

***Database Processing, 11e (Kroenke)***

**Chapter 1: Introduction**

1) The purpose of a database is to help people keep track of things.

Answer: TRUE

Diff: 1            Page Ref: 3

2) In a database, each table stores data about a different type of thing.

Answer: TRUE

Diff: 1            Page Ref: 3

3) In a database, each row in a spreadsheet has data about a particular instance.

Answer: FALSE

Diff: 2            Page Ref: 3

4) In every database, not just the databases discussed in this book, table names are capitalized.

Answer: FALSE

Diff: 2            Page Ref: 3

5) A database shows data in tables and the relationships among the rows in those tables.

Answer: TRUE

Diff: 1            Page Ref: 4

6) Data is recorded facts and figures; information is knowledge derived from data.

Answer: TRUE

Diff: 1            Page Ref: 5

7) Databases record data in such a way that they can produce information.

Answer: TRUE

Diff: 2            Page Ref: 6

8) Enterprise Resource Planning (ERP) is an example of a data mining application.

Answer: FALSE

Diff: 2            Page Ref: 6-7

9) Small databases typically have simple structures.

Answer: FALSE

Diff: 3            Page Ref: 8

10) Microsoft Access is a low-end product intended for individuals and small workgroups.

Answer: TRUE

Diff: 2            Page Ref: 14

11) Applications are computer programs used directly by users.

Answer: TRUE

Diff: 1            Page Ref: 8

12) Sequenced Query Language (SQL) is an internationally recognized standard language that is understood by all commercial database management system products.

Answer: FALSE

Diff: 2      Page Ref: 8

13) A database management system (DBMS) creates, processes and administers databases.

Answer: TRUE

Diff: 1      Page Ref: 11

14) Microsoft Access is just a DBMS.

Answer: FALSE

Diff: 2      Page Ref: 13

15) The DBMS engine in Microsoft Access is called Jet.

Answer: TRUE

Diff: 2      Page Ref: 14

16) In Microsoft Access, you can use the Oracle DBMS in place of the Jet DBMS.

Answer: FALSE

Diff: 2      Page Ref: 14

17) In an Enterprise-class database system, a database application interacts with the DBMS.

Answer: TRUE

Diff: 2      Page Ref: 15 Fig 1-16

18) In an Enterprise-class database system, a database application accesses the database data.

Answer: FALSE

Diff: 2      Page Ref: 15 Fig 1-16

19) In an Enterprise-class database system, business users interact directly with the DBMS, which directly accesses the database data.

Answer: FALSE

Diff: 2      Page Ref: 15 Fig 1-16

20) All database applications get and put database data by sending SQL statements to the DBMS.

Answer: TRUE

Diff: 2      Page Ref: 9

21) The DBMS ranked as having the "most power and features" in the text is IBM's DB2.

Answer: FALSE

Diff: 3      Page Ref: 16 Fig 1-17

22) The DBMS ranked as being the "most difficult to use" in the text is Oracle Corporation's Oracle Database.

Answer: TRUE

Diff: 3      Page Ref: 16 Fig 1-17

23) The DBMS ranked as being the "easiest to use" in the text is Microsoft's SQL Server.

Answer: FALSE

Diff: 2      Page Ref: 16 Fig 1-17

24) The DBMS ranked as having the "least power and features" in the text is Microsoft Access.

Answer: TRUE

Diff: 2      Page Ref: 16 Fig 1-17

25) A database is called "self-describing" because it reduces data duplication.

Answer: FALSE

Diff: 2      Page Ref: 12

26) The description of a database's structure that is stored within the database itself is called the "metadata."

Answer: TRUE

Diff: 1      Page Ref: 12 Fig 1-14

27) In a database processing system, indexes are held by the database management system (DBMS).

Answer: TRUE

Diff: 3      Page Ref: 11 Fig 1-12

28) Database design is important, but fortunately it is simple to do.

Answer: FALSE

Diff: 1      Page Ref: 16

29) A database design may be a new systems development project.

Answer: TRUE

Diff: 1      Page Ref: 16-19 Fig 1-18

30) A database design is rarely a redesign of an existing database.

