Experiment : 1

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Subject: Full Stack 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:**

Header.jsx:

```
const Header =
({title})=>{ return (
<header style={{padding:"0.5rem",backgroundColor:"#27ae60"}}>
<h1>{title}</h1>
</header>)
  }
export default Header;
```

Logs.js:

```
export const logs = [
  { id: 1, activity: "Car Travel", carbon: 4 },
  { id: 2, activity: "Electricity Usage", carbon: 6 },
  { id: 3, activity: "Cycling", carbon: 0 },
];
```

Dashboard.jsx :

```
import {logs} from '../data/logs';
const Dashboard=()=>{
const  total=logs.reduce((sum,log)=>sum+log.carbon,0); //exporting this function directlty change the data
return(
  <div className="dashboard">
    <h2>Dashboard</h2>
    <p>Total Carbon Footprint: {total} kg</p>
    <ul>
      {logs.map(log=>(
        <li key={log.id}>
          {log.activity}={log.carbon} kg
        </li>
      ))}
    </ul>
  </div>
);
};

export default Dashboard;
```

Logs.jsx :

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

const Activities=()=>{
  const highCarbon=logs.filter(log=>log.carbon>3);
  const lowCarbon=logs.filter(log=>log.carbon<=3);
  return(
  <div>
    <h2>High Carbon Activities</h2>

    <ul>
      {highCarbon.map(log => (
        <li key={log.id} style={{color:"red"}}>
          {log.activity}={log.carbon} kg
        </li>
      ))}
    </ul>

    <h2>Low Carbon Activities</h2>
    <ul>
```

```
        {lowCarbon.map(log=>(
          <li key={log.id} style={{color:"green"}}>
            {log.activity}={log.carbon} kg
          </li>
        ))}
      </ul>
    </div>
          );
};

export default Activities;
```

App.jsx :

```
import Header from "./components/Header";
import Logs from "./pages/Logs";
import Dashboard from "./pages/dashboard";

const
  App=()=>{ return (
<>
  <Header title= "Ecotrack-Experiment 1"/>
  <main style={{padding:"1rem"}}>
  <Dashboard/>
  <br></br>
  <Logs/>
</main>

</>
  );
}
export default App;
```

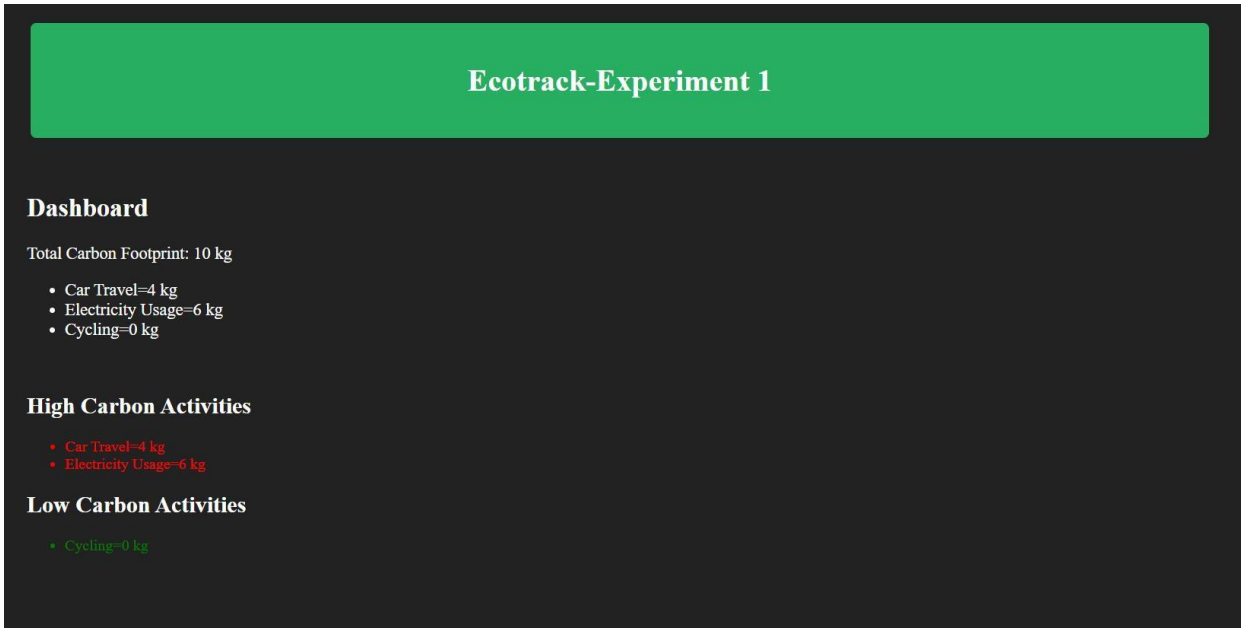
Main.jsx :

```
import { StrictMode } from 'react'
import { createRoot } from 'react-dom/client'
import './index.css'
import App from './App.jsx'

createRoot(document.getElementById('root')).render(
  <StrictMode>
    <App />
  </StrictMode>,
```

)

4. Output



5. Learning Outcome

1. Ability to set up and configure a React application using Vite, understanding modern frontend tooling and project structure.
2. Understanding of component-based architecture in React, enabling modular, reusable, and maintainable UI development.
3. Practical use of ES6 JavaScript array methods (map, filter, reduce) for implementing data-driven user interface rendering.
4. Application of separation of concerns principles by organizing code into components, pages, and data modules.
5. Capability to design a basic scalable frontend architecture, suitable for future enhancements such as routing, state management, and API integration.