⛅ Real-Time Weather App — Project Summary

Purpose:

To build a cloud-hosted Flask application that allows users to:

- Search weather by city
- View real-time temperature and conditions
- Store and view a history of weather searches

Technologies Used:

- **Frontend**: HTML, Bootstrap 5, Jinja2 Templates
- **Backend**: Flask (Python)
- **API**: OpenWeatherMap API
- **Database**: PostgreSQL (AWS RDS)
- **Hosting**: AWS EC2 (Amazon Linux)
- **DB Driver**: psycopg2-binary

AWS Setup:

- **EC2 Instance**: `t2.micro` (Free Tier), running Flask app on port `8080`
- **RDS Instance**: PostgreSQL with a table `weather_history` for search logs
- **Security Group**: Allows EC2 to connect to RDS on port `5432`

Core Features:

- `/`: Home page with city input
- `/weather`: Fetches and displays current weather from OpenWeatherMap API
- `/history`: Shows the last 10 city searches with timestamp and weather info

How It Works:

1. User enters a city on the home page
2. Flask app queries OpenWeatherMap API
3. Displays temperature and description
4. Logs search data (city, temp, description, timestamp) in PostgreSQL RDS
5. History page retrieves and displays recent searches from the database