

What's cool with C# 11 and .NET 7

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Topics

- C# Language Enhancements
- What's new?
- What's coming?
- How does it help?



Auto Default Struct

C# 10 added

- struct records
- with expressions with structs
- custom parameterless constructors

C# 11 enhanced

auto default struct





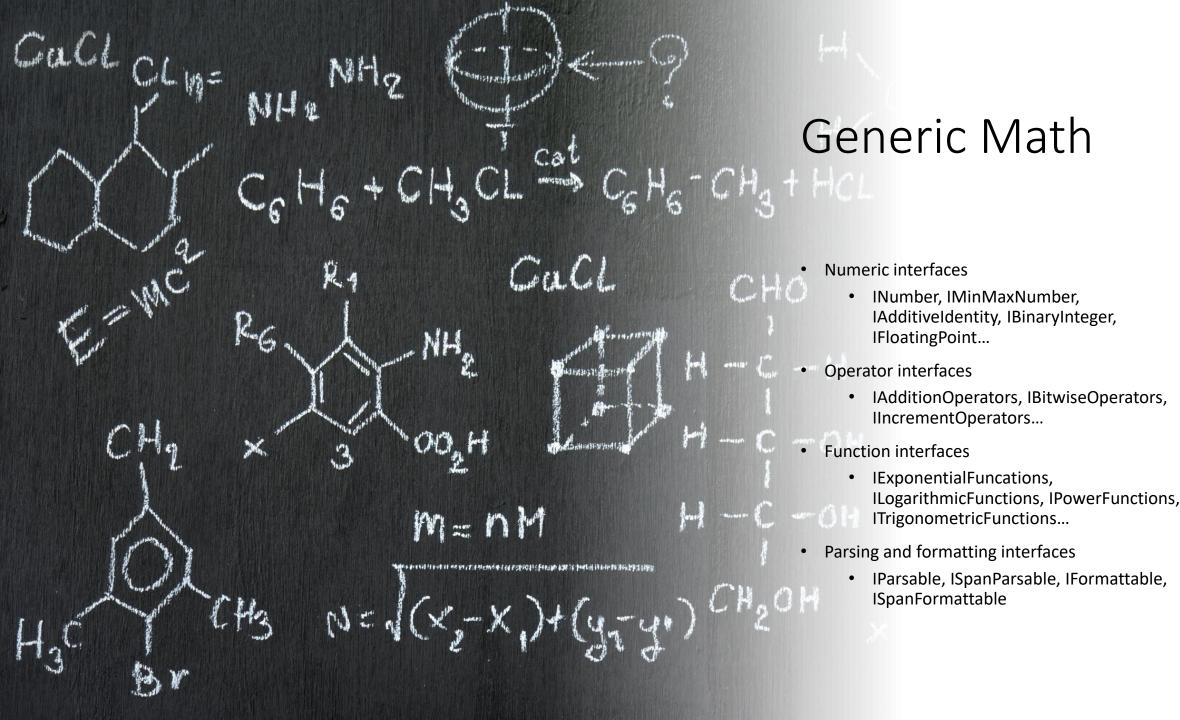
Required Modifier

- Nullable reference types solves problems
- Constructors adds complexity
- required: Initialize with *constructor* or *object initializer*
- Modifier for properties and fields
- SetsRequiredMembers Attribute on constructor

Interface Enhancements

- C# 8 added implementation in interfaces
 - Versioning
 - Mixin functionality
- C# 11 adds static members
 - Constraints with generic types





Pattern Matching Enhancements

- List Patterns
 - Apply a pattern on any element in the sequence
 - Discard pattern to match any element
 - Slice pattern to match zero or more elements
- Matching on Span<T>



Strings

- Utf8 String literals
 - U8 suffix
 - ReadOnlySpan<byte>
- Raw string literals
 - Three or more quotes
 - span multiple lines
 - Indentation based on end quotes
 - Combine with interpolated strings

