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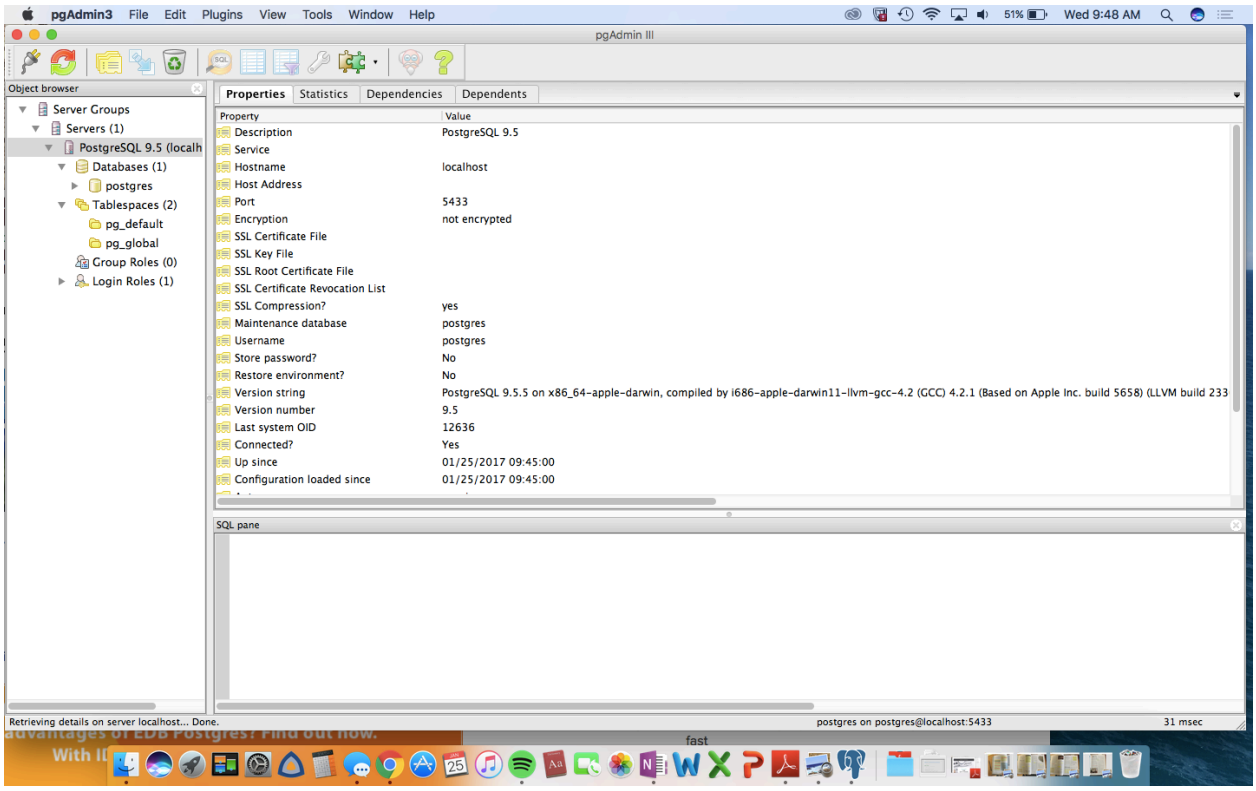
CMPT 308: Database Systems
Lab 1: PostgreSQL
Tuesday, January 24th, 2017

1. **Download PostgreSQL for Mac:**



2. **Data vs. Information**

The first database that comes to my mind is the complex SAP program that I worked with at my internship over the summer. I pulled up data on where the company spent its money and where it was classified. Some column names included Project ID, Network ID, Cost, and Date it was submitted into the system. I then extracted this data from SAP into a Microsoft Excel document. On Excel, I took this data and created a Pivot table in order for the employees to manipulate and visualize how much money they were spending.

If someone from outside of the organization were to see the different ID's for the differing costs and projects the costs were associated with, they would be completely lost. By giving the data context and the team background knowledge about the system, the audience can understand the situation and take it as information. An employee inside the organization is able to understand which project is associated with each cost and then take the following steps to pay off the subcontractors or take care of any issues with the information and handle situations.

3. **Data Models**

Hierarchical and network models are both pre-relational data models. Hierarchical models show data assigned to other data, sort of like a family tree. It lays out data in a way that is visually pleasing to the viewer. One major shortcoming of this model is that there could be some data included in the system that is not shown due to the fact that it is not tied to another piece of data. The hierarchical model is a flat file system and needs more flexibility for the audience to have a full understanding of the system.

The network model in a way is the next step to the more flexible hierarchical model. Like the hierarchical model, it shows the data of a system in a family tree style. It is different in its way to solve the duplication issue. The third tier of data connects to the second tier without needing to be placed twice. This is less effort for the employees who use this type of database. However, the same problem of some data not being shown if it is not connected to data is still present. IBM met physical data independence with the creation of network models in 1969.

Relational models would later solve this problem by connecting data in a way that every piece of the system is shown to the user. The relational model solves this problem by organizing data in the form of rows and columns. It connects the data in a 1 to many, many to 1, or many to many relationship. This system has become so effective that we are still using it today.