# Chapter 2 - Introduction to the Visual Studio .NET IDE

## <u>Outline</u>

- 2.1 Introduction
- 2.2 Overview of the Visual Studio .NET IDE
- 2.3 Menu Bar and Toolbar
- 2.4 Visual Studio .NET IDE 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**

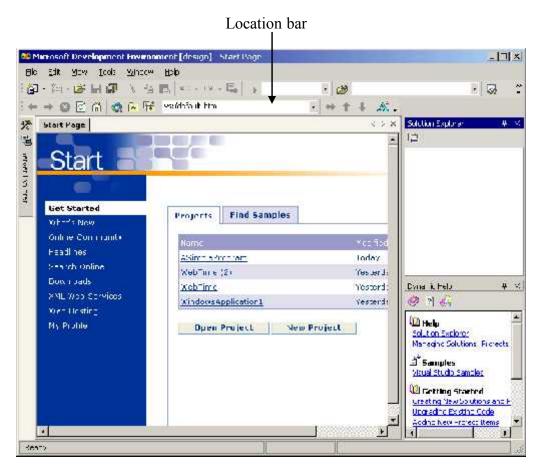
- Visual Studio .NET
  - Microsoft's Integrated Development Environment (IDE)
  - Used to create, run and debug programs (applications)
- Visual programming
  - Dragging and dropping predefined building blocks into place to create a simple Visual Basic program

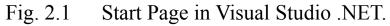


# 2.2 Overview of the Visual Studio .NET IDE

- Start Page
  - Helpful links to get around
    - Get Started
    - What's New
    - Downloads
    - My Profile
  - Displays recent projects
  - Displays Open Project and New Project buttons









| Image: Setup and Deployment Projects       Windows       Class Library         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects         Image: Setup and Deployment Projects       Image: Setup and Deployment Projects       Image: Setup and Deployment Projects< | Windows<br>Control Library |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| ASP.NET Web ASP.NET Web<br>Application Service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Web Control<br>Library     |
| A project for creating an application with a Windows user interface Name: WindowsApplication1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |
| Location: C:\My Documents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Browse                     |
| Project will be created at C:\My Documents\WindowsApplication1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |





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### Fig. 2.3 Design view of Visual Studio .NET IDE.



#### <u>File Edit Yiew Project Build Debug Data Format Tools Window Help</u>

#### Fig. 2.4 Visual Studio .NET IDE menu bar.



| Menu               | Description                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| File               | Contains commands for opening projects, closing projects, printing project data, etc.                                                               |
| Edit               | Contains commands such as cut, paste, find, undo, etc.                                                                                              |
| View               | Contains commands for displaying IDE windows and toolbars.                                                                                          |
| Project            | Contains commands for managing a project and its files.                                                                                             |
| Build              | Contains commands for compiling a program.                                                                                                          |
| Debug              | Contains commands for <i>debugging</i> (i.e., identifying and correcting problems in a program) and running a program.                              |
| Data               | Contains commands for interacting with <i>databases</i> (i.e., files that store data, which we discuss in Chapter 19, Databases, SQL and ADO .NET). |
| Format             | Contains commands for arranging a form's controls.                                                                                                  |
| Tools              | Contains commands for accessing additional IDE tools and options that enable customization of the IDE.                                              |
| Windows            | Contains commands for arranging and displaying windows.                                                                                             |
| Help               | Contains commands for accessing the IDE's help features.                                                                                            |
| <b>Fig. 2.5</b> Su | mmary of Visual Studio .NETIDE menus.                                                                                                               |

### Fig. 2.5 Summary of Visual Studio .NET IDE menus.





#### Fig. 2.6 Toolbar demonstration.



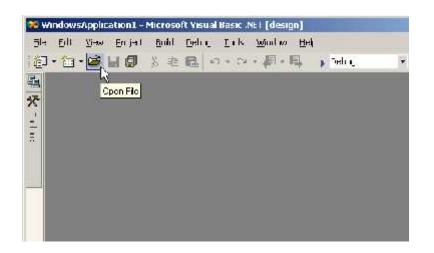


Fig. 2.7 Tool tip demonstration.



Fig. 2.8 Toolbar icons for three Visual Studio .NET IDE windows.



