



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 1

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Branch: BE CSE

Section/Group: KRG_3B

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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 highemission 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:

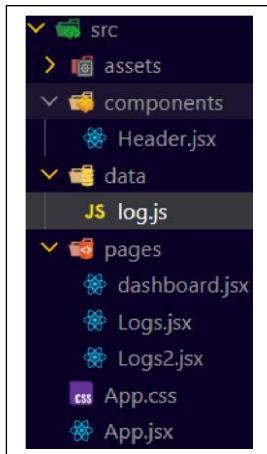
- Programming Language: JavaScript (ES6+)
- Framework / Library: React (Functional Components)
- Build Tool: Vite
- Code Editor: Visual Studio Code
- Web Browser: Google Chrome



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Files Structure



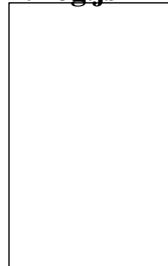
JS logs.js

experiment-1-ecotrack > ecotrack > src > data > JS logs.js > ...

```
1  export const logs = [
2    { id: 1, activity: "Car Travel", carbon: 3 },
3    { id: 2, activity: "Electricity Usage", carbon: 6 },
4    { id: 3, activity: "Cycling", carbon: 0 },
5    { id: 4, activity: "Bus Travel", carbon: 2 },
6    { id: 5, activity: "Flight Travel", carbon: 12 },
7    { id: 6, activity: "Train Travel", carbon: 1 },
8    { id: 7, activity: "Air Conditioner Usage", carbon: 5 },
9    { id: 8, activity: "Solar Energy Usage", carbon: 0 },
10   { id: 9, activity: "Cooking with Gas", carbon: 4 },
11   { id: 10, activity: "LED Lighting", carbon: 1 },
12   { id: 11, activity: "Laptop Usage", carbon: 2 },
13   { id: 12, activity: "Meat Consumption", carbon: 7 },
14   { id: 13, activity: "Recycling Waste", carbon: 0 },
15 ]
```

File Used

1.Log.js



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  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    })
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 }
```



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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

```
ecotrack > 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;
```

Output



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Ecotrack

Dashboard

Total Carbon Footprint: 10Kgs

High Carbon Activities

- Car Travel: 4Kgs
- Electricity Usage: 6Kgs

Segregation

- Car Travel: 4 kg CO₂
- Electricity Usage: 6 kg CO₂
- Cycling: 0 kg CO₂

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.