Answer: FALSE

Diff: 1      Page Ref: 16-19 Fig 1-18

31) Information systems that stored groups of records in separate files were called file processing systems.

Answer: TRUE

Diff: 2      Page Ref: 19-20 Fig 1-25

32) Data Language/I (DL/I) structured data relationships as a tree structure.

Answer: TRUE

Diff: 3      Page Ref: 21 Fig 1-25

33) The CODASYL DBTG mode structured data relationships as a tree structure.

Answer: FALSE

Diff: 3      Page Ref: 22 Fig 1-25

34) The relational model was first proposed in 1970 by E. F. Codd at IBM.

Answer: TRUE

Diff: 2      Page Ref: 22

35) The 1977 edition of this text contained a chapter on the relational model, and that chapter was reviewed by E. F. Codd.

Answer: TRUE

Diff: 3      Page Ref: 22

36) dBase was the first PC-based DBMS to implement true relational algebra on a PC.

Answer: FALSE

Diff: 3      Page Ref: 23

37) Paradox is the only major survivor of the "bloodbath of PC DBMS products."

Answer: FALSE

Diff: 2      Page Ref: 23

38) Business organizations have resisted adopting object-oriented database systems because the cost of purchasing OODBMS packages is prohibitively high.

Answer: FALSE

Diff: 3      Page Ref: 23

39) Bill Gates has said that "XML is the lingua-franca of the Internet Age."

Answer: TRUE

Diff: 2      Page Ref: 24

40) XML Web services allow database processing to be shared across the Internet.

Answer: TRUE

Diff: 2      Page Ref: 24

41) The purpose of a database is to:

- A) help people keep track of things.
- B) store data in tables.
- C) create tables of rows and columns.
- D) maintain data on different things in different tables.
- E) All of the above.

Answer: A

Diff: 2      Page Ref: 3

42) A database stores:

- A) data.
- B) relationships.
- C) metadata.
- D) A and B
- E) A, B and C

Answer: E

Diff: 2      Page Ref: 3-4 and 12

43) A database records:

- A) facts.
- B) figures.
- C) information.
- D) A and B
- E) A, B and C

Answer: D

Diff: 2          Page Ref: 3

44) A sales contact manager used by a salesperson is an example of a(n) \_\_\_\_\_.

- A) single-user database application
- B) multiuser database application
- C) e-commerce database application
- D) A or B
- E) Any of A, B or C

Answer: A

Diff: 2          Page Ref: 8 and Fig 1-5

45) A Customer Resource Management (CRM) system is an example of a(n) \_\_\_\_\_.

- A) single-user database application
- B) multiuser database application
- C) e-commerce database application
- D) A or B
- E) Any of A, B or C

Answer: B

Diff: 2          Page Ref: 8 and Fig 1-5

46) An online drugstore such as Drugstore.com is an example of a(n) \_\_\_\_\_.

- A) single-user database application
- B) multiuser database application
- C) e-commerce database application
- D) A or B
- E) Any of A, B or C

Answer: C

Diff: 1          Page Ref: 7 Fig 1-5

47) The industry standard supported by all major DBMSs that allows tables to be joined together is called \_\_\_\_\_.

- A) Sequential Query Language (SQL)
- B) Structured Question Language (SQL)
- C) Structured Query Language (SQL)
- D) Relational Question Language (RQL)
- E) Relational Query Language (RQL)

Answer: C

Diff: 1          Page Ref: 8

48) A program whose job is to create, process and administer databases is called the \_\_\_\_\_.

- A) Database Modeling System
- B) Database Management System
- C) Data Business Model System
- D) Relational Model Manager
- E) Data Business Management Service

Answer: B

Diff: 2      Page Ref: 8

49) Microsoft Access includes:

- A) a DBMS.
- B) an application generator.
- C) a Web server.
- D) A and B
- E) A, B and C

Answer: D

Diff: 2      Page Ref: 13 Fig 1-15

50) Microsoft Access may use which of the following DBMS engines?

- A) Jet
- B) SQL Server
- C) Oracle
- D) A and B
- E) A, B and C

Answer: D

Diff: 2      Page Ref: 14

51) Which of the following are basic components of an enterprise-class database system?