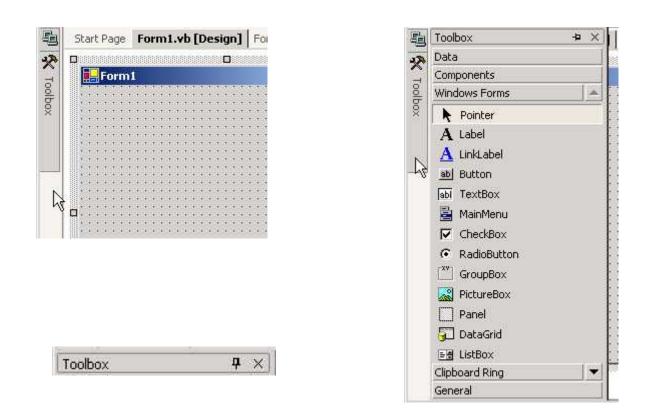


Fig. 2.9 Demonstrating the auto-hide feature.



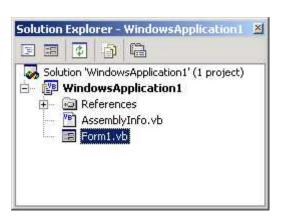


Fig. 2.10 Solution Explorer with an open solution.

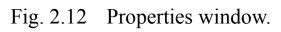






Toolbox window.

| Form1 System.Winde                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | una Correa Correa | 100 |
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| Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Form1             |     |
| 3 Rebavior                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |     |
| AllowDrop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Falso             |     |
| Contex:Menu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | (none)            |     |
| Enabled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | True              |     |
| ImeMode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NuCcritro         |     |
| 3 Configurations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |     |
| ∃ (DynamicProperties)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |     |
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| 3 Design                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |     |
| (Name)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Form1             |     |
| DrawGric                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | True              |     |
| I GridSize                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8, δ              |     |
| Locked                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | False             |     |
| ShapToGrid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Truc              |     |
| 3 Focus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |     |
| Causes Val dation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | True              |     |
| 🗆 Layout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |     |
| Autobicale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Inie              | *   |





| Command        | Description                                                                             |
|----------------|-----------------------------------------------------------------------------------------|
| Contents       | Displays a categorized table of contents in which help articles are organized by topic. |
| Index          | Displays an alphabetized list of topics through which the programmer can browse.        |
| Search         | Allows programmers to find help articles based on search keywords.                      |
| Fig. 2.13 Help | ) menu commands.                                                                        |

Fig. 2.13 Help menu commands.



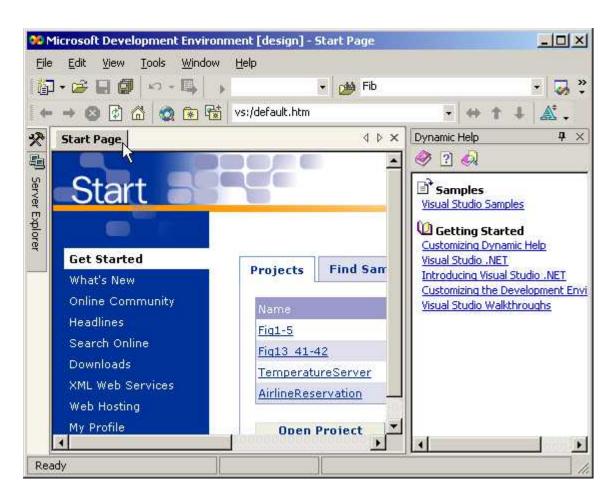
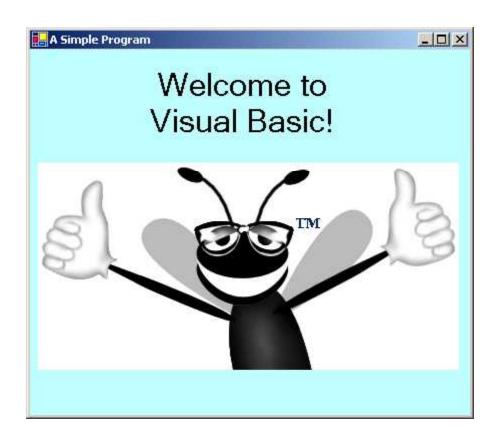
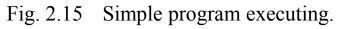


Fig. 2.14 Dynamic Help window.







| ew Project                                 |                                                                                                    |                                                                                                                  | 00 0-1                                               |
|--------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Project Types:                             |                                                                                                    | Templates:                                                                                                       | 000                                                  |
| Visual C<br>Visual C<br>Setup a<br>Other P | asic Projects<br># Projects<br>++ Projects<br>nd Deployment Projects<br>rojects<br>tudio Solutions | Windows<br>Application<br>ASP.NET Web<br>Application<br>Class Library<br>Class Library<br>ASP.NET Web<br>Service | Windows<br>Control Library<br>Web Control<br>Library |
| A project for cre                          | sating an application with a Win                                                                   | dows user interface                                                                                              |                                                      |
| Jame:                                      | ASimpleProgram                                                                                     |                                                                                                                  |                                                      |
| ocation:                                   | C:\MyProjects                                                                                      | •                                                                                                                | Browse                                               |
| Project will be cro                        | eated at C:\MyProjects\ASimple                                                                     | eProgram.                                                                                                        |                                                      |
| - 9403                                     | - I                                                                                                | OK Cancel                                                                                                        | Help                                                 |

Fig. 2.16 Creating a new Windows Application.



