

This five-day course provides a practical, hands-on introduction to GUI development using Windows Forms and C#. The course introduces database programming in Windows, including use of Language Integrated Query (LINQ). The course covers powerful newer Windows Forms features, such as controls, data binding, and ClickOnce deployment for creating smart client applications. It covers interoperability with the next-generation Windows client framework, Windows Presentation Foundation (WPF). The course begins with a fundamental discussion of Windows Forms architecture and programming simple Windows Forms applications “from scratch.” Then the use of Visual Studio 2010 and the Forms Designer is introduced, which is used throughout the remainder of the course. Simple controls are covered, such as buttons, labels, textboxes, checkboxes, radio buttons and group boxes. List controls are surveyed, including list box, combo box, list view, and DomainUpDown. Dialogs are discussed in detail, including modal and modeless dialogs and associated controls. Menus, toolbars and status bars are covered. Advanced topics are introduced, including parent/child and owner/owned relationships, programming the Clipboard, visual inheritance, the BackgroundWorker component, and ClickOnce deployment. Advanced controls are introduced, including the tree view, tab control and SplitContainer. Resources are discussed, including their use in localization.

Course Objectives:

- Understand the fundamentals of Windows Forms architecture
- Acquire proficiency in the use of Visual Studio to create professional class Windows
- Gain a thorough grounding in the important controls provided by Windows Forms
- Learn how to implement dialogs, menus, toolbars and status bars
- Learn how to use advanced controls such as tree views, splitters and tabbed dialogs
- Learn how to implement data access using ADO.NET and binding of controls
- Use Language Integrated Query (LINQ) to access data from Windows Forms
- Learn how to interoperate between Windows Forms and WPF

Audience: This course is designed for experienced application developers and architects responsible for Windows applications in a Microsoft environment

Prerequisites: Experience programming the .NET Framework using C#.

Number of Days: 5 days

1	Introduction to Windows Forms What Are Windows Forms? Windows Forms Class Hierarchy Control Class Form Class Form Class Methods Building a Form Application Class Simple Windows Application Using the .NET Framework SDK	Using Controls Common Control Properties Ambient Control Properties Common Control Events Trapping Events Using the Button Control HelloWorld – Step 3 Using the Label Control Chapter Section Chapter Section
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	Using the TextBox Control MSDN Documentation		
2	Visual Studio and the Forms Designer Visual Studio Using the Forms Designer Examining the Forms Designer Generated Code Designing "Pretty" Forms Designing "Easy-to-Use" Forms Setting the Tab Order Defining Keyboard Shortcuts Defining Default and Cancel Buttons		
3	Using Controls Controls Using the TextBox – Again Using the Clipboard Making Selections Using the CheckBox Using the RadioButton with a GroupBox Working with Ranges Using the NumericUpDown Using the TrackBar Using the ProgressBar Working with Dates Using the MonthCalendar Using DateTimePicker Other Controls Tracing Debug and Trace Classes Viewing Trace Output Debug Statements Debug Output WriteLine Syntax		
4	List Controls Working with Lists Using a ListBox Selected Items Selected Indices Other ListBox Features Adding and Removing Items Dynamically Using the ComboBox Storing Objects in List Controls Using the DomainUpDown Control Using a ListView Adding Columns to a ListView		
		5	Adding items to a ListView Working with Dialogs Modal vs. Modeless Dialogs Message Box MessageBox Show Method Closing a Form Custom Dialogs Modal Dialogs Creating a New Form Common Dialog Properties Designing the Form Configuring the DialogResult Displaying the Form Accessing Data on the Form Changing the Behavior of a Button's DialogResult Displaying Errors with the ErrorProvider Control Validation Using the ErrorProvider Modeless Dialogs Designing the Modeless Dialog Displaying the Form Managing the Relationship between the Parent and Modeless Dialog Programming the Apply and Close Buttons Programming the Apply Button Managing the Number of Instances of the Modeless Dialog Common Dialogs Using the Common Dialog Controls
		6	Menus, Toolbars and Status Bars Menus MenuStrip Control Attaching a Menu to a Form Configuring Items in a Menu Responding to Menu Events DropDownOpening Event ContextMenuStrip Control Context Menu Events Handling Multiple Events Status Bars A Quick Status Bar Toolbars Importing Images Associating an Event Handler

	Image and Text on Buttons		.NET Support for Cultures
7	Advanced Windows Forms Topics		Changing the Current Culture
	Forms and Controls		Building Localizable Forms
	Parent/Child Relationships		MainForm.resx File
	Owner/Owned Relationships		Code for Localization
	Top-Most Forms		Visual Studio Localization Support
	Clipboard Object	10	Applications and Settings
	Placing Data on the Clipboard		The Application Class
	Retrieving Data from the Clipboard		Starting and Stopping Applications
	Visual Inheritance		Application Events
	Building the Base Form		Logging to a File
	BackgroundWorker Component		Closing a Window
	BackgroundWorker Code		Processing Windows Messages
	ClickOnce Deployment		Filtering Messages
	Web Examples Setup		Configuration Files
	Publishing a ClickOnce App		Reading Configuration Files
	Uninstalling the Application		Configuration File and Visual Studio
	Installing the Application		Application Settings
8	Using Advanced Controls		Application Settings Using Visual Studio
	Panel Control		Application Configuration File
	TreeView Control		User Configuration File
	TreeView Properties		Manual Application Settings
	TreeView Methods		Default Values of Settings
	TreeView Events		Accessing the Registry
	TreeNode Class	11	Data Access
	Adding Nodes		ADO.NET
	Removing Nodes		.NET Namespaces
	Iterating Through Nodes		ADO.NET Architecture
	ImageList		.NET Data Providers
	Image Collection Editor		SmallPub Database
	Tab Control		DataSet Architecture
	Controls on Tab Pages		Why DataSet?
	Selected Index		DataSet Components
	Tab Control Event Handling		XML File Schema Definition
	SplitContainer		XML File Data
	WebBrowser Control		Reading and Writing XML
9	Resources		Accessing a DataSet
	Resources		Adding a New Row
	Image Resources		Searching and Updating a Row
	Loading the Bitmaps		Deleting a Row
	Embedded Resources		Data Adapters
	Accessing Embedded Resources		Language Integrated Query (LINQ)
	Creating String Resources		Bridging Objects and Data
	Strings in the Program		Using Server Explorer
	Accessing Resources from Code		Object Relational Designer
	Cultures and Internationalization		

- IntelliSense
- Basic LINQ Query Operators
- Obtaining a Data Source
- Filtering
- Ordering
- Aggregation
- Obtaining Lists and Arrays
- Deferred Execution
- Modifying a Data Source
- Performing Inserts via LINQ to SQL
- Performing Deletes via LINQ to SQL
- Performing Updates via LINQ to SQL

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Data Binding

- Data Binding Concept
- Simple Data Binding
- Binding to a List
- Binding to a DataGrid
- DataView
- Filtering and Sorting
- DataView and Data Binding
- Column Formatting
- Data Binding with BindingSource
- BindingSource Architecture
- Binding to a List
- Setting up the Bindings
- Category Class
- Code in the From
- DataGridView Control
- Performing a Query

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Windows Forms and WPF

Interoperation

- Windows Presentation Foundation
- What is XAML?
- Default Namespace
- XAML Language Namespace
- Code-Behind File
- Interoperating with Windows Forms
- Add a Form to a WPF Application
- Add a WPF Window to a Windows Forms Application
- Mixing WPF and Windows Forms in the Same Window
- Hosting a Windows Forms Control Using Code
- WindowsFormsHost via Code
- Windows Forms MonthCalendar