Varighed:	2 dage
Deltagerpris:	11.800,00 dkr
Kursusnummer:	LB1376

Asynchronous Programming in C#

Kort om undervisningen

Discover the practical power of Asynchronous Programming in C#, in this up-to-date course covering C# 11 and .NET 7. Gain the expertise needed to seamlessly architect and implement responsive, efficient and scalable applications.

In today's dynamic software landscape, mastering asynchronous programming is more and more essential for crafting faster, hardware-optimized applications. As multi-core CPUs are now standard, parallel processing is the key to unlocking performance. While the demand for responsive interactions with remote services has only heightened the immense value that asynchronous programming can bring.

In this comprehensive two-day course for seasoned C# and .NET developers seeking to master asynchronous programming, we will cover a diverse set of libraries and tools, from threads and locks to advanced features like concurrent collections, PLINQ, Tasks, and async/await. Each library's purpose will be demystified, helping you to pinpoint the right solutions to specific challenges.

The course offers clear, accessible explanations of the underlying theory and key terms, as well as give hardware-level insights to solidify your grasp of the material. There will also be hands-on exercises that enable you to master and apply the intricacies of asynchronous programming.

By the end of this course, you will be empowered to use asynchronous techniques to deeply optimize the efficiency, scalability and responsiveness of your applications.

Indhold

- Introduction, Processes and Threads
  - Synchronous vs. Asynchronous programming
  - Processes
  - Threads
- Thread pool
  - The cost of creating threads
  - Worker and I/O Threads
  - When not to use the thread pool
- Tasks
  - Creating tasks
  - Returning data from a task
  - Using Tasks or Threads?

- Waiting for tasks
- Error Handling in Asynchronous Programming
  - Exceptions in threads
  - Exceptions in tasks
- Cancelling tasks
  - Cancellation Token Source
  - Tokens
- Continuations
- Async – await
  - Async methods
  - Async state machine
  - The await keyword
  - Returning data from async methods
  - Async all the way
  - Async lambdas
  - Optimizing async/await
  - .GetAwaiter().GetResult()
  - WaitAsync
- Task Schedulers
- Synchronization contexts
  - SynchronizationContext vs. TaskScheduler
  - Capturing the context
- ConfigureAwait
- Value Tasks
  - Tasks vs ValueTasks
- Asynchronous Streams
  - IASyncEnumerable
  - ConfigureAwait
  - Cancellation of streams
- Async LINQ
- And much more …

Forudsætninger

To get the most out of this training, participants should have at least one year of experience as a C# developer and possess the skills covered in our C# Fundamentals course. A good understanding of C#, including generics, lambdas, and LINQ, is crucial. While previous experience in parallel or async programming is not required, participants will benefit from familiarity with basic parallel concepts.

Målgruppe

Experienced C# / .Net developers who would like to enhance their applications using asynchronous and parallel programming.

Efter kurset kan deltageren

Kommende afholdelsesdatoer

Klik på nedenstående links for tilmelding til en af vores planlagte afholdelser

09/09-10/09 2024 - Storkøbenhavn
04/12-05/12 2024 - Storkøbenhavn

Oplysning om yderligere afholdelser findes på vores hjemmeside. Andre spørgsmål besvares meget gerne ved brug af vores kontaktformular eller på telefon (+45) 33 861 861