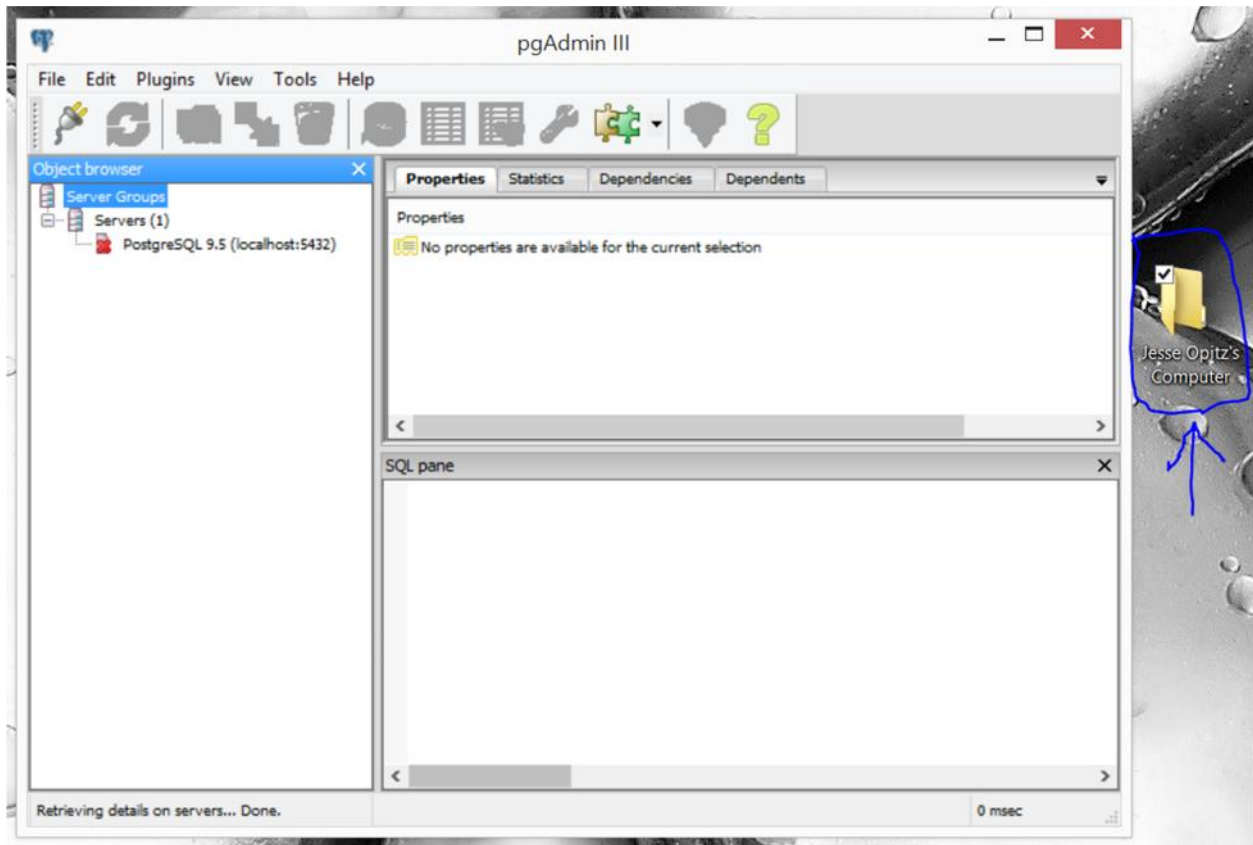Jesse Opitz
Database Management
Lab 1

2) A database in use today is a Marist lost and found database for students. In this database, the data can be considered any number or form of characters that may be entered into the website. This data is then turned into information because it is labeled by the category the user entered it in. For example, the English word "iPhone" may be entered into the database as a piece of data. Depending on what part of the form the user enters the data in will decide which category "iPhone" is entered under. For this example, "iPhone" will be categorized under the "Item Name" category. Since the context of "iPhone" is present, "iPhone" is considered to be information. With this knowledge entered by the user, some item named "iPhone" has been identified. The Marist lost and found data base has more information on each item as a requirement to help users identify if it's the item they lost. For example, the user must enter the item as lost or found, a description of the item, the date found and the location the item was found.

3) IBM invented the hierarchical data model, which organizes data in a tree-like structure. Each child record must have a single parent record. However, a parent record may have multiple child

records. Data is formed into several one-to-many relationships between parent and child records. The hierarchical data model was the first model to achieve physical data independence, as well as, the first data model ever created. Furthermore, the hierarchical data model lacks can't contain cycles, have data without a parent, and still has the problem of duplicated data. An additional problem with this model is that it operated at the physical level, which made it inconvenient for programmers to write code at a high level.

   A network pre-relational data model is the first model to fix the problem of inconsistency. Furthermore, this model was graph-oriented and allows each record to have multiple parents and children. Also, the network data model has more flexibility than the hierarchical model. Even though this model was an upgrade from the hierarchical model, it was still difficult to easily insert, delete and update data.

   If XML was used as a model for data storage, it may form a tree-oriented model because it contains tags and in between the tags are nested tags. This is similar to the hierarchical model because the outer tags could be considered "parent records" and the nested tags would be the "child records." The problems of inserting, deleting and updating data would still exist, as well as, the problem of duplicating data.