

**AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH (AIUB)**  
**Faculty of Science and Technology (FST)**  
**Department of Computer Science (CS)**  
**Course: Web Technologies**

## Lab Task 02: Weather Forecast Application

### Instruction:

1. Complete the task
2. After completion, push the code in the GitHub repository.

### Scenario:

A weather service needs a frontend application to display 7-day forecasts. Create an application that fetches weather data in JSON format and displays it with appropriate icons and styling.

### Steps:

Build a weather forecast app:

- **Backend (weather.php):**
  - Return JSON data for 7-day forecast
  - Include: date, temperature (high/low), condition, humidity, wind\_speed, icon

json

```
{
  "city": "New York",
  "forecast": [
    {
      "date": "2024-12-30",
      "temp_high": 45,
      "temp_low": 32,
      "condition": "Sunny",
      "humidity": 65,
      "wind_speed": 10
    }
  ]
}
```

- **Frontend (weather.html):**
  - City selector dropdown (5 cities)
  - Current date and time display
  - Display forecast cards for each day:
    - Day of week

- Weather icon (use emoji or font icons)
  - High/Low temperature
  - Condition description
  - Humidity and wind speed
- Temperature unit toggle (°C/°F)
- Refresh button to fetch new data
- **AJAX & JSON:**
  - Fetch data when city changes
  - Use JSON.parse() to process response
  - Convert temperatures if unit changed
  - Handle JSON parsing errors gracefully
  - Display loading state during fetch
  - Animate card appearance
- **Additional Features:**
  - Find hottest and coldest day
  - Calculate average temperature
  - Highlight days with rain/snow
  - Responsive design for mobile