Language Map for JavaScript

Variable Declaration *Is this language strongly typed or dynamically typed? Provide at least three examples (with different data types or keywords) of how variables are declared in this language.*	C# is strongly typed. To declare variables, first name the data type and then the name Ex: int price = 5; int price = 5, bulkPrice = 3, discountedPrice = 4 var itemName = “Mulch” const double EulersNumber = 2.718281828459
Data Types *List all of the data types (and ranges) supported by this language.*	Byte: 0 to 255 Sbyte: -128 to 127 Short: -32,768 to 32,767 Ushort: 0 to 65,535 Int: -2,147,483,648 to 2,147,483,647 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 Char: single character Float: floating point number Double: double-precision floating number Bool: true or false

Selection Structures
Provide examples of all selection structures supported by this language (if, if else, etc.) ***Don’t just list them, show code samples of how each would look in a real program.***
	If - else:
	int capacity = 25;
	
	if (capacity > 25) {
	
	Console.WriteLine("Capacity Reached, you must wait.");
	}
	Else {
	Console.WriteLine("Come on in!");
	}
	
	Switch Block:
	string timeOfDay = "midnight-11:59";
	
	switch (day) {
	
	case "midnight-11:59":
	
	Console.WriteLine("morning");
	
	break;

	case "12:00-6:00": Console.WriteLine("afternoon"); break; default: Console.WriteLine("night"); }

Repetition Structures
Provide examples of all repetition structures supported by this language (loops, etc.) ***Don't just list them, show code samples of how each would look in a real program.***
	For
	class ForExample
	{
	static void Main(string[] args)
	{
	for (int i = 0; i < 5; i++)
	{
	Console.WriteLine($"For Loop Iteration: {i}");
	}
	}
	}
	
	While
	class WhileExample
	{
	static void Main(string[] args)
	{
	int i = 0;
	while (i < 5)
	{
	Console.WriteLine($"While Loop Iteration: {i}"); i++;
	}
	}
	}
	
	Do-while
	class DoWhile
	{
	static void Main(string[] args)
	{
	int i = 0;
	
	do
	{
	Console.WriteLine($"Do-While Loop Iteration: {i}"); i++;
	} while (i < 5);
	}
	}
	Foreach
	class ForeachExample
	{
	static void Main(string[] args)
	
	{ string[] sustantivos= { "Perro", "Gato", "Casa", "Duende" };

	foreach (string sustantivos in sustantivos)
	
	{
	Console.WriteLine($"Sustantivos: {sustantivos}");
	}
	}
	}

Arrays
*If this language supports arrays, provide **at least two examples** of creating an array with a primitive or String data types (e.g. float, int, String, etc.) If the language supports declaring arrays in multiple ways, provide an example of way.*
	String Array direct index population:
	
	string[] verbos= new string[] { "comer", "volar", "entender" };
	
	Integrar Array followed by index assignment:
	
	int[] numeros= new int[4];
	
	numeros[0] = 10;
	numeros[1] = 20;
	numeros[2] = 30;
	numeros[3] = 40;

Data Structures *If this language provides a standard set of data structures, provide a list of the data structures and their Big-Oh complexity (identify what the complexity represents).*	**List** Methods of the List data structure are either O(1) for accessing a single element or insert to the end or O(n) for insert, delete selection, or search) **Linkedlist** Methods of the LinkedList data structure are either O(1) (for accessing a single element or insert to the end) or O(n) (for insert, delete selection, or search) **Array** These methods are O(1) for accessing the array and inserting to the end. There are also O(n) for searching, inserting into a specific position, and deleting an element. **Stack** For push, pop, and peek each is O(1) because it only takes 1 operation. **Queue** For peek, enqueue, and dequeue each is O(1) as they only take 1 operation

Objects
If this language support object-orientation, provide an example of how you would write a simple object with a default constructor and then how you would instantiate it.
	Yes, C# is an Object Oriented language. I will create a ciudad object and instantiate it for Lima.
	
	public class Ciudad
	{
	
	public string nombre;
	public int populacion;
	
	public Ciudad()
	{
	nombre = “null”;
	populacion = 0;
	}
	
	public void cityInfo()
	{
	Console.WriteLine($”Name: {nombre}, populacion: {populacion}”;

	}
	
	Class PrintInfo
	{
	Static void Main(string[] args)
	
	Ciudad ciudad1 = new Ciudad
	
	Ciudad1.Displayinfo();
	
	Ciudad1.nombre= “Lima”
	Ciudad1.populacion = 30;
	
	Ciudad1.DisplayInfo();
	}
	}

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? If so, what these other languages?*	C# compiles to Common Intermediate Language, or CIL. Other languages that use CIL are: PowerShell, C++, Visual Basic, and F#
Libraries/Frameworks *What are the popular libraries or frameworks used by programmers for this language? List at least three (3) and describe what they are used for.*	C# uses the “using” reserve word to import libraries. Some common examples are: JavaScript Object Notation – JSON is commonly used in web development and facilitates communication between humans and computers Serilog – helps organize the use of files and databases and helps keeps a log library Xamarin – helps interconnectedness between cross-platform applications.
Domains *What industries or domains use this programming language? Provide at least three specific examples of companies that use this language and what they use it for.* ***E.g. Company X uses C# for its line of business applications.***	C# is found across many industries, including banking, healthcare, and game Devlopment. Banks use the language for analytics, banking software, and trading systems. Healthcare uses it for it digital medical records. Lastly, game development uses C# for managing graphics and keeping track of in-game objects