Experiment 1

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1. **Aim:**
   Modern React Foundations – EcoTrack

2. **Objective:**

   • To set up a React project using Vite with proper project structure
   • To understand component-based architecture in React
   • To apply ES6 array methods (map, filter, reduce) for data-driven
   UI rendering
   • To separate concerns using components, pages, and data modules

3. **Implementation/Code:**

   Header.jsx:

```jsx
src > components > Header.jsx > Header
1   const Header = ({title}) => {
2       return (
3           <header style = {{
4               padding: '10px',
5               backgroundColor: '#5499f8',
6               color : 'white',
7               textAlign: 'center',
8           }}>
9           <h1>{title}</h1>
10          </header>
11      )
12  }
13  export default Header;
```

Dashboard.jsx:

```jsx
import logs from "../data/logs";

const dashboard = () => {
    const totalcarbon = logs.reduce((acc, curr) => {
        return acc + curr.carbon;
    }, 0);

    return (
        <div>
            <h1>Dashboard</h1>
            <h2>Total Carbon Footprint: {totalcarbon} kg CO2</h2>
            <ul>
                {logs.map((log) => (
                    <li key={log.id}>
                        {log.activity}: {log.carbon} kg CO2
                    </li>
                ))}
            </ul>
        </div>
    )

}

export default dashboard;
```

Log.jsx:

```jsx
1    import logs from "../data/logs";
2
3    const Logs = () => {
4        const highCarbon = logs.filter((log) => {
5                        return log.carbon > 3;
6                })
7        return (
8            <div>
9                <h1>Logs with Carbon geater than 3</h1>
10               <ul>
11                   {highCarbon.map((log) => {
12                       <li key = {log.id}>
13                           {log.activity} = {log.carbon} kg CO2
14                       </li>
15                   })}
16               </ul>
17           </div>
18       )
19   }
20
21   export default Logs;
```

App.jsx:

```jsx
import dashboard from "./pages/dashboard";
import Logs from "./pages/logs";
function App(){
  return (
    <div>
      <dashboard />
      <Logs/>
    </div>
  )
}
export default App;
```

4. Output:

Total Carbon Footprint: 10 Kg

- Car Travel = 4 KG
- Electricity Usage = 6 KG
- Cycling = 0 KG

High Carbon Activity

- Car Travel = 4 Kg
- Electricity Usage = 6 Kg

Low Carbon Activity

- Cycling = 0 Kg

5. Learning Outcomes:

- Analyze Project Structure:

  Deduce the purpose and architecture of a React application by examining its file and directory organization.

- Component-Based Architecture:

  Understand the distinction between page-level components (pages/) and reusable UI components (components/).

- React Router (or equivalent):

  (Assuming App.jsx handles routing) Understand how to implement client-side routing to create a single-page application (SPA) feel.

- Data Handling:

  Learn how static data can be imported and utilized within React components (as seen with data/logs.js).