

CS5010 Project: Charlottesville Weather Analytics

An Interactive Application in Python

Developed By Group 4:

Feiyin Wu (fw3fm), Marcus Rosti(mer3ef), Nathan Harmon (nth3xd), Nikhil Mascarenhas (nm4gt)

Introduction

- Objective

Collect weather data for the city of Charlottesville and provide users an interactive application to query the data and find interesting information.

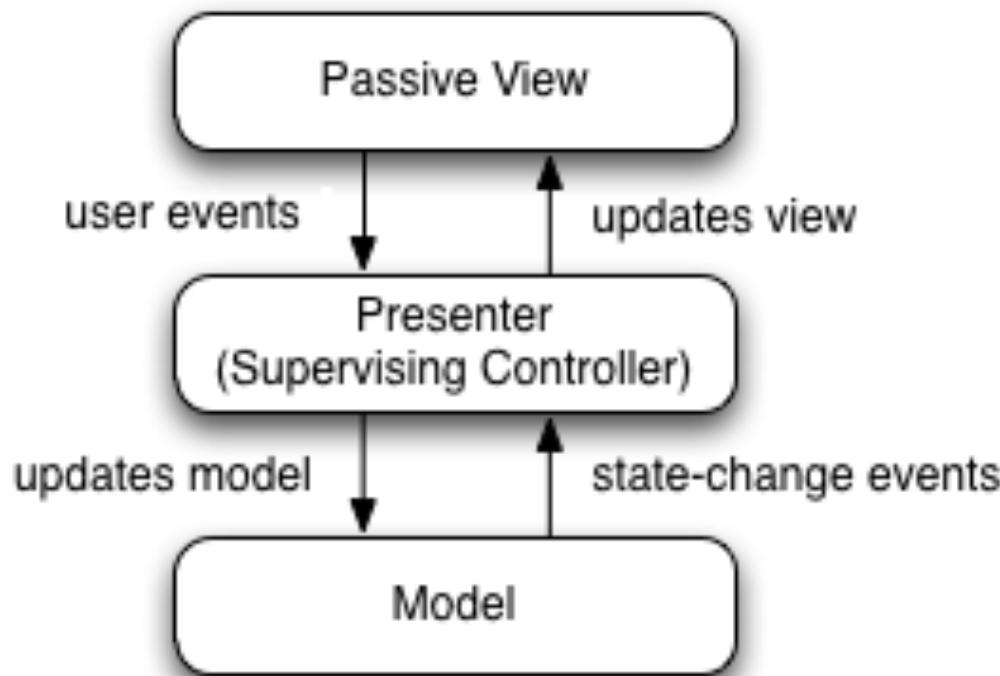
Data Source



[http://api.openweathermap.org/data/2.5/history/city?
id={id}&type=hour&start={start}&end={end}](http://api.openweathermap.org/data/2.5/history/city?id={id}&type=hour&start={start}&end={end})

```
{ "main":{ "temp":300.32, "pressure":1015, "humidity":74,  
        "temp_min":299.25, "temp_max":302.15 },  
  "wind":{ "speed":2.6, "deg":180 },  
  "clouds":{ "all":40 },  
  "weather": [ { "id":802, "main":"Clouds",  
               "description":"scattered clouds", "icon":"03n" } ],  
  "dt":1438217161 }
```

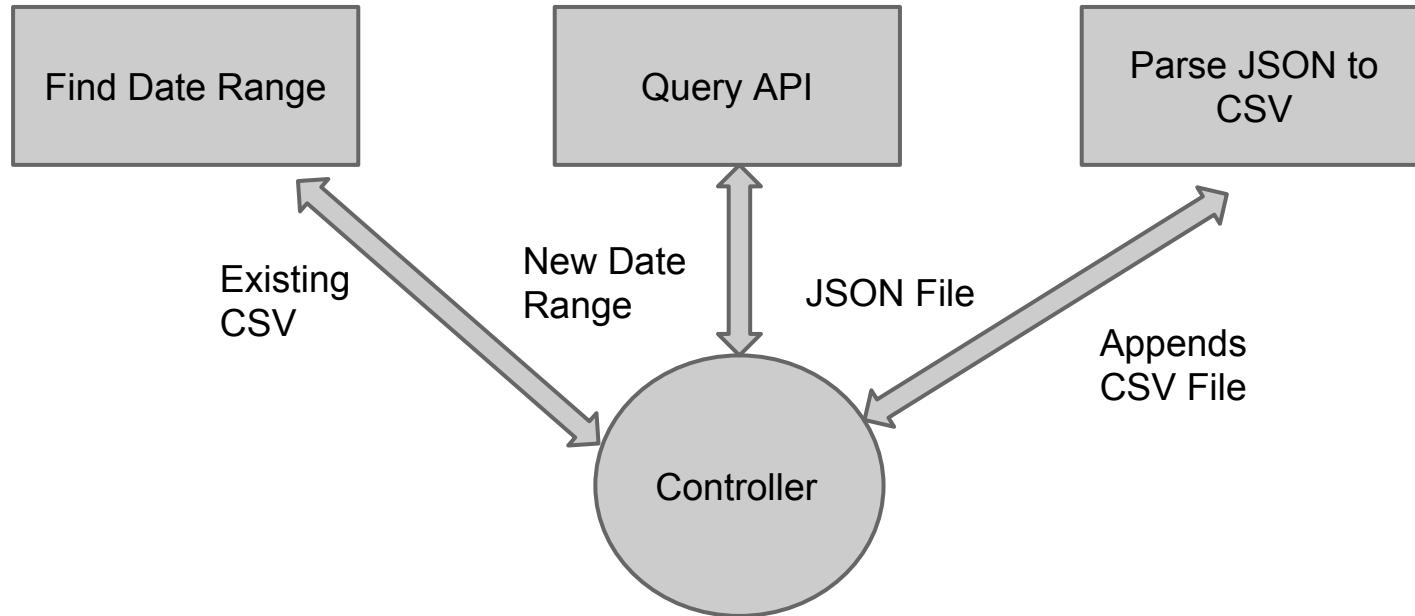
Software Architecture



Development Phases

- Phase 1: Write scripts to collect data, script should get data without duplicates and keep the data file up-to-date.
- Phase 2: Create a command line user-interface for users to query data.
- Phase 3: Represent data using graphs

Phase 1: Data Collection



Phase 2: User Interface

Option 1: Today's Weather (*Function: today_weather()*)

Option 2: Average Temperatures (*Function: ave_temps()*)

Option 5: Return Data Range (*Function: date_range()*)

Option 0: Exit

Phase 3 : Visualization

Option 3: Temperature and Humidity Line Graph
(Function: temp_graph())

Option 4: Weather Bar Chart
(Function: weather_barchart())

Questions?

Here's our code: https://github.com/Marcus-Rosti/CS_5010_Project