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 allow for updating only the specific parts of the DOM that have changed. This can be more efficient than replacing large sections of HTML.
- You can update parts of the page without needing to reload or re-render the entire page.
- Direct DOM manipulations preserve the state of form inputs, user selections, and other interactive elements. Replacing HTML can cause these states to be reset, leading to a poor user experience.

---

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

- Imperative updating of the DOM, keeping track of what elements need to change.
- Ensuring that only the necessary parts of the DOM are updated, which can be complex and error-prone without a framework.
- Managing the lifecycle of UI components, including initialization, updates, and cleanup.
- Ensuring data flows in a single direction to maintain predictable state changes, as in React.

---

3. What essence do JavaScript frameworks elevate?

Component Based Architecture

- Frameworks like React, Vue.js, and Angular promote building applications as a collection of reusable components, which enhances code reusability and modularity.
- Each component encapsulates its structure, behavior, and styles, making it easier to manage and reason about the application's parts.

Declarative Programming

- Declarative programming allows developers to describe what the UI should look like rather than how to achieve it. This makes the code more readable and easier to understand.
- When the application state changes, the UI automatically updates to reflect these changes, reducing the need for manual DOM manipulation.

State Management

- Frameworks provide tools and patterns for managing state in a predictable and centralized manner

Unidirectional Data Flow

- Data flows in a single direction, from parent to child components, which helps in understanding how data moves through the application.

Scalability

- Promotes a structured and organized codebase that is easier to scale and maintain.
- Built-in mechanisms for optimizing performance, such as efficient rendering and resource loading, support the development of scalable applications.

---

4. Very broadly speaking, how do most JS frameworks achieve abstraction?
They hide away the imperative DOM mutations

---

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

The most important aspect of learning a JS framework is understanding its core concepts, what exactly it abstracts away from us and how best we can use those abstracts in a specific use-case.