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Data Models

Hierarchical Data Models is a model system by IBM that organizes data in a tree like structure. Data is stored as one value and then connected to other data to form a hierarchy of data. Each tier of data is part of the previous tier. The Network Database Model represents each object and their relationship to other sets of data. It is not restricted to a tier system of data, like a hierarchical model, so that it allows multiple objects to have a relationship with different sets of data.

One big issue with the Hierarchical Data Model is that each "child" object can only have one "parent" object. This is an issue because as systems become more complex it becomes difficult to easily show that more than one "parent" object is related to a single "child" object. This issue with a relational database is none existent because many-to-one or many-to-many relationships exist can be used. A large short coming of the Network Data Model is the complexity of the model. Each database can be immensely large and cause a large amount of confusion with all the pointers from one set of data to the next. It also has a short coming in that it is very difficult to change the structure of the database. This issue of many pointers does not exist because of the innate features of the relational model. Using the example, we had in class, with the adventure game, hundreds of items could be listed and then linked to many players, in turn causing hundreds of pointers once each player has acquired a significant number of items.

XML is a hierarchical data storage model that allows users to store information about the relationship of data to each other. XML is also inherently ordered, due to its hierarchical nature. XML is appealing to many users because it allows data storage that is less normalized than what is required in relational databases. Overall XML could be a great alternative for data storage when compared to relational data storage.