

# CHAPTER 11: BEHIND THE SCENES: DATABASES AND INFORMATION SYSTEMS

## Multiple Choice:

1. Which of the following is a reason for creating a list instead of creating a database?

- A. to prevent data inconsistency
- B. to prevent data redundancy
- C. to make it easier to share data in a central location
- D. to organize data for simple tasks

Answer: D

Reference: Life Without Databases

Difficulty: Easy

2. Which of the following is NOT an effect of data redundancy in a database?

- A. increased loss of data
- B. wasted time entering data
- C. increased likelihood of a mistake
- D. inconsistent data

Answer: A

Reference: Life Without Databases

Difficulty: Moderate

3. When data changes in multiple lists and all lists are not updated, this causes:

- A. data redundancy.
- B. information overload.
- C. duplicate data.
- D. data inconsistency.

Answer: D

Reference: Life Without Databases

Difficulty: Challenging

4. \_\_\_\_\_ means that the data contained in a database is accurate and reliable.

- A. Data redundancy
- B. Data integrity
- C. Data reliability
- D. Data consistency

**Answer:** B     **Reference:** Advantages of Using Databases

**Difficulty:** Moderate

5. All of the following are advantages of using a database, EXCEPT:

- A. data redundancy.
- B. data integrity.
- C. flexible use of data.
- D. information sharing.

**Answer:** A     **Reference:** Advantages of Using Databases

**Difficulty:** Easy

6. In a database, a field is a:

- A. label.
- B. table of information.
- C. group of related records.
- D. category of information.

**Answer:** D     **Reference:** Fields

**Difficulty:** Moderate

7. Each field in a database is identified by a:

- A. field name.
- B. key name.
- C. field type.
- D. field code.

**Answer:** A     **Reference:** Fields

**Difficulty:** Easy

8. In a database, \_\_\_\_\_ fields store numbers used to perform calculations.

- A. next
- B. numeric
- C. key
- D. alphanumeric

**Answer:** B

**Reference:** Fields

**Difficulty:** Easy

9. A telephone number would be stored in a \_\_\_\_\_ field in a database.

- A. text
- B. memo
- C. computed
- D. date

**Answer:** A

**Reference:** Bits And Bytes: When a Number Isn't Really a Number

**Difficulty:** Moderate

10. A picture would be stored in a(n) \_\_\_\_\_ field in a database.

- A. text
- B. memo
- C. object
- D. hyperlink

**Answer:** C

**Reference:** Fields

**Difficulty:** Moderate

11. To record a person's last name, use a(n) \_\_\_\_\_ field in a database.

- A. memo
- B. object
- C. name
- D. text

**Answer:** D

**Reference:** Fields

**Difficulty:** Easy

12. To store text data that may be very long, use a \_\_\_\_\_ field in a database.

- A. memo
- B. text
- C. data
- D. long

**Answer:** A

**Reference:** Fields

**Difficulty:** Easy

13. A group of related fields in a database is called a(n):

- A. record.
- B. object.
- C. memo.
- D. table.

**Answer:** A

**Reference:** Records and Tables

**Difficulty:** Easy

14. A group of related records in a database is called a(n):

- A. column.
- B. object.
- C. key.
- D. table.

**Answer:** D

**Reference:** Records and Tables

**Difficulty:** Easy

15. The purpose of the primary key in a database is to:

- A. unlock the database.
- B. uniquely identify a record.
- C. provide a map of the data.
- D. establish constraints on database operations.

**Answer:** B     **Reference:** Primary Keys

**Difficulty:** Moderate

16. A good candidate for a primary key in a database would be a(n):

- A. last name.
- B. birthdate.
- C. employee position title.
- D. student identification number.

**Answer:** D     **Reference:** Primary Keys

**Difficulty:** Moderate

17. All of the following are types of databases, EXCEPT:

- A. relational.
- B. relation-oriented.
- C. object-oriented.
- D. multidimensional.

**Answer:** B     **Reference:** Database Types

**Difficulty:** Challenging

18. A relational database organizes data by logically grouping similar data into \_\_\_\_\_, or tables that contain related data.

