

2. Lets imagine an entry in a mapping database, like Google Maps. Pieces of data in this entry may include the street address, zip code, town, state, country, latitude, longitude, the name of what is there (such as “starbucks”), and more. The zip code, for example, is a piece of data, however by itself it is useless as it is just a number. Linking a zip code with a town name combines two pieces of data into one piece of information. A description such as “starbucks” is not useful by itself, because there are thousands of starbucks locations. An address is useless if you don’t know what is at the address or what town or state the address is in. Data is turned into information by connecting the pieces together.

When we search for a starbucks on our phone, we can find the address of a starbucks location, along with the town, and other information. Combining this information with your current location by gps (which is data on its own), the phone can help you get from point A to point B, which is a prime example of many pieces of data coming together to create valuable information.

3. The hierarchical model was created by IBM. It is arranged in a branching tree shape, similar to the tree of life. Records are connected to each other along branches in a parent-child relationship. This structure is more efficient to navigate than previous databases, when you are familiar with the structure of the database. The network model is similar to the hierarchy model, however in the network model one record can be connected with multiple owners. This is a benefit over the hierarchical model, as it means duplicate records do not need to exist for multiple owners to connect to (have ownership of) the same record.

Both the network and hierarchical model are programming based, meaning you need to write software to use the database and make sense of the data, as this functionality is not built in. This can be time consuming and unending, as new software needs to be written for every new query or use case. In the relational model, structured query language allows for queries to the database without writing software. This makes the database much easier to create, edit, or gather data from as the functionality to interface with the database is built into sql.

XML, by my understanding, is not a model for data storage in a database model sense of the word. XML is used to store data, but it is not used as a database because manipulating a database is key to its usefulness. Databases often can have terabytes or petabytes of data, and that data is really only useful when it can be quickly modified or queried. Databases are about more than just storing the data, which is where XML seems to fall short.