**Steeleye**

**Assignment**

**Frontend**

**Q1)** **Explain what the simple List component does.**

**Answer:**

A simple list is a user interface that displays a collection of items in the list. Maybe we've seen this before in apps like the messaging app that shows your email or the names of your emails or messages. The is called the "simple list" because it is an essential part of that is easy to create and does not require complex code. It's also a good way to organize and present information in a clear and concise way.

Creating a Simple List in React involves looping through an array of data and using the map function to assign each item in the list. Each item usually appears as a separate row or column in a list, and each row or column contains some information about the item, such as its name or description.

The Simple List is a popular way to present various types of information, such as listing contacts, products, jobs, or other related items. It can also customize additional features such as sorting, filtering and pagination to help users browse large collections.

Overall, the Simple List is a fair and efficient way to present information to users in an organized and understandable way.

**Question 2) What problems / warnings are there with code?**

**Answer:**

1. In the “SingleListItem” component, the “onClickHandler” prop is not being called correctly. Instead of passing a function as the “onClick” handler, it's passing the result of calling “onClickHandler(index)”, which is not what we want. The correct way to do this is to pass a function that calls “onClickHandler” with the index, like this:

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

1. In the “SingleListItem” component, the “isSelected” prop is not being used correctly. The “isSelected” prop is being passed as a boolean, but in the component it's being used as a value for the “backgroundColor” style property, which should be a string. To fix this, we can change the prop type to “PropTypes.string”.
2. In the “WrappedListComponent” component, the “selectedIndex” state is not being initialized correctly. It should be initialized to null, not undefined:

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

1. In the “WrappedListComponent” component, the items prop type is incorrect. Instead of “array(PropTypes.shapeOf({ text: PropTypes.string.isRequired }))”, it should be “PropTypes.arrayOf(PropTypes.shape({ text: PropTypes.string.isRequired }))”.
2. In the “WrappedListComponent” component, the items prop default value is set to null, which is not appropriate for an array prop. It should be set to an empty array instead:

WrappedListComponent.defaultProps = {

items: [],

};

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

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

import PropTypes from 'prop-types';

// Single List Item

const WrappedSingleListItem = ({

  index,

  isSelected,

  onClickHandler,

  text,

}) => {

  // fix: use an arrow function to pass the index argument to the onClickHandler

  return (

    <li

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

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

    >

      {text}

    </li>

  );

};

WrappedSingleListItem.propTypes = {

  index: PropTypes.number,

  isSelected: PropTypes.bool,

  onClickHandler: PropTypes.func.isRequired,

  text: PropTypes.string.isRequired,

};

const SingleListItem = memo(WrappedSingleListItem);

// List Component

const WrappedListComponent = ({

  items,

}) => {

  // fix: setSelectedIndex should be a function returned by useState, not a reference to the function itself

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

  useEffect(() => {

    setSelectedIndex(null);

  }, [items]);

  const handleClick = index => {

    setSelectedIndex(index);

  };

  return (

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

      {items.map((item, index) => (

        <SingleListItem

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

          text={item.text}

          index={index}

          // fix: isSelected should be a boolean value, not the state setter function

          isSelected={selectedIndex === index}

          key={index}

        />

      ))}

    </ul>

  )

};

WrappedListComponent.propTypes = {

  items: PropTypes.arrayOf(PropTypes.shape({

    text: PropTypes.string.isRequired,

  })),

};

// fix: set the default value of items to an empty array, not null

WrappedListComponent.defaultProps = {

  items: [],

};

const List = memo(WrappedListComponent);

export default List;