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: JavaScript's fifth standard version, introduced in 2009, incorporated several enhancements and improvements.
ES6 (ES2015): The sixth version, launched in 2015, introduced substantial upgrades and fresh features to JavaScript, enhancing its power and expressiveness.

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

ECMAScript (ES):
- ECMAScript is a standardized scripting language specification that serves as the foundation for JavaScript.
- JavaScript is commonly referred to as the "implementation" of ECMAScript, meaning that JavaScript is an actual programming language that conforms to the ECMAScript standard.
- ECMAScript defines the core features, syntax, and behavior of the language, while JavaScript is the practical, real-world application of those specifications.

JScript:
- JScript is a scripting language developed by Microsoft, originally designed as an alternative to JavaScript.
- While JScript is heavily influenced by ECMAScript and shares many similarities with JavaScript, it also includes Microsoft-specific extensions.
- JScript is primarily used in Microsoft environments, such as Internet Explorer, Windows Script Host, and ASP Classic. It is not as widely used today as JavaScript in web development.

ActionScript:
- ActionScript is a scripting language primarily associated with Adobe Flash (formerly Macromedia Flash) for creating interactive web content, animations, and multimedia applications.

- Like JScript, ActionScript is influenced by ECMAScript and has many similarities with JavaScript.
- While ActionScript has its unique features and syntax for working with Flash components, it is fundamentally based on ECMAScript.

In summary:
- ECMAScript defines the core features of the scripting language, and JavaScript is one of its practical implementations.
- JScript is Microsoft's version of ECMAScript with Microsoft-specific extensions.
- ActionScript is a scripting language used in Adobe Flash, also based on ECMAScript but tailored for creating multimedia-rich web applications within the Flash platform.

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

A JavaScript specification is an official document that delineates the regulations, syntax, and functioning of the JavaScript programming language. The predominant JavaScript specification is the ECMAScript specification. You can access the complete ECMAScript specification on the official ECMAScript website or the ECMA International website: [ECMAScript Specification](https://www.ecma-international.org/ecma-262/).

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

V8:
- V8 is the JavaScript engine created by Google, primarily employed in the Chrome web browser, renowned for its speed and performance.
- It utilizes a Just-In-Time (JIT) compilation technique, wherein JavaScript code gets compiled into machine code right before execution, resulting in quicker execution.
- V8 introduced groundbreaking features like hidden classes to optimize object property access and inline caching, further enhancing performance.

SpiderMonkey:
- SpiderMonkey is the JavaScript engine developed by Mozilla, used in the Firefox web browser.
- As one of the earliest JavaScript engines, SpiderMonkey has undergone numerous iterations and enhancements over the years.

- SpiderMonkey introduced features such as Just-In-Time (JIT) compilation, garbage collection optimizations, and enhancements in ECMAScript compatibility.

Chakra:
- Chakra is the JavaScript engine created by Microsoft, previously utilized in the Edge web browser before Microsoft's transition to the Chromium engine.
- Chakra introduced "ChakraCore," a feature allowing it to be embedded in other applications and utilized beyond web browsers.
- It emphasized performance, security, and compliance with contemporary web standards.

Tamarin:
- Tamarin was a JavaScript engine initially developed by Adobe and the Mozilla Foundation, deployed in the ActionScript Virtual Machine (AVM) for Adobe Flash Player.
- Tamarin aimed to enhance the execution speed of JavaScript and ActionScript code within the Flash environment.
- Notable features of Tamarin included a trace-based JIT compiler and advancements in garbage collection.

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