DBMS Assignment - Unit 1 (Solved)

Multiple Choice Questions (Answers)

1. What does DBMS stand for? -> (b) Data Base Management System

2. Which of the following is not a function of DBMS? -> (c) Web page creation

3. The file processing system typically requires _____ to handle the data. -> (a) Custom software

4. The external level of the ANSI/SPARC model deals with _____. -> (a) User views of the data

5. Which of the following provides the best example of data independence? -> (d) Altering the logical schema without changing the external schema

6. Which of the following is an advantage of the client-server architecture? -> (d) Simplified data sharing

9. The DBA is responsible for _____. -> (a) Creating databases and maintaining them

10. Which of the following is not a component of the three-tier database architecture? -> (d) Network tier

Fill in the blanks (Answers)

1. The internal (physical) level in the ANSI/SPARC model is responsible for the physical storage of data.

2. NoSQL databases store data in key-value pairs, documents, or graphs instead of tables.

3. The client in a client-server architecture requests services from the server.

4. In a file processing system, data redundancy refers to the unnecessary duplication of data.

5. The database administrator (DBA) is responsible for creating and maintaining databases.

Short & Long Answer Explanations

1. Explain the concept of data independence in DBMS.
Data independence is the capacity to change the schema at one level of a database system without having to change the schema at the next higher level. There are two types: - Logical data independence: Ability to change the conceptual schema without affecting external schemas or application programs. - Physical data independence: Ability to change the internal schema (storage, indexes) without affecting the conceptual schema.

2. Differentiate between the logical and physical levels of the ANSI/SPARC model.
Logical (conceptual) level: Describes what data is stored and the relationships among the data. It is independent of physical considerations and focuses on structure (tables, constraints). Physical (internal) level: Describes how the data is actually stored on storage media. Includes file structures, indexes, access paths and storage details.

3. What are the primary functions of a Database Administrator (DBA)?
Primary functions of a DBA include: database design and creation, installation and configuration of DBMS, security and user management, backup and recovery, performance tuning, monitoring, and enforcing integrity constraints. DBAs also handle capacity planning and provide support to developers and users.

4. Advantages and disadvantages of DBMS over a traditional file processing system
Advantages: - Reduced data redundancy and inconsistency - Improved data security and

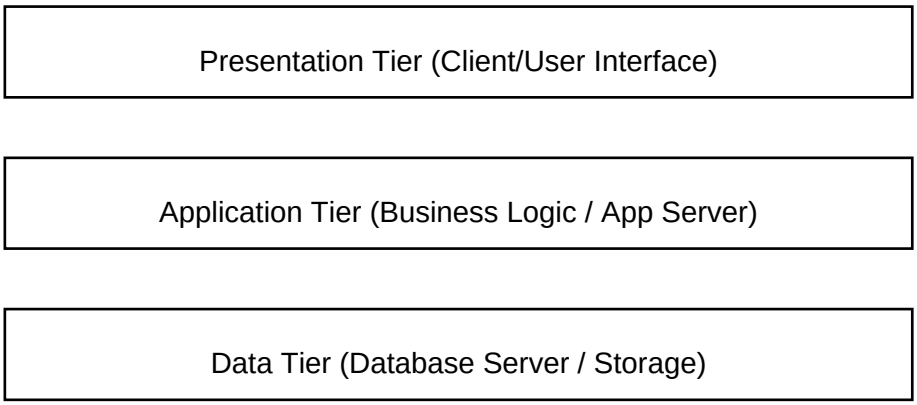
integrity - Efficient data access and concurrency control - Centralized administration and backup Disadvantages: - Higher initial cost and complexity - Requires specialized personnel (DBA) - Potential performance overhead for some simple tasks - Increased hardware/software resource needs

5. Main responsibilities of a DBA and contribution to database management

Main responsibilities include design & implementation, security management, backup & recovery, performance tuning, data integrity enforcement, user management, and maintenance. These ensure availability, reliability, security, and efficient operation of database systems.

6. DBMS Architecture (Three-tier) - Explanation and Block Diagram

Three-tier architecture separates the system into: - Presentation tier (client/user interface) - Application (logic) tier (business logic, application server) - Data tier (database server and storage) Advantages: modularity, scalability, easier maintenance, and security separation.



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