Native AOT Deployment

- Self-contained
- AOT compiled to native code
- Quick startup, less memory
- Can run where JIT is not allowed

- No dynamic loading
- No reflection emit
- No C++/CLI
- Requires trimming
- Compilation into a single file
- Includes runtime-libraries
- ASP.NET Core not supported (yet)

.NET 7
Source
Generators

Logging

Regex

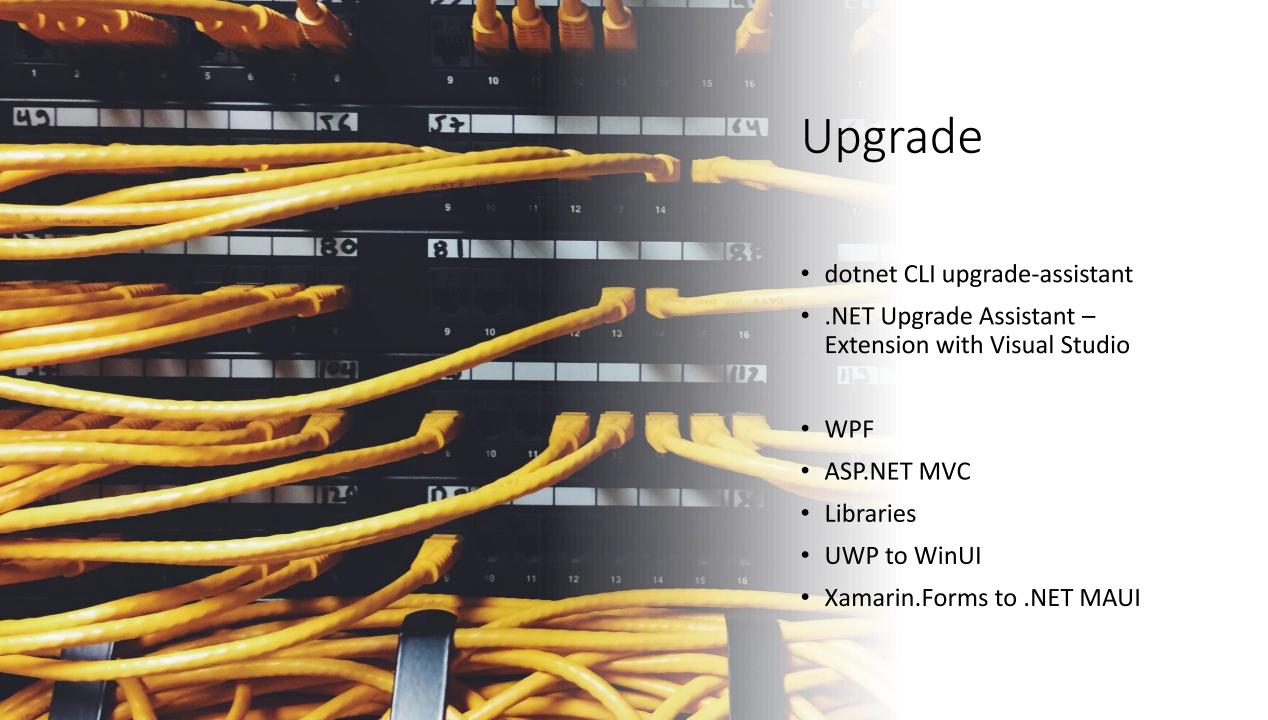
JSON Serialization

Platform Invoke

JavaScript Interop

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More at 7 PM



What's next?

- Semi-auto properties (field keyword)
- Primary constructors
- params Span<T>
- lambda default parameters
- Default in deconstruction
- Collection literals
- Roles (extend everything, implement interfaces on behalf of the underling type – act as adapters)



Summary

- What's new with C#?
- Required...interfaces...pattern matching...strings...AOT...

- Directions going forward
- Source code: https://github.com/cnilearn/bastaspring2023
- Blog: https://csharp.christiannagel.com



