Database Management

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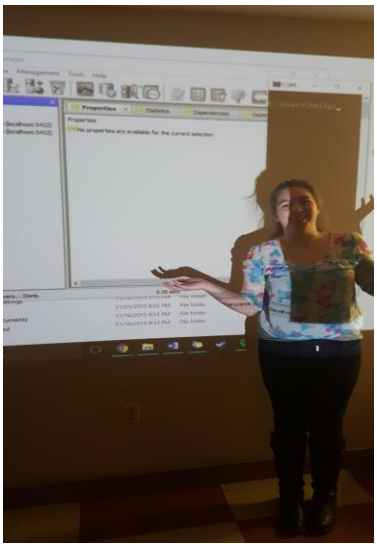
1. 

2. Data vs. Information – An example of a database is one to keep track of employees and their designations and departments, which then links to two other tables for the designations and the departments. These other tables contain fields such as the department name and a description of the department or the designation name and a description of the designation. This database would have data such as the employee's id number, name, e-mail, and the id's of their department and designation. The database organizes the data into information that can be processed by humans by using multiple tables that are linked together to give the data more depth. It provides context to the data so that it can be understood by a human that wants to read it. An example of "data" would be just an employee's id number, whereas "information" would put context with that data by saying 'Their id is 2946927' and grouping it together with other data about the employee, such as their e-mail and name. Alone the number means nothing, whereas with the name and email, it becomes understandable to a person reading the data. The main difference between data and information, then, is when it is used. A computer understands and uses the data, it doesn't want the excess information. On the other hand, information is given to humans as we cannot comprehend singular data without context.

3. Data Models – The hierarchical database model is organized into a tree-like structure where the data is stored as records connected by links. The relational model is the most commonly used model. It connects a bunch of tables by relating the data. The downsides of using the hierarchical model over the relational model are that it stores data in a linear storage, it doesn't have very sophisticated relationships, it is slower, and it has too much redundancy.