PROJECT REPORT

Web Development Traineeship program Interns Elight 2025

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PROJECT ON:-

“WEATHER WISE”

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CONTENTS

|  |
| --- |
| Introduction. |
| Team Members & Roles |
| Project Details |
| Result and Outcomes |
| Reference |
| Conclusion |

CHAPTER 1: INTRODUCTION

Weather forecasting is essential in daily life, helping individuals and businesses make informed decisions based on climatic conditions. Our project, the Weather Forecast Application, aims to provide users with real-time weather data, including temperature, humidity, air quality, wind speed, and a 5-day forecast, in a user-friendly interface.

* Purpose & Motivation:-

With the increasing reliance on technology for weather updates, users need an accurate, fast, and interactive weather application that presents data in an intuitive manner. Unlike generic weather websites, our app focuses on modern UI design, animations, and seamless user experience.

* Objectives:-

1. Develop a fully responsive and visually appealing weather dashboard.
2. Integrate Open Weather Map API to fetch and display live weather data.
3. Implement Material-UI components for a clean and professional design.
4. Allow users to search for weather conditions in different cities.
5. Ensure smooth navigation and data visualization through animations.

* Scope of the Project:-

This project is designed for general users who need weather updates in a simplified format. The application can be used by:

1. Travelers to check weather conditions before planning trips.
2. Students & professionals to decide on daily commute plans.
3. Outdoor event organizers to monitor real-time weather changes.
4. Businesses that depend on weather conditions, such as agriculture and logistics.

* Significance of the Project:-

By combining React.js and Material-UI, we ensure a modern, high-performance, and interactive weather application. This project also serves as an excellent learning opportunity for our team, helping us strengthen our skills in frontend development, API integration, and UI/UX design.

CHAPTER 2:- TEAM MEMBERS & ROLES

|  |  |
| --- | --- |
| Name | Roles |
| Sahadev Sahoo | API Integration & Data fetching & Task Distribution. |
| Vivek Jadhao | Planning &UI/UX React.js & Material- UI. |
| Sanjivani Jadhav | Bug Fixing &  Performance testing. |

CHAPTER 3:- PROJECT DETAILS

* Problem Statement
* Many users need a simple and reliable way to check real-time weather updates and forecasts.
* The goal is to provide an intuitive UI that displays accurate weather details efficiently.
* Technology Stack
* Frontend: React.js, Material-UI
* Backend: OpenWeatherMap API
* Version Control: GitHub
* Implementation Steps:-

1. Project Setup: Installed dependencies and configured React.js with Material-UI.

2. API Integration: Connected OpenWeatherMap API to fetch weather data dynamically.

3. UI/UX Design: Designed a responsive and animated weather dashboard.

4. Testing & Debugging: Fixed issues related to API calls, UI responsiveness, and performance.

CHAPTER 4:- RESULTS & OUTCOMES

Successfully built a responsive weather application.

Features:-

✅ Real-time temperature, humidity, and air quality index.

✅ 5-day weather forecast with animations.

✅ Search functionality for different cities.

CHAPTER 5:- CONCLUSION

The project met its objectives and provided an efficient weather forecasting solution. Future improvements could include user authentication, location-based weather alerts, and additional API integrations.