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:

- Its also known as ECMAScript 5.
- It was released in the year 2009.
- It is the fifth version or edition of ECMAScript.
- It supports primitive data types: string, number, boolean, null & undefined.
- The var keyword in JavaScript is used for defining variables.

ES6 and ES2015:

- Also known as ECMAScript 6.
- It is the sixth version or edition of ECMAScript.
- It was released in 2015.
- It has a new primitive data type named Symbol, which supports unique values.
- The var, let & const keywords are used for defining variables in JavaScript.
- Due to the presence of new features, ES6 or ES2015 has higher performance than ES5.
- In ES6 or ES 2015, a new feature of the arrow function was introduced, in which the function keyword is not used for defining a function.

ES5, ES6, and ES2015 all refer to different versions of the ECMAScript specification.

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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 is based on the ECMAScript standard.
- JScript is designed to be compatible with JavaScript.
- It was primarily used for client-side scripting in web applications.
- JScript was commonly used in Internet Explorer.
- Syntax and core features of JScript are similar to JavaScript.
- There may be some differences in implementation and available features between JScript and JavaScript.

Action Script:

- ActionScript is a programming language used with Adobe Flash.
- It made websites interactive and animated.
- Developers used it to create buttons, animations, and interactive elements.
- It was based on ECMAScript, similar to JavaScript.
- ActionScript's popularity has declined with the decline of Flash.
- JavaScript and HTML5 are now more commonly used for similar purposes.

ECMAScript

- ECMAScript is a set of rules that define how JavaScript works.
- ECMAScript is a standardized scripting language specification.
- It forms the basis of JavaScript and other programming languages.
- The specification defines the syntax, semantics, and core features of the language.
- ECMAScript is maintained by the Ecma International standards organization.
- JavaScript is the most widely used implementation of ECMAScript.
- ECMAScript versions introduce new features, syntax improvements, and bug fixes.
- ECMAScript is used to build interactive web applications, server-side applications, mobile apps, and more.

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

The specification is a collection of documents describing how JavaScript and its variants should work in the context of JavaScript and its variants

Specification: ECMAScript® 2021 Language Specification
Edition: 12th
URL: https://tc39.es/ecma262/

In this specification, you will find detailed information about the ECMAScript 2021 language. It covers topics such as syntax, data types, control flow, functions, objects, modules, error handling, and more.

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

V8

- V8 is a software created by Google for running JavaScript code.
- It makes JavaScript code run faster and more efficiently.
- V8 manages computer memory to ensure efficient usage.
- It works on different types of computers, including Windows, Mac, Linux, and Android.
- V8 is open source, allowing developers to see and contribute to its code.
- Developers can embed V8 into their own programs to add JavaScript capabilities.
- V8 enhances the performance and interactivity of websites and applications that use JavaScript.

SpiderMonkey

- SpiderMonkey is a special program created by Mozilla that helps the Firefox web browser understand and use JavaScript.
- It's like a language translator that allows websites to do cool things.

Here are a few things to know about SpiderMonkey:
1. JavaScript Interpreter: SpiderMonkey reads and understands JavaScript code.
2. Open Source: SpiderMonkey is an open-source program, which means its code is available for anyone to see and even modify. This encourages collaboration and improvements from people all over the world.
3. Faster Execution: SpiderMonkey is designed to make JavaScript code run faster. It uses clever techniques to make sure websites respond quickly and smoothly to your actions.
4. Memory Management: SpiderMonkey takes care of managing computer memory for JavaScript code. It ensures that memory is used efficiently and helps prevent memory-related issues.
5. Works with Firefox: SpiderMonkey is specifically made to work inside the Firefox web browser. It's like a special tool that helps Firefox understand and run the JavaScript code used on websites.

In simpler terms, SpiderMonkey is a behind-the-scenes program that helps Firefox understand and use JavaScript to make websites interactive and exciting. It makes sure things happen quickly and smoothly, making your web browsing experience more enjoyable.

Chakra

- Chakra is a JavaScript engine developed by Microsoft.
- It helps web browsers and applications understand and execute JavaScript code.
- Chakra focuses on speed and performance, making JavaScript code run faster and more efficiently.

- It handles memory management, allocating and deallocating memory for JavaScript code.
- Chakra is integrated into Microsoft's web browsers and other products.
- It follows the ECMAScript standard, ensuring compatibility with JavaScript code written to the standard.

Tamarin

- Tamarin is a software technology used to run programs written in ActionScript.
- It ensures smooth and efficient execution of these programs.
- Tamarin is commonly used in the Adobe Flash Player.
- It understands the instructions written in ActionScript and makes them come to life.
- Tamarin enables interactive content, such as videos, animations, and games, to work on websites.
- It is a behind-the-scenes technology that ensures everything runs smoothly for a better user experience.

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

1. Caniuse.com: Provide a user-friendly interface to check the compatibility of different web features across various browsers. Here's how it works:
    - Go to caniuse.com in your web browser.
    - In the search bar, type the name of the web feature you want to check (e.g., "flexbox" for a flexible layout feature).
    - You'll see a list of browsers and their versions displayed, along with color-coded support information (green for full support, yellow for partial support, and red for no support).
    - You can click on each browser version to see detailed information about its support and any related issues.

2. MDN compatibility table: MDn provides a comprehensive compatibility table that shows how different web features are supported across various browsers. Here’s how you can use it:

- Go to developer.mozilla.org and search for the web feature you're interested in (e.g., "CSS grid" for a grid layout feature).
- In the documentation, you'll find a compatibility table that lists different browsers and their versions.
- The table indicates the level of support for the feature, such as full support, partial support, or no support.
- You can check each browser version to see detailed information about its support and any relevant notes or workarounds.
- This helps you understand the compatibility landscape for the specific feature and make informed decisions when building your website.