- A. keys
- B. relations
- C. fields
- D. records

**Answer:** B     **Reference:** Relational Databases

**Difficulty:** Moderate

19. In a relational database, tables are logically linked to each other by a:

- A. key.
- B. hyperlink.
- C. field type.

D. field size.

**Answer:** A    **Reference:** Relational Databases

**Difficulty:** Moderate



20. A(n) \_\_\_\_\_ database stores data in objects, not in tables.

- A. object-oriented
- B. relational
- C. multidimensional
- D. object-relational

**Answer:** A     **Reference:** Object-Oriented Databases

**Difficulty:** Challenging

21. Which of the following statements concerning object-oriented databases is FALSE?

- A. Objects in an object-oriented database contain not only data but also methods for processing the data.
- B. Object-oriented databases store computational instructions in the same place as the data.
- C. Object-oriented databases are more adept at handling structured (analytical) data than relational databases.
- D. Object-oriented databases store more types of data than relational databases and access that data faster.

**Answer:** C     **Reference:** Object-Oriented Databases

**Difficulty:** Challenging

22. Which of the following would NOT ordinarily be considered unstructured data?

- A. text
- B. video
- C. audio clips
- D. MP3 files

**Answer:** A     **Reference:** Object-Oriented Databases

**Difficulty:** Challenging

23. Oracle 10g is an example of a(n):

- A. relational database.
- B. object-oriented database.
- C. multidimensional database.
- D. Web-based database.

**Answer:** C     **Reference:** Multidimensional Databases

**Difficulty:** Moderate

24. Which of the following is NOT one of the four main functions of a database management system (DBMS)?
- A. creating databases and entering data
  - B. viewing and indexing data
  - C. querying data
  - D. programming data

**Answer:** D    **Reference:** Database Management Systems: Basic Operations    **Difficulty:** Moderate

25. The \_\_\_\_\_ contains data descriptions and defines the name, data type, and length of each field in the database.
- A. data dictionary
  - B. data table
  - C. data record
  - D. data field

**Answer:** A    **Reference:** Creating Databases and Entering Data    **Difficulty:** Moderate

26. Another name for the data dictionary in a database is the:
- A. validation data.
  - B. relational data.
  - C. database management system.
  - D. database schema.

**Answer:** D    **Reference:** Creating Databases and Entering Data    **Difficulty:** Challenging

27. Field attributes (such as data type and field size) in a database are also known as:
- A. metadata.
  - B. default values.
  - C. field names.
  - D. primary keys.

**Answer:** A    **Reference:** Creating Databases and Entering Data    **Difficulty:** Moderate



28. When entering data, violations of \_\_\_\_\_ usually result in error messages.

- A. data entry
- B. validation rules
- C. arithmetic operators
- D. computation

**Answer:** B    **Reference:** Data Validation    **Difficulty:** Moderate

29. \_\_\_\_\_ are the values the database will automatically use for the field unless the user enters another value.

- A. Data types
- B. Default values
- C. Validated data
- D. Metadata

**Answer:** B    **Reference:** Creating Databases and Entering Data    **Difficulty:** Moderate

30. Common types of validation checks include all of the following, EXCEPT:

- A. range.
- B. completeness.
- C. redundancy.
- D. consistency.

**Answer:** A    **Reference:** Data Validation    **Difficulty:** Challenging

31. Range checks ensure that the data entered falls within the set \_\_\_\_\_, which are properties that must be satisfied for an entry to be accepted into a field.

- A. field constraints
- B. default values
- C. validations

D. descriptions

**Answer:** B     **Reference:** Data Validation

**Difficulty:** Challenging

32. In addition to keying data directly into the database, data entry can be done from a(n):

A. input form.

B. table.

C. field.

D. data dictionary.

**Answer:** A     **Reference:** Input Forms

**Difficulty:** Easy

33. \_\_\_\_\_ is the process within the database design of ensuring that data entered into a database meets validation rules.

