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Lab 1, Essay 2

Data Models

In the past, there have been multiple different approaches developed for structuring

access to information in a database. IBM's IMS (Information Management System) was one of

the two earliest data models created for structuring information, the other one being Cullinet

Software's IDMS. IMS created the hierarchical data model which is where different kinds of

records relate to one another in hierarchical form where certain data that holds higher value (ex

cooperate headquarters location) is at the top and then data that holds lower value (location of

smaller branches of the company) would be placed at the bottom. The IDMS product was created

as a result of the 1971 CODASYL report of an industry database task group and made the

network data model. The network data model is similar to the hierarchical data model but the

network data model is more of a generalization of the hierarchical model where a set of records

in one layer may be on different hierarchies on the next layer.

The hierarchical model is structured as a tree with the root at the top and the branches at

the bottom. The network model is structured as a directed graph without circuits. The main

problem with both of these models of data was that they are difficult to pose and execute and

often required an expert programmer who actually understood what could be a complex

navigational structure of data. IMS and IDMS are still running today but are running on legacy

systems which is harder to switch out of although it may be running perfectly fine. Most

companies will now choose DBMS over either of these two now.

The most commonly used model for database systems is the relational model because it is easier for non-expert programmers to use. Even more recently, another newer data model called the object-relational model is been replacing the relational model which is an extension of the relational model.

An XML document kind of looks like an upside down tree to me that spreads it's leafs into little nets. I think XML makes it easier to specify data due to the organizational properties the tree creates, always allowing room for more branches but easily checkable to see what overall branch it is under. XML databases are a category of NoSQL databases.