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?

These are different JavaScript versions also known as ECMAScript standard. ES 5 was launched in December 2009. It brought forth significant improvement and additions to JavaScript such as strict mode, map, JSON.parse(), and Arrays.

ES6 was launched in June 2015 and brought a major update. It carried main syntax enhancements such as let and const for variable declaration.

ES2015 is another version of ES6 reflecting the year of release, it is the official designation used in the ECMAScript specification.ES5 laid the foundation for modern JavaScript development with important language enhancements, while ES6 (ES2015) introduced new features and syntax improvements to further enhance the language's capabilities and developer experience.

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

ECMAScript is the standardized specification that defines the JavaScript language, while JavaScript, JScript, and ActionScript are implementations of the ECMAScript standard used in different contexts and environments.

ActionScript - This is a scripting language primarily used for developing interactive applications and multimedia content, especially in Adobe Flash.

JavaScript - This is a high-level, interpreted programming language that conforms to the ECMAScript specification.

JScript - This is Microsoft's implementation of the ECMAScript standard. It was initially developed for use in Microsoft's Internet Explorer web browser.

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

JavaScript specification is the ECMAScript specification. ECMAScript defines the syntax, semantics, and behavior of the JavaScript programming language. It provides detailed descriptions of language features, including syntax rules, data types, control structures, functions, and objects.

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

They are known as ECMAScript engines for web browsers. Each is used to optimize JavaScript performance. Each run JavaScript differently

V8 - Developed by Google for the Chrome web browser, V8 is one of the most widely used JavaScript engines, named for its car engine. It uses just-in-time (JIT) compilation to translate JavaScript code into machine code for faster execution.

V8 employs various optimization techniques, including inline caching, hidden class transitions, and dynamic code generation.

SpiderMonkey - Is the first JavaSricpt engine written at Netscape Communication and released as an open source and maintained by Mozilla Foundation. SpiderMonkey also uses JIT to execute JavaScripts code.

Chakra -Is the JavaScript engine used in Microsoft Edge (legacy versions).
It features a multi-tiered architecture, including an interpreter, a baseline JIT compiler, and an optimizing JIT compiler. It is designed to optimize performance and memory usage, with a focus on real-world scenarios encountered in web browsing.

Tamarin - Was an open-source JavaScript engine developed by Adobe Systems and the Mozilla Foundation. It was used in the Adobe Flash Player and various Mozilla projects.

It utilized a JIT compiler and other optimization techniques to improve JavaScript execution performance.

Each of these compilers are used to enhance JavaScript performance.

References

- https://en.wikipedia.org/wiki/SpiderMonkey
- https://en.wikipedia.org/wiki/V8_(JavaScript_engine)
- https://en.wikipedia.org/wiki/Chakra_(JScript_engine)
- https://en.wikipedia.org/wiki/Tamarin_(software)
- https://en.wikipedia.org/wiki/List_of_ECMAScript_engines

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