Introduction to the Visual Studio .NET
Integrated Development Environment IDE

CSC 211 Intermediate Programming
Visual Studio .NET Integrated Development Environment (IDE)

• The **Start Page** (Fig. 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
Visual Studio .NET Integrated Development Environment (IDE)

Fig. 1 Start Page in Visual Studio .NET, with an empty project list.
Visual Studio .NET Integrated Development Environment (IDE)

Fig. 2 New Project dialog.
Visual Studio .NET Integrated Development Environment (IDE)

Fig. 3 Visual Studio .NET environment after a new project has been created.
Menu Bar and Toolbar

• The menu bar (Fig. 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. 5

• The toolbar (Fig. 6)
  – Contains commonly used commands as icons (Fig. 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
      – Tool tips briefly state what the icons are or do.
Menu Bar and Toolbar

Fig. 4   Visual Studio .NET menu bar.
## Menu Bar and Toolbar

<table>
<thead>
<tr>
<th>Menu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>File</strong></td>
<td>Contains commands for opening projects, closing projects, printing files, etc.</td>
</tr>
<tr>
<td><strong>Edit</strong></td>
<td>Contains commands such as cut, paste, find, undo, etc.</td>
</tr>
<tr>
<td><strong>View</strong></td>
<td>Contains commands for displaying IDE windows and toolbars.</td>
</tr>
<tr>
<td><strong>Project</strong></td>
<td>Contains commands for adding features, such as bitmap files, to the project.</td>
</tr>
<tr>
<td><strong>Build</strong></td>
<td>Contains commands for compiling a program.</td>
</tr>
<tr>
<td><strong>Debug</strong></td>
<td>Contains commands for debugging and executing a program.</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Contains commands for additional IDE tools and options for customizing the environment.</td>
</tr>
<tr>
<td><strong>Window</strong></td>
<td>Contains commands for arranging and displaying windows.</td>
</tr>
<tr>
<td><strong>Help</strong></td>
<td>Contains commands for getting help.</td>
</tr>
</tbody>
</table>

*Fig. 5 Visual Studio .NET menus summary.*
Menu Bar and Toolbar

Toolbar icon (indicates a command to create a new project)

Fig. 6 Visual Studio .NET toolbar.
Menu Bar and Toolbar

Fig. 7 Tooltip demonstration.
Visual Studio .NET Windows

Fig. 8 Toolbar icons for two Visual Studio .NET windows.
Solution Explorer

• The Solution Explorer (Fig. 9)
  – Lists all files in the solution
  – Displays the contents or 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 boxes expand and collapse the tree
    • Can also double click on the file name to expand/collapse
Solution Explorer

Fig. 9 Solution Explorer window.
Toolbox Window

- The **Toolbox** (Fig. 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. 2.13)
    - Mouse over it to expand it
    - When the mouse is no longer over it, the toolbar goes away
    - The pin icon is used disable auto hide
Toolbox Window

Fig. 10 Toolbox window.
Fig. 11 Demonstrating window auto-hide.
Properties Window

- **The Properties window** (Fig. 12)
  - Manipulate the properties of a project or a class
  - Each project has its own set of properties
    - Properties can include full path name and its dependences
  - Left column is the property
  - Right column is the property value
  - Icons
    - The *Alphabetic* icon arranges the properties alphabetically
    - The *Categorized* icon arranges the properties by category
Fig. 12 Properties window.
Simple Program: Displaying Text and an Image

Welcome to Visual C++ .NET

Fig. 13 Simple program as it executes.
Simple Program: Displaying Text and an Image

Visual C++ Projects folder
Windows Forms Application (.NET)

Description of selected project type

Fig. 14 New Project dialog
Simple Program: Displaying Text and an Image

Fig. 15 Visual Studio .NET after a Windows application has been created.
Simple Program: Displaying Text and an Image

Fig. 16   Setting the form’s **Text** property.
Simple Program: Displaying Text and an Image

• Resize the form (Fig. 17)
  – 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. 18)
  – The **BackColor** determines the form’s background color
    • Dropdown arrow is used to set the color

• Add a Label control to the form (Fig. 19)
  – 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
Simple Program: Displaying Text and an Image

Fig. 17   Form with sizing handles.
Simple Program: Displaying Text and an Image

Fig. 18 Changing property **BackColor**.
Simple Program: Displaying Text and an Image

Fig. 19 Adding a new label to the form.
Simple Program: Displaying Text and an Image

• Set the label’s text (Fig. 20)
  – 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 this example

• Set the label’s font size and align text (Fig. 21)
  – The Font property changes the label’s text (Fig. 22)
  – The TextAlign property to align the text (Fig. 23)

• Add a picture box to the form (Fig. 24)
  – Picture boxes are used to display pictures
  – Drag the picture box onto the form
Simple Program: Displaying Text and an Image

![Image of a label centered with updated Text property](image)

**Fig. 20** Label in position with its Text property set
Simple Program: Displaying Text and an Image

Fig. 21 **Properties** window displaying the label’s properties.
Simple Program: Displaying Text and an Image

Fig. 22  **Font** window for selecting fonts, styles and sizes.
Simple Program: Displaying Text and an Image

Fig. 23 Centering the text in the label.
Simple Program: Displaying Text and an Image

Fig. 24 Inserting and aligning the picture box.
Simple Program: Displaying Text and an Image

• Insert an image
  – The **Image** property sets the image that appears (Fig. 25)
    • Pictures should be of type .gif, .jpeg, or .png (Fig. 26)
  – The picture box is resizable to fit the entire image (Fig. 27)

• Save the project
  – In the **Solution Explorer** select **File > Save**
  – Using **Save All** will save the source code and the project

• Run the project
  – 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
Simple Program: Displaying Text and an Image

Fig. 25  **Image** property of the picture box.
Simple Program: Displaying Text and an Image

Fig. 26 Selecting an image for the picture box.
Simple Program: Displaying Text and an Image

![Welcome to Visual C++ .NET](after resizing the picture box)

Fig. 27 Picture box after the image has been inserted.
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