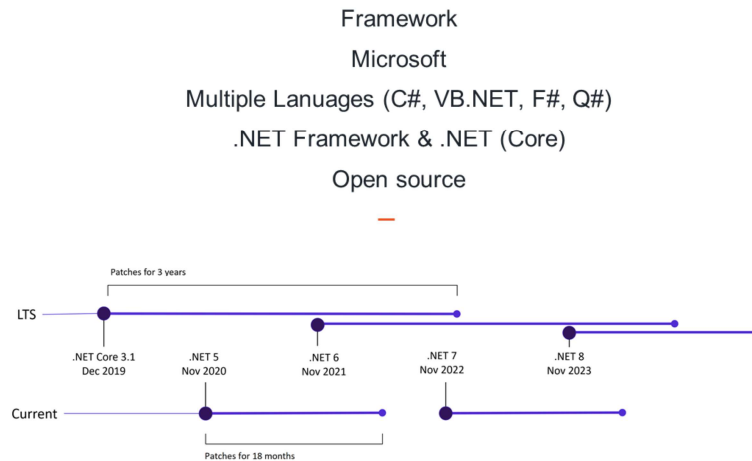# C# Fundamentals

Hack Your Future (https://hackyourfuture.be/)

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What is .NET?

Framework
Microsoft
Multiple Lanuages (C#, VB.NET, F#, Q#)
.NET Framework & .NET (Core)
Open source

- Frameworks in Web development: Angular, React, ...
- .NET Framework 4.8: Support for .NET 4.8 follows the Lifecycle Policy of the parent OS. It is supported as a Windows component on the latest required update for the operating systems below. We recommend customers upgrade to .NET Framework 4.8 to receive the highest level of performance, reliability, and security.

C# Language

Multi-paradigm programming language
Object Oriented
Statically/strongly typed
C# version depends on .NET version
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- Multi-paradigm programming language: C# encompasses static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented (class-based), and component-oriented programming disciplines.
- Statically typed: The user needs to define a type for every variable The compiler will know the types of all variables and inform the user of mistakes (prevents typing bugs)
- VS decides the c# version based on the .NET version: https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/configure-language-version

IDE's

Visual Studio 2022

Visual Studio Code

Rider (JetBrains)

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Types in C#

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Demo

Methods

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Demo

Program Flow

Demo

Debugging

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Breakpoints
Stepping though code
Live code editing
Inspecting variables