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

ES5 is the fifth edition of the ECMAScript standard, released in December 2009. It introduced significant improvements to the JavaScript language and is widely supported by all modern browsers. Key features introduced in ES5 include strict mode, JSON support, "bind" method, "forEach" method for arrays, and various other utility functions.

ES6

ES6, also known as ECMAScript 2015, is the sixth edition of the ECMAScript standard, released in June 2015. It brought major enhancements to JavaScript, making it more modern, expressive, and developer-friendly. Key features introduced in ES6 include arrow functions, class syntax, let and const declarations for block-scoped variables, template literals, destructuring assignments, spread and rest operators, modules, and promises for handling asynchronous operations, among others.

ES2015

ES2015 is just another name for ES6. The "ES2015" naming convention was introduced to standardize version names based on the release year (2015 in this case) and to avoid confusion with future ECMAScript versions.

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

JScript:

JScript is a scripting language developed by Microsoft. It was their implementation of the ECMAScript standard, starting with JScript version 1.0 in 1996. JScript was primarily used in Microsoft's Internet Explorer browser and server-side technologies like Active Server Pages (ASP).

The relationship between JScript and JavaScript is that both are implementations of the ECMAScript standard. While JavaScript is the most common and widely used implementation, JScript was Microsoft's version of the same standard, tailored for their platforms.

ActionScript:

ActionScript is a scripting language primarily associated with Adobe (formerly Macromedia) Flash. It was used for creating interactive and animated content within Flash applications, such as games, multimedia presentations, and web-based animations. ActionScript had its roots in ECMAScript, but it evolved separately to suit the needs of the Flash platform.

ActionScript 3.0, the most recent version, is heavily based on ECMAScript 4, but the two languages eventually diverged in terms of features and usage. While ActionScript shared similarities with ECMAScript and JavaScript, it

was mainly confined to the Flash runtime environment and was not as widely used as JavaScript on the web.

ECMAScript:

ECMAScript is the standard specification for scripting languages, and JavaScript is the most well-known implementation of this standard. It defines the syntax, semantics, and behavior of the scripting language used in web browsers, servers, and other environments.

JavaScript was originally developed by Netscape, and its first version was called LiveScript. Later, it was renamed JavaScript to leverage the popularity of Java at the time. Eventually, JavaScript was submitted to ECMA International for standardization, and ECMAScript was born.

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

ECMAScript Language Specification is an example of a JavaScript specification. You can find the ECMAScript Language Specification on the official website of Ecma International, the organization responsible for managing the ECMAScript standard

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

V8 is a JavaScript engine developed by Google. It is primarily used in the Google Chrome web browser and is also the foundation for Node.js, a server-side JavaScript runtime. V8 is written in C++ and is designed to be fast and efficient. It uses various optimization techniques, such as Just-In-Time (JIT) compilation, to convert JavaScript code into optimized machine code. V8 has been well-known for its speed and has significantly contributed to the performance improvements in modern JavaScript execution.

SpiderMonkey:
SpiderMonkey is the JavaScript engine developed by Mozilla and is used in the Mozilla Firefox web browser. It was one of the first JavaScript engines ever created and has undergone significant improvements over the years. SpiderMonkey also uses JIT compilation and employs various optimization strategies to enhance JavaScript execution performance.

Chakra (legacy):
Chakra was the JavaScript engine developed by Microsoft and used in the Internet Explorer web browser. However, starting with Microsoft Edge

(introduced in 2015), Chakra was replaced by a new engine called "ChakraCore," which was open-sourced as part of Microsoft's commitment to improving web standards and interoperability.

Tamarin:

Tamarin was a JavaScript engine initially developed by Adobe Systems. It was used in the Adobe Flash Player and the Mozilla Firefox web browser to execute JavaScript (ActionScript in Flash Player's case). However, Tamarin development was discontinued, and its code was merged with the SpiderMonkey engine, enhancing the capabilities of SpiderMonkey.

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