: Why do organizations need databases?

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A data base or database is an organized collection of data. Data is stored and it continues and persists. Ideally a database is a logically coherent collection of meaningful data that is useful. A database is a requirement for most business operations. A database is no longer a "want", rather a database is now essential in even small businesses with only a few employees and sales around one million US dollars. Databases need to expand and grow with an organization. Databases are at the core of many business operations. For example, you buy something and the entire transaction is recorded in a database from finding the item, to ordering, to paying for it, to adjusting the inventory on-hand, to providing for shipping and tracking of the item.

A database transaction is a collection of operations or tasks often called a unit of work that performs a single logical function like data retrieval or updating a record as part of a database application. Often databases help people perform work.

A given set of data can be organized in a number of ways. For example, a customer database can be organized as a single Customer table with multiple columns for fields like FirstName, LastName, City. Alternatively a customer database can be organized with multiple tables like a Customer table and a CityState table. Each unique City and its State would be included in the CityState table and a record ID would be created. That identifier or ID would be included in the main Customer table with the entry or row for each individual customer to link to that person's city and state. The ID is used to establish a relation.

Each way we organize data has advantages and disadvantages. A database designer should organize data in the way that makes it easiest, fastest and most efficient to retrieve data needed for an anticipated task. If an appropriate database design is implemented and if the database is well managed, then creating a database and using a database management system (DBMS) can provide some or all of the following benefits and outcomes:

1. Data categories will be defined, and its organization will be more logical and more understandable.

2. Database queries will provide answers to routine questions anticipated by the designer and sometimes to non-routine questions.

3. Database queries will provide results for both simple and complex questions.

4. Database reports will reduce the amount of data presented with summaries.

5. DBMS provides more efficient recording and access to data.

6. DBMS supports database access for multiple applications. A DBMS reduces data storage redundancy.

7. Well designed databases reduce data access, collection and storage costs and improves performance of operations.

8. Data duplication is reduced.

9. A well-structured database avoids errors and problems that occur when data changes.

10. Large amounts of data can be stored in a database management system.

11. Multiple people can view and manipulate the data at the same time.

12. Access is provided to related data used in multiple applications.

A number of major components must be managed in a database environment including: a) the data, b) the software database management system (DBMS), c) computing and networking hardware, d) data collection and dissemination procedures, and finally, e) database users and the management staff including database administrators and database analysts. Many people access databases from Web applications.

A DBMS connects and manages a software application's use of data in a database. Data about data, also called metadata, often is stored by a DBMS and that metadata helps application designers use the data. A database is considered to be self-describing and self-documenting when it contains metadata that defines data elements and the data structure in the database. There are a number of enterprise and personal DBMS products that can be used to build and manage databases.

Computerized databases can and have replaced manual record keeping. Keeping records remains very important and hence computerized databases are necessary and even mandatory in organizations. Retrieving data to create information is equally important and that is much easier with database management systems. Data is valuable, good data and information derived from data can support decision making, but data must be actively managed to have maximum value.

Databases **support** work, including managerial decision making.

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