

## 9. Build a To-do List Application using React with state and prop

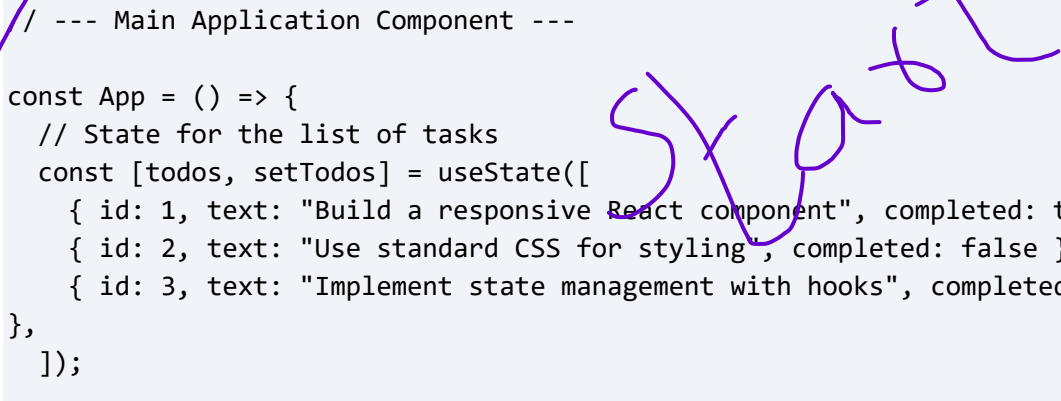
```
import React, { useState } from 'react';
import './App.css'; // Assuming you create this file for external styles

// --- Icon Components (Inline SVG to avoid external dependencies) ---

const Trash2Icon = (props) => (
  <svg {...props} xmlns="http://www.w3.org/2000/svg" width="20" height="20"
    viewBox="0 0 24 24" fill="none" stroke="currentColor" strokeWidth="2"
    strokeLinecap="round" strokeLinejoin="round" className="icon-trash">
    <path d="M3 6h18"/>
    <path d="M19 6v14c0 1-1 2-2 2H7c-1 0-2-1-2-2V6"/>
    <path d="M10 11v6"/>
    <path d="M14 11v6"/>
    <path d="M14 2h-4c-1 0-2 1-2 2v2h8V4c0-1-1-2-2-2z"/>
  </svg>
);

const PlusIcon = (props) => (
  <svg {...props} xmlns="http://www.w3.org/2000/svg" width="24" height="24"
    viewBox="0 0 24 24" fill="none" stroke="currentColor" strokeWidth="2"
    strokeLinecap="round" strokeLinejoin="round" className="icon-plus">
    <path d="M12 5v14"/><path d="M5 12h14"/>
  </svg>
);

const NewTaskInput = ({ value, onChange, onAdd }) => (
  <div className="new-task-input-container">
    <input
      type="text"
      placeholder="What needs to be done?"
      value={value}
      onChange={(e) => onChange(e.target.value)}
      onKeyDown={(e) => {
        if (e.key === 'Enter') {
          onAdd(value);
        }
      }}
      className="task-input-field"
    />
    <button
      onClick={() => onAdd(value)}
      className="add-task-button"
      disabled={value.trim() === ''}
    >
      <PlusIcon />
    </button>
  </div>
);
```



```

/ --- Main Application Component ---

const App = () => {
  // State for the list of tasks
  const [todos, setTodos] = useState([
    { id: 1, text: "Build a responsive React component", completed: true },
    { id: 2, text: "Use standard CSS for styling", completed: false },
    { id: 3, text: "Implement state management with hooks", completed: false
  },
  ]);

  // State for the current input value of the new task
  const [newTaskText, setNewTaskText] = useState('');

  /**
   * Adds a new task to the list.
   * @param {string} text - The text of the new task.
   */
  const addTask = (text) => {
    if (text.trim() === '') return;

    const newTodo = {
      id: Date.now(), // Simple unique ID generation
      text: text.trim(),
      completed: false,
    };

    setTodos([...todos, newTodo]);
    setNewTaskText(''); // Clear the input field
  };

  /**
   * Toggles the completion status of a task by its ID.
   * @param {number} id - The ID of the task to toggle.
   */
  const toggleTask = (id) => {
    const updatedTodos = todos.map(todo =>
      todo.id === id ? { ...todo, completed: !todo.completed } : todo
    );
    setTodos(updatedTodos);
  };

  /**
   * Deletes a task by its ID.
   * @param {number} id - The ID of the task to delete.
   */
  const deleteTask = (id) => {
    const updatedTodos = todos.filter(todo => todo.id !== id);
  }
}

```

```

    setTodos(updatedTodos);
  };

  // The TodoItem component displays a single task item.
  const TodoItem = ({ todo, onToggle, onDelete }) => {
    return (
      <li className="todo-item">
        <div
          className="todo-item-content"
          onClick={() => onToggle(todo.id)}
        >
          <input
            type="checkbox"
            checked={todo.completed}
            onChange={() => onToggle(todo.id)}
            className="todo-checkbox"
          />
          <span className={`todo-text ${todo.completed ? 'completed' : ''}`}>
            {todo.text}
          </span>
        </div>

        {/* Delete Button */}
        <button
          onClick={(e) => {
            e.stopPropagation(); // Prevent toggling when deleting
            onDelete(todo.id);
          }}
          className="delete-button"
          aria-label="Delete task"
        >
          <Trash2Icon />
        </button>
      </li>
    );
  };

  return (
    <div className="app-container">
      <div className="todo-app-wrapper">
        <h1 className="app-title">
          To-Do List
        </h1>
        <p className="app-subtitle">
          Manage your daily tasks efficiently.
        </p>

        {/* Task Input (uses props for communication) */}

```

```

<NewTaskInput
  value={newTaskText}
  onChange={setNewTaskText}
  onAdd={addTask}
/>

{/* Task List */}
{todos.length === 0 ? (
  <p className="empty-list-message">
    🦉 All done! Add a new task above.
  </p>
) : (
  <ul className="todo-list">
    {/* List items (uses props for communication) */}
    {todos.map(todo => (
      <TodoItem
        key={todo.id}
        todo={todo} // Passing the task object as a prop
        onToggle={toggleTask} // Passing the toggle handler as a prop
        onDelete={deleteTask} // Passing the delete handler as a prop
      />
    ))}
  </ul>
)}
</div>
</div>
);
};

export default App;

```

*Handwritten purple scribbles and a line under "export default App;" are present in the original image.*

## OUTPUT:

