SE005CS-*High Performance C# (V1.1)*

DURATION: 3 Days; Instructor-led

WHAT YOU WILL LEARN
Write high performance code is crucial in some applications.

This course will show you how to write high efficient C# code based on coding techniques, Language features, Special tools, and High-end technologies.

The course is mainly focusing on the performance issues at coding level.

AUDIENCE
This course is intended primarily for developers who plan to write more efficient C# code.

PREREQUISITES
Basic C# programming skill.

The course materials, lectures, and lab exercises are in English. To benefit fully from the instruction, students need an understanding of the English language.

METHODOLOGY
This program will be conducted with interactive lectures, PowerPoint presentation, discussions and practical exercise

COURSE OUTLINES

Module 1 – Why High Performance is needed?
- Some scenarios
- Factors affecting performance in C# programming
- The Benchmarking preparation

Module 2 – Language Constructs
- Conventional for Vs foreach
- IEnumerable, yield return and foreach
- Row-First Vs Column-First iteration
- The impact of Recursion
- The impact of constructor chaining
- Remove Redundant Code

Module 3 – Operators
- Leverage on short circuit
- The impact of boxing and unboxing
- ==, Equals and ReferenceEquals
- Using bitwise operators

Module 4 – Parameters
- Optional parameter Vs method overloading
- Parameter passing By Value Vs By Reference
- Normal return Vs return by out

Module 5 – Collections and Foundation Classes
- Using StringBuilder
- Generic List initial internal buffer size
- Using Dictionary
- Using proper collections

Module 6 – Special Methods
- Using String.Compare method
- Using Array.Copy
- Using TryParse() method
- Using Buffer.BlockCopy

Module 7 – C# Specific
- struct Vs class
- getter Vs readonly field
- The impact of overflow check
- Sealing classes
- The impact of inlining
- Using class level members

Module 8 – C# Advanced Features
- Using cloning
- Using pointer
- Asynchronous coding
- Meta coding

Module 9 – Using Patterns
- FlyWeight
- Prototype

Module 10 – Special Techniques
- Lookup Tables
- Caching
- Grid Computing