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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.
	JavaScript is dyamically typed language.
	<script>
	Var test = "Test";
	console.log(test);
	</script>
	
	<script>
	If (true) {
	let test = "Test";
	console.log(test);}
	else let failedTest = "Failed Test"
	console.log(failedTest)
	</script>
	
	<script>
	Const test = "Test"
	console.log(test);
	</script>

Data Types *List all of the data types (and ranges) supported by this language.*	Number: +-(2^53 – 1) Bigint: arbitrary length Float: 7 decimal digits Double: 15 decimal digits Booleans: true or false String: 0 or more characters Null: one single unknown value Undefined: one single undefined value Symbol: unique identifiers Object: for complex data structures
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:** <script> Var num = 2; If (num = 2){ document.write("True);} </script>

	If Else:
	<script>
	Var num = 2;
	if (num = 2){
	document.write("True);}
	else{document.write("False");}
	</script>
	
	Switch:
	<script>
	Var mascot = "Cardinals";
	Switch(letter){
	Default: document.write("Knights");
	Break;
	Case "Volunteers": document.write("Volunteers");
	Break;
	Case "Wildcats": document.write("Wildcats");
	Break;
	Case "Orange": document.write("Orange");
	Break;}
	Document.write("was the mascot.");
	</script>

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.**
	While statement:
	Var num = 10;
	Var sum – 0;
	While (num < 20){
	Sum += num;
	Num++;
	Console.log(num);}
	Console.log(sum);
	
	For statement:
	Var num = 10;
	Var sum = 0;
	For (var num = 10; num<20;num++){
	Sum+= num;
	Console.log(sum);}
	Console.log(sum);

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.)*	Const letters = {"a", "b", "c", "d"}; Console.log(letters); Let foodTime = new Array("Breakfast", "Lunch", "Dinner"); Console.log(foodTime); Console.log(foodTime.length); Console.log(foodTime[1]);
Data Structures *If this language provides a standard set of data structures, provide a list of the data structures and their Big-Oh complexity.*	Array {Insert- O(n), Access- O(1), Search- O(n)} HashMap {Insert- O(1), Access O(1), Search-)(1)} Map(using binary search tree) {Insert, Access, and Search- O(log(n))} Set(using HashMap) {Insert, Access, and Search- O(1)} Set(using list) {Insert, Access, and Search- O(n)} Set(using binary search tree){Insert, Access, and Search- O(log(n))} Linked List {Insert, Access, and Search- O(n)} Stack(array implementation) {Insert, Access, and Search- O(1)} Queue(array implementation) {Insert, Access, and Search- O(1)} Queue(list implementation) {Insert, Access, and Search- O(1)}

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.
	<script>
	Class Test {
	Constructor(A, B){
	This.g = A;
	This.f = B;}
	Print(){
	document.write(this.g + "
	" + this.f);}
	}
	Let a1 = new Test("A", "Test");
	a1.print();
	</script>

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?*	Javascript has a JS runtime environment. In the JS runtime environment, it contains a JS engine. Each browser has their own Javascript engine. Chrome uses v8 JS Engine and node.js is a cross-platform runtime environment.
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..*	**jQuery**- makes things simpler for HTML manipulation and the syntax is similar to CSS **React.js** – makes interactive user interface creations easier and can be used for developing mobile applications **Underscore.js** – it has many functions of four different types based on the datatypes they manipulate (objects, arrays, both objects and arrays, and other functions); it also supports filters, maps, etc.

Domains *What industries or domains use this programming language? Provide 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.***	Microsoft uses javascript to build its edge web browser. Paypal uses javascript in production and to build all client-facing applications Netflix uses javascript to use a more distributed approach to speed up and alleviate the stress on their servers Walmart uses javascript to make their mobile site faster Groupon uses javascript to rebuild their website into different node applications and it makes it faster