EXPERIMENT NO. - 06

Roll No.	24
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Class	D15B
Subject	Full Stack Development
Lab Outcome	Implement **authentication and user roles** with JWT
Date of Performance/ Submission	
Signature & Grades	

Experiment No. 6

Aim: Implement **authentication and user roles** with JWT

Code:

WeatherDashboard.jsx Code

```
import React, { useEffect, useState } from 'react';
import axios from 'axios';
import { useNavigate } from 'react-router-dom';
import moment from 'moment';

const WeatherDashboard = () => {
  const [city, setCity] = useState('');
  const [weatherCards, setWeatherCards] = useState([]);
  const [currentLocationWeather, setCurrentLocationWeather] = useState(null);
  const [currentLocationForecast, setCurrentLocationForecast] = useState([]);
  const [error, setError] = useState('');
  const [user, setUser] = useState(null);
  const [history, setHistory] = useState(() => JSON.parse(localStorage.getItem("history")) || []);
  const navigate = useNavigate();
  const API_KEY = '******************UR_KEY************************';
  const getBackgroundImage = (weatherCondition) => {
 <CODE>
 };

  const fetchCurrentLocationWeather = async (lat, lon) => {
    try {
      const res = await
axios.get(`https://api.openweathermap.org/data/2.5/weather?lat=${lat}&lon=${lon}&appid=${API_K
EY}&units=metric`);
      setCurrentLocationWeather(res.data);
      const forecastRes = await
axios.get(`https://api.openweathermap.org/data/3.0/onecall?lat=${lat}&lon=${lon}&exclude=minute
ly,hourly,alerts&appid=${API_KEY}&units=metric`);
      setCurrentLocationForecast(forecastRes.data.daily.slice(0, 7));
    } catch (err) {
      setError('Could not fetch your location's weather.');
    }
  };

  const fetchDashboard = async () => {
    const token = localStorage.getItem("token");
    try {
      const res = await axios.get("http://localhost:5000/dashboard", {
        headers: { Authorization: `Bearer ${token}` }
      });
      setUser(res.data.user);
    } catch (err) {
      // navigate("/login");}  };

  useEffect(() => {
```

```
    if (navigator.geolocation) {
      navigator.geolocation.getCurrentPosition(
        (pos) => fetchCurrentLocationWeather(pos.coords.latitude, pos.coords.longitude),
        () => setError('Permission denied for location access or location not found.')
      );
    } else setError('Geolocation is not supported by this browser.');
    const token = localStorage.getItem("token");
    if (!token) {
       // navigate("/login");
    }
    fetchDashboard();
  }, []);

  const fetchCityWeather = async (e) => {
    e.preventDefault();
    if (!city.trim()) return;
    try { const res = await
axios.get(`https://api.openweathermap.org/data/2.5/weather?q=${city}&appid=${API_KEY}&uni
s=metric`); const forecastRes = await
axios.get(`https://api.openweathermap.org/data/2.5/forecast?q=${city}&appid=${API_KEY}&units=
metric`) const dailyForecast = forecastRes.data.list.filter((reading) =>
        reading.dt_txt.includes("12:00:00")
      ).slice(0, 5);
      const newCard = { ...res.data, forecast: dailyForecast };
      const alreadyExists = weatherCards.some((w) => w.name === newCard.name) ||
currentLocationWeather?.name === newCard.name;
      if (alreadyExists) return setError('City is already shown.');
      setWeatherCards((prev) => [...prev, newCard]);
      setHistory((prev) => {
        const updated = [...new Set([newCard.name, ...prev])].slice(0, 5);
        localStorage.setItem("history", JSON.stringify(updated));
        return updated;
      });
      setCity('');
      setError('');
    } catch (err) {
      setError('City not found.');
    }
  };

  const getWeatherIcon = (iconCode) =>
`https://openweathermap.org/img/wn/${iconCode}@2x.png`;

  return (
          </div>
      {/* Right Section - Search, Details & Forecast (Scrollable) */}
      <div className="md:col-span-1 lg:col-span-2 bg-gradient-to-br from-gray-100 to-gray-200 text-
gray-800 p-6 md:p-8 flex flex-col z-20 overflow-y-auto">
        <h2 className="text-4xl font-semibold text-center mb-6 text-indigo-700">Other Cities</h2>
        {/* Search Bar */}
```

```
      <form onSubmit={fetchCityWeather} className="flex items-center space-x-3 mb-6 bg-white
rounded-full p-2 shadow-lg">
        <input
          type="text"
          value={city}
          onChange={(e) => setCity(e.target.value)}
          placeholder="Search any city"
          className="flex-grow bg-transparent text-lg px-2 text-gray-800 placeholder-gray-500
focus:outline-none"/>
        <button type="submit" className="bg-indigo-500 text-white p-3 rounded-full hover:bg-indigo-
600 transition duration-300 transform hover:scale-105">
          <svg xmlns="http://www.w3.org/2000/svg" className="h-6 w-6" fill="none" viewBox="0 0 24
24" stroke="currentColor">
            <path strokeLinecap="round" strokeLinejoin="round" strokeWidth={2} d="M21 21l-6-6m2-
5a7 7 0 11-14 0 7 7 0 0114 0z" />
          </svg>
        </button>
      </form>

      {error && <p className="text-red-500 text-center mb-4">{error}</p>}
            </div>
        </div>
      )}
    </div>
  </div>
 );
};

export default WeatherDashboard;
```

