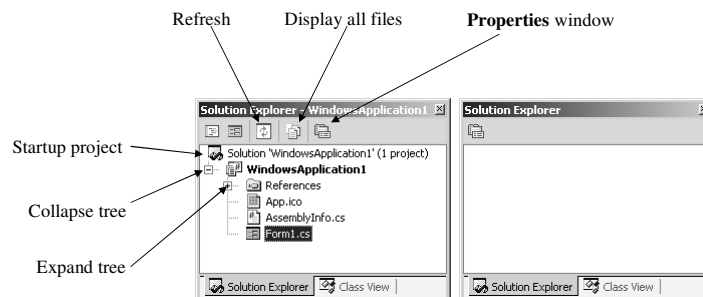


Fig. 2.9 Solution Explorer window.



2.4.2 Toolbox

- The **Toolbox** (Fig. 2.10)
 - Contains reusable controls
 - Controls customize the form
 - Visual programming allows ‘drag and drop’ of controls
 - Black arrows at bottom are used to scroll through items
 - Mouse pointer icon
 - Allows user to deselect current control
 - No tool tips
 - Each icon is labeled with its name
 - **Toolbox** can be hidden on left side of IDE (Fig. 2.11)
 - Mouse over it to expand it
 - When the mouse is no longer over it, the toolbar goes away
 - The pin icon is used to disable auto hide

© 2002 Prentice Hall. All rights reserved.

2.4.2 Toolbox

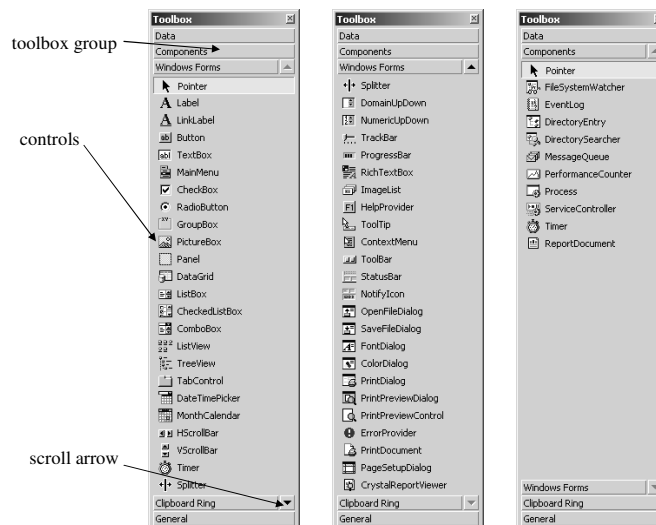


Fig. 2.10 Toolbox window.

© 2002 Prentice Hall. All rights reserved.

2.4.2 Toolbox

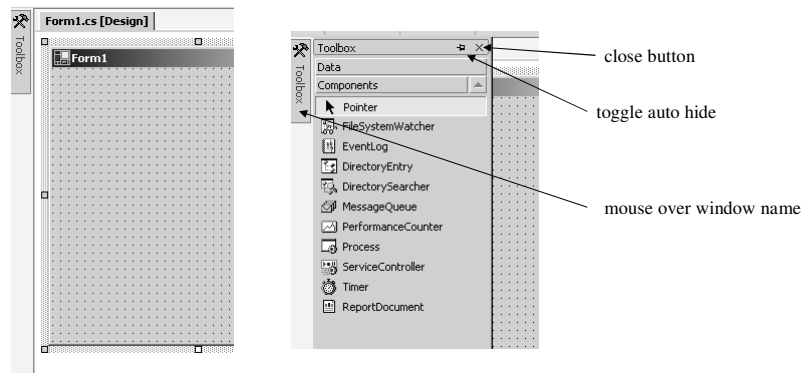


Fig. 2.11 Demonstrating window auto-hide.

2.4.3 Properties window

- The **Properties** window (Fig. 2.12)
 - Manipulate the properties of a form or control
 - Each control has its own set of properties
 - Properties can include size, color, text, or position
 - Right column is the property
 - Left column is the property value
 - Icons
 - The **Alphabetic** icon arranges the properties alphabetically
 - The **Categorized** icon arranges the properties by category
 - The **Event** icon allows reactions to user actions
 - Users alter controls visually without writing code
 - The component selection dropdown list shows what control is being altered and what other controls can be altered

