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Short Essay: Data vs. Information

Data, in terms of computing is defined as the quantities, characters, or symbols being stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media. Data without context is considered meaningless because information is produced based on data. Specific data is what leads to information of anything. Information could be defined as data processed. For example, storing grades within a database would be considered data, but a persons average of those grades would be considered information. With a database containing nothing but grades, the average of the grades could not be figured out without the stored data. Another example of a database is Facebook. Facebook uses a database to stores things such as pictures, liked posts, friends, pages followed, etc. Based on this, it has been proven that Facebook makes assumptions about users such as a person's sexual orientation. So, in this example, the data is all the users liked pages, pictures, etc. The information of a persons sexual orientation is the information conducted from the data. From these two database examples, it proves that data is necessary for information to be conducted and that it is not "meaningless".

Short Essay: Data Models

The hierarchical model is setup as a tree-like structure. Each child record has an individual parent record, and child records are sorted through links. Each record is a collection of fields that contains a single value. Parent records could link to one or more child records. This model expresses many

relationships and was primarily used by IBM in the 60's and 70's but is rarely used today due to its lack of scalability. The network model is a more advanced version the hierarchical model and is highly flexible by allowing many-to-many relationships. This model is constructed from sets of related records. This tree-like model allows for links between one parent record and many children records. This model was created in the late 60's by the Conference on Data Systems Languages (CODASYL). The relational model for database management uses a structure and language consistent with first-order predicate logic. This model uses key-value for each attribute in its tables. Both the hierarchical model and network model were preferable for large-scale applications but fell in relation to the relational model being that the relational model offers a higher-level and more declarative interface. XML as a model for data storage is something I would say should be considered. The advantages of XML files such as moving them is simple and easy because the files are saved in plain text. Also, being that XML allows data to be specified without SQL makes it easier for the user of the database system. This system does run into problems though relatable to a hierarchical system.