AdminDashboard.jsx

```
import axios from 'axios';
import React, { useEffect, useState } from 'react';
import { useNavigate } from 'react-router-dom';
const AdminDashboard = () => {
 const [users, setUsers] = useState([]);
 const navigate = useNavigate()
 const [isAdmin, setAdmin] = useState(false);

 const fetchDashboard = async () => {
  const token = localStorage.getItem("token");
  try {
   const res = await axios.get("http://localhost:5000/adminDashboard", {
    headers: { Authorization: `Bearer ${token}` }
   });
   setUsers(res.data.users);

   if (res.data.admin.role !== "admin") {
    navigate("/weatherDashboard");
   }
```

```
      navigate("/adminDashboard")
    } catch (err) {
      console.log("Access denied", err);
      navigate("/weatherDashboard"); // optional: redirect if not admin
    }
  };
    useEffect(() => {
    fetchDashboard();
  }, []);
  return (
    <div className="min-h-screen bg-gradient-to-r from-blue-100 via-purple-100 to-pink-100 px-4 p-
6">
      <div className="max-w-5xl mx-auto">
        {/* Dashboard Header */}
        <div className="mb-8">
          <h1 className="text-3xl font-bold text-indigo-700 mb-2">Admin Dashboard</h1>
          <p className="text-gray-600">Overview of logged-in users</p>
        </div>

        {/* Stats Box */}
        <div className="grid grid-cols-1 sm:grid-cols-2 lg:grid-cols-3 gap-4 mb-6">
          <div className="bg-white shadow rounded-2xl p-6 text-center">
            <h2 className="text-xl font-semibold text-gray-800">Total Logged-in Users</h2>
            <p className="text-4xl text-indigo-600 mt-2">{users.length}</p>
          </div>
        </div>
        {/* User Table */}
        <div className="bg-white shadow-md rounded-2xl overflow-x-auto">
          <table className="min-w-full table-auto text-sm text-gray-700">
            <thead className="bg-indigo-50">
              <tr>
                <th className="px-6 py-3 text-left font-semibold">#</th>
                <th className="px-6 py-3 text-left font-semibold">Name</th>
                <th className="px-6 py-3 text-left font-semibold">Email</th>
                <th className="px-6 py-3 text-left font-semibold">Role</th>
                <th className="px-6 py-3 text-left font-semibold">Login Time</th>
              </tr>
            </thead>
            <tbody>
              {users.map((user, idx) => (
                <tr key={user.id} className="border-b hover:bg-gray-50">
                  <td className="px-6 py-3">{idx + 1}</td>
                  <td className="px-6 py-3">{user.name}</td>
                  <td className="px-6 py-3">{user.email}</td>
                  <td className="px-6 py-3">{user.role}</td>
                  <td className="px-6 py-3">{user.lastLogin}</td>
                </tr>
              ))}
            </tbody>
          </table>
        </div>
```

```
    </div>
   </div>
  );
};
export default AdminDashboard;
```

