

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment - 1

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Branch : BE CSE (AIML)

Section/Group : 23AIT-KRG/G1

Semester : 6th SEM

Date of Performance : 14/01/26

Subject Name : Full Stack II

Subject Code : 23CSH-382

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 :

```
1  const Header = ({title}) => {
2
3      return (
4          <header style = {
5              {
6                  padding: "1rem",
7                  backgroundColor: "#4CAF50",
8                  color: "white",
9                  textAlign: "center"
10             }
11         }>
12             <h1>{title}</h1>
13         </header>
14     );
15 };
16
17 export default Header;
```

Dashboard.jsx :

```
1 import logs from "../data/logs";
2
3 const Dashboard = () => {
4   const totalCarbon = logs.reduce((total, log) =>
5     total + log.carbon, 0);
6 }
7 return (
8   <div>
9     <h1>Dashboard</h1>
10    <p>Total Carbon Footprint: {totalCarbon} kg CO2</p>
11
12    <h2>Activity Logs</h2>
13    <ul>
14      {logs.map(log => (
15        <li key={log.id}>
16          {log.activity}: {log.carbon} kg CO2
17        </li>
18      ))}
19    </ul>
20  </div>
21)
22
23 export default Dashboard;
```

App.jsx :

```
import { useState } from 'react'
import Header from './components/Header'
import Dashboard from './pages/dashboard'
import './App.css'

function App() {
  const [currentPage, setCurrentPage] = useState('dashboard')

  return (
    <>
      <Header onClick={setCurrentPage} />
      <div className="container">
        {currentPage === 'dashboard' && <Dashboard />}
        {currentPage === 'logs' && <logPage />}
      </div>
    </>
  )
}

export default App
```

logs.jsx :

```
import log from "../data/logs";

const logPage = () => {
    const highCarbonLogs = log.filter(log => log.carbon >= 4);
    const lowCarbonLogs = log.filter(log => log.carbon < 4);
    return (
        <div>
            <h1>High Carbon Logs</h1>
            <ul>
                {highCarbonLogs.map(log =>(
                    <li style={{ color: "red" }} key={log.id}>
                        | {log.activity}: {log.carbon} kg CO2
                    </li>
                ))}
            </ul>
            <h1>Low Carbon Logs</h1>
            <ul>
                {lowCarbonLogs.map(log =>(
                    <li style={{ color: "green" }} key={log.id}>
                        | {log.activity}: {log.carbon} kg CO2
                    </li>
                ))}
            </ul>
        </div>
    )
}

export default logPage;
```

4. Output :

Total Carbon Footprint: 10 Kg

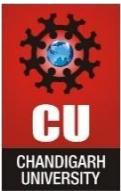
- Car Travel = 4 KG
- Electricity Usage = 6 KG
- Cycling = 0 KG

High Carbon Activity

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

Low Carbon Activity

- Cycling = 0 Kg



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5. Learning Outcomes :

- Analyze Project Structure: Deduce the purpose and architecture of a React application by examining its file and directory organization.
- Component-Based Architecture: Understand the distinction between page-level components (pages/) and reusable UI components (components/).
- React Router (or equivalent): (Assuming App.jsx handles routing) Understand how to implement client-side routing to create a single-page application (SPA) feel.
- Data Handling: Learn how static data can be imported and utilized within React components (as seen with data/logs.js).