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<p style="text-align:center">Hierarchal and Network: The Pre-relational Databases</p>

There are two different forms of data storage that were used before relational databases. These data formats are Hierarchal and Network relations. The hierarchy is going from the top down, making a database starting from one node and moving to the next. A shortcoming of the hierarchal model is that duplication of certain values occurs if two parent nodes have the same child node. If the child node is edited in only one of the parents, the data is not correct and there is a problem that will be hard to fix. This system also does not allow for backtracking. The network model makes things easier than the hierarchal model as there is a possibility for backtracking and multiple parents leading to the same child. A problem of the network model is that if something is not related to another thing in the database, then it is not included in the database. For example, if 1 is connected to a, 2 connects to b, and c doesn't have a connection, then c is not shown in a network model. The relational model fixes everything. XML could easily be used as a data model, but it does not reach the standards of the relational model.