

# Overview of .NET Framework

Microsoft promises that .NET delivers easier integration within and between businesses, while creating opportunities to more meaningfully connect with customers. They claim the tools of the .NET platform can decrease time and cost associated with developing and maintaining business applications. Does it deliver? At what cost?

This workshop separates the hype from the reality. It focuses on the practical knowledge your organization needs to implement .NET and deliver tangible benefits to your organization. You will discover the impact of the .Net framework on current and future projects.

This 2-day workshop begins with an introduction to the .NET framework and architecture, starting with the big picture. It then delivers insight into .NET's advantages and how to understand and mitigate its weaknesses. It explains Web Services and its core technologies: XML, SOAP, WSDL and UDDI.

This workshop is designed to help you discover the answers to your .NET questions regarding architecture, .NET runtime language, .NET class libraries, ADO.NET database access, ASP.NET web application development, and .NET My Services.

## Who Should Attend

Those interested in learning about .NET, technical managers who are responsible for making decisions about these technologies, architects who need an initial introduction, and developers requiring an overview of the concepts.

## Prerequisites

Understanding of Windows development concepts and familiarity with Microsoft architecture is advantageous.

### Workshop Objectives:

- < Gain a clear understanding of .NET, its origin, architecture, applicability and its impact on your own development efforts.
- < Discover the technologies that are part of the .NET framework.
- < Grasp the importance of Web Services.
- < Learn the underlying protocols (XML, SOAP, WSDL, UDDI) used to build Web Services.
- < Build familiarity with .NET development options.
- < Understand how ADO.NET is utilized to access data.
- < Examine how ASP.NET is used to develop web applications.
- < Analyze the services provided by .NET My Services.
- < Gain confidence in the significance and future of .NET.

# Fundamentals of Visual Studio 2008

Visual Studio 2008 adds a large set of new functionality for the Visual Studio developer. From new language features, including LINQ (Language Integrated Query) to new client-side data support, Visual Studio 2008, and the .NET Framework 3.5, make it easier than ever to create robust, enterprise-level applications. This 2-day workshop introduces the most important new features in Visual Studio 2008 to the experienced Visual Studio developer. These features can be used to create and consume application services, build ASP.NET web sites, create engaging desktop applications, design workflows, expose services, and enhance Microsoft Office applications.

## Who Should Attend

This workshop is intended for those with Visual Studio 2005 experience and who want to learn, in a succinct fashion, what's new in Visual Studio 2008.

## Prerequisites

Before taking this workshop, students should have a good working knowledge of Visual Studio 2005 and the .NET Framework 2.0.

## Workshop Objectives:

- ▶ Investigate new language features, including LINQ (Language Integrated Query).
- ▶ Incorporate improvements to Visual Studio's data features.
- ▶ Learn how Visual Studio 2008 can be used to target multiple versions of the .NET framework.
- ▶ Build applications using Windows Presentation Foundation (WPF).
- ▶ Communicate between applications using Windows Communication Foundation (WCF).
- ▶ Create workflow-enabled applications using Windows Workflow Foundation (WF).
- ▶ Describe new Web development features and controls available in ASP.NET 3.5 and Visual Studio 2008.
- ▶ Investigate new features for both Web and Windows applications.
- ▶ Learn about building managed applications for Microsoft Office.
- ▶ Learn how the new features support the various data access technologies available to developers.

# Getting Started with C# 2008

C# was created to be the programming language best suited for writing enterprise applications for .NET. This 5-day workshop will walk developers through the process of learning Microsoft C# 2008 and give them the knowledge and skills they need to develop C# applications for the Microsoft .NET Platform. Participants will learn how to utilize Visual Studio 2008, the .NET Framework, and the C# programming language to create robust, real world applications. Participants will learn to utilize all vital aspects of C# including Object-Oriented programming (OOP) concepts, recommended programming standards and conventions, working with data types and collections, and the basics of creating a simple Windows Presentation Foundation (WPF) application.

