

# C# 13

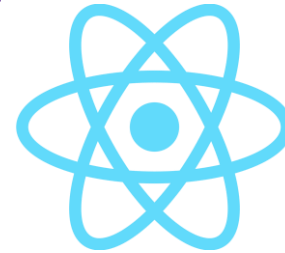
## Wichtige Neuerungen



Thorsten Kansy (tkansy@dotnetconsulting.eu)

# Meine Person- Thorsten Kansy

Freier Consultant, Software Architekt,  
Entwickler, Trainer & Fachautor



Azure Cosmos DB



# Mein Service- Ihr Benefit

- Individuelle Inhouse Trainings
- (Online on-demand) Projektbegleitung
- Beratung
  - Problemanalyse und Lösungen
  - Technologieentscheidungen



# Agenda

- Params collections
- New lock object
- New escape sequence
- Implicit index access
- More partial members
- Overload resolution priority
- LINQ
- Sonstiges



Software, Slides & Solution

# Software

- **Entwicklungsumgebungen**
  - Visual Studio 2022 (17.12.2+)
  - Visual Studio Code
  - JetBrains Rider
  - ...
  
- **.NET**
  - .NET 9.0+



<https://dotnet.microsoft.com/en-us/download>

# C#-Version

- csproj-Datei
- LangVersion  
“preview” => 13.0+

```
<PropertyGroup>  
  <OutputType>Exe</OutputType>  
  <TargetFramework>net9.0</TargetFramework>  
  <ImplicitUsings>enable</ImplicitUsings>  
  <Nullable>enable</Nullable>  
  <LangVersion>13.0</LangVersion>  
</PropertyGroup>
```



<https://docs.microsoft.com/de-de/dotnet/csharp/language-reference/configure-language-version>



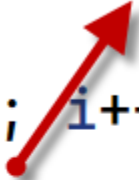
# Params collections





# Params collections

```
public static void Concat<T>(params ReadOnlySpan<T> items)
{
    for (int i = 0; i < items.Length; i++)
    {
        Write(items[i]);
        Write(",");
    }
    WriteLine();
}
```



 Demo 



New lock object

# New lock object

```
// New Style
using (newLock.EnterScope())
{
    // Code...
}

if (newLock.TryEnter(millisecondsTimeout: 500))
{
    try
    {
        // Code...
    }
    finally
    {
        newLock.Exit();
    }
}
```

 Demo 




New escape sequence



# New escape sequence

```
// Old style  
WriteLine("Hello, World\u001b!");  
  
// New style  
WriteLine("Hello, World\e!");
```



 ~~Demo~~ 

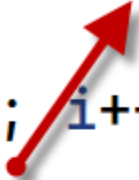




Implicit index access

# Implicit index access

```
public static void Concat<T>(params ReadOnlySpan<T> items)
{
    for (int i = 0; i < items.Length; i++)
    {
        Write(items[i]);
        Write(",");
    }
    WriteLine();
}
```





Demo



A black and white cow stands prominently in the foreground on a busy street in India. The cow is facing right. In the background, there is a red bus with 'AIR CONDITIONER' and 'Khaitan' written on it, a green bus with 'DIO सिस्टम' and 'जुबेली यातायात' written on it, and several cars, including a white Hyundai. A motorcycle is parked on the right side of the road. The scene is set in an urban area with trees and utility poles in the background.

More partial members

# More partial members

```
internal partial class PartialExamples
{
    2 references | 0 changes | 0 authors, 0 changes
    internal partial int Capacity { get; set; }

    2 references | 0 changes | 0 authors, 0 changes
    internal partial string this[int index] { get; set; }

    2 references | 0 changes | 0 authors, 0 changes
    internal partial string? TryGetAt(int index);
}
```

 Demo 

A wide-angle photograph of a mountain range. The upper portion shows several jagged, snow-covered peaks against a clear, bright blue sky. The lower portion shows a valley with brown, rocky slopes. In the bottom left, a small, single-story building with a blue roof is visible. A dark blue horizontal band is overlaid across the middle of the image, containing white text.

Overload resolution priority

# Overload resolution priority

```
[OverloadResolutionPriority(1)]
```

```
4 references | 0 changes | 0 authors, 0 changes
```

```
public static void DummyFunc(params ReadOnlySpan<int> s) => WriteLine("Span");
```

```
// Default overload resolution priority of 0
```

```
0 references | 0 changes | 0 authors, 0 changes
```

```
public static void DummyFunc(params int[] a) => WriteLine("Array");
```





Demo





LINQ



# LINQ

- CountBy
- AggregateBy
- Index



Demo





Sonstiges



# Sonstiges

- Method group natural type
- `ref` and `unsafe` in iterators and async methods
- Allows `ref struct`



Leider (wieder) gestrichen

# Leider (wieder) gestrichen

- Semi auto properties `field` keyword
- Extension types
- Automatische Konvertierung zw. `Array`, `Span<T>`, `ReadOnlySpan<T>`
- **Tupel-Dekonstruktion** `(int x, string y) = default statt (default, default)`




# Fragen? Jetzt oder später!



## Kontakt

---

 E-Mail  
tkansy@dotnetconsulting.eu

 Telefon  
+49 (0) 6187 / 2009090

 Microsoft Teams  
Meet now

 LinkedIn  
Link me

 XING  
Xing me

 X (Twitter)  
@tkansy



# www.dotnetconsulting.eu

SQL Server meets .NET (Core)- professionally!



Ich berate, coache und trainiere im Bereich Entwicklung von .NET (Core) Anwendungen mit Microsoft SQL Server- mit Allem, was dazu gehört- und was man vielleicht weglassen sollte.