REACT JS

Virtual DOM

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Browsers create an in-memory representation of HTML text called HTML DOM.

DOM stands for Document Object Model.

React creates an in-memory replica of the HTML DOM called Virtual DOM.

Virtual DOM is lightweight and detached from browser-specific implementation details.

Like the actual DOM, the Virtual DOM is a node tree that lists elements, their attributes and content as objects and properties.

Virtual DOM is created by React’s render() method.

Creation of Virtual DOM happens very fast in React.

Whenever setState() method is called on any component, the entire UI will be re-rendered in a NEW Virtual DOM representation.

The difference between the previous Virtual DOM representation and the new one is calculated.

Real DOM is then updated with only the difference.

The process of comparing virtual DOMs is called diffing.

The process of applying changes found via diffing to the HTML DOM is called reconciliation.

HTML DOM manipulation is an expensive operation.

During reconciliation, React calculates the minimum number of DOM operations needed to achieve the update.

This is why React is very fast.

Programmers write React code as if the entire page is rendered on each change, while the React libraries only render sub components that actually change.

“Chrome developer tools” has something called “The paint flashing tool”.

This tool, when activated, highlights parts of the page that the browser repaints.

The paint flashing tool can be activated by checking the Paint Flashing checkbox in Rendering tab of the console drawer.

Console drawer can be toggled on and off using the Esc key in Chrome developer tools.

Using this tool one can see how efficient React is in updating ONLY relevant sections of the page.

END OF CHAPTER

APPENDIX