**Language Map for JavaScript**

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| **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.* | * Dynamically typed * Var x =5 * Let x = 5 * X =5 |
| **Data Types**  *List all of the data types (and ranges) supported by this language.* | * Types are dynamic. * Boolean – 1 byte * Null – this is just a constant but w3 still lists it. 1 byte * Undefined – responds to dynamic assignments * Number - 2^-1074 and 2^1024, safely store integers in the range -(2^53 − 1) to 2^53 − 1 * BigInt – numbers larger than 253-1 * String – immutable. Can concat, 2^53 - 1 * Symbol – random gen basically, always returns a random prim * And there’s objects |
| **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 (relational){  --------  }  Else/if else( ){  -------------  } |
| **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 () {  }  Do{  -----------  } while()  For {  } |
| **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 array\_name = [item1, item2, ...]; * const array\_name = [“Aaron”, “Jacob”]; |
| **Data Structures**  *If this language provides a standard set of data structures, provide a list of the data structures and their Big-Oh complexity.* | - Arrays. O(1), O(n) for iterations  - Stack O(n) depending on order  - Queues O(n) order  - Linked List O(n) order depending  - Trees O(n )  - Hashtable 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.* | * const car = {type:"Fiat", model:"500", color:"white"}; * name:value * const person = {   firstName: "John",  lastName: "Doe",  age: 50,  eyeColor: "blue"  }; |
| **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?* | Inside a browser’s runtime environment or the Node 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 library: HTML document traversal, events, animations  React library: builds interfaces  D3.js library: datafocused |
| **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.*** | * Paypal: interfacing * Netflix: interfacing * Groupon: site interfacing * Microsoft: edge browsing |