

# Chapter 1: Overview of Database Concepts

Student: \_\_\_\_\_

1. A database is a physical storage device for data.  
True False
2. A field is a basic unit of data also referred to as a record.  
True False
3. A character is a basic unit of data and can consist of a number, letter, or special symbol.  
True False
4. A collection of fields is a file.  
True False
5. A collection of records is a file.  
True False
6. A field in the logical design of a database corresponds to a row in the physical table of a relational database.  
True False
7. A record in the logical design of a database corresponds to a row in the physical table of a relational database.  
True False
8. The Systems Development Life Cycle is a series of steps that can be used to guide the development process for a database management system.  
True False
9. An entity is represented by a column in the Entity-Relationship Model.  
True False
10. Only one type of relationship can be represented in an Entity-Relationship Model.  
True False

11. The following types of relationships can be included in an Entity-Relationship Model: one-to-one, one-to-many, many-to-many.  
True False
12. A one-to-many relationship cannot be included in a relational database.  
True False
13. A one-to-many relationship means that an occurrence of a specific entity can only exist once in each table.  
True False
14. Data redundancy is created through a process known as normalization.  
True False
15. If a primary key has been identified for the data, then the data is considered to be in first normal form (1NF).  
True False
16. Partial dependency can only exist if the data is uniquely identified by a composite primary key.  
True False
17. Transitive dependency can only exist if the data is uniquely identified by a composite primary key.  
True False
18. Data is in second normal form (2NF) if it contains no repeating groups and has a primary key to uniquely identify each record.  
True False
19. Partial dependency means that at least one of the data values is dependent on only a portion of the primary key.  
True False
20. The simplest approach to remove a partial dependency is to use each portion of the primary key to create separate tables.  
True False
21. A foreign key uniquely identifies each row in a table.  
True False

22. A foreign key appears on the many side of a one-to-many relationship.  
True False
23. A bridging table can be used to eliminate a many-to-many relationship in a relational database.  
True False
24. A many-to-many relationship cannot exist in a relational database.  
True False
25. Two tables can be linked or joined together through a common field.  
True False
26. Tables can be linked or joined together through their primary keys.  
True False
27. A column represents a field in the physical database table.  
True False
28. Data mining refers to analyzing historical data stored in a database.  
True False
29. The occurrence of data anomalies would indicate an unnormalized database design.  
True False
30. Structured Query Language (SQL) is generally used to interact with a database.  
True False
31. Which of the following is used to create and maintain the physical database?  
A. Data mining  
B. Database Management System (DBMS)  
C. E-R Model  
D. Systems Development Life Cycle (SDLC)
32. Which of the following terms is considered the basic unit of data in a database?  
A. character  
B. field  
C. record  
D. file

33. Which of the following terms best describes where a group of characters that represents a customer's address would be stored in the logical design?
- A. record
  - B. file
  - C. field
  - D. database
34. Which of the following terms represents a collection of fields?
- A. field
  - B. record
  - C. character
  - D. file
35. A \_\_\_\_ is a group of interrelated files.
- A. record
  - B. character
  - C. field
  - D. database
36. Which of the following terms refers to a group of related records?
- A. database
  - B. character
  - C. field
  - D. file
37. A field in the logical design of a database corresponds to a \_\_\_\_ in the physical database.
- A. column
  - B. row
  - C. table
  - D. file
38. A record in the logical design of a database corresponds to a \_\_\_\_ in the physical database.
- A. column
  - B. row
  - C. table
  - D. file
39. A \_\_\_\_ is a storage structure designed to hold a collection of data.
- A. column
  - B. row
  - C. table
  - D. database

40. The multi-step process used when creating a new system is referred to as \_\_\_\_.
- A. the Systems Development Life Cycle
  - B. data mining
  - C. E-R Modeling
  - D. SQL
41. A DBMS includes which of the following capabilities?
- A. security
  - B. data dictionary
  - C. multiuser access
  - D. all of the above
42. Which of the following is not a step in the Systems Development Life Cycle (SDLC)?
- A. systems analysis
  - B. systems investigation
  - C. systems design
  - D. all of the above are steps in the SDLC
43. In which step of the Systems Development Life Cycle (SDLC) are the logical and physical components defined?
- A. systems recovery
  - B. systems analysis
  - C. systems design
  - D. systems implementation and review
44. In which step of the Systems Development Life Cycle (SDLC) is the solution to the identified problem determined and understood?
- A. systems investigation
  - B. systems analysis
  - C. systems design
  - D. systems implementation and review
45. In which step of the Systems Development Life Cycle (SDLC) is the system actually used by the end-user on a regular basis?
- A. systems investigation
  - B. systems analysis
  - C. systems deployment
  - D. systems implementation and review

