.NET Framework Class Library Fundamentals

Course Content

Course Description:
.NET Framework Class Library Fundamentals training gives attendees a thorough introduction to .NET Core for programmers who already know the C# language. Students learn core portions of the .NET Framework including architecture and key concepts of .NET, including class libraries, packages, frameworks, memory management, processes, threads, and much more.

At Course Completion:
After competing this course, student will be able to:
- Gain a thorough understanding of the philosophy and architecture of .NET Core
- Understand packages, metapackages, and frameworks
- Acquire a working knowledge of the .NET programming model
- Implement multi-threading effectively in .NET applications

Prerequisites:
Should be experienced application developers or architects with a working knowledge of C#.

Topics:

.NET Fundamentals
- What is Microsoft .NET?
- Common Language Runtime
- Framework Class Library
- Language Interoperability
- Managed Code
- .NET Core and Cross-Platform Development

Class Libraries
- Components in .NET
- Class Libraries Using Visual Studio
- Using References

Packages and Frameworks
- NuGet Packages and Gallery
- Metapackages and Frameworks
- Packages in .NET Core
- Porting from Classical .NET to .NET Core
- Visual Studio Package Manager
- Installing Packages
- Creating Packages

I/O and Serialization
- Directories
- Files and Streams
- XML Serialization

Delegates and Events
- Delegates
- Random Number Generation
- Anonymous Methods
- Lambda Expressions
- Events

NET Programming Model
- Garbage Collection
- Finalize and Dispose
- Processes
- Command-Line Arguments
- Threads

.NET Threading
- Threading Fundamentals
- ThreadPool
- Foreground and Background Threads
- Synchronization
- Task Parallel Library