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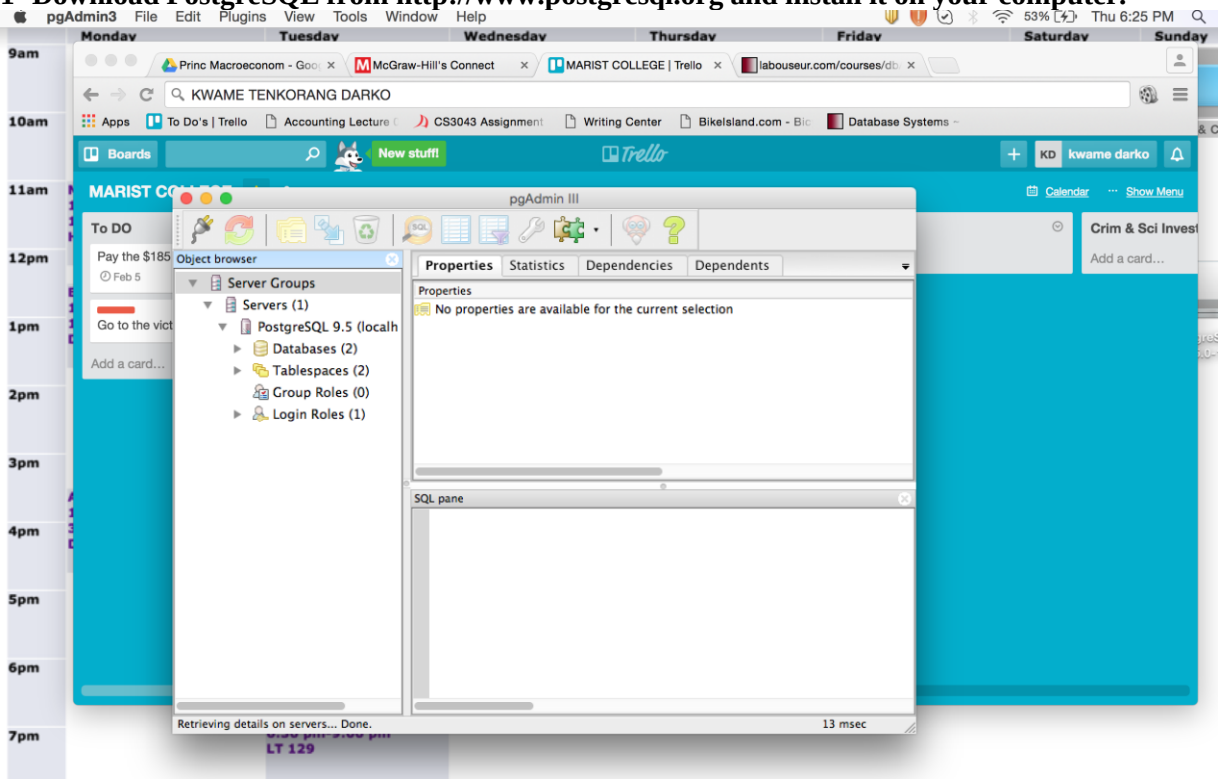
Lab 1: PostgreSQL - 20 points

1- Download PostgreSQL from http://www.postgresql.org and install it on your computer.



2 - Short essay: Data vs. Information - Select a database in use today (real or imagined) and identify the elements of "data" stored therein and describe how the database organizes the "data" into "information". Give contrasting examples of "data" and "information" that illustrate the meaninglessness of "data" without context and organization. Talk about the value the "information" provides once the component data is given context.

A) A database is a collection of data that are organized such that data can be accessed from, managed, and updated. A Data is the facts of something from which information is made up of. A Data by itself alone has no meaning unless we describe what type of data it is. When we describe the data and give it meaning, it turns into information which is of use because it describes what type of data we are dealing with. Information usually provides the answers to "who, what, where, and when." An imagined database for example called "SAT_Scores" may be created for the Scholastic Assessment Test (SAT). The Data of the database will be all factual statements regarding the person that took the test, such as Race, Age, Writing_Sore, Reading_Sore, and Math_Score. From this, information can be taken from the data such as the top 5 scores in each section of the test, the average score of each section, or what race scored the highest and lowest .

3 - Short Essay: Data Models - Briefly describe the hierarchical and network pre-relational data models. Explain their shortcomings in relation to the relational model. Considering this, what do

you think of XML as a model for data storage?

A) IBM first version of a database, the Hierarchical Data Model is the concept that an entity of a database could only have one parent but many children. Due to this, at the very top of the Hierarchical Model there is only one entity called the Root. Due to this, the Network Database Model was designed to fix the problems of the hierarchical model. The Network database model allowed a child to have more than one parent. This caused the database to run faster and also reduce duplicate data. In other words, entities can be accessed through more than one path and allows a child database to be accessed through more than one link. Searching for something with a Hierarchical Model because of its structure and design often made difficult and time consuming. The Network Model fixed these issues but had its own set of problems. The main problem was to be able to use it successfully, you needed to be a database expert due to its changes of performance on different machines. The Relational Database Model fixed these issues. A relational database is a database based on the relational model of data. With a relational database, accessing information because easier and faster because it allowed you to organize data into one or more tables with a unique key for each row. Data could be accessed and changed without having to change other things that would've made life harder. Using XML as a model for data storage in my opinion is not a good idea based on the simple fact that it was never meant to be a database. Although it can be used as a data storage, it will be better to use an already established language made for data storage.