Participants will complete hands on exercises in class that utilize simple applications to illustrate the power of C#.

## Who Should Attend

This workshop is designed for application developers who must master the concepts and functionality of C# 2008, Visual Studio 2008, and the .NET Framework.

### Workshop Objectives:

- ▶ Become familiar with Visual Studio 2008.
- ▶ Understand the history of the .NET Framework and the evolution of Microsoft development technologies.
- ▶ Store data in memory using the correct data type.
- ▶ Create, name, and assign values to variables.
- ▶ Use common statements to implement flow control, looping, and exception handling.
- ▶ Learn to debug C# applications using Visual Studio 2008.
- ▶ Understand basic concepts and terminology of Object-Oriented programming.
- ▶ Create a simple Windows Presentation Foundation (WPF) form.

# Going Further with C# 2008

This 5-day workshop will walk developers through the process of learning the advanced concepts of Microsoft C# 2008 in order to build sophisticated applications. Participants will learn how to apply C# to build real world applications. We will create a simple database and explore various methods of using C# to work with the data including ADO.NET and LINQ. We will also create business classes that represent data entities, and learn how to read text and XML files from — and write text and XML files to — the file system. In accordance with creating a real world application throughout the course, the participants will learn to create and test ASP.NET Web and WCF services, and how to create Windows Presentation Foundation (WPF) forms, ASP.NET Web forms, ASP.NET AJAX, and Silverlight applications. Finally, participants will learn to debug, test, and deploy C# applications.

## Who Should Attend

This workshop is designed for application developers who must not only master C# 2008, but also need to learn to apply their C# skills to create and test applications using proven industry design standards.

### Workshop Objectives:

- ▶ Create real world sample applications using WPF, ASP.NET, and Silverlight.
- ▶ Learn to debug C# applications.
- ▶ Generate and conduct unit tests on a C# application.
- ▶ Deploy C# applications created for Windows and the Web.
- ▶ Manage data stored in a relational database and local files using ADO.NET and LINQ.
- ▶ Create business classes to represent and encapsulate data.
- ▶ Expose data to client application consumers using ASP.NET Web services and WCF services.
- ▶ Consume services using WPF, ASP.NET, ASP.NET AJAX, and Silverlight applications.

# Getting Started with Visual Basic

This 5-day hands-on workshop covers the basics of the latest version of Visual Basic programming for the .NET Framework, from the constructs of the language itself to the .NET environment for which it was redesigned. Topics include data types, Object-Oriented Programming (OOP) concepts, debugging, exception handling, developing user interfaces using Windows Presentation Foundation (WPF), the Just-In-Time compiler, namespaces, assemblies, and Language Integrated Query (LINQ). The biggest change for classic VB programmers is the introduction of Object-Oriented (OO) features, so special emphasis is placed on the principles of OO programming and how best to harness its power in your application design. In addition, the instructor will often discuss issues of performance, design, and best practices as they relate to the various topics presented throughout the workshop.

Participants will have the opportunity to utilize their new skills with many hands-on exercises using Visual Studio 2008.

## Who Should Attend

This workshop is aimed at developers who plan to begin developing applications using Visual Basic and the .NET Framework.

## Prerequisites

Participants should have experience with Windows and a strong programming background but do not need to know Visual Basic or Object-Oriented Programming, although they are helpful.

### Workshop Objectives:

- ▶ Learn about the evolution of .NET and its architecture.
- ▶ Understand VB syntax and the .NET Foundation classes.
- ▶ Work with strings, files, and data collections.
- ▶ Explore the concepts of Object-Oriented programming.
- ▶ Develop, compile, and run applications using Visual Studio 2008.
- ▶ Debug .NET applications both during development and at runtime.
- ▶ Create Graphical User Interfaces (GUIs) using Windows Presentation Foundation (WPF).
- ▶ Make VB applications more robust with structured exception handling.
- ▶ Build, use, configure, and deploy .NET assemblies.

