**Weatherapp**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
  <title>Weather & Factorial App</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      padding: 20px;
      background: #f0f4f8;
    }

    h2 {
      text-align: center;
      color: #333;
    }

    .app-container {
      max-width: 500px;
      margin: auto;
      background: #fff;
      padding: 25px;
      border-radius: 12px;
      box-shadow: 0 4px 8px rgba(0,0,0,0.1);
      margin-bottom: 40px;
    }

    input, button {
      width: 100%;
      padding: 10px;
      margin: 8px 0;
      font-size: 16px;
    }

    button {
      cursor: pointer;
      background: #007BFF;
      color: white;
      border: none;
      border-radius: 8px;
    }
```

```html
    button:hover {
      background: #0056b3;
    }

    .output {
      margin-top: 15px;
      background: #f9f9f9;
      padding: 15px;
      border-radius: 8px;
      min-height: 40px;
    }
  </style>
</head>
<body>

  <h2>🌤️ Weather & 🔢 Factorial App</h2>

  <!-- Weather App Section -->
  <div class="app-container">
    <h3>Weather App</h3>
    <input type="text" id="cityInput" placeholder="Enter city name" />
    <button onclick="getWeather()">Get Weather</button>
    <div class="output" id="weatherDisplay"></div>
  </div>

  <!-- Factorial Calculator Section -->
  <div class="app-container">
    <h3>Factorial Calculator</h3>
    <input type="number" id="numberInput" placeholder="Enter a non-negative number" />
    <button onclick="calculateFactorial('iterative')">Calculate Iterative</button>
    <button onclick="calculateFactorial('recursive')">Calculate Recursive</button>
    <div class="output" id="factorialResult"></div>
  </div>

  <script>
    // Replace with your own OpenWeatherMap API key
    const apiKey = "YOUR_API_KEY_HERE";

    async function getWeather() {
      const city = document.getElementById("cityInput").value.trim();
      const display = document.getElementById("weatherDisplay");

      if (!city) {
```

```javascript
      display.innerHTML = "⚠️ Please enter a city name.";
      return;
    }

    try {
      const response = await fetch(

`https://api.openweathermap.org/data/2.5/weather?q=${city}&units=metric&appid=${apiKey}`
      );
      if (!response.ok) throw new Error("City not found");

      const data = await response.json();
      display.innerHTML = `
        <strong>City:</strong> ${data.name}<br>
        🌡️ Temp: ${data.main.temp} °C<br>
        💧 Humidity: ${data.main.humidity}%<br>
        🌬️ Wind: ${data.wind.speed} m/s<br>
        🌤️ Description: ${data.weather[0].description}
      `;
    } catch (error) {
      display.innerHTML = "❌ Error: " + error.message;
    }
  }

  function factorialIterative(n) {
    let result = 1;
    for (let i = 2; i <= n; i++) {
      result *= i;
    }
    return result;
  }

  function factorialRecursive(n) {
    if (n === 0 || n === 1) return 1;
    return n * factorialRecursive(n - 1);
  }

  function calculateFactorial(method) {
    const input = document.getElementById("numberInput").value;
    const num = parseInt(input);
    const resultDiv = document.getElementById("factorialResult");

    if (isNaN(num) || num < 0) {
      resultDiv.innerHTML = "⚠️ Please enter a valid non-negative integer.";
```

```
      return;
    }

    let result;
    if (method === "iterative") {
      result = factorialIterative(num);
    } else {
      result = factorialRecursive(num);
    }

    resultDiv.innerHTML = `✅ Factorial of ${num} using <strong>${method}</strong> method
is: <strong>${result}</strong>`;
  }
 </script>
</body>
</html>
```