



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 1

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Subject Name: Full Stack - II

Subject Code: 23CSH-309

Aim: To develop a web-based **Carbon Footprint Monitoring Dashboard** that tracks daily activities, calculates total carbon emissions, and categorizes data to help users identify high-emission behaviors and promote environmental awareness.

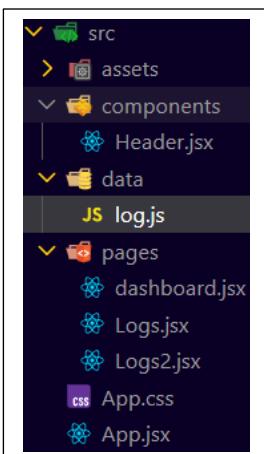
Objective:

- To calculate the total carbon footprint using efficient data aggregation techniques.
- To identify and highlight high carbon-emission activities for better decision-making.
- To present activity-wise emission data in a clear and organized format.
- To apply visual indicators (color-based segregation) for quick emission analysis.
- To implement a clean, modular React architecture using functional components.
- To strengthen understanding of JavaScript array methods like map(), filter(), and reduce() in a real-world use case.

Input/Apparatus Used:

- Programming Language: JavaScript (ES6+)
- Framework / Library: React (Functional Components)
- Build Tool: Vite
- Code Editor: Visual Studio Code
- Web Browser: Google Chrome

Files Structure





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File Used

1.Log.js

```
Ecotrack > src > data > JS log.js > ...
1  export const logs = [
2    { id: 1, activity: "Car Travel", carbon: 4 },
3    { id: 2, activity: "Electricity Usage", carbon: 6 },
4    { id: 3, activity: "Cycling", carbon: 0 },
5  ];
```

2.Header.jsx

```
Ecotrack > src > components > Header.jsx > [?] default
1  const Header={({title})=>{
2    return(
3      <header style={{padding:"0.5rem",
4        backgroundColor:"#4CAF50",color:"white"}>
5        <h1>{title}</h1>
6      </header>
7    )
8  }
9
10 export default Header;
```

3.dashboard.jsx

```
1  import {logs} from '../data/log.js';
2  const DashBoard=()=>{
3    const totalCarbon=logs.reduce((sum,i)=>{
4      return sum+i.carbon;
5    },0)
6    return(
7      <div>
8        <h2>Dashboard</h2>
9        <p>Total Carbon Footprint: {totalCarbon}Kgs</p>
10       <ul>
11         {logs.map(i=>{
12           <li key={i.id}>
13             {i.activity}: {i.carbon}Kgs
14           </li>
15         })}
16       </ul>
17     </div>
18   }
19 }
20
21 export default DashBoard;
```

4.log.jsx

```
import{logs} from '../data/log';

const Logs=()=>{
  const highCarbon=logs.filter(i=>i.carbon>=4);
  return(
    <div>
      <h2>High Carbon Activities</h2>
      <ul>
        {highCarbon.map(i=>(
          <li key={i.id}>
            {i.activity}: {i.carbon}Kgs
          </li>
        ))}
      </ul>
    </div>
  )
}
export default Logs;
```

5.App.jsx

```
cotrack > src > App.jsx > [?] App
1  import Header from "./components/Header";
2  import DashBoard from "./pages/dashboard";
3  import Logs from "./pages/Logs";
4  import Logs1 from "./pages/Logs2";
5
6  function App(){
7    return (
8      <div>
9        <Header title={"Ecotrack"} main={true}/>
10       <DashBoard/>
11       <Logs/>
12       <Logs1/>
13     </div>
14   )
15 }
16
17 export default App;
```



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Output

The screenshot shows a dark-themed web application interface. At the top, a green header bar contains the word "Ecotrack" in white. Below it, a dark section labeled "Dashboard" in red. It displays "Total Carbon Footprint: 10Kgs". Underneath, a section titled "High Carbon Activities" lists two items: "Car Travel: 4Kgs" and "Electricity Usage: 6Kgs". Further down, a section titled "Segeration" lists three items: "Car Travel: 4 kg CO₂" (in red), "Electricity Usage: 6 kg CO₂" (in red), and "Cycling: 0 kg CO₂" (in green).

Learning Outcomes

- Built a **React-based web application** using functional components and clean component architecture.
- Applied **JavaScript array methods** (map, filter, reduce) to process and analyze real-world data.
- Implemented **conditional rendering and dynamic styling** for better UI clarity.
- Gained hands-on experience with **modern development tools** like Vite and ES6+ JavaScript.