

IS.220: Lecture 1

Multiple Choice Questions (MCQs)

1. What is a database?
 - a) A collection of random data
 - b) A logically coherent collection of related data
 - c) A single table of information
 - d) A program that processes data
 - **Answer:** b) A logically coherent collection of related data
2. Which of the following is an example of a traditional database application?
 - a) Multimedia databases
 - b) Data warehouses
 - c) Numeric and textual databases
 - d) Geographic Information Systems (GIS)
 - **Answer:** c) Numeric and textual databases
3. The primary purpose of a **Database Management System (DBMS)** is to:
 - a) Process and manipulate images
 - b) Enable users to create and maintain a database
 - c) Store only structured text data
 - d) Replace spreadsheets
 - **Answer:** b) Enable users to create and maintain a database
4. What does **metadata** refer to in a database?
 - a) The actual data stored in the database
 - b) The hardware that stores the database
 - c) The descriptive information about the structure of the database
 - d) A type of query language
 - **Answer:** c) The descriptive information about the structure of the database
5. Which of the following is **not** a function of a DBMS?
 - a) Defining data structures
 - b) Constructing a database
 - c) Printing documents
 - d) Manipulating stored data
 - **Answer:** c) Printing documents
6. **Data Abstraction** refers to:
 - a) The ability to hide storage details from users
 - b) The process of deleting old data
 - c) Encrypting the database for security
 - d) Organizing data randomly
 - **Answer:** a) The ability to hide storage details from users
7. What is an example of a **real-world database** application?
 - a) Airline reservation system
 - b) Music streaming service
 - c) Social media analytics
 - d) All of the above

- **Answer:** d) All of the above
- 8. What is the **main advantage of using a DBMS**?
 - a) Increased redundancy
 - b) Sharing of data among multiple users
 - c) More complex development process
 - d) Slower access time
 - **Answer:** b) Sharing of data among multiple users
- 9. A database system that allows multiple users to access the same data concurrently is known as:
 - a) Multi-threaded database
 - b) File-based storage
 - c) Multi-user database system
 - d) Standalone database
 - **Answer:** c) Multi-user database system
- 10. What is **one major disadvantage of the file-based approach**?
 - a) It provides centralized control over data
 - b) Data redundancy and inconsistency
 - c) Improved security features
 - d) Easy data sharing
 - **Answer:** b) Data redundancy and inconsistency
- 11. Which of the following is **not a characteristic** of the database approach?
 - a) Self-describing nature
 - b) Program-data independence
 - c) Centralized data storage
 - d) Increased data duplication
 - **Answer:** d) Increased data duplication
- 12. **OLTP (Online Transaction Processing)** is commonly used in:
 - a) Large-scale reporting applications
 - b) Real-time transaction systems like banking
 - c) Data warehousing
 - d) None of the above
 - **Answer:** b) Real-time transaction systems like banking
- 13. Which **DBMS function** is responsible for protecting the database against unauthorized access?
 - a) Data abstraction
 - b) Security and access control
 - c) Data redundancy control
 - d) Indexing
 - **Answer:** b) Security and access control
- 14. What is an example of a **database query**?
 - a) A request to delete a table
 - b) A request to list all students registered in a "Database" course
 - c) Creating a backup of a database
 - d) Updating database software
 - **Answer:** b) A request to list all students registered in a "Database" course
- 15. When should **you not use a DBMS**?

- a) If the database and applications are simple and well-defined
 - b) When multiple users need to access data concurrently
 - c) If strong security and integrity constraints are needed
 - d) When a company wants to enforce standard data formats
 - **Answer:** a) If the database and applications are simple and well-defined
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True/False Questions

16. A database is simply a collection of random data.
 - **False**
17. A **DBMS** is a software system that helps users create, maintain, and manipulate databases.
 - **True**
18. A **file-based system** allows multiple programs to share the same data easily.
 - **False**
19. One of the **advantages of a DBMS** is that it controls redundancy.
 - **True**
20. **Metadata** refers to the actual data stored in the database.
 - **False**
21. A **university database** might store information about students, courses, instructors, and grades.
 - **True**
22. The **data warehouse** is used primarily for transaction processing.
 - **False**
23. A **database catalog** stores information about the database structure.
 - **True**
24. **Concurrency control** ensures that multiple users can access a database without conflicts.
 - **True**
25. A **DBMS** allows users to **define, construct, manipulate, and share** databases.
 - **True**
26. **Querying a database** means deleting its contents.
 - **False**
27. **Database abstraction** helps users interact with data without knowing storage details.
 - **True**
28. A **transaction** in a database system consists of only one operation.
 - **False**
29. **OLTP (Online Transaction Processing)** systems are mainly used for decision support and analysis.
 - **False**
30. **Data integrity constraints** ensure that only valid data is entered into the database.
 - **True**