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?

Versions of the ECMAScript standard such as ES5, ES6, and ES2015 refer to specifications that define JavaScript programming language.

ECMAScript 5, commonly referred to as ES5, made its debut in the year 2009 and brought along a multitude of fresh elements and extensions for JavaScript.

ES6, or commonly referred to as ECMAScript 2015, is a significant language update that was launched in the year of its name: 2015. This release brought substantial enhancements to JavaScript such as arrow functions, classes, modules and improved syntax.

ES2015 is merely an alternative label for ES6, denoting the year of its release. Functionally speaking, ES6 surrounds a group within ES2015 but has gained broader usage under that name.

To summarize, ES5 represents an outdated iteration of JavaScript whereas ES6/ES2015 stands as a more advanced version equipped with numerous enhancements and additional functionalities.

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

JScript, ActionScript, and ECMAScript are scripting languages that have connections with JavaScript. JScript serves as Microsoft's interpretation of ECMAScript, whereas ActionScript is Adobe's version. Meanwhile, ECMAScript stands as the standardized form of this scripting language on which JavaScript relies. In web development practices today, JavaScript takes precedence by being the most extensively utilized performance of ECMAScript worldwide.

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

The ECMAScript specification serves as a prime illustration of JavaScript specifications. It is accessible on both the Ecma International website and the official ECMAScript website.

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

Different web browsers use different JavaScript engines to interpret and execute JavaScript code. The most popular ones include V8 (used by Google Chrome), SpiderMonkey (used by Mozilla Firefox), Chakra (used by Microsoft Edge and Internet Explorer), and Tamarin (used by Adobe Flash Player, but discontinued). These engines may have different optimization techniques and internal workings, but they generally adhere to the JavaScript language standards defined by ECMAScript, ensuring consistent functionality across browsers.

JavaScript engines used by web browsers:

- V8: Developed by Google for Google Chrome. Known for its fast performance and efficient memory management.
- SpiderMonkey: Developed by Mozilla for Mozilla Firefox. Optimized for performance and stability.
- Chakra: Developed by Microsoft for Microsoft Edge (Legacy) and Internet Explorer. Replaced by ChakraCore in Microsoft Edge (Chromium).
- Tamarin: Developed by Adobe Systems for Flash Player. Discontinued since 2012.

Differences and similarities:

- Engines have different optimization techniques, memory management strategies, and internal workings.
- Performance and behavior may vary across browsers but should generally adhere to JavaScript language standards (ECMAScript).

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