

## **How do you fetch products from an API using useEffect with async/await?**

You use useEffect to run the API call when the component mounts. Inside useEffect, define an async function and call it to fetch data using await, then store the response in state.

## **What is a controlled in React?**

A controlled is a dropdown whose selected value is controlled by React state using the value and onChange props.

## **Why do we keep the selected category in state?**

We keep the selected category in state so React can track user selection and re-render the UI whenever the category changes.

## **Why is a default value like 'all' used in the dropdown?**

A default value like 'all' allows displaying all products initially and provides a way to reset filters easily.

## **How do you filter products based on the selected category?**

You filter products using the JavaScript filter method, comparing each product's category with the selected category stored in state.

## **What is derived data, and where do you compute it?**

Derived data is data calculated from existing state, such as filtered products. It is computed inside the component during render, not stored in state.

## **Why shouldn't you modify the original products array while filtering?**

Modifying the original array can cause unexpected bugs and breaks immutability. React relies on immutability to detect changes correctly.

## **How does React know to re-render when the category changes?**

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

## **How do you render elements dynamically from API data?**

You use the map method on the fetched categories array to generate elements dynamically.

## **How do you handle 'No products found' after filtering?**

You check the length of the filtered products array. If it is zero, you conditionally render a message like 'No products found'.