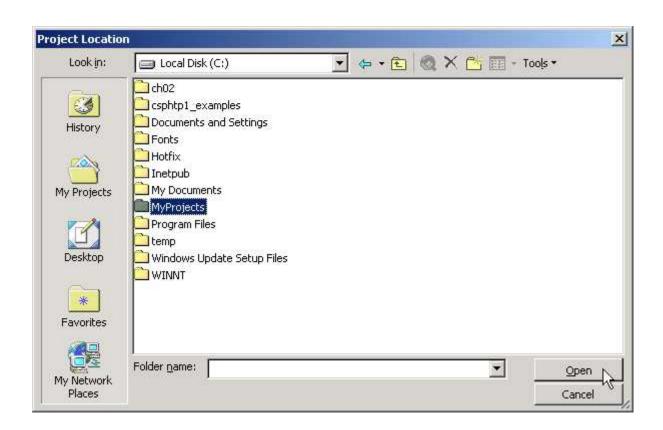


Fig. 2.17 Setting the project location in the Project Location dialog.



| Properties<br>Form1 System.Window | Form1 System.Windows.Forms.Form |      |  |  |  |  |  |  |  |
|-----------------------------------|---------------------------------|------|--|--|--|--|--|--|--|
|                                   |                                 |      |  |  |  |  |  |  |  |
| FormBorderStyle                   | Sizable                         | ٠    |  |  |  |  |  |  |  |
| RightToLeft                       | No                              | 1000 |  |  |  |  |  |  |  |
| Text                              | A Simple Program                |      |  |  |  |  |  |  |  |
| 🗄 Behavior                        |                                 |      |  |  |  |  |  |  |  |
| AllowDrop                         | False                           |      |  |  |  |  |  |  |  |
| ContextMenu                       | (none)                          | -    |  |  |  |  |  |  |  |
| Text<br>The text contained in the | e control.                      |      |  |  |  |  |  |  |  |

Fig. 2.18 Setting the form's Text property.



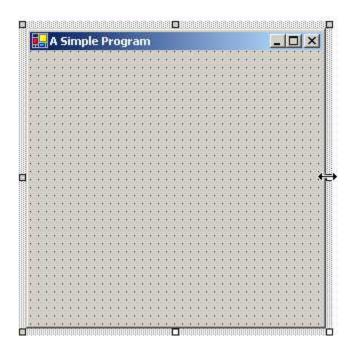


Fig. 2.19 Form with sizing handles.



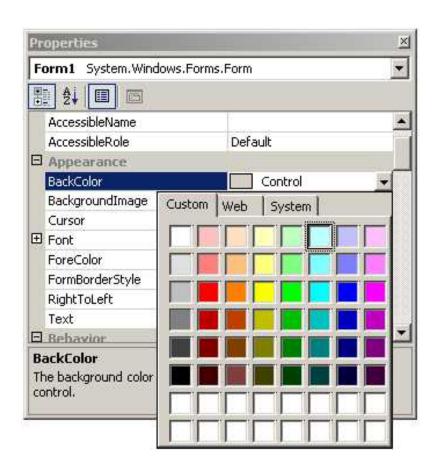


Fig. 2.20 Changing the form's BackColor property.



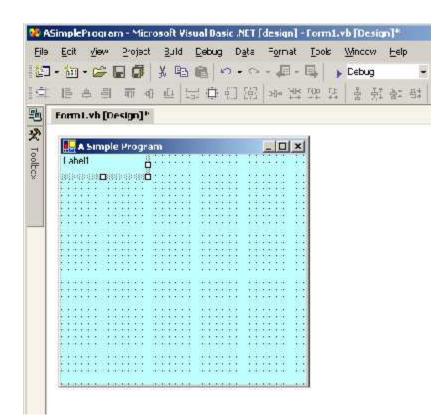


Fig. 2.21 Adding a label to the form.



| ļ  | - | A  | 9  | i  | m  | p  | le | F  | r  | 0   | gı | a  | in | n    |    |    |    |     |    |    |    |    |     |            |    |    |    |    | IJ | -  |    |    |    | ×  |    |
|----|---|----|----|----|----|----|----|----|----|-----|----|----|----|------|----|----|----|-----|----|----|----|----|-----|------------|----|----|----|----|----|----|----|----|----|----|----|
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| 5  | 5 | 0  | 5  | 5  | 9  | S. | S. | E  |    |     |    |    |    |      |    |    | Ę  | 1   |    |    |    |    |     |            |    |    |    | ÷. | ٥. | ٥. | ٥. | ٥. | ٥. | 1  | 9  |
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| 2  | 9 | 0  | 9  | 9  | 9  | 2  | 2  | 9  | 2  | 2   | 2  | 2  | 2  | 2    | 2  | 9  | 9  | 9   | 2  | 2  | 2  | 2  | 2   | 2          | 2  | 2  | ٥. | 2  | ٥. | 2  | ٥. | ٥. | ٥. |    | 9  |
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|    | 4 | 1  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4   | 4  | 4  | 4  | 4    | 4  | 4  | 4  | 4   | 4  | 4  | 4  | 4  | 4   | 4          | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  |
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| 1  | 1 |    | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 3   | 3  | 3  | 3  | 1    | 1  | 1  | 1  | 1   | 1  | 3  | 1  | 1  | 3   | 3          |    | 3  |    | 3  |    | *  |    |    |    | •  | 1  |
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| į, |   | 0  | S. | S. |    | 1  | 1  |    | 1  |     |    |    | ÷. | 1    | 1  |    | S. |     | 1  |    | 1  | 1  |     |            |    |    |    |    |    |    |    |    |    |    | 0  |
| 5  |   | 0  |    |    |    |    |    |    |    |     |    |    |    |      |    |    |    |     |    |    |    |    |     |            |    |    |    |    |    |    |    |    |    |    | 1  |
| į. |   | 0  | 9  | 9  |    |    |    |    |    |     |    |    |    |      |    |    | 9  |     |    |    |    |    |     |            |    |    |    |    |    |    |    |    |    |    | 2  |
|    |   | 2  | 2  | 2  |    |    |    |    |    |     |    |    | ÷. |      |    |    | 2  |     |    |    |    |    |     |            |    |    |    |    |    |    |    |    |    |    | 1  |
|    |   | 2  | 2  | 2  |    |    |    |    |    |     |    |    |    |      |    |    | 2  |     |    |    |    |    |     |            |    |    |    |    |    |    |    |    |    |    | į, |
|    |   | 1  | 1  | 1  |    | 2  | 2  |    | 2  | 2   | 2  | 2  | 2  | 2    | 2  |    | 1  |     | 2  | 2  | 2  | 2  | 2   | 2          | 4  | 2  | 4  | 2  | 4  | 4  | 4  | 4  | 4  |    | 2  |
|    |   | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 4   | 4  | 4  | 1  | 1    | 1  | 1  | 1  | 1   | 1  | 4  | 1  | 1  | 4   | 4          | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  | 4  |    | 1  |
|    |   | 1  | 1  | 1  | 1  |    |    | 1  |    | 4   | 4  | 4  | 2  |      |    | 1  | 1  | 1   |    | 4  |    |    | 4   | 4          |    | 4  |    | 4  |    |    |    |    |    |    | 1  |
| 2  | 2 | 22 | 2  | 2  | 22 | 22 | 22 | 22 | 22 | 22  | 22 | 22 | 2  | 22   | 22 | 22 | 2  | 22  | 22 | 22 | 22 | 22 | 22  | 22         | 22 | 22 | 22 | 22 | 22 | 2  | 22 | 22 | 22 | 20 | 2  |

Fig. 2.22 Label in position with its Text property set.



| Properties        | 2                              |
|-------------------|--------------------------------|
| Label1 System.Win | dows.Forms.Label               |
|                   |                                |
| Cursor            | Default                        |
| FlatStyle         | Standard                       |
| 🗄 Font            | Microsoft Sans Serif, 8.25pt 🔜 |
| ForeColor         | ControlText                    |
| Image             | (none)                         |

Fig. 2.23 Properties window displaying the label's properties.



