DWA_02.8 Knowledge Check_DWA2

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

ES5 (ECMAScript 5): Released in 2009, it's the fifth edition of ECMAScript. It introduced important features like strict mode, JSON support, and new array methods (e.g., forEach, map, filter, reduce). It's widely supported in modern web browsers and is considered the baseline for web development.

ES6 (ECMAScript 6): Also known as ECMAScript 2015 (ES2015), it was released in 2015. It brought significant enhancements to JavaScript, including arrow functions, template literals, classes, enhanced object literals, promises, modules (import/export), and spread/rest operators. It introduced a more modern and developer-friendly syntax.

ES2015 (ECMAScript 2015): This is another name for ES6. The term ES2015 is used to emphasize the year it was standardized and to avoid confusion with future ECMAScript editions (e.g., ES7, ES8), which are named after their release year. Technically, ES6 and ES2015 refer to the same edition of ECMAScript.

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

JScript: Developed by Microsoft, JScript is a scripting language primarily used for web development within Internet Explorer. It is an early implementation of the ECMAScript specification and shares many features with JavaScript, but also includes proprietary extensions. JScript is specific to Microsoft technologies and is not commonly used in modern web development.

ActionScript: This scripting language was developed by Macromedia (later acquired by Adobe) for building interactive applications and animations in Adobe Flash. Influenced by ECMAScript standards, ActionScript includes object-oriented programming features. However, with the decline of Flash and the growth of web standards, ActionScript's relevance has decreased.

ECMAScript: ECMAScript is a standardized scripting language specification that defines the core features of a scripting language. JavaScript, the most well-known implementation of ECMAScript, is often referred to when discussing this standard. Other scripting languages like JScript and ActionScript also incorporate ECMAScript features but may deviate from the standard.

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

A JavaScript specification is like a detailed guide that explains all the cool features and functionalities of the JavaScript language. You can find the most complex and official information about JavaScript in the ECMA-262 specification 1. It's like the holy grail for JavaScript knowledge!

For example, the ES6 (ECMAScript 2015) specification brought some excellent upgrades to JavaScript, including arrow functions, template literals, classes, enhanced object literals, promises, modules (import/export), and spread/rest operators 1. It's like a whole new level of JavaScript awesomeness!

If you're interested, you can check out the latest draft of the ECMAScript specification at tc39.es/ecma262.

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

All four javascript engines ultimately aim to execute the JavaScript code, they do have different optimization techniques but they all work towards one goal and to adhere to the JavaScript language specifications to ensure compatibility across different browsers and environments.

- V8 is a high-performance JavaScript engine developed by Google and used in the Google Chrome web browser. It compiles JavaScript code into machine code for efficient execution and employs Just-In-Time compilation techniques.

- SpiderMonkey, developed by Mozilla for Firefox, includes a JIT compiler and is known for its focus on security and standards compliance.

- Chakra, developed by Microsoft for Edge, also features a JIT compiler and various optimizations but has since been replaced by V8 Edge.

- Tamarin, an open-source project by Adobe and Mozilla, aimed to provide a high-performance engine for JavaScript and ActionScript but is not as widely used as V8 or SpiderMonkey.

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