Advanced Techniques

SoftUni Team

Technical Trainers

Software University

Software University

https://softuni.bg

Have a Question?

Software University

sli.do

#react

Table of Contents

Context

What is Context?

- **State Management**
  - React **Context API** allows you to manage and share state across multiple components without having to pass **props** down manually at every level, making it easier to manage global state
- **Provider-Consumer Pattern**
  - It uses a Provider to supply the state and a Consumer or the **useContext** hook to access the state in any component within the provider's tree.
- **Avoids Prop Drilling**
  - By enabling a more efficient way to pass data through the component tree, it helps to avoid **"prop drilling"**, where props are passed through many intermediate components unnecessarily.

Easier Context

```
export const Context = React.createContext();

export const ContextProvider = ({children}) => {
        const [state, setState] = React.useState({});

        return (
                <Context.Provider value={state}>
                        {children}
                </Context.Provider>
        )
}
```

Higher-Order Components

Advanced Composition and Decoration

Higher-Order Components

- A **higher-order component** (**HOC**) is an advanced technique in React for reusing component logic
- **HOCs** are not part of the React API
- **HOC** is a function that takes a component and returns a new component

Higher-Order Component

- Components are the primary unit of code reuse
  - Some patterns aren't straightforward for traditional components
- Whereas as component transforms props into UI
  - **HOC** component transform a component into another component

```
const EnhancedComponent = higherOrderComponent(WrappedComponent);
```

HOC Example

```
function hocFunc(WrappedComponent) {
    return function Component(props) {
        render() {
            return <WrappedComponent {...props} />;
        }
    };
}
```

UseReducer

More Hooks

- **useReducer**
  - An alternative to useState
  - Accepts a reducer of type `(state, action) => newState`
  - Return the current state paired with a **dispatch** method
  - Preferable when you have complex state logic

```
const [state, dispatch] = useReducer(reducer, initialState);
```

Error Boundaries

Error Boundaries

- **Error boundaries** are React components
  - **Catching**, **logging** and **displaying** JS error anywhere in their child component tree
- They catch errors during rendering
- **Do not** catch errors for
  - Event handlers
  - Asynchronous code
  - Server-side rendering

Error Boundaries

- A component becomes an **error boundary** if it defines
  - **`static getDerivedStateFromError`**
    - Render a fallback UI after an error has been thrown
  - **`componentDidCatch`**
    - Log error information
- You can use it as a regular component

```
<ErrorBoundary>
  <MyWidget />
</ErrorBoundary>
```

Error Boundaries

- Error boundaries work like a JavaScript **catch {}** block for component
- Only **class component** can be error boundaries
- Declare an error boundary component **once** and use it throughout your application

Error Boundaries

- You may wrap **top-level** route components to display some error message
- Wrapping individual widgets in an error boundary
  - Protect them from crashing the rest of the app

JEST

Unit Testing

What is JEST?

- Jest is a JavaScript unit testing **framework**
  - Used by Facebook to **test** services and React applications
- Jest acts as a **test runner**, **assertion library** and **mocking library**
- Jest provides **Snapshot testing**
  - Create a rendered 'snapshot' and compare it to a previous
- https://jestjs.io/

Summary

- Context provides way to pass data through the c omponent without passing the props manually
  - Context API
- HOC
- useReducer
- Error Boundaries
- Unit Testing

Software University

Questions?

SoftUni

Software University

SoftUni Creative

SoftUni Digital

SoftUni Foundation

SoftUni Kids

СофтУни БУДИТЕЛ

Finance Academy

SoftUni Diamond Partners

Software University

SmartIT

Coca-Cola HBC Bulgaria

SUPER HOSTING .BG

createX

Postbank

Решения за твоето утре

DRAFT KINGS

VIVACOM

AMBITIONED

INDEAVR

Serving the high achievers

SOFTWARE GROUP

PHAR VISION

Trainings @ Software University (SoftUni)

- Software University – High-Quality Education, Profession and Job for Software Developers
  - softuni.bg, about.softuni.bg
- Software University Foundation
  - softuni.foundation
- Software University @ Facebook
  - facebook.com/SoftwareUniversity

License