

React Products Fetching & Filtering – Theory Answers

1. How do you fetch products from an API using useEffect with async/await?

In React, data is fetched inside the useEffect hook so that it runs after the component renders. Since useEffect itself cannot be async, an async function is defined inside it and then called. The fetched data is stored in state using useState, which triggers a re-render.

2. What is a controlled select in React?

A controlled select element is one whose value is managed by React state. The selected option is tied to a state variable and updated using an onChange handler.

3. Why do we keep the selected category in state?

Keeping the selected category in state allows React to track changes and re-render the UI when the category changes, enabling dynamic filtering.

4. Why is a default value like "all" used in the dropdown?

A default value like "all" ensures an initial valid selection and represents showing all products before filtering.

5. How do you filter products based on the selected category?

Products are filtered using the filter() method. If the category is "all", all products are shown; otherwise, only matching categories are displayed.

6. What is derived data, and where do you compute it?

Derived data is computed from existing state instead of being stored separately. Filtered products are derived from the products array and selected category and calculated inside the component.

7. Why shouldn't you modify the original products array while filtering?

React state should be immutable. Modifying the original array can cause bugs and incorrect re-rendering. Filtering should return a new array.

8. How does React know to re-render when the category changes?

When state updates, React detects the change and automatically re-renders the component.

9. How do you render option elements dynamically from API data?

After fetching categories and storing them in state, map() is used to render option elements dynamically.

10. How do you handle "No products found" after filtering?

If the filtered products array is empty, a conditional message like "No products found" is displayed instead of the product list.