authMiddleware.jsx

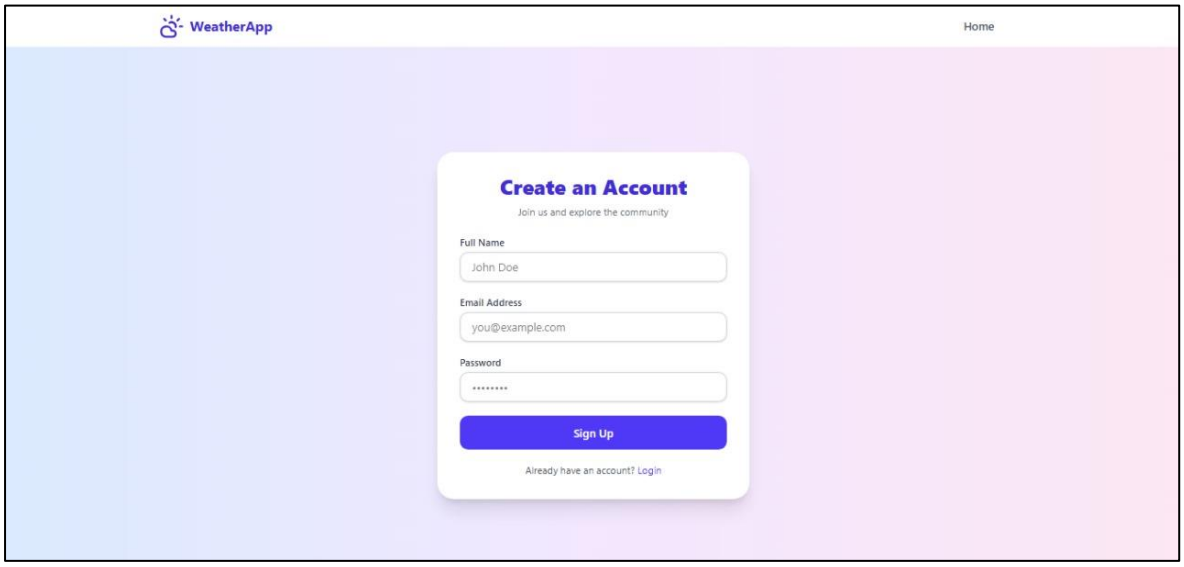
```
const jwt = require("jsonwebtoken");
const SECRET = "ABCD@1234";

function authMiddleware(req,res,next){
   const authHeader = req.headers.authorization;
   if (!authHeader) return res.status(401).json({ message: "No token provided" });

   const token = authHeader.split(" ")[1]; // "Bearer <token>"

   jwt.verify(token, SECRET, (err, user) => {
    if (err) return res.status(403).json({ message: "Invalid token" });
    req.user = user;
    next();
   });
}
module.exports = authMiddleware;
```

