**What are Databases?**

A Database is a shared, integrated computer structure that stores a collection of data.

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**Data / INFORMATION**

Data is raw unprocessed facts. Information is the result of processing raw data.

There exist two types of Data: Meta Data and End USER Data

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**DBMS Advantages**

- Manages transactions between the end user and the database
- Facilitates
- Data access
- Data security and integrity
- Data sharing
- Increases end user productivity
- Needed for management of large systems of Data

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**Database challenges**

- Large numbers of people want access to data, which can cause a plethora of database problems. These include, Data security, Data privacy, backup and recovery, integrity.
- All of these can be comprised with the poor setup of a DBMS.
- Ex. When the same data is given access to multiple people to change at will, they could run into data anomalies, or redundancies.

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**Good design in a Database**

Good design in a Database includes

- Encouraged data sharing
- Helps control data redundancy
- Helps Manage data accuracy/integrity
- Supports concurrent/distributed access
- Permits storage of vast volumes of data with efficient access

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**Top Databases for 2015**

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**NoSQL Vs. SQL**

**NoSQL Databases**

- Not based on the relational model
- Support distributed database architectures
- Provide high scalability, high availability, and fault tolerance
- Support large amounts of sparse data
- Geared toward performance rather than transaction consistency

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**SQL**

- No complex programming
- There is relational support
- There is data integrity