

## **C# .NET Training: C# Programming with .NET - Live Online Training**

### **Objectives**

After attending the C# .NET Training, you will be able to program C# code and are familiar with the .NET framework. You can write basic applications with C# in Visual Studio .NET.

### **Participants**

The C# .NET training addresses software developers and software architects.

### **Requirements**

Basic knowledge of object-oriented programming as well as experience in programming with C or another programming languages.

### **Live-Online-Training**

\* Price per attendee, in Euro plus VAT

Training code: LE-C#-PRG

### **Face-To-Face - English**

#### **Duration**

4 days

### **Live Online - German**

| <b>Date</b> | <b>Duration</b> |
|-------------|-----------------|
|-------------|-----------------|

|                     |        |
|---------------------|--------|
| 10.11. – 13.11.2025 | 4 days |
|---------------------|--------|

### **Face-To-Face - German**

| <b>Date</b> | <b>Duration</b> |
|-------------|-----------------|
|-------------|-----------------|

|                     |        |
|---------------------|--------|
| 16.03. – 19.03.2026 | 4 days |
|---------------------|--------|

## **C# .NET Training: C# Programming with .NET - Live Online Training**

### **Content**

#### **.NET Overview**

- Introduction in .NET
- Key concepts of .NET

#### **Structure of .NET Programs**

- Introduction - C# program
- Comments
- Examples

#### **Overview of Standard Data Types**

- Integers, floating point numbers, text
- Type conversion

- Arrays
- Enumeration types (enums)
- Own data types
- Type inference (var)
- Examples

**Formatted Output**

- Formatting types
- Own formats
- String interpolation
- Exercise: Working with data types and formatted output in a simple program

**Operators**

- Overview of operators
- Arithmetic, relational and logical operators, bit operators
- Examples

**Control Statements**

- Branching
- Jumps
- Looping
- Exercise: Working with control statements

**Classes**

- Structure of classes
- Object creation
- Fields, methods and properties
- Access modifier
- Constructors and destructors
- Overloading of methods
- Namespaces
- Exercise: Creating classes with properties and methods

**Operator Overload**

- Overloading operators
- Explicit and implicit conversion operators
- Indexer
- Examples

**Inheritance**

- Derivation from a basic class
- Impact of access modifiers
- Calling the basic class constructor
- Hiding and overriding methods
- Virtual methods
- Type checking and conversion rules
- Abstract and sealed classes
- Creating, using and implementing interfaces
- Exercise: Inheritance and virtual methods

**Structures**

- Difference to classes
- Passing by reference
- Boxing and unboxing
- Examples

**Exception Handling**

- Which errors result in exceptions?
- Exception handling
- Information about exceptions
- Throwing exceptions in own code
- Exercise: Error handling with exception handling

**Generic Data Types and Collections**

- What are generic data types?
- Advantages of generic collections

- Overview of the most common collection classes
- Optional exercise: Using a generic list

**Delegates and Events**

- Pointer to methods in C#
- Use of callbacks
- Use of events
- Lambda expressions
- Expression bodied function members
- Examples

**Assemblies**

- Structure of assemblies
- Use of DLLs
- Differences between private and shared assemblies
- Examples

**Exercises in the C# .NET Training**

- Use of data types and formatted output in a simple program
- Use of control structures
- Creation of classes with properties and methods
- Inheritance and virtual methods
- Error handling with exception handling
- Optional: Using a generic list
- The practical exercises are carried out after working through the related topics

**MicroConsult PLUS**

- We will provide you with a download link for your exercises and the solutions from this workshop.