

React - Memo

Topics : <u>React JS</u> Written on January 03, 2024

In React, the React.memo function is a higher-order component (HOC) that helps optimize the performance of functional components by memoizing the result. Memoization is a technique where the result of a function is cached and returned when the same inputs occur again. React.memo is particularly useful for preventing unnecessary re-renders of components when their props haven't changed.

Here's a basic usage example:

```
import React, { memo } from 'react';
```

```
const MyComponent = memo((props) => {
// Component logic here
```

```
return (
// JSX rendering
);
});
```

```
export default MyComponent;
```

In this example, the memo function is used to wrap the functional component MyComponent. Now, MyComponent will only re-render if its props have changed.

It's important to note a few key points about React.memo:

1. **Shallow Prop Comparison:** By default, React.memo performs a shallow comparison of props to determine whether the component should update. This means it checks if the new and previous props refer to the same objects, and it doesn't deeply compare the contents of objects. If your props are complex objects, you might need to implement a custom comparison function using the areEqual parameter of React.memo.

```
const MyComponent = memo((props) => {
// Component logic here
```

```
}, (prevProps, nextProps) => {
// Custom comparison logic
return /* true if props are equal, false otherwise */;
});
```

- 2. **Functional Components Only:** React.memo is designed for functional components, not for class components. If you need similar behavior for class components, you can use the PureComponent base class.
- 3. **Performance Considerations:** While React.memo can help optimize performance by preventing unnecessary renders, it's important not to prematurely optimize. In many cases, React's default reconciliation algorithm handles updates efficiently, and memoization may not be necessary.
- 4. **Avoid Excessive Memoization:** Applying React.memo to every functional component might not always be beneficial. Memoization comes with a cost, and applying it unnecessarily can make your code more complex without providing significant performance improvements.
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