A. Proofreading

B. Authorization

C. Validation

D. Computation

**Answer:** C     **Reference:** Data Validation

**Difficulty:** Moderate

34. The phrase ">5.50 And <20" is an example of a(n) \_\_\_\_\_ check to validate data in a database.

A. requirements

B. completeness

C. range

D. insurance

**Answer:** C     **Reference:** Data Validation

**Difficulty:** Moderate

35. A(n) \_\_\_\_\_ check confirms that only text characters are entered in a field.

A. alphabetic

B. numeric

C. completeness

D. range

**Answer:** A    **Reference:** Data Validation

**Difficulty:** Easy

36. A(n) \_\_\_\_\_ check ensures that all fields in a database defined as “required” have data entered into them.

A. requirements

B. completeness

C. consistency

D. alphabetic and numeric

**Answer:** B    **Reference:** Data Validation

**Difficulty:** Moderate

37. A \_\_\_\_\_ check compares the values of data in two or more fields to see if these values are reasonable.

A. constraint

B. completeness

C. consistency

D. range

**Answer:** C    **Reference:** Data Validation

**Difficulty:** Moderate

38. Making a field \_\_\_\_\_ means that it cannot be left blank.

A. numeric

B. required

C. calculated

D. validated

**Answer:** B    **Reference:** Data Validation

**Difficulty:** Easy

39. \_\_\_\_\_ organizes a database into the order you need.

A. Browsing

- B. Scrolling
- C. Sorting
- D. Querying

**Answer:** C     **Reference:** Viewing and Sorting Data

**Difficulty:** Easy

40. SQL is based on a branch of mathematics called:

- A. structured algebra.
- B. data-driven calculus.
- C. artificial intelligence.
- D. relational algebra.

**Answer:** D     **Reference:** Dig Deeper: Structured Query Language (SQL)     **Difficulty:** Challenging

41. A(n) \_\_\_\_\_ query displays a subset of data from one table based on specified criteria.

- A. select
- B. variable
- C. operational
- D. join

**Answer:** A     **Reference:** Dig Deeper: Structured Query Language (SQL)     **Difficulty:** Moderate

42. A \_\_\_\_\_ query displays a subset of data from two or more tables using a common field.

- A. select
- B. complex
- C. table
- D. join

**Answer:** D     **Reference:** Dig Deeper: Structured Query Language (SQL)     **Difficulty:** Moderate

43. A(n) \_\_\_\_\_ enables users to have the database select and display records that match a certain criteria.

- A. query

- B. sort
- C. operation
- D. join

**Answer:** A     **Reference:** Extracting or Querying Data

**Difficulty:** Moderate

44. The process of reducing redundancy in a database is called:

- A. a consistency check.
- B. normalization.
- C. metadata.
- D. schema.

**Answer:** B     **Reference:** Normalization of Data

**Difficulty:** Moderate

45. The primary key must be a(n) \_\_\_\_\_ field.

- A. numeric
- B. object
- C. unique
- D. related

**Answer:** C     **Reference:** Normalization of Data

**Difficulty:** Easy

46. A \_\_\_\_\_ is a large-scale electronic repository of data that is time-variant.

- A. data warehouse
- B. data mine
- C. knowledge-based system
- D. decision support system

**Answer:** A     **Reference:** Data Warehouses

**Difficulty:** Moderate

47. The premise behind a relational database is that \_\_\_\_\_ are established among the tables.

- A. relationships
- B. schema
- C. consistencies
- D. normalizations

**Answer:** A    **Reference:** Normalization of Data

**Difficulty:** Moderate

48. \_\_\_\_\_ is the term used for extracting data from source databases, transforming or reformatting the data, and storing it in the data warehouse.

- A. Data staging
- B. Validation
- C. Normalization
- D. Clickstream data

**Answer:** A    **Reference:** Data Staging

**Difficulty:** Challenging

49. All of the following are types of reports generated by a management information system, EXCEPT:

- A. summary
- B. detail
- C. exception
- D. validation

**Answer:** D    **Reference:** Management Information Systems

**Difficulty:** Easy

50. Which of the following items is NOT a major component of a decision support system (DSS)?

- A. internal and external data sources
- B. data warehousing
- C. model management systems
- D. knowledge-based systems

