

Windows Forms using C#

Course No.

9415

Description

This course provides a practical, hands-on coverage of developing Windows applications using Windows Forms and C#.

The course begins with a fundamental discussion of Windows programming using Windows Forms and the .NET Framework SDK. Then the use of Visual Studio .NET and the Form Designer is introduced, which is used throughout the remainder of the course. Forms are covered and issues of user interface design are discussed. Simple controls are covered, such as buttons, labels, textboxes, checkboxes, radio buttons and group boxes. Additional controls are surveyed, including list view and tree view controls. Dialogs are discussed in detail, including modal and modeless dialogs and associated controls.

Menus, toolbars and status bars are covered. Resources are discussed, including their use in localization. Application settings are covered, including use of configuration files and the Registry. An introduction to GDI+ covers the fundamentals of painting in Windows and the use of pens, brushes, bitmaps and fonts. Printing is covered using both intrinsic classes in the .NET Frameworks and Crystal Reports.

File I/O is covered, including use of stream classes and serialization. Data Access is covered, including the use of data sets and data binding.

The course concludes with a discussion of Web deployment, including Code Access Security, and an overview of multithreading in Windows applications.

Prerequisites

A basic knowledge of programming the .NET Framework using C#. Previous exposure to ADO.NET would be helpful for the chapter on data binding.

Objectives

- Understand the fundamentals of Windows Forms architecture and how to program using Windows Forms and the .NET Framework SDK
- Acquire proficiency in the use of Visual Studio .NET to create professional class Windows applications
- 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 draw and print in your Windows Forms applications
- Understand the use of resources and application settings in Windows Forms applications
- Acquire a working knowledge of data access and data binding
- Learn practical issues in modern Windows applications, including the use of Web deployment and multithreading

System Requirements

Course exercises require Microsoft Visual Studio .NET 2003 on Windows 2000 or XP. Internet Information Services and SQL Server should be installed. See the appropriate course Setup Guide for details.

A good minimal hardware profile for this course would have a Pentium 500-MHz or equivalent CPU, 256 MB of RAM, and at least 2 GB of free disk space for tools installation and courseware.

Duration

4 days

Course Contents

1. Introduction to Windows Forms

- User Interface Programming
- Windows Forms Class Hierarchy
- Using .NET Framework SDK
- A Simple Form
- Drawing Text
- Windows Forms Event Handling
- Buttons
- Labels and Textbox Controls

2. Visual Studio .NET and Form Designer

- Using Visual Studio .NET
- Design Window and Code Window
- Adding Event Handlers
- Overriding Virtual Methods of a Form
- Code Generated by Form Designer

3. Forms

- Modal and Modeless Forms
- Form Size and Location
- Child Controls
- Layout
- Multiple Document Interface
- UI Design

4. More Controls

- Checkbox, Radio Button, and Group Box Controls
- Listbox and Combo box
- ListView control
- TreeView control
- Numeric Up/Down control
- Trackbar control
- Progress control
- MonthCalendar control
- DateTimePicker control

5. Dialogs

- Modal Dialogs
- Dialogs and Controls
- Modeless Dialogs
- Using Common Dialog Controls

6. Menus, Toolbars and Status Bars

- Building a main menu and context menus
- Building a toolbar
- Building a status bar
- Using the Timer control

7. Resources

- Assembly Manifest
- Typed Resources
- Resource Managers
- Resource Localization

8. Applications and Settings

- Application Class
- Application Lifetime and Events
- Compile-Time Settings
- Configuration Files
- Registry

9. Drawing and Printing

- Windows Forms Painting
- GDI+ Structures
- Pens
- Brushes
- Bitmaps
- Metafiles
- Text and Fonts
- Printing using PrintDocument
- Building a report using the Crystal Reports

10. File I/O and Serialization

- Streams
- Files
- Serialization

11. Data Access and Data Binding

- Data Sets and ADO.NET
- Visual Studio Data Designer
- Data Binding
- Using the DataGrid with DataTables

12. Web Deployment

- Application Download
- Versioning
- Code Access Security

13. Multithreading

- Overview of threading issues
- Creating threads
- Starting and stopping threads
- Pausing and resuming threads
- Synchronizing threads
- Scheduling threads

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