# Going Further with Visual Basic

This 5-day hands-on workshop is a direct follow-up to *Getting Started with Visual Basic*. It covers advanced features of Visual Basic 2008 such as delegates, events, multithreading, attributes, reflection, and dealing with memory management. In addition, participants will explore how to use VB to develop enterprise-level applications within the .NET Framework: from accessing data using ADO.NET, LINQ, and XML processing classes to building Web applications with ASP.NET, Web Services, and WCF Services. Lastly, the class takes a look at specific performance-monitoring and security features that .NET provides. Throughout the workshop the instructor will discuss issues of performance, design, and best practices as they relate to the various topics presented, and participants will develop a start-to-end application.

## Who Should Attend

This workshop is aimed at VB 2008 developers who are ready to explore advanced features of the language and start developing enterprise-level applications and components.

## Prerequisites

Participants should have experience with VB 2008 and the .NET Framework equivalent to the information covered in *Getting Started with Visual Basic*. This workshop's first chapter review of beginning-level topics will not be sufficient for learning the necessary material thoroughly enough.

### Workshop Objectives:

- ▶ Learn about issues related to memory management.
- ▶ Build multithreaded applications with synchronized code.
- ▶ Write event-driven code using events and delegates.
- ▶ Access relational databases and process XML data from VB code.
- ▶ Build Web applications using ASP.NET, .NET Web Services, and WCF Services.
- ▶ Monitor the performance of your code.
- ▶ Implement a variety of security measures.

# Introduction to ASP.NET

Microsoft's Active Server Pages (ASP) technology empowers Web servers with the ability to deliver dynamically built HTML pages to browsers. However, ASP lacks the modularity, security, and ease of development that today's Internet software requires. To provide designers and programmers with a powerful set of development tools and a robust infrastructure that addresses the most common problems faced by Web developers, Microsoft completely rewrote ASP, resulting in ASP.NET, which runs in the .NET Common Runtime Language (CLR) environment.

This 3-day hands-on class presents an introduction to building Web applications with ASP.NET. Using the Visual Studio .NET IDE, each student will build a complete Web application during the workshop. The application will put into practice the topics presented in class, such as data access, exception handling, tracing, Web Forms page layout, state management, and security. The instructor will also present configuration, performance, and ASP migration tips.

NOTE: This class can be taught in either Visual Basic .NET or C#.

## Who Should Attend

The workshop material is aimed at developers who will be creating Web applications using ASP.NET

## Prerequisites

No ASP experience is necessary. However, students are expected to be familiar with .NET and to know the basic constructs of HTML and the language in which the class is taught.

### Workshop Objectives:

- < Use Web Forms to create an interactive Web page.
- < Handle application, page, and control events.
- < Debug an ASP.NET program within Visual Studio .NET.
- < Build reliable Web applications using exception handling.
- < Access data with ADO.NET.
- < Partition ASP.NET applications into reusable components.
- < Configure application security.
- < Expose an ASP.NET application as a web service.

# Microsoft ASP.NET AJAX

This 3-day workshop will provide a practical introduction to developing rich Internet applications using ASP.NET AJAX. Because of the rich support provided by Microsoft's AJAX tools, an ASP.NET programmer can get up and running in this new environment quickly.

The workshop begins with a discussion of rich Internet applications, which includes substantial client-side code, typically JavaScript. Microsoft's AJAX tools are surveyed, and a simple AJAX application is illustrated. The JavaScript programming language is covered in enough detail to give the participant a good working knowledge of writing client scripts. To retrieve and update information on a Web page from client-side code the programmer needs to use DHTML, or the Document Object Model (DOM), which are discussed in the third chapter along with Cascading Style Sheets (CSS).

