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1/27/2016

Lab 1

### Data vs. Information:

YouTube has grown to be one of the most visited websites in the modern age. However, many users do not know how the website is organized and the importance of this arrangement. Without the proper placement of data gathered in YouTube's database, data will never become information. Data is just facts and statistics, whereas, information is the organization and use of data. For example, data would be the number of plays a particular video has and information would be a playlist compiled of the videos that have the most views. Once data has been collected by YouTube's database it is analyzed and used to provide customers with feedback, or the information is used to direct ads towards a certain demographic. From a customer's perspective information gathered suggests videos to watch, channels to subscribe to, and suggest trending topics or videos other customers are interested in along with the ads that are presented to them. From YouTube's perspective information can be used to direct ads towards users, how to improve their website, and what user accounts can be purged that are inactive. As you can see data is important for any business, but if the data is not organized into information then a person might as well not gather the data in the first place.

### Data Models:

The hierarchical pre-relational data model is a tree-based model and the network pre-relational model is a graph-based model. The biggest issue regarding these pre-relational database models is that they did not support high-level query languages. In comparison to modern day database models it took an incredible amount of work to write simple queries, and statements that would allow a user to jump from one data element to another. The relational model is a lot more advanced and allows for more use of databases compared to pre-relational data models. Ted Codd proposed the organization of data in what is called relations. Relations, provide a table view of data, and suggests the use of high-level querying languages which increased the efficiency of database programmers. Also, large collections of small documents can serve as a database, as such, the methods to query and manipulate these documents are different from those used in relational systems. Many of these files are made with what is called XML. XML is a way to encode files so that the file is human and computer readable. In my opinion XML sounds like a useful way of creating files. However, at this point in time XML seems to be unconventional.