46. In an E-R Model a person, place, or thing with characteristics to be stored in the database are referred to as?
- A. entity
  - B. row
  - C. attribute
  - D. file

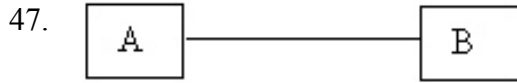


Figure 1

What type of relationship is depicted in Figure 1?

- A. one-to-many
- B. many-to-many
- C. one-to-all
- D. one-to-one

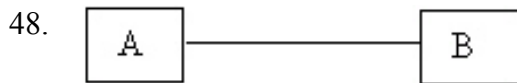


Figure 1

Which statement best describes the relationship shown in Figure 1?

- A. For every occurrence of A, there can only be one occurrence of B.
- B. For every occurrence of A, there can be multiple occurrences of B.
- C. There can be multiple occurrences of A and B.
- D. For every occurrence of B, there can be multiple occurrences of A.



Figure 2

What type of relationship is depicted in Figure 2?

- A. one-to-many
- B. many-to-many
- C. one-to-all
- D. one-to-one

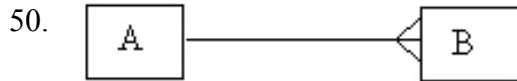


Figure 2

- If entity A in Figure 2 represents customers and entity B represents automobiles, which of the following statements is correct?
- A. Each customer can only own one car, but each car can be owned by many customers.
  - B. Each customer can only own one car and each car can only be owned by one customer.
  - C. Each customer can own many cars and each car can be owned by many customers.
  - D. Each customer can own many cars, but each car can be owned by only one customer.
51. Suppose that a patient in a hospital can only be assigned to one room. However, the room may be assigned to more than one patient at a time. This is an example of what type of relationship?
- A. one-to-many
  - B. many-to-many
  - C. one-to-all
  - D. one-to-one
52. If a recipe contains several ingredients, and those ingredients can also be used in other recipes, this would be an example of what type of relationship?
- A. one-to-many
  - B. many-to-many
  - C. one-to-all
  - D. one-to-one
53. The fact that a person can wear different size clothes and that different people can wear the same size clothes is best characterized as a what type of relationship?
- A. one-to-many
  - B. many-to-many
  - C. one-to-all
  - D. one-to-one
54. If uncontrolled, what can lead to data anomalies?
- A. data normalization
  - B. data correlation
  - C. data redundancy
  - D. data suppression

55. Which of the following is used to determine the correct organization for data that is to be stored in a database?
- A. E-R model
  - B. normalization process
  - C. systems implementation and review
  - D. systems analysis
56. Which of the following may contain transitive dependencies, but not partial dependencies?
- A. unnormalized data
  - B. first normal form (1NF)
  - C. second normal form (2NF)
  - D. third normal form (3NF)
57. Which of the following may contain repeating groups of data?
- A. unnormalized data
  - B. first normal form (1NF)
  - C. second normal form (2NF)
  - D. third normal form (3NF)
58. Which of the following is used to uniquely identify each record?
- A. primary key
  - B. row
  - C. partial dependency
  - D. account number
59. Which of the following may contain partial dependencies, but cannot contain repeating groups?
- A. unnormalized data
  - B. first normal form (1NF)
  - C. second normal form (2NF)
  - D. third normal form (3NF)
60. Partial dependency exists if what conditions exist?
- A. a column is dependent on a portion of the table that is not identified as the primary key
  - B. a column is dependent only on a portion of a composite primary key
  - C. the data contains repeating groups
  - D. the table is not in first normal form (1NF)



