

1)

DBMS: A software package/system to facilitate the creation and maintenance of a computerized database

Database System: The DBMS software along with the data itself.

Meta Data: Describes the content of a database including the data-types, structures, and constraints.

Transaction Processing Application: Software that handles requests to retrieve or change data in a database

2)

Data Retrieval: Data retrieval is allowing users to access the database and view the value of the data. Ex: querying

Data Modification: Modification means users should be able to change the data of the database. Ex: deleting, inserting, editing, restoring

3)

Parametric: The user doesn't know they are interacting with a database. The user could upload text, images, or other media strings and not think about how the information is stored. These users include most people who use social media, games, and even self-checkout.

Sophisticated: The user is very familiar with the database and will use multiple tools in order to analyze the data. The users are usually data analysts, scientists, or engineers. They might create charts and visuals to see the contents of the database better.

4)

Reduce Redundancy: having a central database eliminates copies of the same data.

Access Control: Allows only certain users to view or change the data

Standardization: Keeping data in one format allows the data to be read more easily and from more places.

5)

1: Sometimes implementing a database system is too complex for the amount and type of information you need to store. A rigorous database is an overkill for your needs

2: Implementing a database is too expensive for your budget. Databases have a large start-up cost so it might be better to have a less rigorous way to store your data.

6)

a) Any column with a Major or Department data type would have to be updated.

b) There are a lot of relationships in the tables. Sections are part of a course. students major in a department. Courses have prerequisite Courses. Courses are provided by a department. Instructors teach sections. Grades have a student and a section. Students take sections. There are probably some more.

c)

Brown, MATH2410, A

Brown, CS1310, A

Brown, CS3320, B
Brown, CS3380, A