**Project:**

Creating a 3 day forecast for the Chicago area based off of model data from Penn State University. All the data is taken from NOAA which gathers data from the current state of the atmosphere and puts together a calculation of what the atmosphere might be over the next few days to a week. The output from the project can be used for personal use or even a website potentially.

**Forecast data source(s):**

<http://www.meteo.psu.edu/bufkit/CONUS_NAM_18.html>

KORD (O’Hare) will be our site (Make sure we credit them for the data)

**Forecast models:**

NAM and GFS. The other links are on the left side. May consider SREF and RAP if there’s time.

Have it set up to where you can change the site data feed to generate a forecast

**Storage of data:**

probably keep up to 2 days worth of model data from 06 Z to 00 Z from the prior day to average out the values. Low end if there’s less moisture in the air.

**Items for program that will be on the output:**

Graphic depicting the 3 day forecast. Sun, sun and clouds, cloud, cloud with rain, cloud with snow, thunderstorm, maybe cloud with rain and snow

Temperature day and night and wind range for the day such as 5-10 mph

For clouds, we’ll decipher the data using the Relative Humidity for each layer. Wherever relative humidity exceed 70% in the low levels (SFC-6000 ft), and 50% at middle (6000-20000 ft) and high (above 20000 ft) levels is where clouds should form and above the LCL(Lifting Condensation Level). To calculate our LCL, we take 125(Temp in Celsius - Dewpoint in Celsius). To convert meters to feet, we take our answer and multiply by 3.28084. Will be useful in determining if it’s cloudy, partly cloudy and so forth.The answer is in meters. I would say if we have clouds that exceed 4,000 feet or if more than 6 pressure levels exceed RH of 100%, then it’ll be cloudy as averaged out over a forecast period. Cloud part is a little iffy without digging into very deep calculations. So I may change the numbers here and there down the road.

NOTE: Wind direction is listed down as direction

**Java Database Connectivity 101:**

Connect to a SQL database with JDBC

<http://alvinalexander.com/java/edu/pj/pj010024>