## Chapter 1: Database Systems

Define each of the following terms:
a. Data
b. Field
c. Record
d. File

> Data: Raw facts, or facts that have not yet been processed to reveal their meaning to the end user
> Field: A character or group of characters (alphabetic or numeric) that has a specific meaning; a field is used to define and store data
> Record: A logically connected set of one or more fields that describes a person, place, or thing
> File: A collection of related records; for example, a file might contain data about the students current enrolled at Gigantic University

What is data redundancy, and which characteristics of the file system can lead to it?

> Data redudancy: Exists when the same data is stored unnecessarily at different places
> Characteristics: Poor data security, Data inconsistency, Data-entry errors, Data integrity problems

What is data independence, and why is it lacking in file systems?

> Data independence:

What is a DBMS, and what are its functions?

> DBMS: Database Management System

What is structural independence, and why is it important?

> Structural independence:

Explain the differences among data, information, and a database.

> Data:
> Information:
> Database:

What is the role of a DBMS, and what are its advantages? What are its disadvantages?

> Role of DBMS:
> Advantages:
> Disadvantages:

List and describe the different types of databases.

What are the main components of a database system?

What is metadata?

> Metadata:

Explain why database design is important.

What are the potential costs of implementing a database system?

Use examples to compare and contrast unstructured and structured data. Which type is more prevalent in a typical business environment?

What are some basic database functions that a spreadsheet cannot perform>

What common problems do a collection of spreadsheets created by end users share with the typical file system?

Explain the significance of the loss of direct, hands-on access to business data that end users experienced with the advent of computerized data repositories.



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## Chapter 1: Database Systems (cont)

Explain why the cost of ownership may be lower with a cloud database that with a traditional, company database.

## Chapter 2: Data Models

## Chapter 3: The Relational Database Model

## Chapter 4: Entity Relationship (ER) Modeling

## Chapter 5: Advanced Data Modeling



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