



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 1

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Subject Name: Full Stack Development-II

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Section/Group: KRG 3A

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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 set up a React application using Vite with a standard project structure.
- To build modular and reusable UI using React components.
- To apply ES6 methods (map, filter, reduce) for dynamic data rendering.
- To maintain separation of concerns using components, pages, and data modules.

3.Implementation/Code:

logs.js:

```
export const logs = [
  { id: 1, activity: "Car Travel", carbon: 6 },
  { id: 2, activity: "Electricity Usage", carbon: 4 },
  { id: 3, activity: "Cycling", carbon: 0 },
  { id: 4, activity: "Bus Travel", carbon: 3 },
  { id: 5, activity: "Train Travel", carbon: 1 },
  { id: 6, activity: "Flight (Domestic)", carbon: 10 },
  { id: 7, activity: "Cooking (LPG)", carbon: 15 },
  { id: 8, activity: "Air Conditioner Usage", carbon: 5 }
];
```

Dashboard.jsx:

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

const Dashboard = () => {
  const totalCarbon = logs.reduce((sum, log) => sum + log.carbon, 0);
  return (
    <div>
      <h2>Dashboard</h2>
      <p>Total Carbon Footprint: {totalCarbon} kg CO2</p>
      <ul>
        {logs.map((log) => (
          <li key={log.id}>
            {log.activity} = {log.carbon} kg CO2
          </li>
        ))}
      </ul>
    </div>
  );
};

export default Dashboard;
```

Logs.jsx

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

const Logs = () => {
  const highImpactLogs = logs.filter((log) => log.carbon > 4);
  const lowImpactLogs = logs.filter((log) => log.carbon <= 4);
  return (
    <div>
      <h2>High Carbon Activities (> 4Kg)</h2>
      <ul>
        {highImpactLogs.map((log) => (
          <li style={{color:"rgb(133, 28, 28)"}} key={log.id}>
            {log.activity} = {log.carbon} kg CO2
          </li>
        )));
      </ul>
    </div>
  );
};

export default Logs;
```

```
</ul>
<h2>Low Carbon Activities ( $\leq$  4Kg)</h2>
<ul>
  {lowImpactLogs.map((log) => (
    <li style={{color:"rgb(45, 81, 46)"}} key={log.id}>
      {log.activity} = {log.carbon} kg CO2
    </li>
  )))
</ul>
</div>
);
};

export default Logs;
```

App.jsx

```
import Header from "./components/Header.jsx";
import Dashboard from "./pages/Dashboard.jsx";
import Logs from "./pages/logs.jsx";
```

```
const App = () => {
  return (
    <>
      <Header title="EcoTrack - Experiment 1" />
      <main style={{ padding: "1rem" }}>
        <Dashboard />
        <Logs/>
      </main>
    </>
  );
};

export default App;
```

4. Output

EcoTrack - Experiment 1

Dashboard

Total Carbon Footprint: 44 kg CO₂

- Car Travel = 6 kg CO₂
- Electricity Usage = 4 kg CO₂
- Cycling = 0 kg CO₂
- Bus Travel = 3 kg CO₂
- Train Travel = 1 kg CO₂
- Flight (Domestic) = 10 kg CO₂
- Cooking (LPG) = 15 kg CO₂
- Air Conditioner Usage = 5 kg CO₂

High Carbon Activities (> 4Kg)

- Car Travel = 6 kg CO₂
- Flight (Domestic) = 10 kg CO₂
- Cooking (LPG) = 15 kg CO₂
- Air Conditioner Usage = 5 kg CO₂

Low Carbon Activities (\leq 4Kg)

- Electricity Usage = 4 kg CO₂
- Cycling = 0 kg CO₂
- Bus Travel = 3 kg CO₂
- Train Travel = 1 kg CO₂

5.Learning Outcome:

- Set up a React application using Vite for fast, modern development workflows.
- Develop reusable and maintainable UIs using React's component-based structure.
- Use ES6 array methods (map, filter, reduce) for efficient data handling and dynamic rendering.
- Organize code into components, pages, and data modules to ensure scalability.
- Implement data-driven UI visualization using structured state and independent data modules.