**Answer:** B    **Reference:** Decision Support Systems

**Difficulty:** Challenging

**Fill in the Blank:**

51. In a database, a category of information is stored in a(n) \_\_\_\_\_.

**Answer:** field                      **Reference:** Fields                      **Difficulty:** Moderate

52. In a database, \_\_\_\_\_ fields are numeric fields that store the contents of a calculation.

**Answer:** computational (or computed)                      **Reference:** Fields                      **Difficulty:** Challenging

53. In a database, field \_\_\_\_\_ include text, numeric, date, memo, object, and hyperlink.

**Answer:** types                      **Reference:** Fields                      **Difficulty:** Easy

54. \_\_\_\_\_ are electronic collections of related data that can be easily stored, sorted, organized, and queried.

**Answer:** Databases                      **Reference:** Life Without Databases                      **Difficulty:** Easy

55. Each record in a database should have one field that has a value *unique* to that record, and this is called a(n) \_\_\_\_\_.

**Answer:** primary key                      **Reference:** Primary Keys                      **Difficulty:** Moderate

56. A(n) \_\_\_\_\_ stores data in multiple dimensions as opposed to relational databases, which store data in two-dimensional tables.

**Answer:** multidimensional database                      **Reference:** Multidimensional Databases                      **Difficulty:** Moderate

57. A group of related records in a database is called a file or a(n) \_\_\_\_\_.

**Answer:** table                      **Reference:** Records and Tables                      **Difficulty:** Easy

58. In \_\_\_\_\_ databases, tables are logically linked to each other by including their primary keys in other tables with related information.

**Answer:** relational                      **Reference:** Relational Databases                      **Difficulty:** Easy

59. All modern \_\_\_\_\_ contain a query language that the software uses to retrieve and display records.

**Answer:** database management systems (DBMS)                      **Reference:** Extracting or Querying Data                      **Difficulty:** Easy

60. \_\_\_\_\_ databases are more adept at handling unstructured data such as audio clips, video clips, and pictures.

**Answer:** Object-oriented                      **Reference:** Object-Oriented Databases                      **Difficulty:** Moderate

61. SQL is based on relational algebra, which, like algebraic equations, uses \_\_\_\_\_ and \_\_\_\_\_.

**Answer:** variables, operations **Reference:** Dig Deeper: Structured Query Language (SQL) **Difficulty:** Moderate

62. Because they store the instructions for doing computations in the same place as the data, \_\_\_\_\_ databases can usually process requests for information faster than relational databases.

**Answer:** object-oriented **Reference:** Object-Oriented Databases **Difficulty:** Challenging

63. Small slices of a data warehouse are known as \_\_\_\_\_.

**Answer:** data marts **Reference:** Data Marts **Difficulty:** Easy

64. The data dictionary is also known as the \_\_\_\_\_.

**Answer:** database schema **Reference:** Creating Databases and Entering Data **Difficulty:** Moderate

65. Data describing other data in a database is called \_\_\_\_\_.

**Answer:** metadata **Reference:** Creating Databases and Entering Data **Difficulty:** Challenging

66. Besides using data entry forms or keying data directly into the database, users can \_\_\_\_\_ data electronically from other application files.

**Answer:** import **Reference:** Input Forms **Difficulty:** Moderate

67. A(n) \_\_\_\_\_ check is used to restrict fields in a database to numbers only.

**Answer:** numeric **Reference:** Data Validation **Difficulty:** Moderate

68. Another name for sorting is \_\_\_\_\_.

**Answer:** indexing **Reference:** Viewing and Sorting Data **Difficulty:** Easy

69. The predominant query language for modern-day databases is \_\_\_\_\_.

**Answer:** SQL (structured query language) **Reference:** Extracting or Querying Data **Difficulty:** Easy

70. A(n) \_\_\_\_\_ query displays a subset of data from a table based on the criteria you specify.

**Answer:** select **Reference:** Dig Deeper: Structured Query Language (SQL) **Difficulty:** Challenging

71. When creating a query, the \_\_\_\_\_ include directions such as *select*, *from*, and *where*.

**Answer:** operations **Reference:** Dig Deeper: Structured Query Language (SQL) **Difficulty:** Challenging



72. The two most common queries used to extract data are select queries and \_\_\_\_\_ queries.

**Answer:** join      **Reference:** Dig Deeper: Structured Query Language (SQL)      **Difficulty:** Moderate

73. A(n) \_\_\_\_\_ is a question or inquiry you ask the database so that it provides you with records you wish to view.

**Answer:** query      **Reference:** Extracting or Querying Data      **Difficulty:** Easy

74. The process of outputting the contents of a database in a file format recognizable by other applications is called \_\_\_\_\_.

