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.

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

The benefits of directly manipulating or changing the DOM can be:

- It will allow developers to make specific changes to individual elements. Having this kind of control is very useful when you only need to update a portion of the DOM which will minimize unnecessary changes and improve performance.
- When you replace the HTML, the already-existing state of the DOM will be lost. By doing direct DOM mutations you can preserve the current state of the webpage while making the necessary updates.
- It is more efficient to perform direct DOM mutation over completely replacing HTML and especially when you need to make only a tiny change. Instead of rebuilding it from scratch only the affected elements are changed which reduces re-rendering.

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2. What low-level noise do JavaScript frameworks abstract away?

The low-level concepts that JavaScript frameworks abstract is:

- DOM manipulation. Frameworks such as React, Vue and angular abstract away the direct manipulation of the DOM. Instead of manually changing DOM elements, frameworks now provide a virtual representation of the DOM and handle the updates and rendering of components. This simplifies the process of creating interactive user interfaces.
- Event handlers. Instead of attaching event listeners to the DOM elements, frameworks provide a declarative way where event handlers are interpreted within the component code.

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3. What essence do JavaScript frameworks elevate?

- JavaScript Frameworks provide higher level abstraction and pre-defined structures which simplifies the process of developing programs. It offers reusable components, templates etc which help developers build programs efficiently.
- Frameworks try to provide a useful toolbox for hiding repetitive tasks and boilerplate or low level details to provide tools and utilities that enhance productivity.
- Frameworks promote structured code organization and enforce best practices. They provide a more modular way of structuring code which improves the maintainability and reusability of code and brings an ease when trying to understand navigating through your codebase.

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

- Encapsulation. They wrap the complicated or complex code into modules, components or classes so developers can use them without needing to understand the internal workings.
- They take a declarative approach. Instead of giving detailed step-by-step instructions of how to achieve it, they instead allow developers to describe what they want to accomplish in a straight-forward and human readable approach.
- Some frameworks create virtual representations of the DOM which can be updated more efficiently which means developers do not have to perform direct DOM mutation and they work with the virtual version of it instead.

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

Learning the underlying abstraction and what those tools abstract away. Understanding the underlying concepts and principles on which the framework is built puts you in a better position of solving problems and talking about it and understanding what went wrong and as a result make informed decisions. Also having a strong foundation in the core concepts of JavaScript will allow you to comprehend the inner workings of the framework.