- A) The user
- B) The database application
- C) The database management system (DBMS)
- D) The database
- E) All of the above

Answer: E

Diff: 1      Page Ref: 15 Fig 1-16

52) In an enterprise-class database system \_\_\_\_\_.

- A) the database application(s) interact(s) with the DBMS
- B) the database application(s) access(es) the database data
- C) the DBMS accesses the database data
- D) A and B
- E) A and C

Answer: E

Diff: 2      Page Ref: 15 Fig 1-16

53) In an enterprise-class database system, the database application \_\_\_\_\_.

- A) creates queries
- B) creates forms
- C) creates reports
- D) A and B
- E) B and C

Answer: E

Diff: 2      Page Ref: 15 Fig 1-16

54) In an enterprise-class database system, reports are created by \_\_\_\_\_.

- A) the user
- B) the database application
- C) the database management system (DBMS)
- D) the database
- E) All of the above

Answer: B

Diff: 2      Page Ref: 15 Fig 1-16

55) A database is considered "self-describing" because \_\_\_\_\_.

- A) all the users' data is in one place
- B) it reduces data duplication
- C) it contains a description of its own structure
- D) it contains a listing of all the programs that use it
- E) All of the above

Answer: C

Diff: 1      Page Ref: 12

56) In an enterprise-class database system, the database \_\_\_\_\_.

- A) holds user data
- B) holds metadata
- C) holds indexes
- D) holds stored procedures
- E) All of the above

Answer: E

Diff: 3      Page Ref: 12-13 Fig 1-14

57) A database may contain \_\_\_\_\_.

- A) tables
- B) metadata
- C) triggers
- D) stored procedures
- E) All of the above

Answer: E

Diff: 2      Page Ref: 12-13 Fig 1-14

58) A database may be designed \_\_\_\_\_.

- A) from existing data
- B) as a new systems development project
- C) as a redesign of an existing database
- D) A and B
- E) A, B, and C

Answer: E

Diff: 2      Page Ref: 16 Fig 1-18

59) A database designed using spreadsheets from the Sales department is a database being designed \_\_\_\_\_.

- A) from existing data
- B) as a new systems development project
- C) as a redesign of an existing database
- D) A and B
- E) A, B, and C

Answer: A

Diff: 2      Page Ref: 16-19 Fig 1-18

60) A database designed to implement requirements for a reporting application needed by the Sales department is a database being designed \_\_\_\_\_.

- A) from existing non-database data
- B) as a new systems development project
- C) as a redesign of an existing database
- D) A and B
- E) A, B, and C

Answer: B

Diff: 2      Page Ref: 16-19 Fig 1-18

61) A database designed to combine two databases used by the Sales department is a database being designed \_\_\_\_\_.

- A) from existing data
- B) as a new systems development project
- C) as a redesign of an existing database
- D) A and B
- E) A, B, and C

Answer: C

Diff: 1      Page Ref: 16-19 Fig 1-18

62) Database professionals use \_\_\_\_\_ as specific data sources for studies and analyses.

- A) data marts
- B) normalization
- C) data models
- D) entity-relationship data modeling
- E) data migration

Answer: A

Diff: 2      Page Ref: 19-20

63) Database professionals use a set of principles called \_\_\_\_\_ to guide and assess database



design.

- A) data marts
- B) normalization
- C) data models
- D) entity-relationship data modeling
- E) data migration

Answer: B

Diff: 3      Page Ref: 17

64) A very popular development technique used by database professionals for database design is known as \_\_\_\_\_.

- A) data marts
- B) normalization
- C) data models
- D) entity-relationship data modeling
- E) data migration

Answer: D

Diff: 3      Page Ref: 17-18

65) A very popular development technique used by database professionals to adopt a database design to a new or changing requirement is known as \_\_\_\_\_.

- A) data marts
- B) normalization
- C) data models
- D) entity-relationship data modeling
- E) data migration

Answer: E

Diff: 3      Page Ref: 18-19

66) The predecessor(s) of database processing was (were) \_\_\_\_\_.

