

Week 2 Notes

What is data?

- Meaningful facts
- Describing entities
- Example: Name, tel, address, email ... ect.
- Entities can be something abstract like an order (Not always tangible)
- Every entity has multiple properties

Data can be facts about *relationships*

- Attributes about the relationship

Data vs Information

- Data is raw and unprocessed
- Information is useful info found from the data

The Database

- A database is a collection of **logically related** data
- Includes descriptions of the data called *meta data*
- Logically related data comprised of entities, attributes and relationships

The DBMS

- Stands for *Database management system*
- Enables user to define, create, maintain and control access to the **db**
- You can compare the DBMS to an operating system - which extends the functionality of a database

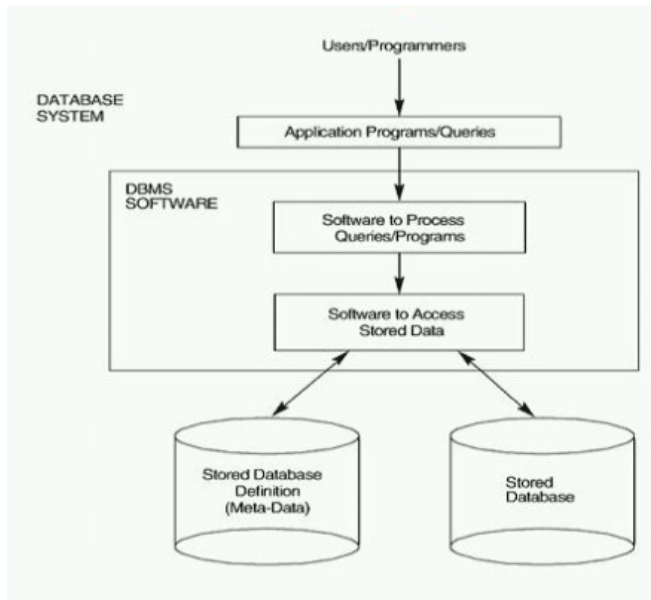
Functions of a DBMS

Function Name	Description
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Disadvantages of database

- Complexity
- Actual cost of the DBMS
- Hardware costs
- Performance
- High impact of failure

Database System



- DBMS is like a layer between *application programs* and the data base

How to Manage Data?

- Traditionally each program defines and manages its own data
 - What are some drawbacks by doing this?
 - Redundancy
 - Higher space complexity
 - Slower/incomplete queries
 - Data can be left in an inconsistent state easily
 - Application program tightly coupled with the data
 - Conversely what are the benefits of a DBMS?

The Database Approach

- Indexing can make queries much faster
- Data is shared between all applications
- Facilitates the building of application
- Enforce standards