C# Sharp:

* It is a programming language developed by Microsoft
* Features of C#:

1. Object Oriented
2. Type safe
3. Rich library support with the help of .NET
4. Asynchronous Programming: It allows your program to do other work while waiting

Async: marks a method to run

Await: Pauses execution until the awaited task

.NET:

* It is a framework
* It provides tools, libraries, and runtime that your C# code runs on. It makes it easier to build and run applications

NOTE:

C# is like the language you use to write a letter.

.NET is like the postal service that delivers it, with all the infrastructure that makes sure it gets there and works properly.

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C# is widely used for the following:

* Web Development (ASP.NET)
* Desktop Applications (Windows Forms, WPF)
* Game Development (Unity)
* Cloud & AI Applications

C# works in the following steps:

C#, the compilation process involves two major steps:

1. Write code (C#)
2. Compile → gets converted into IL by the compiler ,Common Intermediate Language (CIL) or Microsoft Intermediate Language (MSIL).
3. Run the program → IL is converted into native machine code by the JIT compiler
4. CPU executes the native code

NOTE: CLR stands for Common Language Runtime

It is the core runtime environment of the .NET Framework , responsible for managing the execution of .NET programs.

Basic Syntax:

namespace FirstProject

{

Class Program

{

Static void Main(string[] args){

{

}

}

Namespace it is logical entity not physical entity used to group items

Floders are logical but files inside folders or Physical

Project is a collection of item

**Console.ReadKey()**:is a method in C# used to:

**Wait for the user to press a key** before proceeding.  
It reads a single key press from the keyboard.

using System;

class Program

{

static void Main()

{

Console.WriteLine("Hello, World!");

Console.WriteLine("Press any key to exit...");

Console.ReadKey(); // Waits for a key press

}

}

**Datatypes in C#**

1.Value types

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2. Reference Types

3. Pointer types