Experiment 3

Name: Rohit Yadav
UID: 23BAI70628
Branch: BECSE-AIML
Section/Group: 23AIT_KRG-2
Semester: 6th
Date of Performance: 28/01/2026
Subject Name: FULLStack2
Subject Code: 23CSH-382

1. **AIM:** Redux Toolkit & Asynchronous State Management in EcoTrack
2. **Objective:**
    a. Configure a Redux store in a React application using Redux Toolkit
    b. Create and integrate Redux slices for managing application data
    c. Implement asynchronous actions using Redux async thunks
    d. Manage loading, success, and error states during asynchronous operations
    e. Connect React components to Redux state using React-Redux hooks
    f. Trigger asynchronous data fetching through Redux actions from UI components
    g. Use Redux state to derive filtered views without modifying the global store
    h. Enhance user experience by handling refresh actions and improving async UI feedback
    i.
3. **Implementation/Code:**
    a. **logsSlice.jsx**

```
import { createSlice, createAsyncThunk } from
"@reduxjs/toolkit";
```

```
export const fetchLogs = createAsyncThunk(
   "logs/fetchLogs",
   async () => {
       await new Promise((resolve) => setTimeout(resolve,
1000));
       return[
           { id: 1, activity: "Car Travel", carbon: 4 },
           { id: 2, activity: "Electricity Usage", carbon: 6 },
           { id: 3, activity: "Cycling", carbon: 0 },
       ]
   }
)

const logSlice = createSlice({
   name: "logs",
   initialState: {
       data: [],
       status: "idle",
       error: null,
   },
   reducers: {},
   extraReducers:(builder) => {
       builder
       .addCase(fetchLogs.pending, (state) => {
           state.status = "loading";
       } ).addCase(fetchLogs.fulfilled, (state, action) => {
           state.status = "success";
           state.data = action.payload;
       }).addCase(fetchLogs.rejected, (state, action) => {
           state.status = "failed";
           state.error = action.error.message;
       })
   }
})
export default logSlice.reducer;
```

b. Slice.jsx

```
import React from 'react'
import {configureStore, createSlice} from '@reduxjs/toolkit';
import LogsReducer from './logsSlice';
```

```
const store = configureStore({
   reducer: {
       logs: LogsReducer,
   },
});
export default store;
```

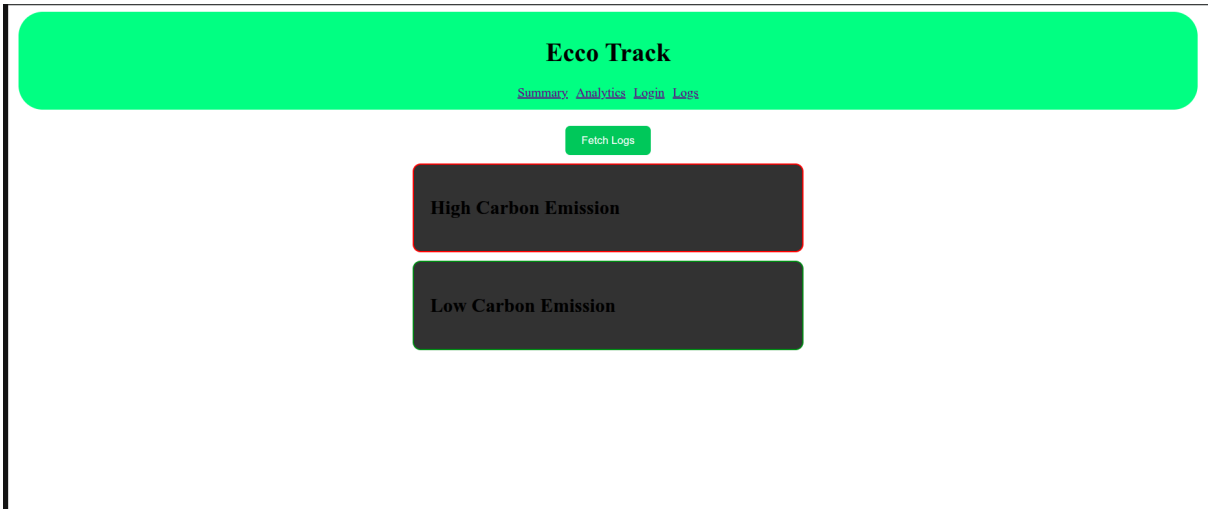
c. LogsPage.jsx

```
import { useDispatch, useSelector } from 'react-redux';
import { fetchLogs } from '../store/logsSlice';

const Logs = () => {
   const dispatch = useDispatch();
   const { data, status, error } = useSelector((state) =>
state.logs);

   const handleFetchLogs = () => {
       dispatch(fetchLogs());
   };

   if (status === "loading") {
       return <p>Loading your logs.....</p>;
   }

   if (status === "failed") {
       return <p>Error: {error}</p>;
   }

   const logs = data || [];

   return (
       <div>
           {/* Fetch Button */}
           <div style={{ textAlign: "center", marginTop: 20 }}>
               <button
                   onClick={handleFetchLogs}
                   style={{
                       padding: "10px 20px",
```

```
                        borderRadius: 6,
                        backgroundColor: "#1db954",
                        color: "white",
                        border: "none",
                        cursor: "pointer"
                    }}
                    disabled={status === "loading"}
                >
                    Fetch Logs
                </button>
            </div>

            {/* High Carbon */}
            <div style={{
                marginLeft: 'auto',
                backgroundColor: "#323232ff",
                marginRight: "auto",
                maxWidth: "30%",
                padding: 20,
                marginBottom: 10,
                marginTop: 10,
                borderRadius: 10,
                border: "2px solid red"
            }}>
                <h2>High Carbon Emission</h2>
                {logs
                    .filter(ele => ele.carbon >= 4)
                    .map((ele, index) => (
                        <h3 key={index} style={{ color: "red"
}}>
                            {ele.activity} {ele.carbon}
                        </h3>
                    ))}
            </div>

            {/* Low Carbon */}
            <div style={{
                marginLeft: 'auto',
                backgroundColor: "#323232ff",
                marginRight: "auto",
                maxWidth: "30%",
                padding: 20,
```

```
                borderRadius: 10,
                border: "2px solid green"
            }}>
                <h2>Low Carbon Emission</h2>
                {logs
                    .filter(ele => ele.carbon < 4)
                    .map((ele, index) => (
                        <h3 key={index} style={{ color: "green"
}}>
                            {ele.activity} {ele.carbon}
                        </h3>
                    ))}
            </div>
        </div>
    );
};

export default Logs;
```

