

Topic : useCallback Hook...

Assignment: Shopping Cart App

Scenario:

You are tasked with building a simple Shopping Cart application where users can add items to their cart, view the total number of items, and remove items from the cart.

The application will make use of the useCallback hook to optimize the performance by memoizing the functions that handle adding and removing items.

This assignment will help you practice the useCallback hook in React with TypeScript.

Requirements:

➤ Project Setup:

- Create a new React project with a TypeScript template and name it ShoppingCartApp.

➤ Component Structure:

● Create a Product Component:

- This component should display a product name and a button to add the product to the cart.
- The addToCart function, which will be passed as a prop, should be memoized using the useCallback hook.

● Create a Cart Component:

- This component should display the list of items currently in the cart and a button to remove each item.
- The removeFromCart function, which will be passed as a prop, should be memoized using the useCallback hook.

● Create an App Component:

- This component should manage the state for the cart items.

- It should include multiple Product components to represent different products.
- It should also include the Cart component to display the cart contents.
- Use the useCallback hook to memoize the addToCart and removeFromCart functions passed to the child components.

Tasks:

1. Event Handling with useCallback:

- Implement the Product component to handle adding products to the cart.
- Implement the Cart component to handle removing products from the cart.
- Use the useCallback hook in the App component to memoize the functions that handle these actions.

2. State Management:

- Implement the state management in the App component to keep track of the items in the cart.
- Ensure that the addToCart and removeFromCart functions are only recreated when necessary, using useCallback.

3. Expected Outcome:

- A simple shopping cart application where users can:
 - Add products to the cart.
 - View the total number of items in the cart.
 - Remove items from the cart.
 - The application should efficiently manage re-renders by using the useCallback hook.
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