Participants learn about the AJAX Client Library, which simplifies client-side programming with JavaScript extensions, a debugging trace facility, and various API shortcuts. Next we cover partial page rendering, which enables part of a page to be updated asynchronously, resulting in an improved user experience. We will also cover various techniques for making remote-method calls, resulting in greater efficiency in an Ajax application. The workshop introduces the AJAX Control Toolkit, which provides many very useful controls enabling sophisticated client-side effects with relatively little programming. The participants will learn about the built-in application services, which provide a client-side API to various services on the server, such as authentication and user profiles.

Numerous programming examples and exercises are provided. A case study illustrates a number of features of ASP.NET AJAX working together. The participant will receive a complete set of notes and all the programming examples.

## Who Should Attend

This workshop is designed for developers who have experience with ASP.NET and wish to take their capabilities to the next level.

### Workshop Objectives:

- ▶ Gain a thorough understanding of the philosophy and implementation of rich Internet applications.
- ▶ Use JavaScript and DHTML/CSS/DOM to add interactivity to Web applications.
- ▶ Explain the benefits of AJAX in creating non-blocking and interactive Web applications.
- ▶ Use ASP.NET AJAX and Visual Studio to easily implement AJAX applications.
- ▶ Create visually rich and attractive Web applications with controls in the AJAX Control Toolkit.



# Developing .NET Web Services

XML-based Web Services allow applications to access functionality via the Internet and are at the forefront of the newest shift in distributed computing. As a leading advocate of this technology, Microsoft has incorporated Web Services support into its .NET Framework through both ASP.NET and .NET Remoting.

This 3-day hands-on class breaks down the various standards that compose the Web Services architecture and demonstrates how to implement the resulting functionality through .NET. Students will explore how to build, consume, debug, and advertise ASP.NET Web Services, as well as discussing various issues that affect them, such as performance and security. In addition, the class describes the alternative .NET Remoting.

NOTE: This class can be taught in either Visual Basic .NET or C#.

## Who Should Attend

This workshop is designed for developers who are going to work with Web Services in the .NET environment.

## Prerequisites

The instructor will assume that students are well-versed in .NET concepts and the language in which the workshop is taught. Knowledge of XML is not required. Although no experience with ASP.NET is necessary, we recommend that students take an ASP.NET class as a complement to this one, as details on the use of ASP.NET features such as security and state management are not taught in this class, although they are mentioned.

### Workshop Objectives:

- < Expose an application as a Web Service.
- < Explore the SOAP protocol.
- < Generate and understand the contents of a WSDL file.
- < Create client proxies.
- < Consume a Web Service using a Web or SOAP client.
- < Register your Web Service for discovery.
- < Discuss security, performance, and other design considerations.

# Introduction to Microsoft ADO.NET

In this 3-day workshop participants will learn about the features provided by ADO.NET 2.0, learn to connect to data sources, retrieve and manipulate data, and perform data updates. Participants will also examine the various ADO.NET classes including Connection, Command, DataReader, DataSet, DataTable, DataRelation, and more. Attendees will witness how to apply constraints and relationships to disconnected data, and learn how to update data — including how to handle stored procedures, parameters, and return values.

At the completion of this workshop participants will understand how to search, sort, and filter data stored in a DataSet or DataTable, become familiar with strongly typed DataSets and learn their advantages, see how to leverage the power of XML through serialization, Diffgrams, and the XMLDataDocument object, and examine new ADO.NET features that support SQL Server 2008 technologies — including asynchronous commands, Multiple Active Result Sets, bulk inserts, and more.

## Who Should Attend

This workshop is designed for developers who need to learn how to use ADO.NET to connect, manipulate, and interact with XML and relational data. System architects and project managers should attend to gain knowledge of the technologies and functionality available in ADO.NET.