**Answer:** exporting      **Reference:** Outputting Data      **Difficulty:** Easy

75. The \_\_\_\_\_ of data is the process of achieving the goal of reducing data redundancy by recording data only once.

**Answer:** normalization      **Reference:** Normalization of Data      **Difficulty:** Moderate

**True and False:**

76. Referential integrity means that for each value in the foreign key of one table, there is a corresponding value in the primary key of the related table.

**Answer:** True      **Reference:** Normalization of Data      **Difficulty:** Challenging

77. A data warehouse includes data that pertains to one period in time.

**Answer:** False      **Reference:** Data Warehouses      **Difficulty:** Moderate

78. Real-time processing means that transactions are accumulated, then a number of transactions are processed at once.

**Answer:** False (Batch)      **Reference:** Transaction Processing Systems      **Difficulty:** Easy

79. The most pressing problems of lists are the inability of the data to be shared and data redundancy.

**Answer:** True      **Reference:** Life Without Databases      **Difficulty:** Moderate

80. Online transaction processing (OLTP) works with real-time processing to ensure that the data is as up to date as possible.

**Answer:** True      **Reference:** Transaction Processing Systems      **Difficulty:** Easy

81. A join query displays a subset of data from a table based on the criteria you specify.

**Answer:** False (select)      **Reference:** Dig Deeper: Structured Query Language (SQL)      **Difficulty:** Moderate

82. Management information systems (MIS) help managers develop solutions for specific problems.

**Answer:** False (decision support systems-DDS) **Reference:** Decision Support Systems **Difficulty:** Challenging

83. External data sources include any source not owned by the company that owns the DDS, such as demographic data purchased from third parties, mailing lists, and statistics compiled by the federal government.

**Answer:** True **Reference:** Internal and External Data Sources **Difficulty:** Easy

84. A portal is a Web site where many types of data services or applications can be accessed at one time.

**Answer:** True **Reference:** Trends in IT: Emerging Technologies: Web Portal... **Difficulty:** Easy

85. Data warehousing is the process by which great amounts of data are analyzed and investigated with the purpose of spotting significant patterns or trends.

**Answer:** False (Data mining) **Reference:** Data Mining **Difficulty:** Moderate

86. Knowledge-based systems support normal logic that enables the interjection of experiential learning into the equation by considering possibilities.

**Answer:** False (fuzzy logic) **Reference:** Knowledge-Based Systems **Difficulty:** Challenging

87. Reducing data redundancy by recording data only once is called normalization of data.

**Answer:** True **Reference:** Normalization of Data **Difficulty:** Moderate

88. In a relational database, when two tables have a common field, the link between the tables is known as a relationship.

**Answer:** True **Reference:** Relational Database Operations **Difficulty:** Easy

89. Sorting a database in alphabetical order means you are sorting in descending order.

**Answer:** False (ascending) **Reference:** Viewing and Sorting Data **Difficulty:** Easy

90. Summary reports provide a consolidated picture of detailed data.

**Answer:** True **Reference:** Management Information Systems **Difficulty:** Moderate

### Matching:

91.

Match the following

terms to their functions:

- |                          |  |
|--------------------------|--|
| I. normalization         | A. alerts managers of need for immediate attention |
| II. exception report     | B. contains historical data                        |
| III. data warehouse      | C. reduces data redundancy in a database           |
| IV. data dictionary      | D. enforces match of primary to foreign keys       |
| V. referential integrity | E. contains metadata describing database structure |

**Answer:** C, A, B, E, D

**Reference:** Multiple locations in chapter

**Difficulty:** Challenging

92.

