

CS445 Fall 2011 In Class Normalization Exercises

1. Find all the keys in the relation:

$\{A, B, C, D, E, F, I\}$

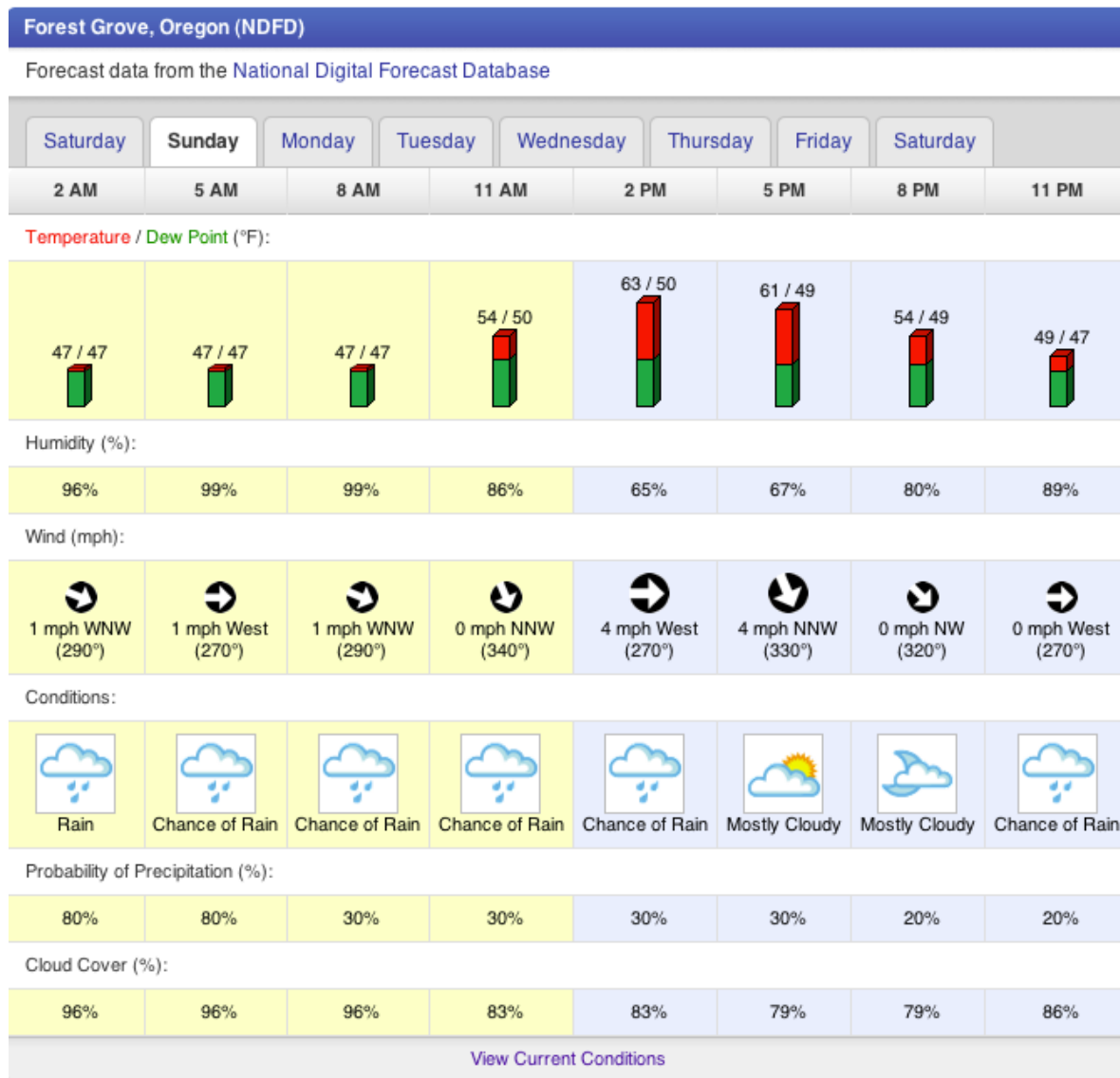
FD: $\{A\} \rightarrow \{B, C\}$; $\{C, D\} \rightarrow \{F, C\}$; $\{B\} \rightarrow \{E\}$; $\{I\} \rightarrow \{C, B\}$; $\{E\} \rightarrow \{I\}$

2. How many super keys exist for the above relation?

3. Put the above relation into BCNF.

4. Put the above relation into 3NF.

Hourly Forecast for Sunday



5. The Weather Underground (wunderground.com) website contains a good deal of data. Above is a screenshot of the hourly forecast for Sunday, Oct 9, 2011. Build an E-R diagram for this data. Build a database schema as well. Show that the schema is in 3NF. Note: Cloud and arrow images are stored in the database as URLs. Temperature bars are dynamically generated from three integers (temperature, dew point, and max of all the numbers currently displayed [for scaling]). Hourly forecasts are produced every twelve hours (12:01 am and 12:01 pm).