UC Berkeley
Python class
AY250

Homework 6
Weather Prediction

In this assignment we will create a database to analyze historical weather data and discovery the relationships between major cities.

1) Create a table of the 50 most travelled airports in the US containing relevant information such as name, city, ICAO airport code, latitude, and longitude.

Read in the following data into a database and join the tables together to create your table:

top_airports.csv contains a list of the 50 most travelled airports in the U.S.

ICAO_airports.csv (7 Mb) is a list of 43000+ airports which includes location information such as latitude, longitude, and elevation

2) Build another table that will hold historical weather information, such as min/max temperature, humidity, precipitation, and cloud cover

3) Grab historical data from weather underground from 2008 until now and populate your tables accordingly

HINT: You can access a month's worth of tabular weather data in CSV format from Weather Underground using the ICAO airport code. For instance, to get the weather for San Francisco airport (ICAO code KSFO) in the month of September 2013, go to:

http://www.wunderground.com/history/airport/KSFO/2013/9/1/MonthlyHistory.html?format=1

4) For each pair of cities/airports determine how the daily change of **high temperature** and **cloud cover** from one city predicts the daily change of the other city 1,3, & 7 days in advance

NOTE: Cloud cover from the Weather Underground tables ranges from 0 (clear) to 8 (completely cloudy)

5) Plot the correlation strengths for the 10 top pairs for all three dates, for both temperature and cloud cover as a function of distance. Also make a plot as a function of longitude difference. What trends do you see?