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?

- ES refers to the abbreviation for ECMA Script, 5 and 6 refer to their release editions in order of release whilst 2015 refers to the release year, ES6 and ES2015 refer to the same release.

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

- JavaScript: JavaScript is a high-level, interpreted programming language primarily used for web development. It was initially created to add interactivity to web pages and is supported by all modern web browsers. JavaScript follows the ECMAScript standard, which defines the syntax, behavior, and features of the language. The terms "JavaScript" and "ECMAScript" are often used interchangeably.
- ECMAScript: ECMAScript is a standardized scripting language specification that JavaScript (as well as JScript and ActionScript) is based on. It provides the foundation for JavaScript's syntax and features. ECMAScript is managed by the Ecma International standards organization and is continuously updated. Each new version of ECMAScript introduces new features and improvements that are eventually implemented in JavaScript.
- JScript: JScript is a scripting language developed by Microsoft. It was created as a competitor to JavaScript and implemented in Internet Explorer. JScript is based on ECMAScript but may have some differences in terms of supported features and behavior. However, with the decline of Internet Explorer, JScript is not as widely used or relevant today.
- ActionScript: ActionScript is a scripting language initially developed by Macromedia (later acquired by Adobe) for creating interactive content and applications using Adobe Flash. ActionScript was influenced by ECMAScript and shares many similarities with JavaScript. It is used primarily for developing multimedia applications and was popular in the era of Flash-based content. However, with the decline of Flash due to HTML5 and modern web standards, the use of ActionScript has significantly diminished.

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

- An example of a JavaScript specification is ECMAScript 2021 (also known as ECMAScript 12 or ES2021). To access the ECMAScript specification, you can visit the Ecma International website. The ECMAScript specification documents are freely available for download in PDF format. You can find the specification by navigating to the Ecma International website (www.ecma-international.org) and looking for the ECMAScript section or by searching for "ECMAScript specification" on your preferred search engine.

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

- V8, SpiderMonkey, Chakra, and Tamarin are all JavaScript engines, which are responsible for executing JavaScript code. They are used in different web browsers and have their own approaches to running JavaScript:
- V8: V8 is the JavaScript engine developed by Google and used in the Google Chrome web browser. It is also utilized by other projects such as Node.js. V8 is written in C++ and is known for its high performance and efficient execution. It uses just-in-time (JIT) compilation techniques to optimize JavaScript code during runtime, providing fast execution speeds.
- SpiderMonkey: SpiderMonkey is the JavaScript engine developed by Mozilla and used in the Firefox web browser. It was one of the first JavaScript engines ever created. SpiderMonkey is written in C++ and was the first JavaScript engine to implement the ECMAScript standard. It has gone through several optimizations over the years, including the addition of JIT compilation techniques to improve performance.
- Chakra: Chakra was the JavaScript engine developed by Microsoft. It was used in Internet Explorer and later in Microsoft Edge (the old version that used EdgeHTML and Chakra). Chakra was known for its efficient memory management and performance optimizations. However, Microsoft has since transitioned to using the Chromium-based version of Microsoft Edge, which employs the V8 engine.
- Tamarin: Tamarin was a JavaScript engine developed by Adobe Systems. It was specifically designed for executing JavaScript and ActionScript code in the Adobe Flash Player and Adobe AIR. Tamarin was based on the LLVM compiler

infrastructure and utilized just-in-time compilation techniques to optimize code execution.

- These JavaScript engines may have differences in their implementation details, performance characteristics, and additional features. They are all designed to run JavaScript, but they may have variations in their approaches and optimizations, leading to different execution speeds and capabilities. However, it's important to note that my knowledge is based on information available up until September 2021, and there may have been updates or changes to these engines since then.

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