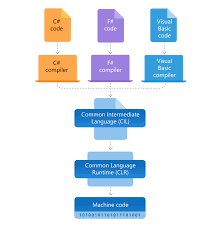
C#

* C# is an object-oriented programming language created by Microsoft that runs on .NET framework.
* C# is used for :
  + Mobile application
  + Desktop application
  + Web services
  + Websites, Gaming
  + Database applications
* Run C# file: **dotnet run**
* .NET Architecture



* The Common Language Runtime (CLR) is the execution engine that handles running applications. It provides services like thread management, garbage collection, type-safety, exception handling, and more.
* The Class Library provides a set of APIs and types for common functionality. It provides types for strings, dates, numbers, etc. The Class Library includes APIs for reading and writing files, connecting to databases, drawing, and more.
* .NET applications are written in the C#, F#, or Visual Basic programming language. Code is compiled into a language-agnostic Common Intermediate Language (CIL). Compiled code is stored in assemblies—files with a .dll or .exe file extension.
* When an app runs, the CLR takes the assembly and uses a just-in-time compiler (JIT) to turn it into machine code that can execute on the specific architecture of the computer it is running on.

**Create a new Console app**

Syntax : dotnet new console -o appname **OR** dotnet new console

**Run the code in cmd**

Syntax: dotnet run

**Hello World program in C#**

Steps: open cmd 🡪 dotnet new console -o HelloWorld 🡪 It will create files automatically

Inside Program.cs file 🡪 Automatically wrote 🡪 Console.WriteLine(“Hello World”);

CMD 🡪 dotnet run

Output : Hello World

**Variables and Datatypes**

* int i = 10;
* float f = 2.0f;
* decimal d = 10.0m;
* bool b = true;
* char c = ‘c’;
* string str = “A string”;

// Declare an implicit variables

* var x = 10;
* var z = “Hellow!”;

// Declare An array

* int[] vals = new int[5];
* string[] strs = {"one","two","three"};

// Null means no values

* Object obj = null;
* Console.WriteLine(obj);

.// Implicit Type conversation

* long bignum;
* bignum = i;

//Explicit Type conversion

* float itof = (float) i;
* int ftoi = (int) f;

**Operator**

* and 🡪 **&&** , or 🡪 **||**

**If the value is null :**

* string str = null;
* Console.WriteLine(str ?? "Unknown String");
* str ??= "Not null values";
* Console.WriteLine(str);
* **Output**:

Unknown String

Not null valules

**If the value is not null**

* string str = “Hello”;
* Console.WriteLine(str ?? "Unknown String");
* str ??= "Not null values";
* Console.WriteLine(str);

**Output:**

Hello

Hello

* **Comment**
  + // 🡪 Single line comments
  + /\* \*/ 🡪 Multi line comments
  + /// 🡪 xml comments