C# Introduction

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LECTURE 1

What is .Net

A Framework in which to run code we have:

A Common Language Runtime (CLR)
◦ runs all programs.
◦ C# compiles to Microsoft Intermediate Language.
◦ MSIL runs on CLR.
◦ Virtual Machine like Java.
◦ code written in many languages compiles to MSIL.

A Common Language Specification (CLS)

A Common Type System (CTS)

C# Introduction

C# is a simple, modern, general-purpose, object-oriented programming language developed by Microsoft within its .NET Framework.

C# was developed by Anders Hejlsberg and his team during the development of .Net Framework.

C# programming is very much based on C and C++ programming languages, so if you have a basic understanding of C or C++ programming, then it will be fun to learn C#.

C# Characteristics

The following reasons make C# a widely used professional language:

➢It is a modern, general-purpose programming language.

➢It is object oriented.

➢It is component oriented.

➢It is easy to learn.

➢It is a structured language.

➢It produces efficient programs.

➢It can be compiled on a variety of computer platforms.

➢It is a part of .Net Framework.

C# Features

Following is the list of few important features of C#:

➢ Boolean Conditions

➢ Automatic Garbage Collection

➢ Standard Library

➢ Assembly Versioning

➢ Properties and Events

➢ Delegates and Events Management

➢ Easy-to-use Generics

➢ Simple Multithreading

➢ Integration with Windows

Some Important Points

C# is case sensitive.

All statements and expression must end with a semicolon (;).

The program execution starts at the Main method.

Unlike Java, program file name could be different from the class name.

C# Code Example

```
using System;

namespace HelloWorldApplication

{

  class HelloWorld

  {

    static void Main(string[] args)

    {

      Console.WriteLine("Hello World");

      Console.ReadKey();

    }

  }

}
```

Terms to be Remembered

using
◦ like import in Java
◦ it is used to include the System namespace in the program.
◦ a program generally has multiple using statements.

namespace
◦ disambiguation of names.
◦ like Internet hierarchical names.
◦ a namespace is a collection of classes

class
◦ contains the data and method definitions that your program uses.

IDE Tools

Following are the tools that we will use for developing C# Applications:

Microsoft Visual Studio 2010/2013/2015.

And for backend Database:

Microsoft SQL Server.

MySQL Server.

C# Code in Visual Studio

Running Demo