Chapter Questions

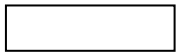
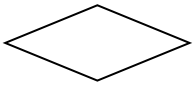
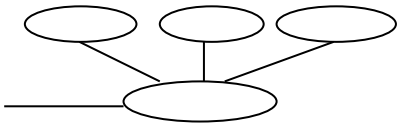
1. Discuss in your own words some problems associated with the traditional approach of storing data.
2. Explain how database addresses each of the challenges mentioned above in (1).
3. List the types of database users and discuss how each type interact with the database system.
4. Define database and discuss the various types
5. Explain the following terms:
   a. OLTP
   b. OLAP
   c. DBMS
   d. Relation
   e. Tuple
   f. Attribute
   g. Domain
   h. RDBMS
   i. DDL
   j. DML
6. Differentiate between OLTP and OLAP
7. Discuss the essential elements of DBMS
8. List the properties of relational tables
9. Discuss the advantages and disadvantages of a relational database
10. Differentiate between the general levels of the architecture of a DBMS

Chapter Questions

1. Distinguish between null and zero
2. Differentiate between data and information
3. Discuss the use of validation table and how it ensures data integrity
4. Explain the following terms:
   i. Table
   ii. Field
   iii. Record
   iv. View
   v. Primary key
   vi. Foreign key
   vii. Database index
   viii. Mandatory participation
   ix. Optional participation
   x. Field specification
5. Discuss in brief why views are important
6. Explain the various types of relationships permissible among tables in a database
7. Discuss the use of linking tables
8. Describe two scenarios that necessitates the use of linking tables
9. Explain data integrity
10. Mention and describe the four types of data integrity in databases

Chapter Questions

1. Explain the ER Model and how it models a database
2. List the various elements of Chen's ER model and their respective diagram notation
3. Explain the following terms:
   i. Entity
   ii. Entity instance
   iii. Entity set
   iv. Attribute
   v. Attribute domain
   vi. Derived attribute
   vii. Multi-valued attribute
   viii. Relationship instance
   ix. Cardinality
4. Distinguish between simple attribute and composite attribute
5. Write down the meaning of the following notations for ER diagrams

Chapter Questions

1. Explain the concept of Normalization and discuss the goal it seeks to achieve
2. Discuss the principle of functional dependencies and full functional dependence
3. List the process of transforming a table into the following:
   i. First Normal Form
   ii. Second Normal Form
   iii. Third Normal Form
4. Define the following:
   i. Database transaction
   ii. Concurrency control
5. What does the acronym ACID stand for?
6. Discuss the various transaction ACID rules
7. Discuss the reasons for ensuring concurrency control in database transactions
8. Explain the following concurrency control mechanisms and state at least one scenario each in which a mechanism is applicable:
   i. Optimistic
   ii. Pessimistic
   iii. Overly optimistic

Chapter Questions

1. Explain why fact-finding precedes database design
2. Discuss the various fact-finding techniques used in database design
3. List at least three advantages of the various fact-finding techniques discussed in (2) above
4. List at least three disadvantages of the various fact-finding techniques discussed in (2) above
5. Distinguish between the following terms:
   i. Open-ended questions and Close-ended questions
   ii. Structured and Unstructured interviews
   iii. Free-format questions and Fixed-format questions
6. Discuss the steps involved in database design process

Chapter Questions

1. Discuss the various elements of SQL language and give two examples each
2. Discuss the uses of the following SQL clauses:
   a. FROM
   b. WHERE
   c. GROUP BY
   d. HAVING
   e. ORDER BY
3. Discuss the various SQL Command categories and their general functions
4. State the use of the following SQL commands and give two (2) examples each:
   a. CREATE
   b. ALTER
   c. DROP
   d. TRUNCATE
   e. RENAME
   f. INSERT
   g. SELECT
   h. UPDATE
   i. DELELTE
   j. GRANT
   k. REVOKE
   l. JOIN
5. Differentiate between Inner and Outer joints
6. Explain the following and state their uses:
   a. Database Constraints
   b. Database Triggers
7. Distinguish between the following in terms of their uses:
   a. Int, SmallInt, TinyInt and BigInt
   b. Float and Decimal
   c. Char, VarChar and NVarChar
8. Define the following and give two (2) examples each:
   a. Entity constraints
   b. Domain constraints
   c. Referential integrity constraints
9. Discuss the two types of SQL Triggers and how to use them