DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING
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Experiment 1

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Section/Group: 23BCSKRG_3A
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Subject Name: Full Stack Development-II
Subject Code: 23CSH-309

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 project using Vite with proper project structure
- To understand component-based architecture in React
- To apply ES6 array methods (map, filter, reduce) for data-driven UI rendering
- To separate concerns using components, pages, and data modules

3. Implementation/Code:

logs.js:

```
export const logs = [
{ id: 1, activity: "Car Travel", carbon: 1 },
{ id: 2, activity: "Electricity Usage", carbon: 6 },
{ id: 3, activity: "Cycling", carbon: 5 },
]
```

Dashboard.jsx:

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

const Dashboard = () => {
  const totalcarbon = logs.reduce((total, log) => total + log.carbon, 0)

  return (
    <div className="dashboard">

      <header>
```

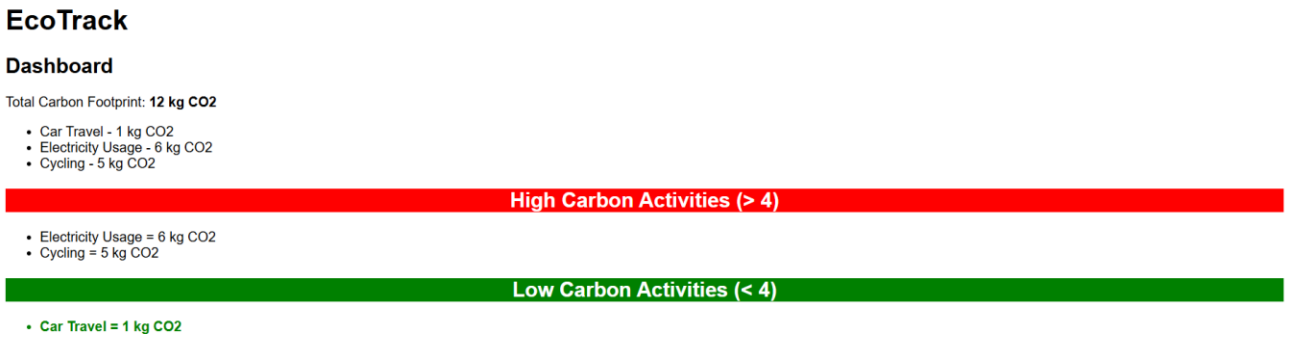
```
        <h2>Dashboard</h2>
        <p>
          Total Carbon Footprint: <strong>{totalcarbon} kg CO2</strong>
        </p>
      </header>

      <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 style={{ background: 'red', color: 'white', textAlign: 'center' }}>
          High Carbon Activities (&gt; 4)
        </h2>
        <ul>
          {highimpactlogs.map((log) => (
            <li key={log.id}>
              {log.activity} = {log.carbon} kg CO2


</li>
        ))}
```

```
        </ul>
      </div>

      <div>
        <h2 style={{ background: 'green', color: 'white', textAlign: 'center' }}>
          Low Carbon Activities (&lt; 4)
        </h2>
        <ul>
          {lowimpactlogs.map((log) => (
            <li key={log.id} style={{ color: 'green', fontWeight: 'bold' }}>
              {log.activity} = {log.carbon} kg CO2
            </li>
          ))}
        </ul>
      </div>
    </>
  )
}

export default Logs
```

4. Output:



5. Learning Outcome:

- Gained hands-on experience in **creating and organizing a React project with Vite**, using structured folders such as components, pages, and data.
- Developed a **component-based UI**, building distinct pages like **Dashboard** and **Logs** for better separation of concerns.
- Implemented **dynamic UI rendering** by using **ES6 map()** to display activity logs from a dataset.
- Utilized **ES6 filter()** to efficiently categorize activities into **high-carbon** and **low-carbon** groups.
- Applied **ES6 reduce()** to calculate the **total carbon footprint** and present summarized results on the dashboard.