STEELEYE ASSIGNMENT

Lovely Professional University

Front End

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Application Link -> https://gauatmmishra-steeleye-frontend.netlify.app/

Q.1. Explain what the simple List component does.

Ans :

The given code is a React component called "List" that renders a list of items with selectable items. It consists of two main parts:

SingleListItem: This is a functional component that represents a single list item. It takes four props as input: index, isSelected, onClickHandler, and text. It renders a list item (<li>) element with the text content provided by the text prop. The background color of the list item is determined by the isSelected prop - if isSelected is true, the background color is set to green, otherwise it is set to red. The onClickHandler prop is used as the click event handler for the list item, and it passes the index prop as an argument when called.

ListComponent: This is also a functional component that represents the main list component. It takes an items prop as input, which is an array of items to be rendered in the list. It uses the useState hook to manage the state of the currently selected item index (selectedIndex). The useEffect hook is used to reset the selected index to null whenever the items prop changes. The handleClick function is called when a list item is clicked, and it sets the selectedIndex state to the index of the clicked item. The ListComponent maps through the items prop and renders a SingleListItem component for each item, passing the necessary props.

Q.2. What problems / warnings are there with code?

Ans:

- The prop type definition for the items prop in WrappedListComponent is incorrect. It should be PropTypes.arrayOf instead of PropTypes.array, and the shape definition should be wrapped in parentheses: PropTypes.arrayOf(PropTypes.shape({ ... })).

- In the WrappedSingleListItem component, the onClick handler is not defined correctly. It should be a function that is called when the li element is clicked. Instead, the onClick handler is being immediately called with the index argument. This will cause the onClick handler to be called during rendering, which is not what we want.

- In the WrappedListComponent component, the setSelectedIndex hook is not being used correctly. The setSelectedIndex function should be called to update the state, but it is being passed as the initial state value to useState. This will cause setSelectedIndex to be undefined, which will cause errors when trying to call it.

- The isSelected prop in WrappedSingleListItem should be a boolean indicating whether the current item is selected. However, it is being passed the selectedIndex state value, which is a number. This will cause errors when trying to set the backgroundColor style of the li element based on the isSelected prop.

- The selectedIndex state value in WrappedListComponent should be initialized to null instead of undefined. This will ensure that it has the correct type (number) and value when it is first used.
- The items prop in WrappedListComponent should have a default value of [] instead of null. This will ensure that the component does not throw an error when it is first rendered
- The index prop in WrappedSingleListItem is not actually used in the component. It can be removed.

- The onClickHandler prop in WrappedSingleListItem should have a default value of an empty function (() => {}) instead of being

marked as required. This will ensure that the component does not throw an error when it is first rendered.

- The text prop in WrappedSingleListItem should have a default value of an empty string ('') instead of being marked as required. This will ensure that the component does not throw an error when it is first rendered.

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

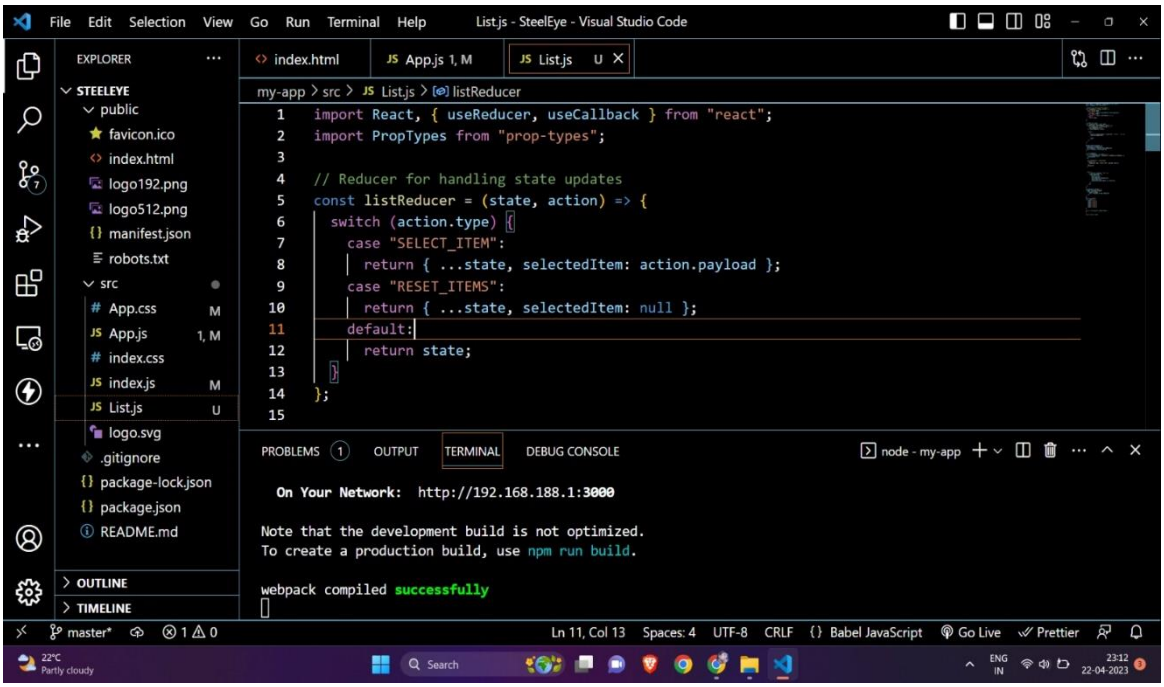
Ans :