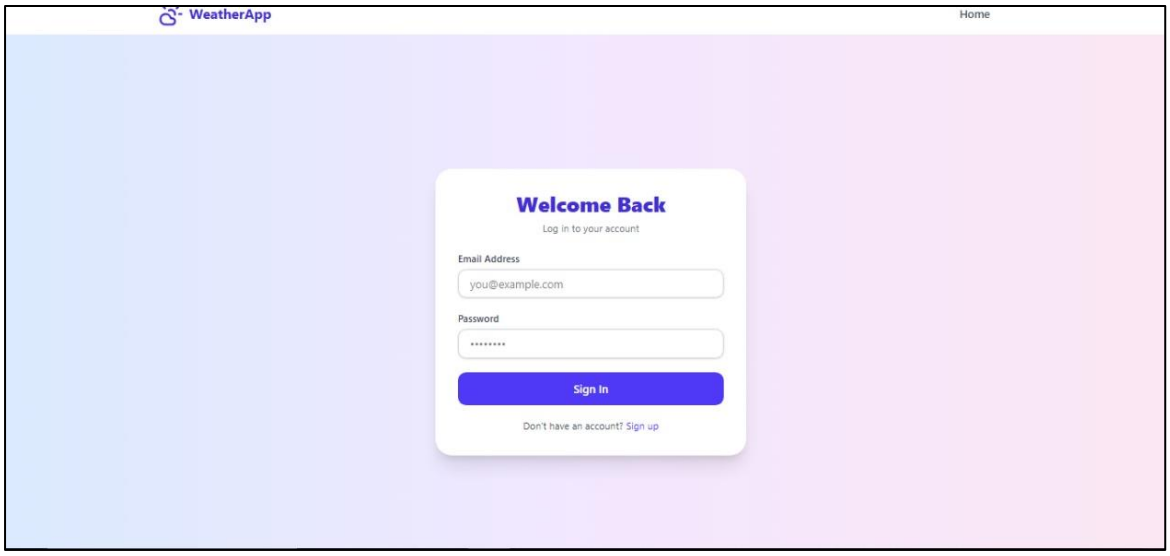
Index.jsx

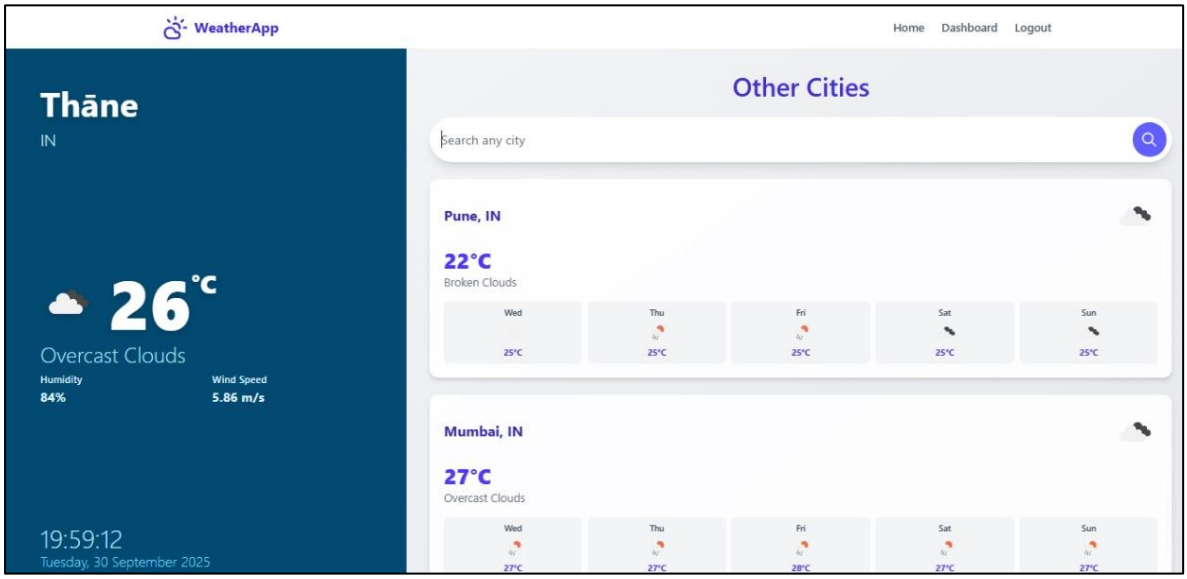
```
require("dotenv").config();  // ✅ Load .env first
const express = require('express');
const cors = require("cors");
const app = express();
const mongoose = require("mongoose");
const jwt = require("jsonwebtoken");
const bcrypt = require("bcryptjs");
const authenticateToken = require('./middleware/authMiddleware');
const authorizeRole = require('./middleware/authorizeRole');
// ✅ Use environment variables
const PORT = process.env.PORT || 5000;
const SECRET = process.env.JWT_SECRET || "ABCD@1234";
const MONGO_URI = process.env.MONGO_URI;

// ✅ Connect to MongoDB Atlas
mongoose.connect(MONGO_URI)
 .then(() => console.log("✅ Connected to MongoDB Atlas"))
 .catch(err => console.error("❌ MongoDB connection error:", err));

// ✅ User Schema & Model
const userSchema = new mongoose.Schema({
 name: String,
 email: { type: String, unique: true },
 hashedPass: String,
```

