

Q1)What does List component does ?

Ans:-

List is a component of react which is taking an array of items which contains unordered list of item and rendering each element of the items array i.e. each item present by sending each to a component `SingleListItem` .

The `SingleListItem` takes `onClickHandler` function, `index`, `isSelected`, `text` as props.

The `onClickHandler` functions sets the index of current item in `selectedIndex` , `index` props is to keep the index of current element, `isSelected` to check wether the index selected is current item index or not, `text` contains the content of the item.

The `WrappedSingleListItem` is a higher-order component that wraps the `SingleListItem` component using `React.memo`. This optimizes performance by re-rendering the component only when its props changes.

The `WrappedListComponent` is also a higher-order component that wraps the `List` component using `React.memo` due to optimization.


The `List` component uses hooks like `useState` and `useEffect`.

Whenever `items` props will change then `useEffect` hook will make the `selectedIndex` state to null. The `useState` hook is used to manage the selected index of the list item.

Q2) What problems/errors are there in the code?

Ans:-


1. In the `List` component, the `selectedIndex` state variable isn't initialized with a default value which isn't recommended as it can create issues during mounting of the component.



```
const [selectedIndex, setSelectedIndex] = useState(null);
```

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2. Secondly, while passing the `isSelected` props we should pass it as a Boolean value, comparing whether the `selectedIndex` value matches with the index of current item or not.



```
isSelected={selectedIndex === index}
```

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3. Third, in the `WrapListComponent`, the `PropTypes` declaration for the `items` prop isn't correct. The array prop type should be defined as `"PropTypes.arrayOf"` instead of `"PropTypes.array"`. Also the `"PropTypes.shapeOf"` should be `"PropTypes.shape"`.

```
items: PropTypes.arrayOf(  
  PropTypes.shape(  
    text: PropTypes.string.isRequired,  
  )  
)
```

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4. The WrappedListComponent should be memorized using React.memo instead of memo

```
onClick={() => onClickHandler(index)}
```

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5. In the SingleListItem component the "onClick" prop is not set correctly. The onClick prop should be set to a function that calls the 'onClickHandler' function with index of item as argument.

```
onClick={() => onClickHandler(index)}
```

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6. Each item should have a unique key in the mapping of items array because it helps react to keep track of all the items uniquely.

```
{items.map((item, index) => (  
  <SingleListItem  
    onClickHandler={() => handleClick(index)}  
    text={item.text}  
    key={Date.now().toLocaleString}  
    index={index}  
    isSelected={selectedIndex === index}  
  />  
))}
```