2.5 Properties Window

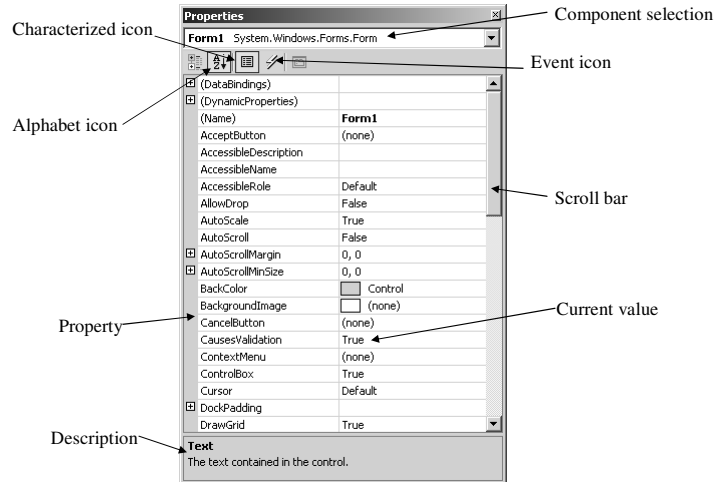


Fig. 2.12 Properties window.

© 2002 Prentice Hall. All rights reserved.

2.5 Using Help

- **Help menu**
 - Index
 - Displays an alphabetic index that users can browse through
 - Search
 - Allows users to search for a particular help topic
 - Filters can be use to narrow the search
- **Dynamic help (Fig. 2.13)**
 - Provide a help topic based on the mouse location
 - Displays relevant topics in the dynamic help window
 - Lists help entries, samples, and “getting started” topics
- **Context-Sensitive help**
 - Automatically brings up relevant help topics

© 2002 Prentice Hall. All rights reserved.

2.5 Using Help

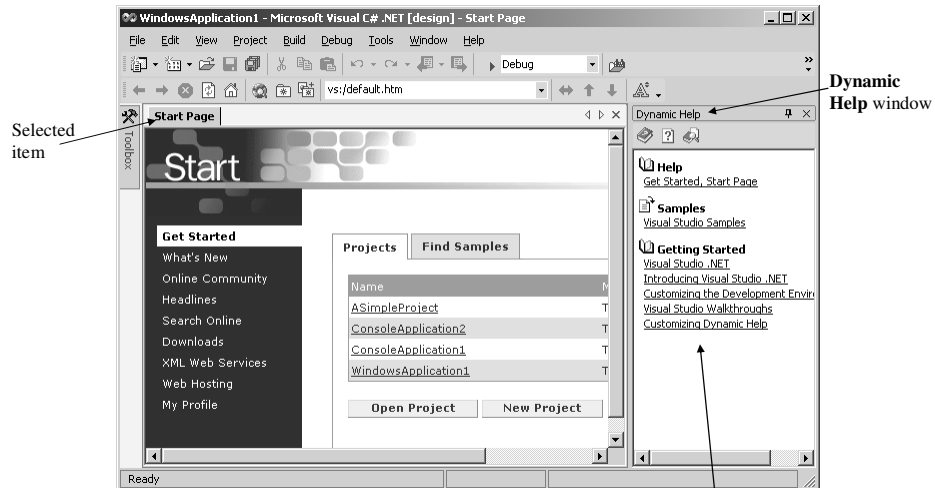


Fig. 2.13 Dynamic Help window.

Relative help topics
for selected item
(start page)

2.6 Simple Program: Displaying Text and an Image

- The program (Fig. 2.14)
 - Form to hold other controls
 - Label to display text
 - PictureBox to display a picture
 - No code needed to create this program
- Create the new program
 - Create a new project
 - Make the project a windows application (Fig. 2.15)
 - Name it: ASimpleProject and sets its location (Fig. 2.16)
- Set the form's title bar (Fig. 2.17)
 - The **Text** property determines the text in the title bar
 - Set the value to: A Simple Program

2.6 Simple Program: Displaying Text and an Image

27



Fig. 2.14 Simple program as it executes.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

