Weather Data Recorder for AgriWeather Insights

# Project Overview

This project is a Python-based application designed to help farmers and analysts log daily weather data such as date, temperature, and weather conditions. The application allows users to input daily records, view summarized statistics, and export the dataset to a CSV file for further analysis.

# Features

- Add daily weather entries with validation

- Prevent duplicate entries for the same date

- View summary statistics including average temperature and condition frequency

- Export data to CSV format

# Technologies Used

- Python 3

- Pandas library

# How to Use the Program

1. Run the script `weather\_data\_recorder.py`.  
2. Choose an option from the menu:  
 - Add Weather Entry  
 - View Summary  
 - Export to CSV  
 - Exit

# Sample Code Snippet

def validate\_date(date\_text):  
 try:  
 datetime.strptime(date\_text, '%Y-%m-%d')  
 return True  
 except ValueError:  
 return False  
  
def add\_weather\_entry():  
 date = input("Enter date (YYYY-MM-DD): ")  
 if not validate\_date(date):  
 print("Invalid date format.")  
 return  
 if date in recorded\_dates:  
 print("Data for this date already exists.")  
 return  
 try:  
 temperature = float(input("Enter temperature (°C): "))  
 condition = input("Enter condition (e.g., Sunny, Rainy): ")  
 weather\_data.append({"Date": date, "Temperature": temperature, "Condition": condition})  
 recorded\_dates.add(date)  
 print("Weather data added successfully.")  
 except ValueError:  
 print("Invalid temperature. Please enter a number.")

# Expected Output

The application exports the collected data into a file named `weather\_data.csv`.

Sample Output:

Date Temperature Condition  
2025-07-01 30.5 Sunny  
2025-07-02 29.0 Rainy