**Phase 4-> Development**

**Objective:**  
To design and develop the main components of the weather website, focusing on layout, appearance, interactivity, and real-time data integration.

**Tasks:**

**Frontend Development:**

This phase involved building the user interface and making the website interactive.

1. **HTML Implementation:**  
   The structure of the site was created using semantic HTML elements. Sections included the header, search input, weather display area, and lunar phase section.
2. **CSS Styling:**  
   CSS was used to style the layout using flexbox and grid. A consistent color scheme, responsive design, and readable fonts helped ensure a smooth user experience. Hover effects and transitions were added for interactivity.
3. **JavaScript Integration:**  
   JavaScript handled user interactions, fetched weather data from APIs, and dynamically updated the page content. It also managed simple error handling for invalid input or connection failures.

**Backend Functionality (via API):**

While there was no traditional backend, APIs were used to fetch and display live data.

1. **Weather API Integration:**  
   The OpenWeatherMap API was used to get current weather details like temperature, humidity, wind, and condition icons.
2. **Search Feature:**  
   Users can enter a city name to fetch and view weather data for that location.
3. **Weather Alerts & Moon Phases:**  
   The site displays weather alerts and current moon phases using API-provided data.
4. **10-Day Forecast:**  
   A 10-day forecast is displayed in a card or scrollable layout for extended insights.

**Files Categorized:**  
All development files belong to the frontend: HTML for structure, CSS for styling, and JavaScript for functionality.