28

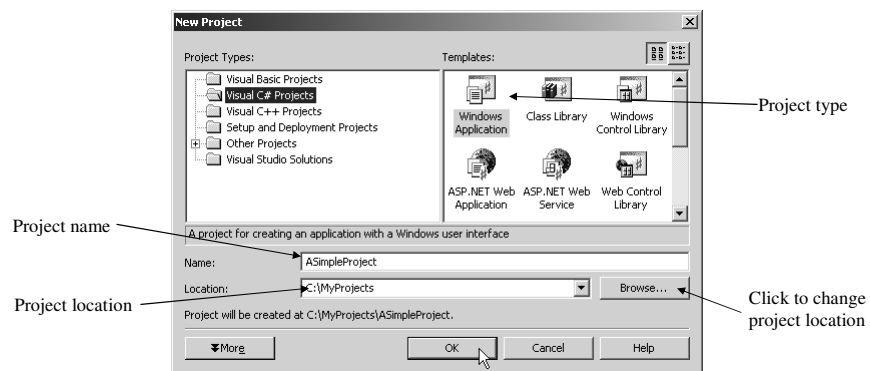
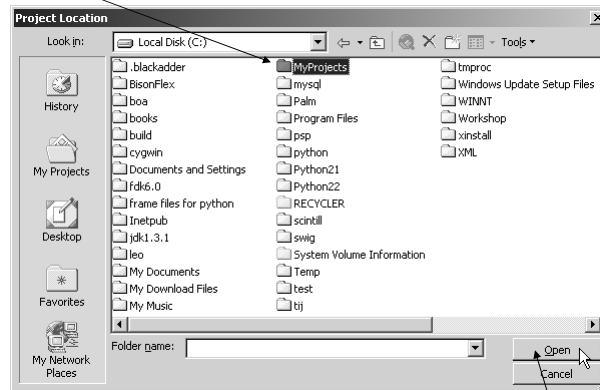


Fig. 2.15 Creating a new Windows application.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

Select project location



Click to set project location

Fig. 2.16 Setting the project location.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

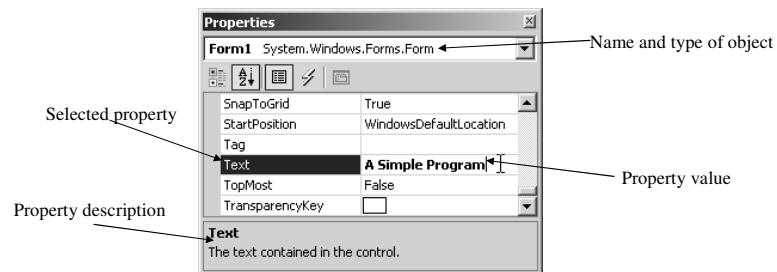


Fig. 2.17 Setting the form's **Text** property.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

- Resize the form (Fig. 2.18)
 - Click and drag one of the forms size handles
 - Enables handles are white
 - Disables handles are gray
 - The grid in the background will not appear in the solution
- Change the form's background color (Fig. 2.19)
 - The **BackColor** determines the form's background color
 - Dropdown arrow is used to set the color
- Add a label control to the form (Fig. 2.20)
 - Controls can be dragged to the form
 - Controls can be added to the form by double clicking
 - The forms background color is the default of added controls

© 2002 Prentice Hall. All rights reserved.



2.6 Simple Program: Displaying Text and an Image

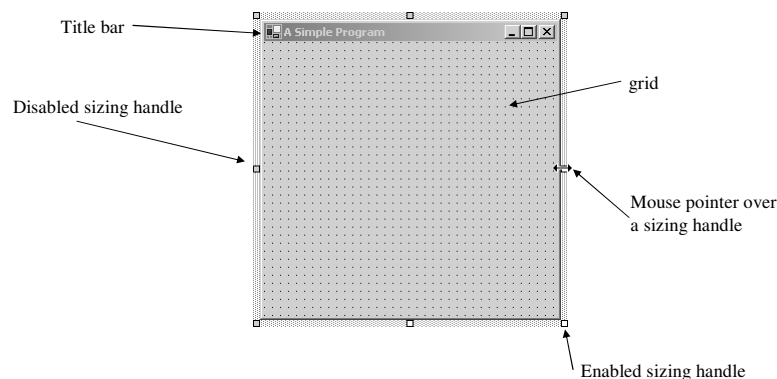


Fig. 2.18 Form with sizing handles.

© 2002 Prentice Hall. All rights reserved.



2.6 Simple Program: Displaying Text and an Image

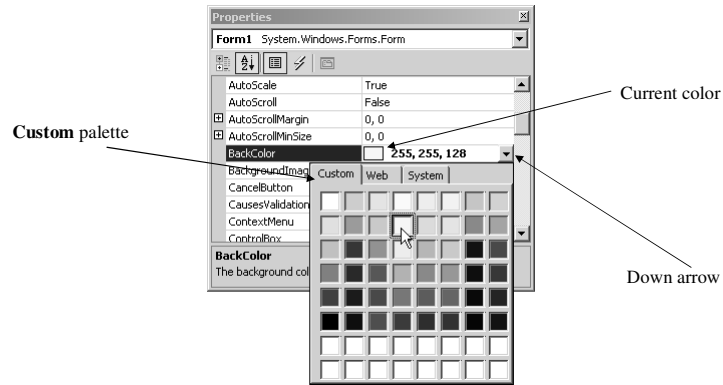


Fig. 2.19 Changing property **BackColor**.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