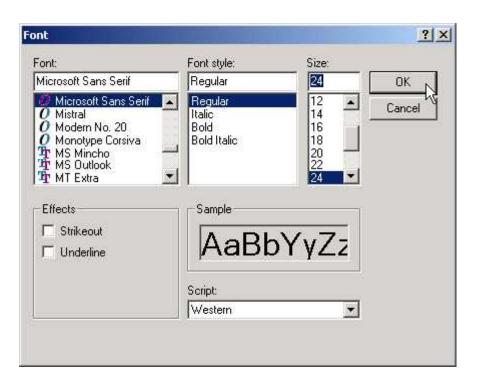


Fig. 2.24 Font window for selecting fonts, styles and sizes.



| Properties                                     |                          |
|------------------------------------------------|--------------------------|
| Label1 System. Windows. Form                   | s.Label 🔤                |
| 11 di 🗐 🖻                                      |                          |
| Text                                           | Welcome to Visual Basic! |
| TextAlign                                      | TopLeft 👻                |
| UseMnemonic                                    |                          |
| 🛛 Behavior                                     |                          |
| AllowDrop                                      |                          |
| TextAlign<br>Determines the position of the te |                          |

Fig. 2.25 Centering the label's text.



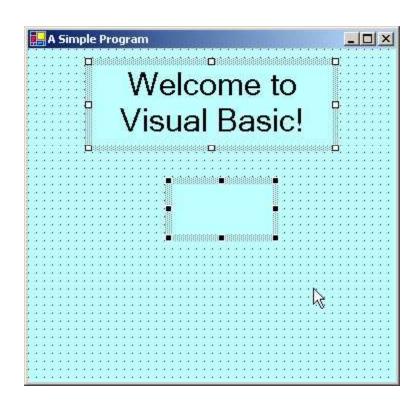


Fig. 2.26 Inserting and aligning the picture box.



| Properties         |                                |
|--------------------|--------------------------------|
| PictureBox1 System | 1.Windows.Forms.PictureBox 🗾 🝷 |
| き<br>24 🔲 🖻        |                                |
| BorderStyle        | None                           |
| Cursor             | Default                        |
| Image              | (none)                         |
| Behavior           |                                |
|                    | ile (a)                        |

Fig. 2.27 Image property of the picture box.



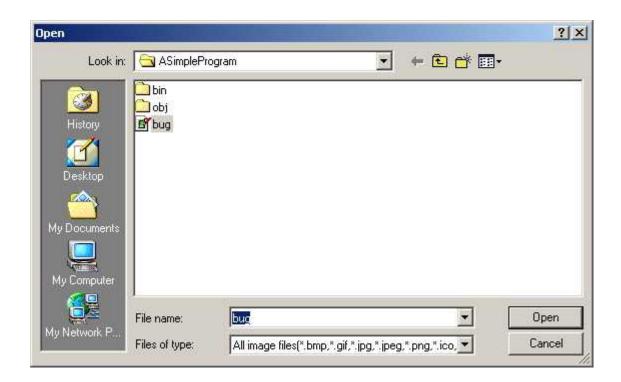
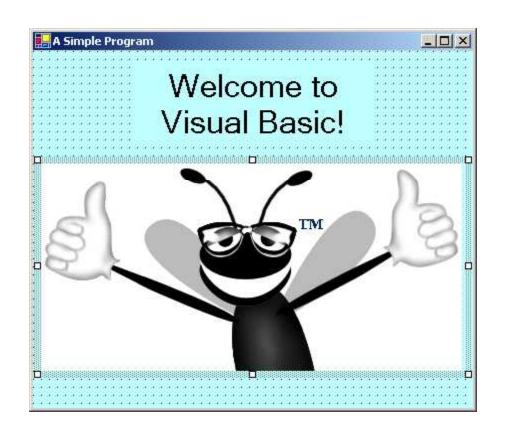
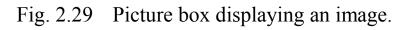


Fig. 2.28 Selecting an image for the picture box.









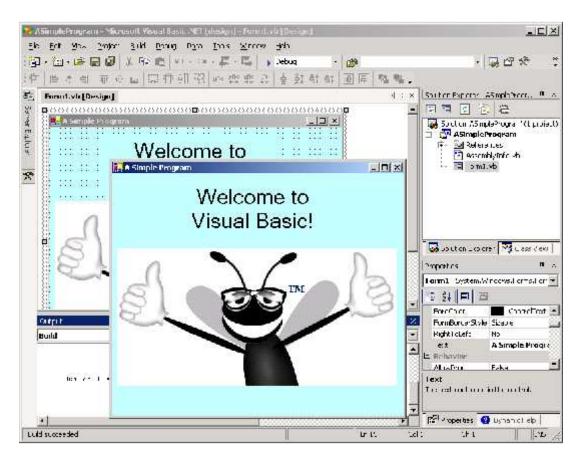


Fig. 2.30 IDE in run mode, with the running application in the foreground.

