**React Component Code Review**

1.Explain what the simple List component does?

The simple List component is a React component that renders a list of items. Each item is represented by a SingleListItem component that displays a text and changes its background color depending on whether it's selected or not. The selection is handled by the List component, which keeps track of the index of the selected item in its state.

2.What problems / warnings are there with code?

There are some problems and warnings with the code:

The isSelected prop in the SingleListItem component is expected to be a boolean, but it's assigned the selectedIndex state, which is a number. This can lead to unexpected behavior or errors.

The setSelectedIndex function in the List component is not called correctly, as it should be invoked with a value instead of being assigned a value.

The default value for the items prop in the WrappedListComponent is null, which is not a valid array type. It should be an empty array instead.

The Prop Types validation for the items prop is not correct. It should be PropTypes.arrayOf(PropTypes.shape({...})) instead of PropTypes.array(PropTypes.shapeOf({...})), as the former specifies an array of objects with a certain shape, while the latter specifies an array of a certain shape.

3.Please fix, optimize, and/or modify the component as much as you think is necessary.

To fix and optimize the component, we can make the following changes:

Change the isSelected prop in the SingleListItem component to a boolean by checking if the index matches the selectedIndex.

Change the setSelectedIndex function in the List component to be invoked with a value.

Change the default value for the items prop in the WrappedListComponent to an empty array.

Change the PropTypes validation for the items prop to PropTypes.arrayOf(PropTypes.shape({...})).

Add a key prop to the SingleListItem component to avoid rendering issues and improve performance.

Remove the unnecessary memoization of the SingleListItem component, as it doesn't have any expensive computation or prop changes.

Here's the modified code:

import React, { useState, useEffect } from 'react';

import PropTypes from 'prop-types';

// Single List Item

const SingleListItem = ({

index,

isSelected,

onClickHandler,

text,

}) => {

return (

<li

style={{ backgroundColor: isSelected ? 'green' : 'red'}}

onClick={onClickHandler}

>

{text}

</li>

);

};

SingleListItem.propTypes = {

index: PropTypes.number.isRequired,

isSelected: PropTypes.bool.isRequired,

onClickHandler: PropTypes.func.isRequired,

text: PropTypes.string.isRequired,

};

// List Component

const List = ({

items,

}) => {

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

useEffect (() => {

setSelectedIndex(null);

}, [items]);

const handleClick = index => {

setSelectedIndex(index);

};

return (

<ul style={{ textAlign: 'left' }}>

{items.map((item, index) => (

<SingleListItem

key={index}

onClickHandler={() => handleClick(index)}

text={item.text}

index={index}

isSelected={index === selectedIndex}

/>

))}

</ul>

)

};

List.propTypes = {

items: PropTypes.arrayOf(PropTypes.shape({

text: PropTypes.string.isRequired,

})),

};

List.defaultProps = {

items: [],

};

export default List;