DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CHANDIGARH UNIVERSITY
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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.

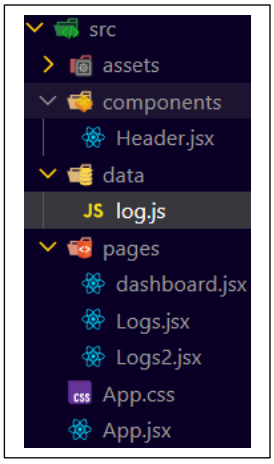
Objective:

- 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

logs.js

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

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

2.Header.jsx

Ecotrack > src > components > Header.jsx > default

```
const Header=({title})=>{
  return(
    <header style={{padding:"0.5rem",
    backgroundColor:"#4CAF50",color:"white"}}>
    <h1>{title}</h1>
    </header>
  )

}

export default Header;
```

3.dashboard.jsx

```
import {logs} from '../data/log.js';
const DashBoard=()=>{
    const totalCarbon=logs.reduce((sum,i)=>{
       return sum+i.carbon;

    },0)
    return(
    <div>
        <h2>Dashboard</h2>
        <p>Total Carbon Footprint: {totalCarbon}Kgs</p>
       <ul>
        {logs.map(i=>{
            <li key={i.id}>
                {i.activity}: {i.carbon}Kgs
            </li>
        })}
       </ul>
    </div>
)
}


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

ecotrack > src > App.jsx > App

```
import Header from "./components/Header";
import DashBoard from "./pages/dashboard";
import Logs from "./pages/Logs";
import Logs1 from "./pages/Logs2";

function App(){
  return (
    <div>
      <Header title={"Ecotrack"}
      main={true}/>
      <DashBoard/>
      <Logs/>
      <Logs1/>
    </div>
  )
}

export default App;
```

Output :

Experiment 1: ECOTRACK

Dashboard

Total Carbon Value: 12

- Car Travel=4Kg
- Electricity Usage=6Kg
- Cycling=2Kg
- Walking=0Kg

High Carbon Daily Logs

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

Low Carbon Daily Logs

- Cycling=2Kg

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.