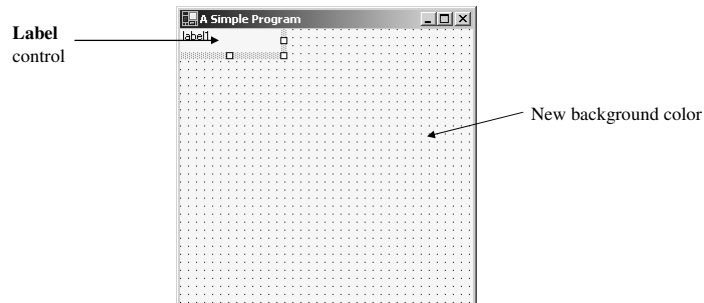


Fig. 2.20 Adding a new label to the form.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

- Set the label's text (Fig. 2.21)
 - The **Text** property is used to set the text of a label
 - The label can be dragged to a desired location
 - Or **Format > Center In Form > Horizontal** can also be used to position the label as in in this example
- Set the label's font size and align text (Fig. 2.22)
 - The **Font** property changes the label's text (Fig. 2.23)
 - The **TextAlign** property to align the text (Fig. 2.24)
- Add a picture box to the form (Fig. 2.25)
 - Picture boxes are used to display pictures
 - Drag the picture box onto the form



2.6 Simple Program: Displaying Text and an Image

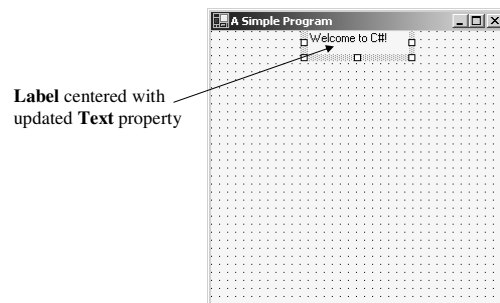


Fig. 2.21 Label in position with its **Text** property set.



2.6 Simple Program: Displaying Text and an Image

37

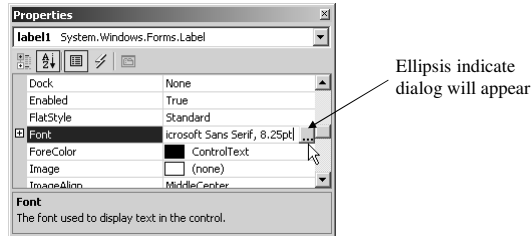


Fig. 2.22 Properties window displaying the label's properties.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

38

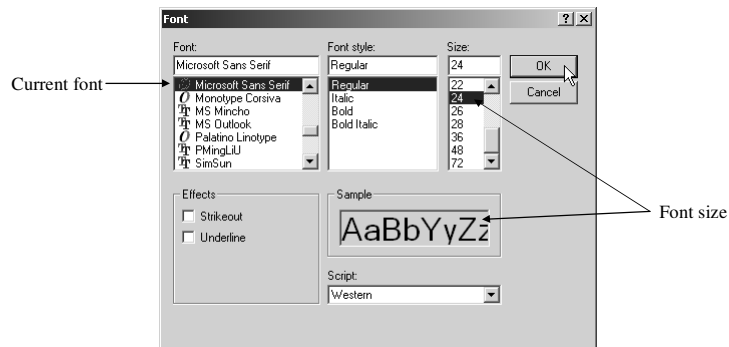


Fig. 2.23 Font window for selecting fonts, styles and sizes.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

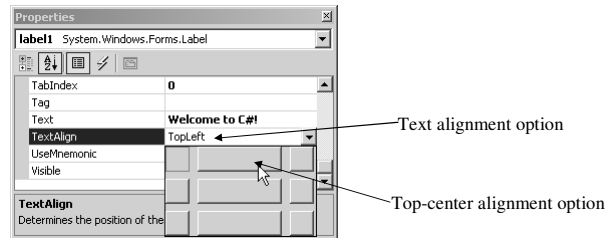


Fig. 2.24 Centering the text in the label.

2.6 Simple Program: Displaying Text and an Image

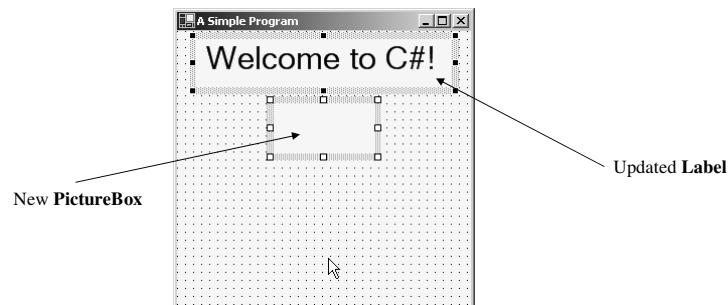


Fig. 2.25 Inserting and aligning the picture box.