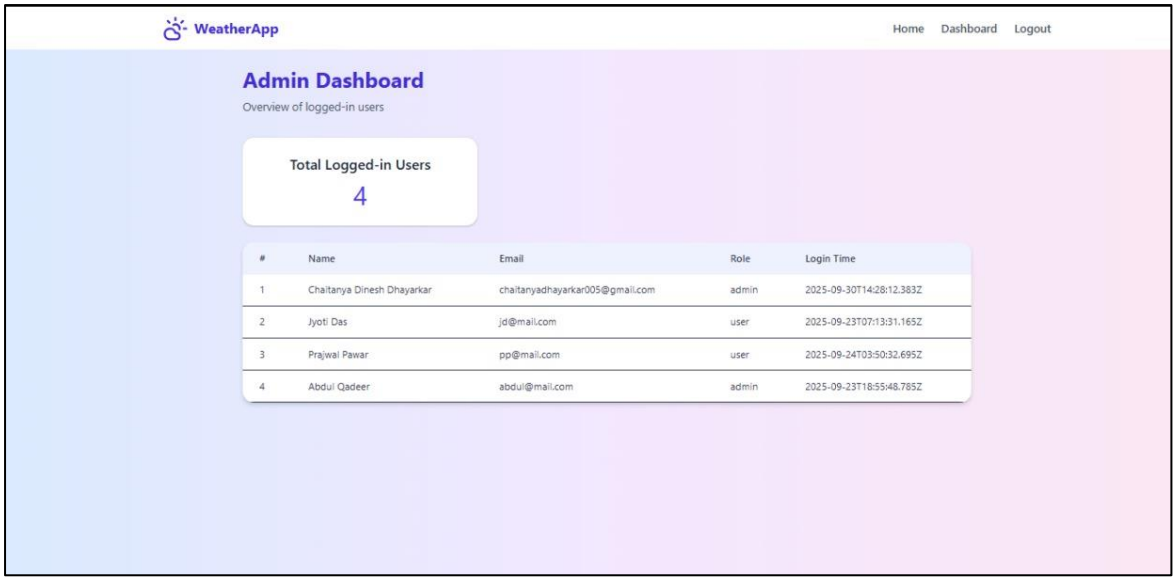
```
  role: { type: String, default: "user" },
  lastLogin: String
});
const User = mongoose.model("User", userSchema);
// ✅ Middleware
app.use(express.urlencoded({ extended: true }));
app.use(express.json());

var corsOptions = {
  origin: 'http://localhost:3000',
  optionsSuccessStatus: 200,
  credentials: true,
};
app.use(cors(corsOptions));

// ✅ SIGNUP
app.post("/signup", async (req, res) => {
<CODE>
});

// ✅ LOGIN
app.post("/login", async (req, res) => {
  try {
    const { email, password } = req.body;

    const user = await User.findOne({ email });
    if (!user) {
      return res.status(401).json({ message: "Invalid credentials", status: false });
    }
    // Update last login time
    user.lastLogin = new Date().toISOString();
    await user.save();
    // Generate JWT
    const token = jwt.sign({ id: user._id, role: user.role }, SECRET, { expiresIn: "1d" });
    res.status(200).json({
      message: "Login successful",
      token,
      role: user.role,
      lastLogin: user.lastLogin,
      status: true
    });   } catch (err) {    res.status(500).json({ error: err.message }) } });

// ✅ DASHBOARD
app.get("/dashboard", authenticateToken, async (req, res) => {
  try {
    const user = await User.findById(req.user.id);
    if (!user) {
      return res.status(404).json({ message: "User not exists" });
    }
    res.json({ message: "Welcome to dashboard", user });
  } catch (err) {    res.status(500).json({ error: err.message });   } });
```

Output:


WeatherApp
Home
Create an Account
Join us and explore the community
Full Name
John Doe
Email Address
you@example.com
Password
Sign Up
Already have an account? Login


WeatherApp
Home
Welcome Back
Log in to your account
Email Address
you@example.com
Password
Sign In
Don't have an account? Sign up


WeatherApp
Home
Dashboard
Logout
Thāne
IN
26°C
Overcast Clouds
Humidity
84%
Wind Speed
5.86 m/s
19:59:12
Tuesday, 30 September 2025
Other Cities
Search any city
Pune, IN
22°C
Broken Clouds
Wed
Thu
Fri
Sat
Sun
25°C
Mumbai, IN
27°C
Overcast Clouds
27°C
28°C



Conclusion:

I have successfully executed and implemented authentication and user roles with **JWT.**