- A) file managers
- B) hierarchical models
- C) network models
- D) relational data model
- E) All of the above were predecessors of database processing.

Answer: A

Diff: 3      Page Ref: 20-23

67) The relational model \_\_\_\_\_.

- A) was first proposed in 1970
- B) was developed by E. F. Codd
- C) was developed at IBM
- D) resulted in the DBMS product DB2
- E) All of the above

Answer: E

Diff: 1      Page Ref: 22-23

68) Modern microcomputer personal DBMS products \_\_\_\_\_.

- A) are supplied by several well-established manufacturers

- B) were essentially killed off by MS Access
- C) have poor response time
- D) are not true DBMS products
- E) are really just programming languages with generalized file-processing capabilities

Answer: B

Diff: 2      Page Ref: 22-23

69) Business organizations have resisted adopting object-oriented database management systems because \_\_\_\_\_.

- A) object-oriented programming uses simplified data structures that fit easily into relational databases
- B) the cost of purchasing OODBMS packages is prohibitively high
- C) the cost of converting data from relational databases to OODBMSs is too high
- D) most large organizations have older applications that are not based on object oriented programming
- E) C and D

Answer: E

Diff: 2      Page Ref: 23

70) For database development, the most important Web-related technology to emerge in recent years is:

- A) FTP.
- B) HTTP.
- C) XML.
- D) OODBMS.
- E) All of the above.

Answer: C

Diff: 2      Page Ref: 23-24

71) The purpose of a database is to \_\_\_\_\_.

Answer: help people keep track of things

Diff: 1      Page Ref: 3

72) In a database, each \_\_\_\_\_ stores data about a different type of thing.

Answer: table

Diff: 1      Page Ref: 3

73) In a database, each \_\_\_\_\_ in a database has data about a particular instance.

Answer: table

Diff: 2      Page Ref: 3

74) In the databases discussed in this book, table names are \_\_\_\_\_.

Answer: capitalized

Diff: 2      Page Ref: 3

75) A database shows data in tables and \_\_\_\_\_ among the rows of those tables.

Answer: the relationships

Diff: 1      Page Ref: 4

76) \_\_\_\_\_ is recorded facts and figures; \_\_\_\_\_ is knowledge derived from data.

Answer: Data; information

Diff: 1      Page Ref: 3 and 5-6

77) Databases record \_\_\_\_\_ in such a way that they can produce \_\_\_\_\_.

Answer: data; information

Diff: 2      Page Ref: 6

78) Enterprise Resource Planning (ERP) is an example of a \_\_\_\_\_.

Answer: multiuser database

Diff: 2      Page Ref: 6-7 Fig 1-5

79) \_\_\_\_\_ do not necessarily have simple structures.

Answer: Small databases

Diff: 3      Page Ref: 8

80) Computer programs used directly by users are called \_\_\_\_\_.

Answer: applications

Diff: 1      Page Ref: 8

81) \_\_\_\_\_ is an internationally recognized standard language that is understood by all commercial database management system products.

Answer: Structured Query Language (SQL)

Diff: 2      Page Ref: 8

82) A \_\_\_\_\_ is used to create, process and administer databases.

Answer: database management system (DBMS)

Diff: 1      Page Ref: 8

83) \_\_\_\_\_ is a DBMS combined with an application generator.

Answer: Microsoft Access

Diff: 2      Page Ref: 13-14

84) In an enterprise-class database system, a \_\_\_\_\_ interacts with the DBMS.

Answer: database application

Diff: 2      Page Ref: 15 Fig 1-16

85) All database applications get and put database data by sending \_\_\_\_\_ to the DBMS.

Answer: SQL statements

Diff: 3      Page Ref: 15 Fig 1-16

86) The DBMS ranked as having the "most power and features" in the text is \_\_\_\_\_.

Answer: Oracle database

Diff: 3      Page Ref: 11

87) The DBMS ranked as being the "easiest to use" in the text is \_\_\_\_\_.

Answer: Microsoft Access

Diff: 2      Page Ref: 16

88) A database is called \_\_\_\_\_ because it contains a description of itself.

