DWA_02.8 Knowledge Check_DWA2

---

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

- ES5: The fifth version of JavaScript's standard, introduced in 2009, with various improvements.
- ES6 (ES2015): The sixth version, released in 2015, brought significant enhancements and new features to JavaScript, making it more powerful and expressive.

---

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 often referred to as the "implementation" of ECMAScript. In other words, JavaScript is an actual programming language that conforms to the ECMAScript standard.
- ECMAScript specifies the core features, syntax, and behavior of the language, while JavaScript is the practical, real-world implementation of those specifications.

JScript:

- JScript is a Microsoft-specific scripting language that was originally designed as an alternative to JavaScript.
- JScript is very similar to JavaScript, as it was influenced by ECMAScript, but it also includes Microsoft-specific extensions.
- JScript is primarily used in Microsoft environments, such as Internet Explorer, Windows Script Host, and ASP Classic. It's not as commonly 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.
- ActionScript is also influenced by ECMAScript and shares 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 is the standardized specification that defines the core features of the scripting language, with JavaScript being one of its practical implementations.
- JScript is Microsoft's version of ECMAScript, similar to JavaScript but with Microsoft-specific extensions, primarily used in Microsoft products.
- 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.

---

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

A JavaScript specification is a formal document that outlines the rules, syntax, and behavior of the JavaScript programming language. The primary JavaScript specification is the ECMAScript specification. You can find the full ECMAScript specification on the official ECMAScript website or on the ECMA International website: https://www.ecma-international.org/ecma-262/.

---

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

V8:

- V8 is the JavaScript engine developed by Google and primarily used in the Chrome web browser. It's known for its speed and performance.

- It uses a Just-In-Time (JIT) compilation technique, where JavaScript code is compiled into machine code just before execution, resulting in faster execution.
- V8 introduced innovations like hidden classes to optimize object property access and inline caching to further improve performance.

SpiderMonkey:

- SpiderMonkey is the JavaScript engine developed by Mozilla, used in the Firefox web browser.
- It was one of the first JavaScript engines and has gone through multiple iterations and improvements over the years.
- SpiderMonkey introduced features like Just-In-Time (JIT) compilation, garbage collection optimizations, and improvements in ECMAScript compatibility.

Chakra:

- Chakra is the JavaScript engine developed by Microsoft. It was used in the Edge web browser before Microsoft transitioned to using the Chromium engine.
- Chakra introduced a feature known as "ChakraCore," which allowed it to be embedded in other applications and used outside of web browsers.
- It emphasized performance, security, and compatibility with the latest web standards.

Tamarin:

- Tamarin was a JavaScript engine initially developed by Adobe and the Mozilla Foundation. It was used in the ActionScript Virtual Machine (AVM) for Adobe Flash Player.
- Tamarin aimed to improve the execution speed of JavaScript and ActionScript code within the Flash environment.
- It featured innovations like a trace-based JIT compiler and improvements in garbage collection.

---

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