Match the following

acronyms to their descriptions:

- |           |   |
|-----------|---|
| I. OQL    | A. processes everyday business transactions                           |
| II. SQL   | B. query language similar to SQL                                      |
| III. OLAP | C. uses databases and models for assisting complex decision processes |
| IV. TPS   | D. assists users with analyzing and finding trends in data warehouses |
| V. DSS    | E. consists of commands and syntax for querying relational databases  |

**Answer:** B, E, D, A, C

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

93.

Match the following

SQL terms to their meanings:

- |                |   |
|----------------|---|
| I. join        | A. another term for directions  |
| II. select     | B. a query that uses keywords to specify fields to display from a table |
| III. variables | C. table names, field names, or selection criteria                      |

IV. select, from, where D. a query that displays related data from multiple tables

V. operations E. examples of operations

**Answer:** D, B, C, E, A **Reference:** DIG DEEPER: Structured Query Language (SQL) **Difficulty:** Moderate

94. Match the following terms to their meanings:

I. object-oriented database

A. SQL is based on this form of mathematics

II. knowledge-based system

B. combines data and methods for processing

III. data mart

C. smaller-scale version of a data warehouse

IV. memo field

D. can include artificial intelligence and uses fuzzy logic

V. relational algebra

E. contains variable-length text data

**Answer:** B, D, C, E, A

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

95. Match the following terms to their meanings:

I. data mining

A. finding patterns and trends in a data warehouse

II. multidimensional database

B. updating transactions all at one time

III. batch processing

C. loading data into a database from external sources

IV. real-time processing

D. stores data in multiple dimensions

V. importing

E. updating the database as a transaction occurs

**Answer:** A, D, B, E, C

**Reference:** Multiple locations in chapter

**Difficulty:** Easy

96. Match the following acronyms to their definitions:

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- |          |  |
|----------|--|
| I. BLOB  | A. a branch of computer science that is attempting to create computers that think like humans                      |
| II. MIS  | B. unstructured data encoded in binary form  |
| III. NLP | C. a system that assists employees in accomplishing routine tasks  |
| IV. AI   | D. users communicate with computers using a natural spoken or written language as opposed to programming languages |
| V. OSS   | E. information that enables managers to make critical business decisions   |

**Answer:** B, E, D, A, C

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

97.

terms to their meanings:

Match the following

- |   |  |
|---|--|
| I. database                               | A. electronic collection of related data that can be easily stored, sorted, organized, and queried |
| II. fuzzy logic                           | B. ensures that data in the TPS is as up to date as possible                                       |
| III. online transaction processing (OLTP) | C. tries to replicate human decision-making processes  |
| IV. model management system               | D. interjects experiential learning into the equation  |
| V. expert system                          | E. assists in building management models in DSSs   |

**Answer:** A, D, B, E, C

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

98.

terms to their meanings:

Match the following

- |                        |  |
|------------------------|--|
| I. detailed report     | A. another name for the data dictionary                                |
| II. data redundancy    | B. a list of transactions that occurred during a certain time period   |
| III. unstructured data | C. non-traditional data such as audio clips, video clips, and pictures |
| IV. table              | D. another name for a file, it is usually organized by a common object |
| V. database schema     | E. entering data multiple times  |

**Answer:** B, E, C, D, A

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

99.

Match the following

terms to their functions:

- |                          |  |
|--------------------------|--|
| I. object fields         | A. a unique field that ensures that records are not duplicated |
| II. computational fields | B. contain items such as pictures or video clips               |
| III. relations           | C. store the contents of a calculation                         |
| IV. record               | D. tables that contain related data in a relational database   |
| V. primary key           | E. a group of related fields                                   |

**Answer:** B, C, D, E, A

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate

100.

Match the following

terms to their meanings:

- |                         |   |
|-------------------------|---|
| I. file                 | A. software-based solution used to gather and analyze information                   |
| II. metadata            | B. includes range, completeness, consistency, alphabetic, and numeric               |
| III. information system | C. also known as a table  |
| IV. relational database | D. data describing data   |
| V. validation check     | E. organizes data in tables that are logically linked to each other by primary keys |

**Answer:** C, D, A, E, B

**Reference:** Multiple locations in chapter

**Difficulty:** Moderate