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Data Models

In the world of database structures, there are many different models that all have their pros and cons that come along with them. Out of the different data model structures, the hierarchical model is the oldest established data model that was developed out of IBM in 1968. This type of model is made up of nodes that are all connected through a series of branches. The hierarchical model is structured like a tree that is positioned upside down. Each node in the hierarchical model has a parent node and only one, every parent node can have multiple children nodes coming from them, but each child node has one parent node. The next data model structure that goes hand in hand with the hierarchical model would be the network model. The network model is often preferred over the hierarchical model because the network model is sort of like an advanced version of the hierarchical model. The network model is very similar to the hierarchical model in all ways except for one. The key difference that makes it differ from the hierarchical model quite significantly in some cases is that the network model can have child nodes with more than one parent node. This change makes the branches more direct and a tree is no longer the most favorable form, it is more of a graph-like model now. These models both used model structures based on directed branch trees and graphs, however, there is a more recent and superior data model structure type that would be the relational model. This data model is superior to the previous two data model structures because the relational model no longer uses nodes and branches to organize records, the relational model uses tables to organize its records. A table

makes sorting and organizing data into information easier, it also creates fewer issues in regards to data independence. Another data model to look at is the XML data model. This data model is not very good at holding large amounts of records, so this kind of data model would not be best for larger databases. If a database has a lot of nesting or if it has recursion then the XML data model may not be superior to the relational data model. Due to XML information being very taxing to process and move it would not be great for saving and organizing large databases.