

DWA_12 Knowledge Check

To complete this Knowledge Check, ensure you have worked through all the lessons in **Module 12: Declarative Abstractions**.

To prepare for your session with your coach, please answer the following questions. Then download this document as a PDF and include it in the repository with your code.

1. What are the benefits of direct DOM mutations over replacing HTML?

Performance boost

Direct DOM mutations are often more efficient than replacing HTML because they only modify the parts of the DOM that need to change. Replacing HTML involves recreating and re-parsing the entire HTML structure, which can be computationally expensive, especially for large and complex pages.

- When you update parts of a web page, you can make it load and respond faster.
 - Direct DOM mutations use less of the computer's processing power.
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2. What low-level noise do JavaScript frameworks abstract away?

Imperative updating of the DOM, keeping track of what elements need to change

JavaScript frameworks abstract updating text, showing/hiding elements, or handling user interactions by providing a more declarative approach. Instead of telling the browser exactly how to change the DOM, you declare what the UI should look like based on the current data or state. The framework then handles the behind-the-scenes work of making those changes efficiently.

- Frameworks help in building websites faster because they provide ready-made pieces
- Frameworks help in avoiding these errors by taking care of many details for you.
- You just tell the framework what you want to change, and it does the work for you

3. What essence do JavaScript frameworks elevate?

JavaScript frameworks enhance the process of creating web applications by offering an organized, efficient, and sustainable method. They simplify complex tasks, making development less complicated. These frameworks encourage the creation of smaller, reusable components, facilitating a modular and component-based approach. Additionally, they come equipped with various tools and features that aid developers in crafting sturdy and scalable web applications. In essence, JavaScript frameworks streamline development, encourage best practices, and empower developers to build robust and adaptable web solutions.

- Frameworks abstract away much of the low-level complexity of web development, such as DOM manipulation, event handling, and HTTP requests. This abstraction allows developers to focus on higher-level application logic rather than dealing with implementation details.
- Frameworks encourage a modular approach to building web applications. They often provide a component-based architecture, where you can create reusable and encapsulated pieces of UI and functionality. This modularity promotes code organization and reusability.

4. Very broadly speaking, how do most JS frameworks achieve abstraction?

They hide away the imperative DOM mutations

In a broad sense, JavaScript frameworks simplify development by abstracting away the need for developers to manually control how web pages update. Instead of giving precise instructions for every change in the Document Object Model (DOM), frameworks offer a more natural, declarative approach. They let developers describe how the user interface should appear based on the application's data, handling the intricate DOM work behind the scenes.

By managing the low-level DOM details and efficiently updating it as needed, frameworks reduce the complexity of development. This abstraction enables developers to focus on expressing the desired UI appearance, rather than worrying about the nitty-gritty steps to achieve it. Consequently, this approach enhances code readability,

minimizes errors, and results in better performance and easier maintenance of web applications.

5. What is the most important part of learning a JS framework?

The most critical aspect of learning a JavaScript framework is developing a strong foundational understanding of its core concepts and principles. These concepts typically include component-based architecture, state management, routing, event handling, and the framework's specific syntax and tools. Mastery of these fundamentals enables developers to build robust and efficient applications within the framework. Additionally, real-world practice through hands-on projects is crucial for solidifying knowledge and gaining practical experience. Staying updated with the framework's community and documentation ensures continuous learning and adaptation to evolving best practices and features. In essence, a strong grasp of foundational concepts and ongoing practical application are the cornerstones of effectively learning and mastering a JS framework.