2.6 Simple Program: Displaying Text and an Image

- Insert an image
 - The **Image** property sets the image that appears (Fig. 2.26)
 - Pictures should be of type .gif, .jpeg, or .png (Fig. 2.27)
 - The picture box is resizable to fit the entire image (Fig. 2.28)
- Save the project
 - In the **Solution Explorer** select **File > Save**
 - Using **Save All** will save the source code and the project
- Run the project (Fig. 2.29)
 - In run mode several IDE features are disabled
 - Click **Build Solution** in the **Build** menu to compile the solution
 - Click **Debug** in the **Start** menu or press the *F5* key



2.6 Simple Program: Displaying Text and an Image

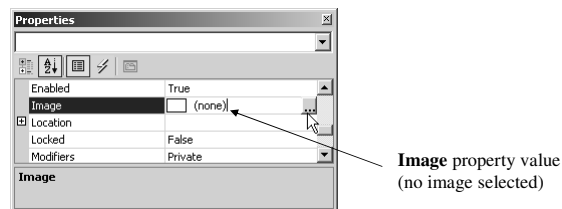


Fig. 2.26 Image property of the picture box.



2.6 Simple Program: Displaying Text and an Image

43

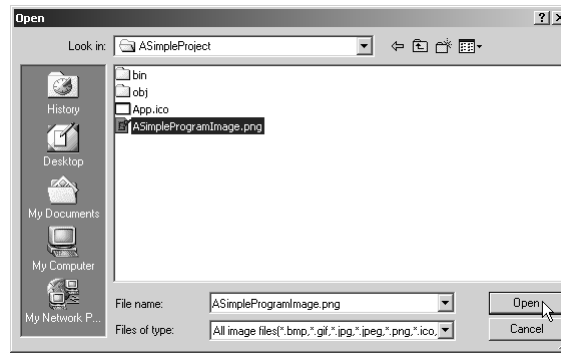


Fig. 2.27 Selecting an image for the picture box.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

44

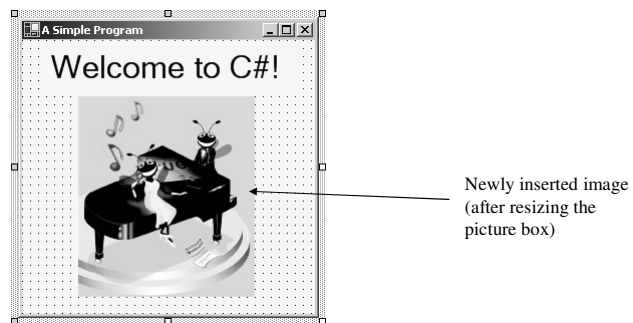


Fig. 2.28 Picture box after the image has been inserted.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

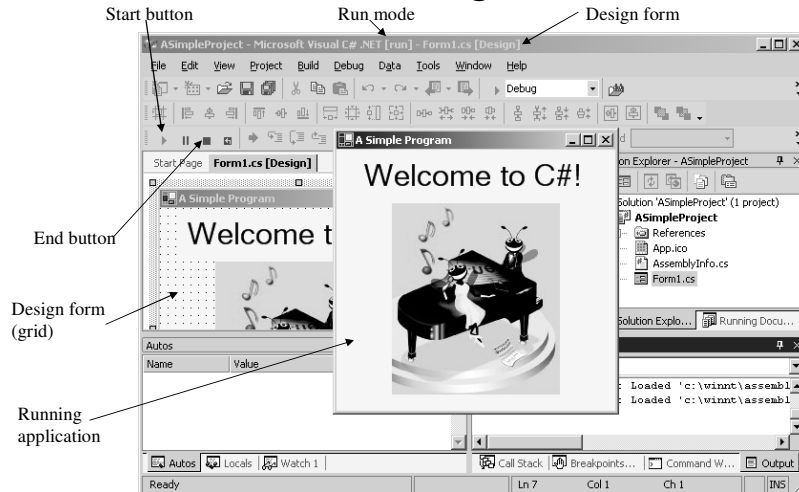


Fig. 2.29 IDE in run mode, with the running application in the foreground.

© 2002 Prentice Hall. All rights reserved.

2.6 Simple Program: Displaying Text and an Image

- Terminating the program
 - Click the **close** button (**x** in the top right corner)
 - Or click the **End** button in the toolbar

© 2002 Prentice Hall. All rights reserved.