



Introduction to C#

By ESH Solutions Ltd.

C# Topics and planned sessions

Categories		No of Sessions
Introduction	Mandatory	1
Variable Types, Operators and Commenting	Mandatory	
Control statements and Loops	Mandatory	
Inbuilt Methods and Namespace	Mandatory	
Object Oriented concepts	Mandatory	
Exceptions	Mandatory	
Access Modifiers	Mandatory	
Variable Types (Advanced)	Optional	1
Best Practices and Good to Knows	Optional	
Managing Large Classes	Optional	1 or 2
Optional Parameters	Optional	
Filtering & Sorting Data	Optional	
Asynchronous Programming	Optional	

Agenda – Day 2

- Introduction to Visual Studio
- C# tutorial – Introduction to C#
- C# tutorial – Reading to writing to console
- C# tutorial – Built in types
- C# tutorial – String type
- C# tutorial – Common Operators
- C# tutorial – Nullable types

Coming up next:

- C# Basics – Arrays, Object Oriented concepts

Important Points

1. Introduction to C#

- Basic structure of a C# program
- What is a Namespace
 - i. Namespace is used to organise code and collection of classes , interfaces etc.
- Purpose of main method
 - i. Main method is the entry point of the application

2. Reading and Writing to a console

- Concatenation and placeholder syntax – most preferred

Important Points

3. Built in types : **Boolean**: Only True or false , **Integral**: sbyte, byte, short, ushort, int, uint, long, ulong , char , **Floating**: **Decimal**: **String**:

Type	Range	Size
sbyte	-128 to 127	Signed 8-bit integer
byte	0 to 255	Unsigned 8-bit integer
char	U+0000 to U+ffff	Unicode 16-bit character
short	-32,768 to 32,767	Signed 16-bit integer
ushort	0 to 65,535	Unsigned 16-bit integer
int	-2,147,483,648 to 2,147,483,647	Signed 32-bit integer
uint	0 to 4,294,967,295	Unsigned 32-bit integer
long	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	Signed 64-bit integer
ulong	0 to 18,446,744,073,709,551,615	Unsigned 64-bit integer

Type	Approximate range	Precision
float	$\pm 1.5e-45$ to $\pm 3.4e38$	7 digits
double	$\pm 5.0e-324$ to $\pm 1.7e308$	15-16 digits

Important Points

4. String types

<code>\a</code>	Bell (alert)
<code>\b</code>	Backspace
<code>\f</code>	Formfeed
<code>\n</code>	New line
<code>\r</code>	Carriage return
<code>\t</code>	Horizontal tab
<code>\v</code>	Vertical tab
<code>\'</code>	Single quotation mark
<code>\"</code>	Double quotation mark
<code>\\</code>	Backslash
<code>\?</code>	Literal question mark

Important Points

5. Common operators in C#

- **Assignment Operator** =
- **Arithmetic Operators** like +, -, *, /, %
- **Comparison Operators** like ==, !=, >, >=, <, <=
- **Conditional Operators** like &&, ||
- **Ternary Operator** ?:

6. Nullable type

- **Null Coalescing Operator** ??

Annexure

.NET – Useful Links

.NET

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

Microsoft Learn

<https://learn.microsoft.com/en-us/training/>

Fiddle

<https://dotnetfiddle.net/>

Visual Studio

<https://visualstudio.microsoft.com/vs/community/>

Visual Studio Code

<https://code.visualstudio.com/download#>

Nuget (exe)

<https://www.nuget.org/downloads>

Public Git repository example

<https://github.com/prjseal/PasswordGenerator.git>



Thank you

Thanks to your commitment and strong work ethic, we know next year will be even better than the last.

We look forward to working together.

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