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React & State management

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Agenda

1. What is React?

2. Main concepts

3. Understand React rendering

4. React context & State Management

5. Q&A.

What is React?

- A JavaScript library for building user interfaces.

- Simplifies UI development through its declarative approach, allowing you to describe how your UI should look for each state.

- It promotes a component-based architecture, where you build reusable, encapsulated components with their own state and logic.

- With React's "Learn Once, Write Anywhere" philosophy, you can apply your React skills to build web applications, mobile apps with React Native, or even server-side rendering with Node.js.

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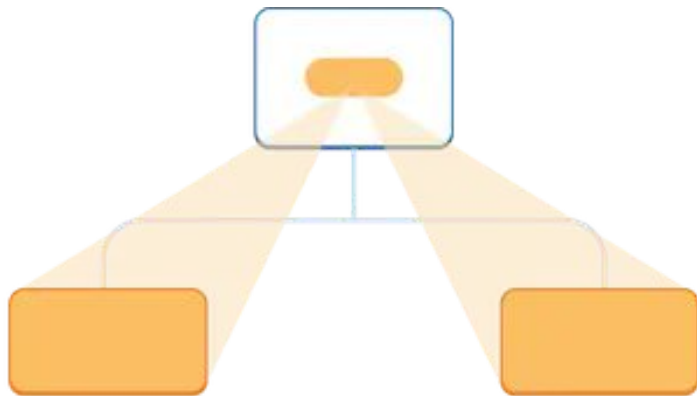FOUNDATION

Main concepts

- JSX

- Rendering Elements

- Components and Props

- State and Lifecycle

- Handling Events

- Conditional Rendering

- Lists and Keys

- Forms

- Lifting State Up

- Hooks and custom hooks

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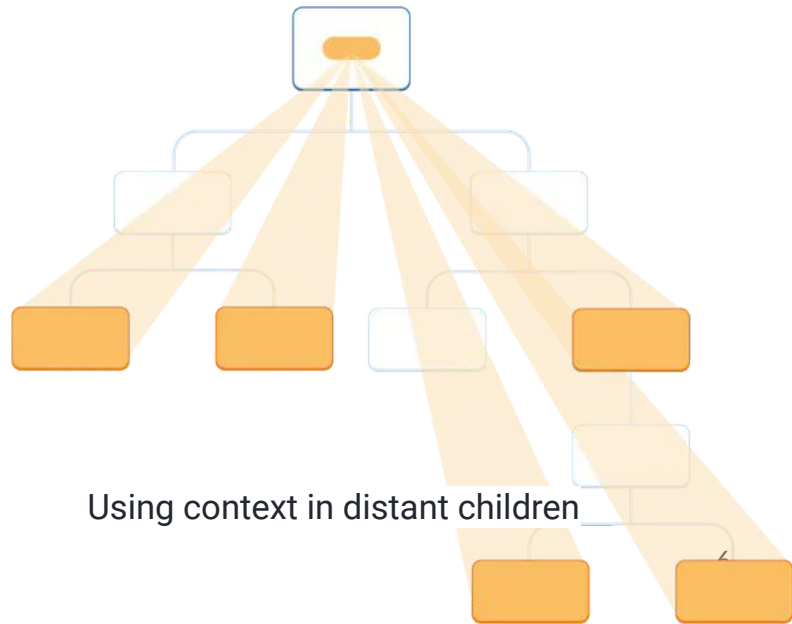
Understand React Rendering

- Every re-render in React starts with a state change.

- When a component's state changes, by default, React re-renders this component and its descendants (if there are any).

- Render process:

    - Triggering a render.

    - React renders your components.

    - React commits changes to the DOM

React context

Context provides a means to pass data through the component tree without the need to manually pass props down at every level. It is aimed at solving the problem of prop drilling.

Using context in close children

Using context in distant children

To use Context:

- Create and export it with export

  const MyContext = createContext(defaultValue).

- Pass it to the useContext(MyContext) Hook to read it in any child component, no matter how deep.

- Wrap children into <MyContext.Provider value={...}> to provide it from a parent.

State management

- Redux

- Recoil

- Jotai

- Zustand

- MobX

References

- https://react.dev/

- https://www.joshwcomeau.com/react/why-react-re-renders/

- https://www.joshwcomeau.com/react/usememo-and-usecallback/

- https://blog.isquaredsoftware.com/2020/05/blogged-answers-a-mostly-complete-guide-to-react-rendering-behavior/

- Source code
    - https://codesandbox.io/s/reacttodo-6f6cz7
    - https://codesandbox.io/s/reactrender-ljwtsh
    - https://codesandbox.io/s/reactcontext-9ph92l

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Thank You

Q&A