Answer: "self-describing"

Diff: 2      Page Ref: 12

89) \_\_\_\_\_ is the description of a database's structure that is stored within the database itself.

Answer: Metadata

Diff: 1      Page Ref: 12-13 Fig 1-13

90) In an enterprise-class database system, indexes are held by the \_\_\_\_\_.

Answer: database

Diff: 3      Page Ref: 12-13 Fig 1-14

91) Business information systems that stored groups of records in separate files were called \_\_\_\_\_.

Answer: file processing systems

Diff: 2      Page Ref: 20-21 Fig 1-25

92) Data Language/I (DL/I) structured data relationships in a data structure known as a \_\_\_\_\_.

Answer: tree structure

Diff: 3      Page Ref: 21-22 Fig 1-25

93) The CODSYL DBTG mode structured data relationships in a data structure known as a \_\_\_\_\_.

Answer: network

Diff: 3      Page Ref: 22 Fig 1-25

94) The relational model was first proposed in 1970 by \_\_\_\_\_ at IBM.

Answer: E. F. Codd

Diff: 2      Page Ref: 22

95) The 1977 edition of this text was the first edition of this book that contained a description of the \_\_\_\_\_.

Answer: relational model

Diff: 2      Page Ref: 20

96) \_\_\_\_\_ was the first PC based DBMS to implement true relational algebra on a PC.

Answer: R:base

Diff: 3      Page Ref: 23

97) \_\_\_\_\_ is the only major survivor of the "bloodbath of PC DBMS products."

Answer: Microsoft Access

Diff: 2      Page Ref: 23

98) Business organizations have resisted adopting \_\_\_\_\_ because of the difficulty of

converting existing databases.

Answer: object-oriented database management systems (OODBMSs)

Diff: 3      Page Ref: 23

99) \_\_\_\_\_ has said that "XML is the lingua-franca of the Internet Age."

Answer: Bill Gates

Diff: 2      Page Ref: 24

100) \_\_\_\_\_ allow database processing to be shared across the Internet.

Answer: XML Web services

Diff: 2      Page Ref: 24

101) What is the purpose of a database, and how does the database accomplish this purpose?

Answer: The purpose of a database is to help people keep track of things. It accomplishes this purpose by storing data in tables. Each table has rows and columns, similar to a spreadsheet. A database usually has multiple tables in order to keep track of different but related things. For example, we might have a CUSTOMER table to keep track of customers and a PRODUCT table to keep track of the things we sell. Each row in each table holds data about a particular instance, i.e., one customer or one product. The database also stores the links between the tables, so that we can track which customers bought which products (note: this will require an additional table if one customer can buy more than one product and one product can be sold to more than one customer).

Diff: 2      Page Ref: 3-5

102) What are the four components of a database system?

Answer: The four components in a database system are: the user, the database application, the database management system (DBMS) and the database. The user interacts with the database application, which interacts with the DBMS, which controls the database. The functions of the database application include creating and processing forms, creating and transmitting queries and creating and processing reports. The DBMS creates databases, tables and supporting structures, manages database data, enforces rules and provides security. The database stores the user data, the database metadata, indexes, triggers, stored procedures and application metadata.

Diff: 2      Page Ref: 8-13

103) Briefly describe the function of an application program in a database system.

Answer: The application program is responsible for creating and processing forms. The application displays the form to the user, allows the user to complete the data entry, evaluates the form to determine which data management tasks need to be performed, and transmits the appropriate requests to the DBMS. The application creates and transmits queries. The queries are requests for data that are created in a language like SQL, and transmitted to the DBMS to have the requested data returned to the application program. The application also creates and processes reports. The query to retrieve the necessary data for the report is sent to the DBMS. When the DBMS returns the needed data, the application manipulates it as necessary to create the requested report. The application program also applies application logic to control the manipulation of data in accordance with the business rules. Finally, the application program is responsible for providing control. Control must be exercised to allow the users to make choices for functions and tasks as appropriate for their jobs. Also, control must be exercised to manage the activities of the DBMS.

Diff: 2            Page Ref: 9-11

104) What components are included in a database?

