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Database Systems

1. The most difficult problem I worked on was trying to input data from my job about the current inventory. It consisted of tracking down items that weren’t properly inventoried. I solved it by see when an item was last used, finding who last used it, and when the item was recovered. From there I was able to find the item and properly inventory it.
2. Well with a relational databse it’s mroe structured where as the non relational is not. A few relational databases would be Microsoft SQL Server and MySQL and non relational would be Mongo DB.
3. I would choose which one would be best for the application I’m about to use. Some of the factors I may take in is if it’s transactional in nature or if there will be large types of data.
4. Row oriented databases organize data by record where as column oriented organize data by field. The better option would be column as it can aggregate better than row oriented.
5. The four types ar atomicity, consistency, isolation and durability. Atomicity is a transaction fails or succeeds and it’ an all or nothing approach. Consistency is used when data needs to stay consistent with the rules of the system. Isolation is pretty much allowing someone to perform modifications or changes on a system/transaction without it affecting anything else. Finally durability is dealing with the persistence of the transaction.Such as if the data is placed in permanent storage or not.
6. A table doesn’t have to have a primary key. No a relational DBMS does not allow us to store data without a primary key.
7. Vertical partitions store tables in separate table where as horizontal partitions store the tables in multiple databases.
8. Transient memory is where data Is not permanently stored where as persistent data is where the data is permanently stored. An example could be a program moving data to the RAM to be accessed faster but once the program is closed it’s no longer available. Where as persistent data is where the program saves the data to something like a SSD or HDD.

DBMS

1. We should use DBMS because it’s more efficient and it is more secure.
2. DBMS gives the ability to control users but also enforce policies if needed for security.
3. A database application allows for a way for data to be provided to end users.
4. Metadata can hold structered information that helps with identity such as, the name of the computer, the author of the file, creation of the file, when the file was modified.
5. Some of the roles would be owner, security admin, access admin, and data writer. The owner can perform all nessecary configurations and and maintenance.
6. Three types of designs would be relational models, network, and object-oriented database models.
7. Client server architecture is when multiple other systems are connected over a network and can share resources amongst each other.
8. We shouldn’t allow end users to access databases because they may not know what they are doing and could either corrupt the file or damage the file in some way.