

Course ID

TK2349

Course Duration

5 days

Course Title

Programming with Microsoft .NET Framework (Microsoft Visual C# .NET)

Related Courses

- Introduction to C# Programming with Microsoft .NET (TK2609, 5 days)

Aimed At

Experienced, professional software developers including those employed by independent software vendors or those who work on corporate enterprise development teams.

Group Size

5-15

Prerequisites

- Introduction to C# Programming for the Microsoft .NET Platform (TK2124, 5 days)

**Course
In a Nutshell**

This course is intended to help professional application developers understand the Microsoft .NET Framework. In addition to providing an overview of the .NET Framework and an introduction to key concepts and terminology, the course includes a series of labs that introduce and explain the .NET Framework functionality used for the coding, debugging, tuning, and deployment of applications. Discussed are components, deployment and versioning, common type systems, collections, strings, arrays, delegates, events, memory and resource management, data streams, files, serialization, remoting, and XML web services.

Customize It!

Tailor this course to your specific background and job requirements at little to no extra cost. Let us know how we can help you get more out of this customizable workshop.

Learn How To

- List the major elements of the .NET Framework and explain how they fit into the .NET platform
- Explain the main concepts behind the common language runtime and use the features of the .NET Framework to create a simple application
- Create and use components in Windows forms-based and ASP.NET-based applications
- Use the deployment and versioning features of the .NET runtime to deploy multiple versions of a component
- Create, use and extend types by understanding the common type system architecture
- Create classes and interfaces that are functionally efficient and appropriate for given programming scenarios
- Use the .NET Framework class library to efficiently create and manage strings,

- arrays, collections and enumerators
- Use delegates and events to make an event-sender object signal the occurrence of an action to an event-receiver object
- Describe and control how memory and other resources are managed in the .NET Framework
- Read from and write to data streams and files
- Use the basic request/response model to send and receive data over the Internet
- Serialize and deserialize an object graph
- Create distributed applications by means of XML web services and object remoting

Course Outline

- Overview of the Microsoft .NET Framework
 - Describing the .NET Framework and its components
 - Overview of namespaces
 - Relationship between the .NET Framework class library and namespaces
- Introduction to Managed Execution Environment
 - Writing a .NET application
 - Compiling and running a .NET application
 - Concepts of garbage collection
- Working with Components
 - Introduction to key .NET Framework development technologies
 - Creating a simple .NET Framework component
 - Implementing structured exception handling
 - Creating a simple console client
 - Creating an ASP.NET client
- Deployment and Versioning
 - Introduction to application deployment
 - Packaging and deploying simple and componentized applications
 - Application deployment scenarios
 - Installing and removing assemblies from the global assembly cache
 - Related topics and tools
- Common Type Systems
 - Introduction to the common type system
 - Describing the difference between value types and reference types
 - Elements of the common type system
 - Object-oriented characteristics
- Working with Types
 - System.Object class functionality
 - Specialized constructors
 - Type operations
 - Interfaces
 - Managing external types

- String, Arrays and Collections
 - Parsing, formatting, manipulating and comparing strings
 - Terminology of collections
 - .NET Framework arrays
 - .NET Framework collections
- Delegates and Events
 - Explanation and use of delegates
 - Explanation and use of multicast delegates
 - Explanation of events
 - Implementing events that conform to .NET Framework guidelines
 - When to use delegates, events, and interfaces
- Memory and Resource Management
 - Basics of memory management
 - Management of non-memory resources
 - Managing implicit resources
 - Managing explicit resources
 - Optimizing garbage collection
- Data Streams and Files
 - Using stream objects
 - Using readers and writers
 - Basic file I/O
 - Explanation of the key features of the .NET Framework's isolated storage mechanism
- Internet Access
 - Internet application scenarios
 - The WebRequest and WebResponse model
 - Application protocols
 - Handling errors
 - Security
 - Best practices
- Serialization
 - Serialization scenarios
 - Serialization attributes
 - Object graph
 - Serialization process
 - Serialization example
 - Deserialization example
 - Custom serialization
 - Custom serialization example
 - Security issues
- Remoting and XML Web Services
 - Writing and configuring distributed applications that use .NET remoting

- Creating an XML web service by using Visual Studio .NET and ASP.NET
- Consuming an XML web service by using the web services description language tool (WSDL.exe)

How You Will Learn

- An experienced software developer and instructor will teach this class workshop style.
- Hands-on exercises will help clarify and reinforce every major concept.
- The class will utilize real-life examples, applications, and case studies to enrich the instruction and drive home the important points.
- You'll learn the "secrets of the pros" including the dos and don'ts, tricks of the trade, and also the hidden pitfalls.
- The participant handbook used in class will serve as a useful refresher and reference upon your return to the job.

Revised

April 6, 2007