



DEPARTMENT OF

COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment 1

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Subject Name: Full Stack - II

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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.

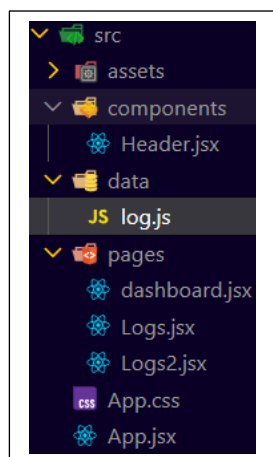
Objective:

- 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



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
11 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;
```

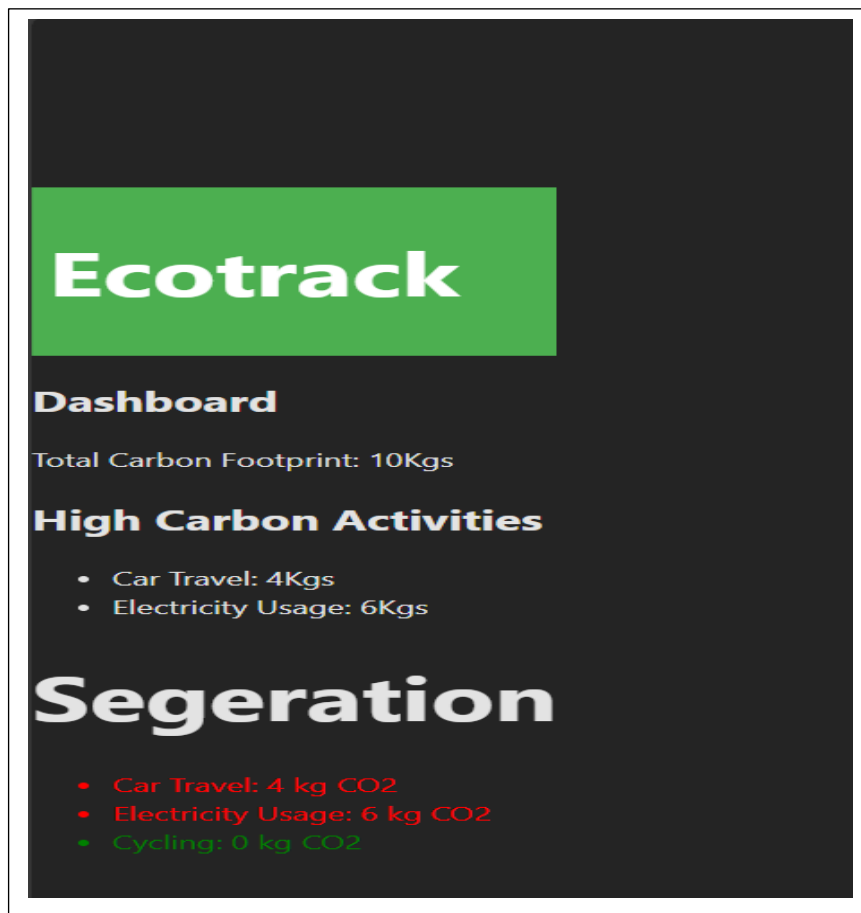
4.log.jsx

```
1 import {logs} from '../data/log.js';
2 const Logs=()=>{
3   const highCarbon=logs.filter(i=>i.carbon>=4);
4   return(
5     <div>
6       <h2>High Carbon Activities</h2>
7       <ul>
8         {highCarbon.map(i=>{
9           <li key={i.id}>
10             {i.activity}: {i.carbon}Kgs
11           </li>
12         })}
13       </ul>
14     </div>
15   )
16 }
17 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"}
10       main={true}/>
11       <DashBoard/>
12       <Logs/>
13       <Logs1/>
14     </div>
15   )
16 }
17
18 export default App;
```

Output



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.