DWA_02.8 Knowledge Check_DWA2

1. What do ES5, ES6, and ES2015 mean - and what are the differences between them?

ES5 is short for **ECMAScript 5** and is also known as **ECMAScript** 2009.

ES6 is short for **ECMAScript** 6, the sixth edition of the **ECMAScript** standard released in 2015. ES2015 is another name for ECMAScript 2015, meaning ES6 and ES2015 are the same versions of the ECMAScript standard.

The main differences between ES5 and ES6 can be summarised as follows:

	ES5	ES6
Data-types	ES5 supports the primitive data types: string, number, boolean, null, and undefined.	ES6 brought additions to JavaScript's data types, including the introduction of a new primitive data type called symbol which supports the creation of unique values.
Performance	Lower performance due to lack of some features that impact efficiency	ES6 offers improved performance compared to ES5 due to its new features and optimized storage implementation.
Defining variables	Only the var keyword can be used to define variables	Introduction of the const and let keywords to define variables
Object Manipulation	Object manipulation operations are more time-consuming	Object manipulation operations are smoother and quicker
	E.g: when extracting values from objects, ES5 does not have built-in destructuring assignment, so developers have to manually access object properties one by one	E.g.: Destructuring assignment in ES6 enables the extraction of multiple properties from objects in a single statement, improving code readability and reducing the need for manual property access.
Arrow Functions	both function and return keywords are used to define a function.	Arrow functions are introduced, dropping the need for the function keyword to define a function
Loops	The for loop is used to iterate over elements	ES6 introduced the forof loop, which allows iterating over the values of iterable objects.

2. What are JScript, ActionScript, and ECMAScript - and how do they relate to JavaScript?

According to net-informations.com, "JavaScript was originally named Mocha and changed to LiveScript but ultimately became JavaScript. JavaScript is the most popular implementation of the ECMAScript Standard. ActionScript and JScript are other languages that implement the ECMAScript."

Essentially, JScript, ActionScript and ECMAScript are all related to JavaScript. Here's how:

- JScript is an interpreted programming language created by Microsoft in 1996 as a
 version of the earlier JavaScript(1995) to use in Internet Explorer, Microsoft's browser.
 The most notable difference between JScript and JavaScript is that JScript is only
 compatible with Internet Explorer, while JavaScript is supported by all modern browsers.
- ActionScript is a scripting language used for developing games, animations, internet
 applications and other multimedia content for Adobe Flash. ActionScript and JavaScript
 are both defined by ECMA-262 standards.
- **ECMAScript** was created to be a standard that would guide the path of JavaScript. ECMAScript provides guidelines for how scripting languages should behave and provides a common base for various implementations.

3. What is an example of a JavaScript specification - and where can you find it?

An example of a JavaScript specification is ES13, recently released in June 2022. You can find and read about it on the <u>ECMA website</u>. Additionally, you can find a summary of its new features from <u>TC39's GitHub repository</u>.

4. What are v8, SpiderMonkey, Chakra and Tamarin? Do they run JavaScript differently?

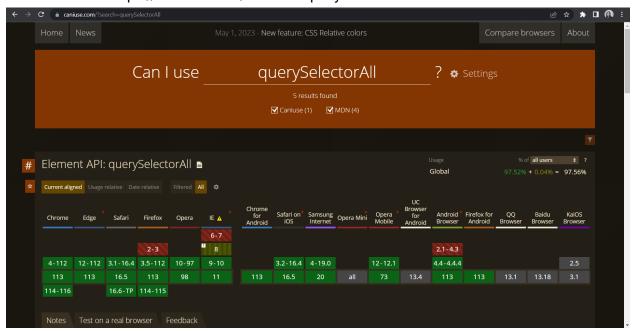
V8, SpiderMonkey, Chakra and Tamarin are all JavaScript engines developed by major browser companies.

- **V8** is an engine developed by the Chromium Project (Google) for the Google Chrome web browser. V8 takes JavaScript and makes it executable in Chrome. It is written in C++, and also powers Node.js. Its first release was in 2008.
- **SpiderMonkey** is an engine developed by Mozilla to power the Firefox browser. It is also written in C++, and was released in 1995, making it the first engine ever created.

- Chakra is an engine developed by Microsoft for its Microsoft Edge Legacy web browser. However, as of 9th March 2021, Microsoft Edge no longer uses Chakra and has switched to V8. Chakra is also written in C++.
- Tamarin is a discontinued JavaScript engine developed by Adobe for executing
 ActionScript (the scripting language used for developing games, animations, internet
 applications and other multimedia content).

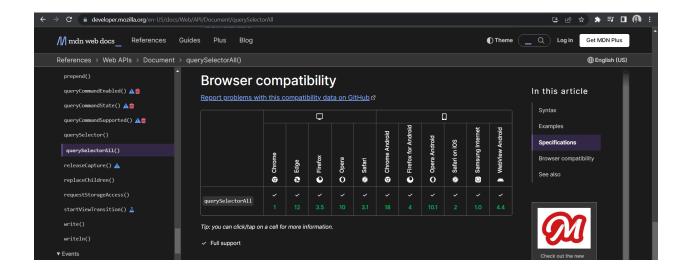
5. Show a practical example using **caniuse.com** and the MDN compatibility table.

caniuse search: https://caniuse.com/?search=querySelectorAll



MDN (Mozilla Developer Network) search:

https://developer.mozilla.org/en-US/docs/Web/API/Document/guerySelectorAll



In MDN, the compatibility status can be represented using different symbols or indicators such as " \checkmark " (fully supported), " \land " (partial support), " \checkmark " (not supported), or " \bigcirc " (unknown). In this case, querySelectorAll() appears to be supported by all browsers specified.

References:

https://www.javatpoint.com/es5-vs-es6

https://www.geeksforgeeks.org/difference-between-es5-and-es6/

 $\underline{https://net-informations.com/js/iq/ecmas.htm\#:\sim:text=JavaScript\%20is\%20the\%20most\%20po}$

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https://www.geeksforgeeks.org/whats-the-difference-between-javascript-and-jscript/

https://github.com/tc39/proposals/blob/main/finished-proposals.md