Answer: The database contains user data, metadata, indexes and other overhead data, and application metadata. User data is the data from the user's environment that they want to track. Metadata is data about the structure of the database. Indexes and other overhead data are structures that the database uses to improve performance. Finally, the application metadata is data about forms, reports, and other application components that some databases, particularly those created with desktop DBMS products, store with the database.

Diff: 2            Page Ref: 13-14

105) Why do we say a database is "self-describing" and why is this an advantage?

Answer: A database is considered self-describing because it contains a description of its own structure within the database itself. This description is called the metadata, and it is stored in specialized tables in relational databases. The advantage is that the database is self-documenting, and that a knowledgeable user or a database designer can easily access the metadata. All DBMS vendors provide tools to access the metadata within their products.

Diff: 3            Page Ref: 12-13

106) What is "metadata" and how does it relate to the definition of a database?

Answer: Metadata is data about the structure of the database itself. This includes data about the names of all the tables in the database, the names of all the columns in each of the tables, the data type of each column in each table, the properties of the tables and the columns, etc. Metadata accounts for the "self-describing" aspect of the definition of a database as a "self-describing collection of integrated tables."

Diff: 2            Page Ref: 12-13

107) Briefly describe the function of the DBMS in a database system.

Answer: The DBMS creates the database and the tables and structures within it. The DBMS also reads and updates the database data. It receives requests from application programs to perform data maintenance tasks. These requests are translated into actions that are performed on the database. In addition to maintaining the user data within the database, the DBMS also maintains the database structures. The DBMS also enforces any rules that have been defined to govern the values of the data, such as data type requirements and referential integrity constraints. The DBMS controls concurrency issues, which deal with the unwanted interruption of one user's work by another user's work. As the only point of entry into the database, the DBMS also provides security for the database to restrict users' access to only the data that they have authority to read or modify. Finally, the DBMS is responsible for the creation of backup copies of the database data and for restoring the database in case a recovery is required.

Diff: 2            Page Ref: 11-12

108) What are "referential integrity constraints"? Give an example.

Answer: A referential integrity constraint is a rule that restricts certain actions on the database data. A referential integrity constraint is used to ensure that the values in a field in one table have matching values in a corresponding field in another table. These constraints are enforced by the DBMS, which will not allow changes to the values of the database that would result in violations of this rule. For example, a database has an EMPLOYEE table and a VEHICLE table that are used to store data on employees and the vehicles that they are assigned to drive. The EMPLOYEE table has a column called EmployeeID that is used to distinguish one employee record from another. The VEHICLE table also has an EmployeeID column that is used to associate a vehicle with the appropriate employee. A referential integrity constraint could be used to prevent a vehicle from being assigned to an employee with an EmployeeID that does not appear in the EMPLOYEE table by requiring that all values in EmployeeID in the VEHICLE table have a matching value in EmployeeID in the EMPLOYEE table.

Diff: 3            Page Ref: 11

109) What are the three types of database design situations?

Answer: Database designs can be based on (1) existing data, (2) new systems development and (3) database redesign. Database designs from existing data may be based on data in spreadsheets or other data tables, or on data extracted from other databases. New systems development gathers user requirements for needed applications and designs a database to meet those requirements. Database redesign may be needed to migrate existing databases to a newer DBMS, or to integrate multiple existing databases.

Diff: 2            Page Ref: 16-19 Fig 1-18

110) Briefly describe the history of database processing.

Answer: The predecessor of database processing was file processing, where data were maintained on magnetic tape. Database processing as we know it today became possible with the availability of direct access disk storage in the 1960s. Using this storage, both the hierarchical data model and then the network data model were developed. In 1970, E. F. Codd of IBM proposed the relational model, which is the standard model used today. Current DBMSs such as DB2, Oracle and SQL Server are based on the relational model. The appearance of microcomputer based DBMSs, in the 1980s led to a "bloodbath" from which Microsoft Access emerged as the dominant PC workstation DBMS. More recent events include the introduction of object-oriented DBMSs (OODBMSs), and the development of tools such as XML to allow the use of database systems over the Internet.

Diff: 3            Page Ref: 18-22 Fig 1-18