

# CAPSTONE PROJECT

## DYNAMIC WEATHER DASHBOARD

**Presented By:**

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# OUTLINE

- Problem Statement
- System Development Approach
- Algorithm & Deployment
- Result
- Conclusion
- Future Scope
- References

# PROBLEM STATEMENT

## Dynamic Weather Dashboard

Users often need **real-time, location-based weather updates** in a **simple and accessible interface**. Traditional apps may lack quick access, clarity, or customization.

This project solves the problem by:

- Fetching live weather data (temperature, humidity, conditions)
- Showing forecasts for upcoming days
- Providing location-based and city-based search
- Improving user convenience and travel planning

# SYSTEM APPROACH

## Technologies Used:

- ❑ **HTML5** – webpage structure
- ❑ **CSS3** – UI styling and layout
- ❑ **JavaScript (ES6)** – API handling and dynamic rendering
- ❑ **OpenWeatherMap API** – real-time weather data

## Key Features:

- ❑ Search by city name
- ❑ Get weather using GPS location
- ❑ Displays temperature, humidity, pressure, wind speed
- ❑ 5-day weather forecast
- ❑ Responsive modern UI with cards and grids

# ALGORITHM & DEPLOYMENT

**Step 1:** User searches for a city OR clicks “Use My Location”

**Step 2:** If location access is allowed → fetch coordinates

**Step 3:** API call to OpenWeatherMap using:

- /weather (current data)
- /forecast (5-day data)

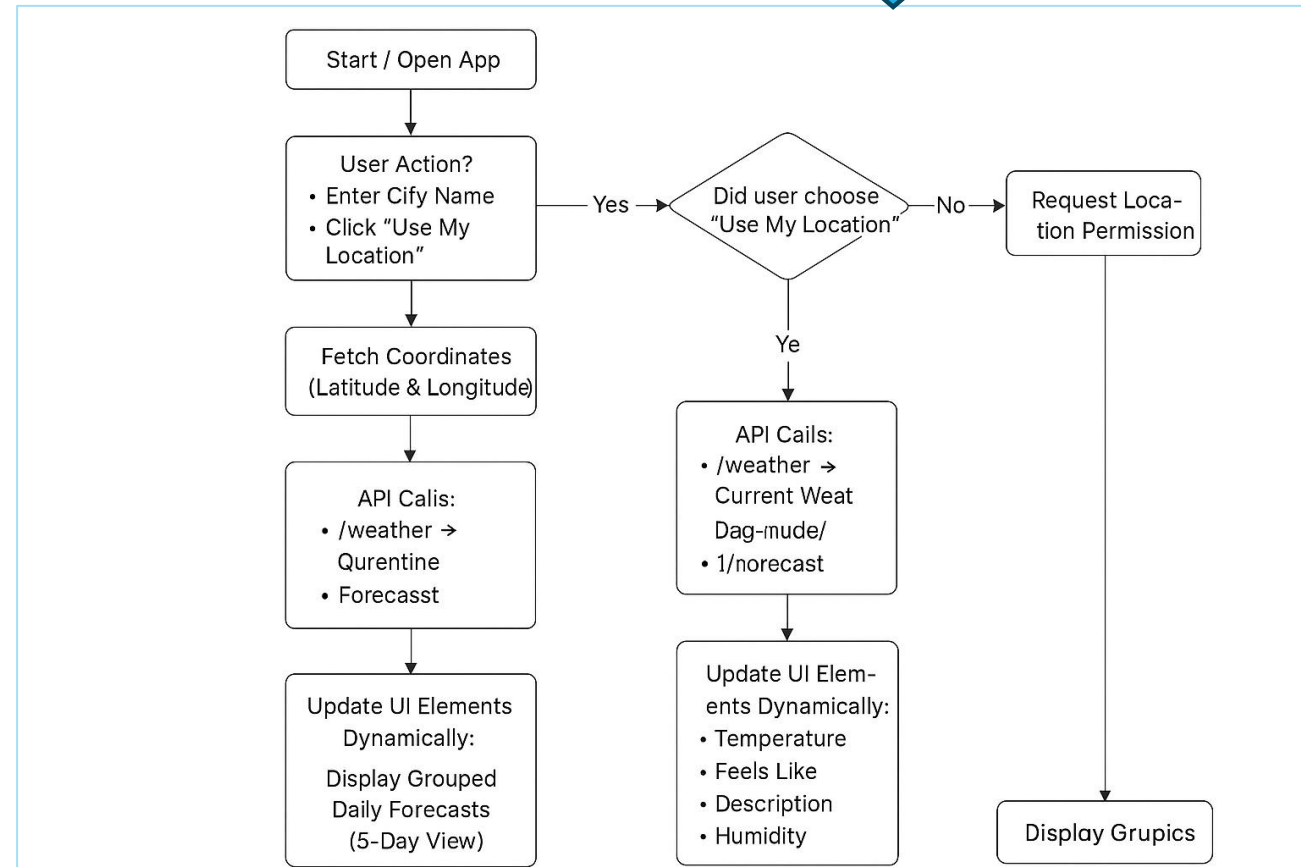
**Step 4:** Parse JSON response

**Step 5:** Update UI elements dynamically:

- Temperature
- Description
- Humidity
- Feels like
- Wind, Pressure
- Icons

**Step 6:** Display grouped daily forecasts

## FLOWCHART ↓



# RESULT

**Weather — Real-time & Location-based**

varanasi Search Use My Location

## 30°C

broken clouds

Location: Varanasi, IN Feels like: 33°C Humidity: 65%

### 5-Day Forecast

<b>Wed</b> 30° / 30° broken clouds	<b>Thu</b> 34° / 26° light rain	<b>Fri</b> 32° / 25° overcast clouds
<b>Sat</b> 30° / 24° light rain	<b>Sun</b> 29° / 24° moderate rain	

### Quick info

Wind: 2.2 m/s  
Pressure: 1004 hPa

### Notes

This demo uses OpenWeatherMap free endpoints.  
Replace YOUR\_API\_KEY in the script with your API key.

## The dashboard displays:

- Current weather
- Location-wise data
- Weather icons
- Feels like & humidity
- 5-day forecast cards
- Wind & pressure sidebar

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## GITHUB AND DEPLOYMNET LINK

**GitHub Link:** <https://github.com/akhilesh-tri00/Dynamic-Weather-Dashboard>

# CONCLUSION

- ❑ Successfully built a real-time weather application
- ❑ Uses geolocation & manual search
- ❑ Integrated third-party weather API
- ❑ Responsive and user-friendly interface
- ❑ Displays both current and 5-day forecast



# FUTURE SCOPE

- Add rain alerts & notifications
- Multi-language support
- Dark/light mode toggle
- Store recent searches
- Mobile app conversion

# REFERENCES

- OpenWeatherMap API
- MDN Web Docs
- W3Schools
- JavaScript Fetch API Documentation
- StackOverflow

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# THANK YOU