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PostgreSQL Lab 1 Short Essays
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Data vs. Information

A database today would use data, which is just unorganized, unstructured raw facts that have no association and are seemingly useless and provide no context, and turn it into information by giving these seemingly useless facts context. This context would help organize and give meaning to these facts. Data is stored in the database and then can be accessed as information given context. For example, a store manager might use a database to access inventory stock numbers. The manager would want to check what items would need to be restocked so they would go into their database and request to the inventory stock list. The database would pull numbers and names of data, which would be useless until the numbers and names were given context such as the names of products with their inventory stock numbers. These products with their inventory levels would provide meaningful and useful information that the store manager could use to ensure that they are reordering products that need to be stocked up on and keep them in business.

Data Models

The hierarchical model views and deals with data as if it is a hierarchy. There is physical data independence, so the data can move. However, you cannot navigate around without the final product being seen, so you need to know the system first. The network pre-relational model rewrites the hierarchical model because there is a way back up so it becomes a network. There is duplication involved, which is a sin and a waste of space that deletes context due to redundancy. Moreover, there is physical independence. There is also the problem of not seeing "IDs" that are not being used since they would not have a place in the hierarchy. The relational model is in tables of rows and columns and the relational data management system. It is well established, easily understood, and flexible, therefore the most coveted of these models. It has not problem with redundancy and the user does not need to see the final product in order to understand the system. XML as a model for data storage would not be ideal due to its many shortcomings that are the same as the shortcomings that the hierarchical model and the network pre-relational model have, such as the inability to navigate around without seeing the final product and needing to know the system first, as well as the problematic duplication.