Optimized Code/modified code -

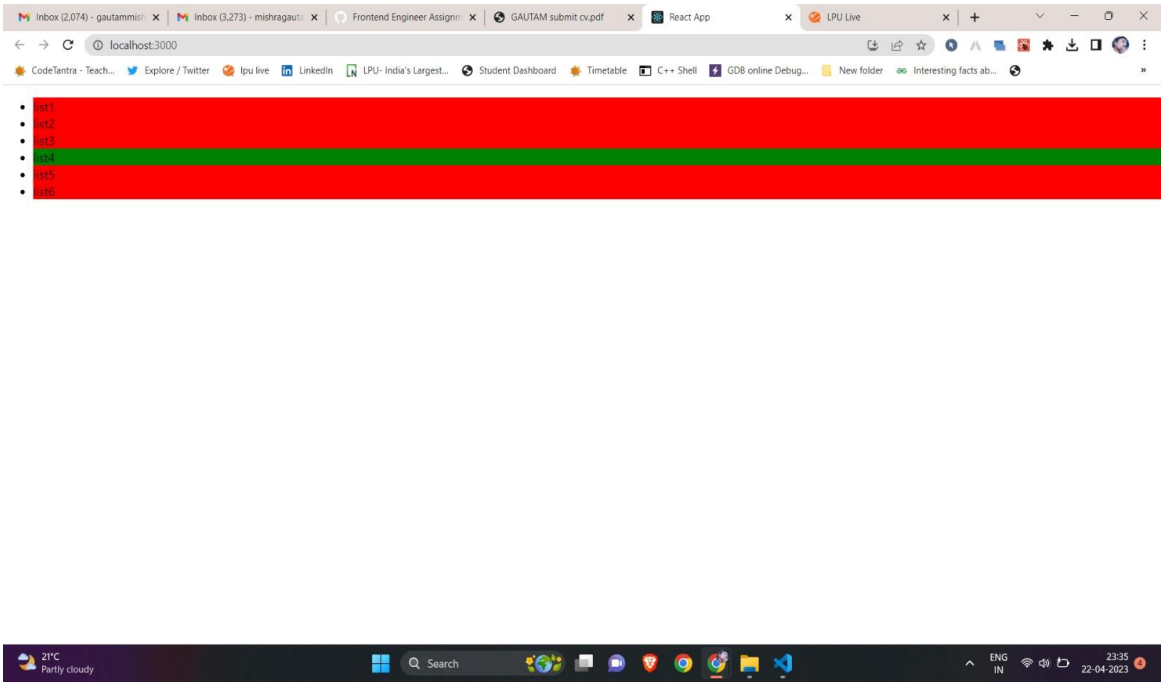
```
import React, { useReducer, useCallback } from "react";
import PropTypes from "prop-types";

// Reducer for handling state updates
const listReducer = (state, action) => {
  switch (action.type) {
    case "SELECT_ITEM":
      return { ...state, selectedItem: action.payload };
    case "RESET_ITEMS":
      return { ...state, selectedItem: null };
    default:
      return state;
  }
};

// Single List Item
const SingleListItem = React.memo(
  ({ isSelected, onClickHandler, text }) => {
    const handleClick = useCallback(() => {
      onClickHandler(text);
    }, [onClickHandler, text]);

    return (
```

```
      <li
        style={{ backgroundColor: isSelected ? "green" : "red" }}
        onClick={handleClick}
      >
        {text}
      </li>
    );
  }
);

SingleListItem.propTypes = {
  isSelected: PropTypes.bool,
  onClickHandler: PropTypes.func.isRequired,
  text: PropTypes.string.isRequired
};

// List Component
const ListComponent = ({ items }) => {
  const [{ selectedItem }, dispatch] = useReducer(listReducer, {
    selectedItem: null
  });

  const handleClick = useCallback(
    (text) => {
      dispatch({ type: "SELECT_ITEM", payload: text });
    },
    [dispatch]
  );

  const resetItems = useCallback(() => {
    dispatch({ type: "RESET_ITEMS" });
  }, [dispatch]);

  return (
    <ul style={{ textAlign: "left" }}>
      {items.map((item) => (
        <SingleListItem
          key={item.text}
          onClickHandler={handleClick}
          text={item.text}
```

```
          isSelected={selectedItem === item.text}
        />
      ))}
    </ul>
  );
};

ListComponent.propTypes = {
  items: PropTypes.arrayOf(
    PropTypes.shape({
      text: PropTypes.string.isRequired
    })
  )
};

export default ListComponent;
```



Output


Inbox (2,074) - gautammish
Inbox (3,273) - mishragauth
Frontend Engineer Assignm
GAUTAM submit cv.pdf
React App
LPU Live
localhost:3000
CodeTantra - Teach...
Explore / Twitter
Ipu live
LinkedIn
LPU- India's Largest...
Student Dashboard
Timetable
C++ Shell
GDB online Debug...
New folder
Interesting facts ab...
lst1
lst2
lst3
lst4
lst5
lst6

21°C
Partly cloudy
Search
ENG
IN
23:35
22-04-2023