61. Which of the following does not contain repeating groups, but has a primary key and possibly partial dependencies?
- A. unnormalized data
  - B. first normal form (1NF)
  - C. second normal form (2NF)
  - D. third normal form (3NF)
62. Data in first normal form (1NF) does not contain which of the following?
- A. primary key
  - B. repeating groups
  - C. partial dependencies
  - D. both a and b
63. Which of the following can lead to partial dependencies?
- A. composite primary key
  - B. common fields
  - C. foreign keys
  - D. normalization
64. Data in second normal form (2NF) may contain which of the following?
- A. repeating groups
  - B. transitive dependencies
  - C. partial dependencies
  - D. both a and b
65. Data in third normal form (3NF) contains which of the following?
- A. repeating groups
  - B. transitive dependencies
  - C. partial dependencies
  - D. none of the above
66. If the data has no partial dependencies, repeating groups, or transitive dependencies, and has a composite primary key, the data is in which form?
- A. first normal
  - B. second normal
  - C. third normal
  - D. unnormalized

67. Which of the following can be used to link the data in two or more tables together?
- A. repeating group
  - B. relationships
  - C. SDLC
  - D. common field
68. Which of the following usually correlates to a primary key in another table?
- A. transitive dependency
  - B. composite primary key
  - C. foreign key
  - D. partial dependency
69. A foreign key is usually found on which side of a relationship?
- A. one
  - B. many
  - C. unnormalized
  - D. primary entity
70. What name is used to denote a common field that exists between two tables, but is also the primary key for one of the tables?
- A. duplicate key
  - B. foreign key
  - C. composite primary key
  - D. distinct key
71. Which of the following types of relationships cannot exist in a relational database?
- A. one-to-many
  - B. many-to-many
  - C. one-to-all
  - D. one-to-one
72. What is added to a relational database to eliminate many-to-many relationships?
- A. bridging table
  - B. transitive dependency
  - C. primary entity
  - D. secondary entity
73. What represents a characteristic or attribute that is being collected about an entity?
- A. record
  - B. row
  - C. field
  - D. both a and b

74. Which of the following is an example of an attribute?
- A. a person's hair color
  - B. the people who live in a particular town
  - C. the patients in a doctor's office
  - D. vendors
75. A field in the logical design of a database is represented by what in the physical database?
- A. column
  - B. row
  - C. field
  - D. row
76. A record in the logical design of a database is represented by what in the physical database?
- A. row
  - B. field
  - C. record
  - D. row
77. Data mining refers to \_\_\_\_.
- A. discovering new data to include in the database
  - B. analyzing data already stored in a database
  - C. selling data to other organizations
  - D. all of the above
78. Analyzing historical sales data stored in a database is commonly referred to as \_\_\_\_.
- A. data storage
  - B. data mining
  - C. data manipulation
  - D. archived data
79. Which of the following committees are responsible for establishing SQL guidelines?
- A. ANSI and ASCII
  - B. ANSI and ISO
  - C. IEEE and OSI
  - D. OSI and ASCII
80. Which of the following is an interface tool that allows a user to create, edit, and manipulate data in Oracle11g?
- A. SQL
  - B. SQL\*Plus
  - C. ASCII
  - D. Script

81. A(n) \_\_\_\_\_ is used to create and maintain the structure of a database.  
\_\_\_\_\_
82. A(n) \_\_\_\_\_ is a storage structure that contains data.  
\_\_\_\_\_
83. A(n) \_\_\_\_\_ is a basic unit of data that can consist of a letter, number, or special symbol.  
\_\_\_\_\_
84. A field is a group of related \_\_\_\_\_.  
\_\_\_\_\_
85. A(n) \_\_\_\_\_ is a group of interrelated files.  
\_\_\_\_\_
86. A(n) \_\_\_\_\_ is a group of related fields.  
\_\_\_\_\_
87. A file is composed of a group of related \_\_\_\_\_.  
\_\_\_\_\_
88. A field is referred to as a(n) \_\_\_\_\_ in the physical database.  
\_\_\_\_\_
89. A(n) \_\_\_\_\_ is referred to as a row in the physical database.  
\_\_\_\_\_
90. A file is referred to as a(n) \_\_\_\_\_ in an Oracle10g database.  
\_\_\_\_\_
91. The steps used to design and develop a database are commonly referred to as the \_\_\_\_\_.  
\_\_\_\_\_
92. A straight line with a crow's foot at one end depicts a(n) \_\_\_\_\_ relationship in an E-R Model.  
\_\_\_\_\_

