

Language Map for C#

Variable Declaration <i>Is this language strongly typed or dynamically typed? Provide an example of how variables are declared in this language.</i>	Variable Declaration: The language is strongly typed <ul style="list-style-type: none"> Examples: <ul style="list-style-type: none"> int shots = 12; char grade = 'A'; string hello = "Hello!";
Data Types <i>List all of the data types (and ranges) supported by this language.</i>	Data Types: <ul style="list-style-type: none"> sbyte (-128 to 127) byte (0 to 255) short (-32,768 to 32,767) ushort (0 to 65,535) int (-2,147,483,648 to 2,147,482,647) uint (0 to 4,294,967,295) long (-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807) ulong (0 to 18,446,744,073,709,551,615) float (10^{-7}) double (10^{-15}) bool (true to false) char ('A' to 'z') string (" ")
Selection Structures <i>Provide examples of all selection structures supported by this language (if, if else, etc.)</i>	Selection Structures: <ul style="list-style-type: none"> if if-else else if switch
Repetition Structures <i>Provide examples of all repetition structures supported by this language (loops, etc.)</i>	Repetition Structures: <ul style="list-style-type: none"> While loop For loop Break/Continue ("Break" within loops while "Continue" allows loop to progress)
Arrays	Arrays:

<p><i>If this language supports arrays, provide an example of creating an array with a primitive data type (e.g. float, int, etc.)</i></p>	<ul style="list-style-type: none"> • Are supported. • Examples: <ul style="list-style-type: none"> ◦ <code>string[] cities = {"Houston", "Atlanta", "Las Vegas", "Omaha"};</code>
<p>Data Structures <i>If this language provides a standard set of data structures, provide a list of the data structures and their Big-Oh complexity.</i></p>	<p>Data Structures (Big-Oh Complexity):</p> <ul style="list-style-type: none"> • Array (O(n)) • Stack (O(n)) • Queue (O(n)) • Singly-Linked List (O(n)) • Doubly-Linked List (O(n)) • Skip List (O(n log(n))) • Hash Table (O(n)) • Binary Search Tree (O(n)) • Cartesian Tree (O(n)) • B-Tree (O(n)) • Red-Black Tree (O(n)) • Splay Tree (O(n)) • AVL Tree (O(n)) • KD (O(n))
<p>Objects <i>If this language support object-orientation, provide an example of how to create a simple object with a default constructor.</i></p>	<p>Object Orientation is supported. Example:</p> <ul style="list-style-type: none"> • <pre>Class Sample { // fields, variables, methods, properties }</pre> • <code>Sample sample1 = new Sample();</code>
<p>Runtime Environment <i>What runtime environment does this language compile to? For example, Java compiles to the Java Virtual Machine.</i> <i>Do other languages also compile to this runtime?</i></p>	<p>Runtime Environment:</p> <ul style="list-style-type: none"> • C# compiles to Common Language Runtime (CLR) • Any language that uses the .NET Framework can compile on CLR
<p>Libraries/Frameworks <i>What are the popular libraries or frameworks used by programmers for this language? List at least three (3).</i></p>	<p>Libraries/Frameworks:</p> <ul style="list-style-type: none"> • Microsoft .NET Framework • .NET Core • Standard Libraries • Mono • Framework Class Library
<p>Domains</p>	<p>Domains:</p> <ul style="list-style-type: none"> • Many in the desktop & web application development industries • Some in the finance or financial tech industries will also use C#

What industries or domains use this programming language? Provide specific examples of companies that use this language and what they use it for.

Companies that use C#:

- Microsoft
- Stack Overflow
- Alibaba Travels
- Intuit