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Language Map for C#

Variable Declaration
Is this language strongly typed or dynamically typed? Provide an example of how variables are declared in this language.
	C# is a strongly typed language. This means that every variable and constant has a type and every expression evaluates to a value. Also, every method declaration specifies a name, the type and kind (value, reference, or output) for each input parameter and for the return value
	
	The syntax to declare a variable:
	using System;
	using System.Collections.Generic;
	using System.Linq;
	using System.Text;
	namespace VariableDeclaration
	{
	Class Program
	{
	
	Static void Main(string[] args) {
	short a;
	int b ;
	double c;
	/* initialization
	*/
	a = 5;
	b = 10;
	c = a + b;

	Console.WriteLine("a = {0}, b = {1}, c = {2}", a, b, c); Console.ReadLine(); } } }
Data Types *List all of the data types (and ranges) supported by this language.*	Data Type Range Byte 0 .. 255 Sbyte -128 . 127 Short -32,768 .. 32,767 Ushort 0 .. 65,535 Int -2,147,483,648 .. 2,147,483,647 Uint 0 .. 4,294,967,295 Long -9,223,372,036,854,775,808 .. 9,223,372,036,854,775,807 Ulong 0 .. 18,446,744,073,709,551,615 Float -3.402823e38 .. 3.402823e38 Double -1.79769313486232e308 .. 1.79769313486232e308 Decimal -79228162514264337593543950335 to 79228162514264337593543950335 char A Unicode character . string. A string of Unicode characters . bool True or False . object An object .

Selection Structures
Provide examples of all selection structures supported by this language (if, if else, etc.)
	if
	using System;
	using System.Collections.Generic;
	using System.Linq;
	using System.Text;
	namespace IfStatement
	{
	Class Program {
	Public static void Main(string[] args) {
	int num = 10;
	if (num % 2 == 0)

```
        {
            Console.WriteLine("It is even number");
        }
        Console.ReadLine();
    }
  }
}
```

If else

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace IfElse
{
   Class Program
   {
      Public static void Main(string[] args)
      {
         int num = 11;
         if (num % 2 == 0)
         {
            Console.WriteLine("It is even number");
         }
         else
         {
            Console.WriteLine("It is odd number");
         }
         Console.ReadLine();
      }
   }
}
```

Repetition Structures
Provide examples of all repetition structures supported by this language (loops, etc.)
	While loop
	
	using System;
	using System.Collections.Generic;
	using System.Linq;
	using System.Text;
	namespace WhileLoop
	{
	classProgram
	{
	
	Public static void Main(string[] args)
	{
	int x = 1;
	// Exit when x becomes greater than 5
	while (x <= 5)
	{
	Console.WriteLine("Test");
	// Increment the value of x for
	// next iteration
	x++;
	}
	Console.ReadLine();
	}
	}
	}
	
	# For loop
	
	using System;
	using System.Collections.Generic;
	using System.Linq;

```
using System.Text;
namespace ForLoop
{
   classProgram
   {

      publicstaticvoid Main(string[] args)
      {
         for (int i = 1; i < = 10; i++)
         {
            Console.WriteLine(i);
         }
         Console.ReadLine();
      }
   }
}
```

Do loop

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace DoLoop
{
   classProgram
   {

      publicstaticvoid Main(string[] args)
      {
         int x = 1;

         do
```

	{
	// The line will be printed
	// if the condition is false
	Console.WriteLine("Test");
	x++;
	}
	while (x < 10);
	Console.ReadLine();
	}
	}
	}

Arrays
If this language supports arrays, provide an example of creating an array with a primitive data type (e.g. float, int, etc.)
	using System;
	using System.Collections.Generic;
	using System.Linq;
	using System.Text;
	namespace Arrays
	{
	classProgram
	{
	
	publicstaticvoid Main(string[] args)
	{
	int [] n = new int[10];
	int i,j;
	/* initialize elements of array n */
	for (i = 0; i < 10; i++) {
	n[i] = i + 100;
	}
	
	/* output each array element's value */
	for (j = 0; j < 10; j++) {

	Console.WriteLine ("Element[{0}] = {1}", j, n[j]); } Console.ReadLine(); } } }
Data Structures *If this language provides a standard set of data structures, provide a list of the data structures and their Big-Oh complexity.*	Stack Queue Linked List Hashtable Binary Search Binary Search Tree Graphs Sorting Algorithms

Objects
If this language support object-orientation, provide an example of how to create a simple object with a default constructor.
	using System;
	using System.Collections.Generic;
	using System.Linq;
	using System.Text;
	namespace Objects
	{
	Class Program
	{
	int num;
	string name;
	
	// this would be invoked while the
	// object of that class created.
	Pr()
	{

	Console.WriteLine("Constructor Called");
	}
	
	Static void Main(string[] args)
	{
	Pr p = new Pr();
	Console.WriteLine(p.name);
	Console.WriteLine(p.num);
	Console.ReadLine();
	}
	
	}
	
	}

Runtime Environment *What runtime environment does this language compile to? For example, Java compiles to the Java Virtual Machine.* *Do other languages also compile to this runtime?*	It compiles to .NET Core runtime environment C# and F# both compile to .NET Core runtime environment Scala, Kotlin, Groovy, Clojure compile to Java Virtual Machine
Libraries/Frameworks *What are the popular libraries or frameworks used by programmers for this language? List at least three (3).*	Hangfire Autofac AutoMapper
Domains *What industries or domains use this programming language? Provide specific examples of companies that use this language and what they use it for.*	• Microsoft uses C# for web and game development. • Stack Overflow uses C# for app development and web services.