### Workshop Objectives:

- ▶ Connect to multiple types of data sources, including SQL Server and Microsoft Jet/Access.
- ▶ Retrieve data, using the DataAdapter, Command, and DataReader classes.
- ▶ Create and configure Command parameters.
- ▶ Cache data using the DataTable and DataSet classes.
- ▶ Apply constraints to DataTable and DataColumn objects.
- ▶ Create relations between DataTable objects, using the DataRelation class.
- ▶ Update data using DataAdapter and Command classes.
- ▶ Work with strongly typed DataSet and DataTable classes.
- ▶ Retrieve and update data using TableAdapter classes.
- ▶ Handle exceptions and data errors, including concurrency errors.
- ▶ Search, sort, and filter data using the DataView class.
- ▶ Work with auto-increment columns in multi-user applications.
- ▶ Retrieve and generate XML data.
- ▶ Take advantage of new SQL Server 2008 features.

# Microsoft Windows Communication Foundation (WCF) for Developers

This 3-day workshop provides the knowledge and skills required by .NET developers for building the next generation of distributed applications by using Windows Communication Foundation (WCF). WCF was designed to expose the current multitude of Windows remoting APIs (web services, MSMQ, TCP, peer-to-peer, etc) from a single unified toolkit. With WCF, you can build secure, reliable, transacted Web services applications that interoperate with existing .NET technologies. In this workshop, participants will examine the overall WCF programming model, binding choices, host options, security issues and the use of declarative markup to specify the underlying infrastructure.

## Who Should Attend

This workshop is intended for experienced .NET 2.0 software developers. No knowledge of WCF is assumed.

### Workshop Objectives:

- ▶ Understand the WCF programming model.
- ▶ Understand WCF binding choices.
- ▶ Understand data serialization choices.
- ▶ Understand WCF security issues.
- ▶ Describe the WCF architecture.
- ▶ Identify WCF components.
- ▶ Design WCF operation and data contracts.
- ▶ Configure endpoints and bindings.
- ▶ Define message structures.
- ▶ Expose and interrogate service metadata.
- ▶ Serialize and encode messages.
- ▶ Identify and configure behaviors.
- ▶ Identify and implement hosting options.
- ▶ Develop an end-to-end transactional application.
- ▶ Implement reliable messaging.
- ▶ Design and implement WCF services.
- ▶ Create and configure WCF Service endpoints.
- ▶ Extend WCF with custom behaviors.

# Microsoft Windows Workflow Foundation (WF) for Developers

This 3-day workshop walks developers through the process of learning Microsoft Windows Workflow Foundation (WF). Microsoft has provided the Windows Workflow Foundation, a set of assemblies based on the .NET Framework 2.0 (as part of the .NET Framework 3.0), along with a full-featured workflow designer built on top of Visual Studio 2005, and it's free.

Windows Workflow Foundation makes it easy to create applications that follow a flow, or react to events and move from state to state. By providing a visual interface for designing the applications, and by binding code activities directly to the design of the application, Windows Workflow Foundation makes it easier than ever to create and maintain complex business applications. In addition, Windows Workflow Foundation provides a runtime engine that manages your application's behavior (that is, the "plumbing") and enforces the workflow. The runtime makes sure the workflow behaves in the manner in which you designed and coded it.

## Who Should Attend

This workshop is designed for application developers that need to create applications that manage workflows. System architects and business analysts should also attend to learn how using WF can make it easy to implement systems that manage business processes.

### Workshop Objectives:

- ▶ Learn the prerequisites for Windows Workflow Foundation.
- ▶ Investigate all the available workflow activities.
- ▶ Learn how to handle exceptions in workflow applications.
- ▶ Work with Delay and Listen activities.
- ▶ Learn how to use RuleSets and Policy activities in workflows.
- ▶ Provide bi-directional communications between the workflow and the host.
- ▶ Understand the difference between sequential and state machine workflows.
- ▶ Learn when and how the workflow runtime persists information about a workflow.
- ▶ Learn when and how the workflow runtime tracks information about a workflow.
- ▶ Understand how to group activities into a transaction.
- ▶ Modify an executing workflow from the host application.
- ▶ Explore how to maintain state between workflow Web service method calls.