

Experiment 1

Name : Vipul Raj

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UID : 23BCS10592

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1. Aim: To design and implement the foundational frontend architecture of the EcoTrack application using modern React practices, Vite tooling, and ES6+ JavaScript features.

2. Objective:-

- To understand about basic of React and Vite.
- To create a project using Vite with proper flow.
- 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:

- **Logs.Js :-**

```
export const logs = [  
  { id: 1, activity: "Car Travel", carbon: 4},  
  { id: 2, activity: "Electricity Usage", carbon: 6},  
  { id: 3, activity: "Cycling", carbon: 0 },  
  {id :4,activity:"Coal",carbon:40},  
];
```

- **Dashboard.Jsx :-**

```
import Header from "../header";  
import { logs } from "../logs";  
import Logs from "../vipul";  
  
const EcoTrack = () => {  
  const totalCarbon = logs.reduce((sum, log) => sum + log.carbon, 0);  
  
  return (  
    <div>  
      <Header title="EcoTrack Experiment-1" />  
  
      <h2>DASHBOARD</h2>  
      <p>Total Carbon Footprint: {totalCarbon} kg</p>  
  
      <ul>  
        {logs.map((log) => (  
          <li key={log.id}>  
            {log.activity} = {log.carbon} kg  
          </li>  
        ))}  
      </ul>  
  
      <Logs />  
    </div>  
  );  
};  
  
export default EcoTrack;
```

- Logs.Jsx :-

```
import { logs } from "../logs.js";

const Logs = () => {
  const highCarbon = logs;

  return (
    <div>
      <h2>Daily Logs</h2>
      <ul>
        {highCarbon.map((log) => (
          <li
            key={log.id}
            style={{
              color: log.carbon < 3 ? "green" : "red"
            }}
          >
            {log.activity} = {log.carbon} kg
          </li>
        ))}
      </ul>
    </div>
  );
};

export default Logs;
```

- App.Jsx:-

```
import EcoTrack from "../EcoTrack1.jsx";

const App = () => {
  return (
    <div>
      <EcoTrack />
    </div>
  );
};

export default App;
```

4. Output

EcoTrack Experiment-1

DASHBOARD

Total Carbon Footprint: 50 kg

- Car Travel = 4 kg
- Electricity Usage = 6 kg
- Cycling = 0 kg
- Coal = 40 kg

Daily Logs

- Car Travel = 4 kg
- Electricity Usage = 6 kg
- Cycling = 0 kg
- Coal = 40 kg

5. Learning Outcome :-

- Developed an **Eco Tracker application** using React to analyze carbon emissions.
- Implemented a **Dashboard component** to display emission data from JavaScript logs.
- Used **map(), filter(), and reduce()** to classify low and high carbon emission elements.
- Applied **component-based architecture** for better code organization.
- Achieved **dynamic data rendering** based on emission levels.
- Enhanced understanding of **data processing and state-driven UI in React**.