93. A solid straight line in an E-R Model depicts a(n) \_\_\_\_\_ relationship.  
\_\_\_\_\_
94. A(n) \_\_\_\_\_ relationship means data can have multiple occurrences in both entities.  
\_\_\_\_\_
95. Data is in \_\_\_\_\_ normal form if it does not have any repeating groups and has a primary key.  
\_\_\_\_\_
96. A(n) \_\_\_\_\_ is used to uniquely identify each record.  
\_\_\_\_\_
97. Data is in second normal form if it is in first normal form and has no \_\_\_\_\_.  
\_\_\_\_\_
98. If at least one value in a record does not depend upon the primary key, then a \_\_\_\_\_ exists.  
\_\_\_\_\_
99. Data is in third normal form if it is in second normal form and has no \_\_\_\_\_.  
\_\_\_\_\_
100. A(n) \_\_\_\_\_ is a common field between two tables and is also a primary key for one of the tables.  
\_\_\_\_\_
101. A(n) \_\_\_\_\_ table can be added to the physical database to eliminate a many-to-many relationship.  
\_\_\_\_\_
102. A(n) \_\_\_\_\_ relationship cannot exist in a physical relational database.  
\_\_\_\_\_
103. Analyzing historical data stored in a database is referred to as \_\_\_\_\_.  
\_\_\_\_\_

104. \_\_\_\_\_ is a data sublanguage that processes sets of data.

\_\_\_\_\_

105. SQL commands can be issued in Oracle *11g* through \_\_\_\_\_ which is an interface that allows users to interact with the database.

\_\_\_\_\_

106. What is the purpose of an E-R Model?

107. What steps/tasks are required to convert unnormalized data to third normal form (3NF)?

108. What is the purpose of a foreign key?

# Chapter 1: Overview of Database Concepts **Key**

1. FALSE
2. FALSE
3. TRUE
4. FALSE
5. TRUE
6. FALSE
7. TRUE
8. TRUE
9. FALSE
10. FALSE
11. TRUE
12. FALSE
13. FALSE
14. FALSE
15. FALSE
16. TRUE
17. FALSE
18. FALSE
19. TRUE
20. TRUE
21. FALSE
22. TRUE
23. TRUE
24. TRUE
25. TRUE
26. FALSE
27. TRUE
28. TRUE
29. TRUE
30. TRUE

- 31. B
- 32. A
- 33. C
- 34. B
- 35. D
- 36. D
- 37. A
- 38. B
- 39. D
- 40. A
- 41. D
- 42. D
- 43. C
- 44. B
- 45. C
- 46. A
- 47. D
- 48. A
- 49. A
- 50. D
- 51. A
- 52. B
- 53. B
- 54. C
- 55. B
- 56. C
- 57. A
- 58. A
- 59. B
- 60. B
- 61. B
- 62. B
- 63. A
- 64. B



- 65. D
- 66. C
- 67. D
- 68. C
- 69. B
- 70. B
- 71. B
- 72. A
- 73. C
- 74. A
- 75. A
- 76. AD
- 77. B
- 78. B
- 79. B
- 80. B
- 81. database management system *or* (DBMS)
- 82. database
- 83. character
- 84. characters
- 85. database
- 86. record
- 87. records
- 88. column
- 89. record
- 90. table
- 91. Systems Development Life Cycle *or* SDLC
- 92. one-to-many *or* one to many
- 93. one-to-one *or* one to one
- 94. many-to-many *or* many to many
- 95. first *or* 1st
- 96. primary key
- 97. partial dependencies
- 98. transitive dependency

99. transitive dependencies

100. foreign key

101. bridging

102. many-to-many *or* many to many

103. data mining

104. Structured Query Language *or* SQL

105. SQL\*Plus

106. An E-R Model is used by designers to determine the types of relationships that exist among entities to be included in the database. In particular, it identifies many-to-many relationships that must be eliminated before the physical database is created.

107. Any repeating groups are eliminated from the unnormalized data and a primary key is identified to put the data in first normal form. If the primary key is a composite primary key, then any partial dependencies must also be eliminated to convert the data to second normal form. Once the data is in second normal form, any transitive dependencies are eliminated and the data is then in third normal form.

108. A foreign key is used to link data together that is contained in more than one table. It is usually found in the many side of a one-to-many relationship and links to the primary key in the other table.