

DEPARTMENT OF

COMPUTER SCIENCE & ENGINEERING

Experiment 1

Student Name: B.Omprakash Reddy

Branch: AIT_CSE

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Subject Name: Full Stack II

UID: 23BAI70296

Section/Group: 23AIT_KRG_G2

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1. Aim:

To design and develop a web-based Environmental Impact Tracker (Eco Track) that calculates and categorizes carbon footprint based on different daily activities using ReactJS.

2. Objective:

The main objectives of this experiment are:

- To understand the use of React components for UI development
- To calculate total carbon footprint using JavaScript logic
- To classify activities into High Carbon and Low Carbon emissions
- To design a minimalist and user-friendly dashboard UI
- To improve understanding of arrays, filter, reduce, and conditional rendering

3. Implementation/Code:

=>**App.jsx**

```
import './App.css'  
import Dashboard from './pages/dashboard'  
import Dashboard1 from './pages/dashboard1'
```

```
import Header from './components/Header'

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

    <main style={{padding: '1rem'}}>
      <Dashboard></Dashboard>
      <Dashboard1></Dashboard1>
    </main>
  </>
);
};

export default App
```

=>logs.js

```
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: 3 },
  { id: 5, activity: "solar Energy Usage", carbon: 3 },
  { id: 6, activity: "Flight travel", carbon: 8 },
];
export default logs;
```

=>dashboard1.jsx

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

```
const Dashboard = () => {
```

```
const totalCarbon = logs.reduce((sum, log) => sum + log.carbon, 0)
```

```
const containerStyle = {
  display: "flex",
  justifyContent: "center",
  marginTop: "2rem"
}
```

```
const boxStyle = {
  border: "1px solid #ccc",
  borderRadius: "8px",
  padding: "1rem",
  maxWidth: "400px",
  backgroundColor: "#f9f9f9"
}
```

```
return (
  <div style={containerStyle}>
    <div style={boxStyle}>
      <h2>All activities</h2>
      <p>Total Carbon FootPrint: {totalCarbon} kg</p>
```

```

      <ul>
        {logs.map((log) => (
          <li key={log.id}>
            {log.activity}: {log.carbon} kgs
          </li>
        ))}
      </ul>
    </div>
  </div>
)
```

```
}
```

```
export default Dashboard
```

=>dashboard2.jsx

```
import logs from '../data/logs';

const Dashboard1 = () => {
  const lowCarbon = logs.filter(log => log.carbon < 4);
  const highCarbon = logs.filter(log => log.carbon >= 4);

  const boxStyle = {
    border: '1px solid #ccc',
    borderRadius: '8px',
    padding: '1rem',
    width: '45%',
    backgroundColor: '#f9f9f9'
  };

  const containerStyle = {
    display: 'flex',
    gap: '1rem',
    flexWrap: 'wrap'
  };

  return (
    <div>
      <h2>Carbon Emissions Dashboard</h2>

      <div style={containerStyle}>
        {/* LOW CARBON */}
        <div style={boxStyle}>
          <h3>Low Carbon Activities (< 4 kg)</h3>
          <ul>
            {lowCarbon.map(log => (
              <li key={log.id}>
                {log.activity}: {log.carbon} kg
              </li>
            ))}
          </ul>
        </div>
      </div>
    </div>
  );
}
```

```

        ))}
      </ul>
    </div>

/* HIGH CARBON */
<div style={boxStyle}>
  <h3>High Carbon Activities ( $\geq$  4 kg)</h3>
  <ul>
    {highCarbon.map(log => (
      <li key={log.id}>
        {log.activity}: {log.carbon} kg
      </li>
    ))}
  </ul>
</div>
</div>
</div>);};

export default Dashboard1;

```

4. Output

Ecotrack-Dashboard

All activities

Total Carbon FootPrint: 24 kg

- Car Travel: 4 kgs
- Electricity Usage: 6 kgs
- Cycling: 0 kgs
- Bus Travel: 3 kgs
- solar Energy Usage: 3 kgs
- Flight travel: 8 kgs

Carbon Emissions Dashboard

Low Carbon Activities (< 4 kg)

- Cycling: 0 kg
- Bus Travel: 3 kg
- solar Energy Usage: 3 kg

High Carbon Activities (\geq 4 kg)

- Car Travel: 4 kg
- Electricity Usage: 6 kg
- Flight travel: 8 kg

5. Learning Outcome

- How to build reusable UI using **React components**
- Practical use of **map()**, **filter()**, and **reduce()**
- How to manage and display data dynamically in React
- Basics of **dashboard UI design** with CSS
- Understanding of **environmental impact awareness through technology**