

A  
SYNOPSIS REPORT ON  
**“Weather Forecast”**  
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UNDER THE GUIDANCE OF  
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**SAVITRIBAI PHULE PUNE UNIVERSITY**

**THROUGH**



**ABHINAV EDUCATION SOCIETY'S  
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# “Weather Forecast”

( using Python(Django))

## INTRODUCTION

The **Weather Forecast Website** is an online platform designed to provide users with real-time weather updates and forecasts for their selected locations. This website delivers accurate and reliable weather data, including temperature, humidity, wind speed, and other essential meteorological information, through a user-friendly interface.

The website integrates weather APIs such as OpenWeatherMap or WeatherAPI to fetch live weather data. It is developed using modern web technologies like HTML, CSS, JavaScript, and Python to ensure responsiveness and seamless performance.

The primary goal of this project is to help users plan their day by offering precise and up-to-date weather information. Additionally, this project serves as a learning experience, allowing the developer to gain hands-on knowledge in web development, API integration, and data visualization.

## **PURPOSE OF THE PROJECT**

The purpose of the **Weather Forecast Website** is to provide users with accurate and timely weather information to help them plan their activities effectively. The website aims to:

- Deliver Real-Time Weather Data
- Enhance User Convenience
- Improve Accessibility
- Promote Learning and Skill Development
- Encourage Practical Application of Knowledge

## **OBJECTIVE**

- To Provide Accurate Weather Information
- To Create an Interactive User Interface
- To Integrate Weather API for Data Fetching
- To Implement Django as the Back-End Framework
- To Ensure Cross-Browser Compatibility
- To Enhance Web Development Skills
- To Improve Responsiveness and User Experience

## **TECHNOLOGY USED**

### **Software Requirement**

- **Operating System :** Windows 11
- **Web Framework :** Python Django
- **Database :** SQLite
- **Python Environment:** Python 3.7 or higher
- **Required Python Packages :** asgiref, Certify, chardet, Django, Idna, pytz, requests, sqlparse, urllib3, setuptools
- **User Interface:** HTML, CSS

### **Hardware Requirement**

- **Processor :** AMD Ryzen 5 5600H with Radeon Graphics
- **Memory (RAM):** Minimum 2 GB (4 GB recommended for better performance)
- **Storage:** At least 5 GB of free space for application files and MongoDB database storage
- **Device:** Desktop
- **Browser:** Modern web browser (e.g., Chrome, Edge)

## **MODULE DETAILS**

The Weather Forecast System consists of 1 module which is:

### **User Module**

The functionalities of the User are:

#### **1. Enter City Name**

- The user can input the name of a city or location to search for weather data.

#### **2. View Current Weather Information**

- The user will see the current weather details, including temperature, humidity, wind speed, and other essential weather parameters for the selected city.

#### **3. View 15-Hour Weather Prediction**

- The user can access weather predictions for the next 15 hours, including hourly temperature, wind speed, and conditions.

#### **4. View 15-Day Temperature Forecast**

- The user can view a 15-day weather forecast, which includes only temperature predictions for each day.

#### **5. Responsive User Interface**

- The website will be responsive, ensuring a seamless experience across devices like desktop, tablet, and mobile.

#### **6. Error Handling**

- If the user enters an invalid city or if there is an issue with fetching data, an error message will be displayed.