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Week 14 Research Assignment

1. When does a React component render?

A React component re-renders whenever there is a change in its state or props. Additionally, it can also re-render when its parent component re-renders or when the developer explicitly calls the `forceUpdate()` function. When the state or props of a component change, React's diffing algorithm kicks in to determine what specific changes are necessary in the Document Object Model (DOM). Based on this comparison, it efficiently updates and re-renders only those components that changed. This process is part of React's re-rendering and reconciliation process, which makes React highly efficient.

2. Considering React, what is one-way, or unidirectional data flow? Why is it important?

One-way or unidirectional data flow in React refers to the way state data is passed down from parent components to child components via props, and how children emit changes upward via callbacks. This pattern enhances predictability and code maintainability by clarifying data sources and paths, and simplifies debugging by allowing for easy tracing of state changes. It also fosters the design of self-contained, reusable components by isolating state management at the top level. Thus, the same component can be utilized in multiple places with different states, enhancing code reusability and efficiency (React Docs - Lifting State Up, as of September 2021).

<https://legacy.reactjs.org/docs/reconciliation.html>

<https://legacy.reactjs.org/docs/lifting-state-up.html>