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Database Management

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## Lab 1

### Data vs. Information

The government has many different databases, most of which the citizens of the U.S. know nothing about. One database was recently stumbled upon by two hikers in the depths of the grand canyon. The hikers had stumbled on the huge rocks that make up the wall of the grand canyon and had moved them enough to see bright light coming through the rocks. They dug through the rock and stumbled into what they later found out was one of the secret data centers of the United States government. While there, they further investigated what data was being stored in such a secret place. They found a computer that explained all the data. There was data on extraterrestrial sightings, data on possible galaxies in the universe, and even data on the different people that believe in extraterrestrial life. The hikers were not completely sure what they were looking at when they saw just list of different facts that the government had obtained. They looked further into the computer and finally found files about how workers were using the database to take every piece of data that was stored about these subjects and organizing it into tables and graphs and information that had context and meaning. The hikers could see that the data center was a place that stored the data of the extraterrestrial sightings and linked it to the people that believe in extraterrestrial life and the other possible galaxies on the planet. The hikers saw the government official's comments about how the raw facts of data that they had collected had no meaning by themselves. They also saw that once the data was given meaning by being put into the data center and organized in a way that gave them information on possible extraterrestrial life and which citizens to keep an eye on that believed

that this extraterrestrial life really does exist, that they data then became valuable by having context and becoming information that was usable to the government.

## Data Models

The hierarchical data model and the network data model are very similar. Both are formed in a hierarchy with one item branching down from another and so forth. The problem with the hierarchical model is that it duplicates data and it does not represent accurately an item that has not been found. The network model came next and the problem of duplication of data was fixed, but the representation of an item that had not been found was still not accurate. The relational model fixed this by becoming a collection of tables and rows and leaving behind the file system all together. The relational model fixed both the problem of duplication and the problem of an item not being found but still needing to be recorded. I think you can store data on a document with XML so that both a computer and humans can understand the data, but it would be just data. One could have another XML file to store the information that comes from the data but it would not be a good way to just have data and obtain information from that data because it is basically just a text file.