4. Output:



Ecco Track

Summary Analytics Login Logs

Loading your logs.....

Ecco Track

Summary Analytics Login Logs

Fetch Logs

High Carbon Emission

Car Travel 4

Electricity Usage 6

Low Carbon Emission

Cycling 0

Ecco Track

Summary Analytics Login Logs

Login

Login Now

Ecco Track

Summary Analytics Login Logs

Dashboard_layout

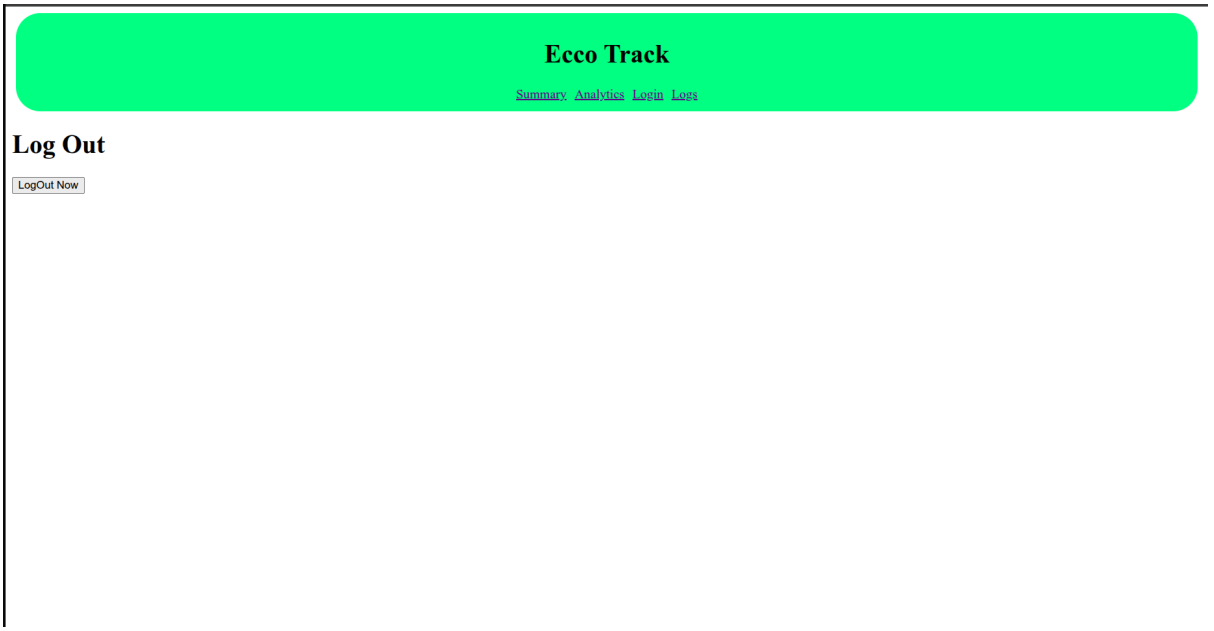
DashboardSummary

Ecco Track

Summary Analytics Login Logs

Dashboard_layout

DashboardAnalytics



5. Learning Outcome:

a. I learnt how to make redux react.
b. How the react redux and redux slices actually work.
c. I learnt how to use the outlet tags along with nested routes.