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C# 6 Development

(5 days)

Course overview

This course takes a close look at C# 6, which was introduced in Visual Studio 2015. There is a more recent version of this course available, if you want to learn the latest details available in C# 7 and Visual Studio 2017.

What you'll learn

- Essential C# syntax
- Implementing object-oriented designs in C#
- Using generics, collection classes, and exceptions
- What's new in C# 6 and .NET 2015
- Using LINQ and EF
- Introduction to asynchronous programming
- Overview of ASP.NET Core MVC

Prerequisites

- At least 6 months programming experience
- Familiarity with OO concepts would be an advantage

Course details

- **Introduction to C# and .NET:** .NET Framework building blocks; Hello world in C#; Using Visual Studio 2015; Namespaces and assemblies
- **Core C# Programming Constructs:** Variables, operators, and statements; Reference types vs. value types; Conversions; Nullable types; Using the Console and String classes; Flow-of-control; Using implicit types
- **More C# Programming Constructs:** Defining methods; Input, output, and optional parameters; Method overloading; Arrays; Structures
- **Defining and Using Classes:** Defining classes; Defining constructors and finalizers; Defining properties; Creating and disposing objects; Defining constants and read-only fields; Static members; Partial classes/methods
- **Inheritance and Polymorphism:** Defining base classes and derived classes; Overriding methods; Abstract classes; Interfaces
- **Exception Handling:** Defining Try/Catch/Finally blocks; Throwing exceptions; Defining new exception classes; Defining Using blocks
- **Creating Collections of Objects:** Overview of generics; Using List collections; Using Dictionary collections

- [What's New in C# 6](#): Static using syntax; Auto-property initializers; Dictionary initializers; Exception filters; String interpolation
- [Delegates, Events, and Lambdas](#): Overview; Defining simple delegates; Defining and handling events; Using lambda expressions
- [Additional Language Features](#): Operator overloading; Extension methods; Object initializers; Anonymous types
- [Introduction to LINQ](#): The role of LINQ; Simple LINQ query expressions; Using LINQ with collections; LINQ query operators
- [Using the Entity Framework](#): EF classes and DbContext; Implementing relationships; Managing data; Additional techniques
- [Introduction to Asynchronous Programming](#): Understanding the async and await keywords; Implementing asynchronous code
- [Overview of ASP.NET Core MVC](#): Creating an ASP.NET Core MVC application; Defining models, views, and controllers; Introduction to REST and Web API