



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 1

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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:

[ecotrack/src/components/Header.jsx](#)

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

```
export default Header;
```

[ecotrack/src/data/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 },
  { id: 4, activity: "Bus Travel", carbon: 2 },
  { id: 5, activity: "Train Travel", carbon: 1 },
];
```

[ecotrack/src/pages/dashboard.jsx](#)

```

import { logs } from "../data/logs";

const Dashboard = () => {
  const totalCarbon = logs.reduce((sum, log) => sum + log.carbon, 0);

  return (
    <div>
      <h2>Dashboard</h2>
      <p>Total Carbon Footprint: {totalCarbon} Kgs</p>

      <ul>
        {logs.map((log) => (
          <li key={log.id}>
            {log.activity} = {log.carbon} Kg
          </li>
        )));
      </ul>
    </div>
  );
};

export default Dashboard;

```

[ecotrack/src/pages/logs.jsx](#)

```

import { logs } from "../data/logs";

export const Logs = () => {
  const highcarbon = logs.filter(log => log.carbon > 4);

  return (
    <div>
      <h2>Daily Logs (High Carbon)</h2>

      <ul>
        {highcarbon.map(log => (
          <li
            key={log.id}
            style={{ color: "red" }}
          >
            {log.activity} = {log.carbon} Kg
          </li>
        )));
      </ul>
    </div>
  );
};

export const LowCarbon = () => {
  const lowcarbon = logs.filter(log => log.carbon < 3 && log.carbon>0);

  return (
    <div>
      <h2>Low Carbon Logs</h2>

```

```

<ul>
  {lowcarbon.map(log => (
    <li
      key={log.id}
      style={{ color: "lightgreen" }}
    >
      {log.activity} = {log.carbon} Kg
    </li>
  )));
</ul>
</div>
);
};

```

[ecotrack/src/App.jsx](#)

```

import React from "react";
import Header from "./components/Header";
import Dashboard from "./pages/dashboard";
import {Logs,LowCarbon} from "./pages/Logs";

const App = () => {
  return (
    <>
      <Header title="Ecotrack-experiment-1" />

      <main style={{ padding: "1rem" }}>
        <Dashboard />
        <Logs />
        <LowCarbon />
      </main>
    </>
  );
};

export default App;

```

4. Output

The screenshot shows a web application titled "Ecotrack-experiment-1" running on localhost:5173. The dashboard has a yellow header bar with the title. Below it, a dark-themed section displays the following information:

Dashboard

Total Carbon Footprint: 39 Kgs

- Car Travel = 4 Kg
- Electricity Usage = 6 Kg
- Cycling = 0 Kg
- Bus Travel = 2 Kg
- Train Travel = 1 Kg
- Flight Travel = 15 Kg
- Cooking Gas Usage = 3 Kg
- Air Conditioner Usage = 8 Kg

Daily Logs (High Carbon)

- Electricity Usage = 6 Kg
- Flight Travel = 15 Kg
- Air Conditioner Usage = 8 Kg

Low Carbon Logs

- Bus Travel = 2 Kg
- Train Travel = 1 Kg

5. Learning Outcome

- Learned to set up a React project using Vite with proper folder structure.
- Understood component-based development using functional React components.
- Applied ES6 array methods (`map`, `filter`, `reduce`) for dynamic UI rendering.
- Implemented data categorization and conditional styling in React.
- Practiced separation of concerns using components, pages, and data modules.