

Modern Database Management, 13e (Hoffer)

Chapter 1 The Database Environment and Development Process

1) According to a McKinsey Global Institute Report, in 2010 alone, global enterprises stored more than:

- A) 1 terabyte of data.
- B) 3 gigabytes of data.
- C) at least 100 petabytes of data.
- D) more than 7 billion exabytes of data.

Answer: D

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

2) Database management involves all of the following EXCEPT:

- A) collecting data.
- B) organizing data.
- C) design web pages.
- D) managing data.

Answer: C

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

3) A database is an organized collection of _____ related data.

- A) logically
- B) physically
- C) loosely
- D) badly

Answer: A

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

4) Legacy systems often contain data of _____ quality and are generally hosted on _____.

- A) poor; personal computers
- B) excellent; mainframes
- C) poor; mainframes
- D) excellent; workgroup computers

Answer: C

LO: 3.1: Define key terms.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

5) Program-data dependence is caused by:

- A) file descriptions being stored in each database application.
- B) data descriptions being stored on a server.
- C) data descriptions being written into programming code.
- D) data cohabiting with programs.

Answer: A

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

6) Because applications are often developed independently in file processing systems:

- A) the data is always non-redundant.
- B) unplanned duplicate data files are the rule rather than the exception.
- C) data can always be shared with others.
- D) there is a large volume of file I/O.

Answer: B

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

7) Relational databases establish the relationships between entities by means of common fields included in a file called a(n):

- A) entity.
- B) relationship.
- C) relation.
- D) association.

Answer: C

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

8) A(n) _____ is often developed by identifying a form or report that a user needs on a regular basis.

- A) enterprise view
- B) reporting document
- C) user view
- D) user snapshot

Answer: C

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

9) A graphical system used to capture the nature and relationships among data is called a(n):

- A) XML data model.
- B) hypertext graphic.
- C) relational database.
- D) data model.

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

10) Data that describe the properties of other data are:

- A) relationships.
- B) logical.
- C) physical.
- D) metadata.

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

11) Metadata typically describes all of the following EXCEPT:

- A) data definitions.
- B) length.
- C) allowable values.
- D) location on disk.

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

12) A person, place, object, event, or concept about which the organization wishes to maintain data is called a(n):

- A) relationship.
- B) object.
- C) attribute.
- D) entity.

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

13) _____ are established between entities in a well-structured database so that the desired information can be retrieved.

- A) Entities
- B) Relationships
- C) Lines
- D) Ties

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

14) All of the following are primary purposes of a database management system (DBMS) EXCEPT:

- A) creating data.
- B) updating data.
- C) storing data.
- D) providing an integrated development environment.

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

15) With the database approach, data descriptions are stored in a central location known as a:

- A) server.
- B) mainframe.
- C) PC.
- D) repository.

Answer: D

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

16) A user view is:

- A) what a user sees when he or she looks out the window.
- B) a table or set of tables.
- C) a logical description of some portion of the database.
- D) a procedure stored on the server.

Answer: C

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

17) A major difference between data warehouses and transactional systems as compared to big data is:

- A) the data is unstructured in big data systems.
- B) the size of the CPU used.
- C) the programming required to access data.
- D) all of the above.

Answer: A

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

18) Which organizational function should set database standards?

- A) Management
- B) Application development
- C) Technical services
- D) Database Administration

Answer: D

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

19) _____ is a tool even non-programmers can use to access information from a database.

- A) ODBC
- B) Structured query language
- C) ASP
- D) Data manipulation query language

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

20) Which of the following is NOT an advantage of database systems?

- A) Redundant data
- B) Program-data independence
- C) Better data quality
- D) Reduced program maintenance

Answer: A

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

21) The most common source of database failures in organizations is:

- A) lack of planning.
- B) inadequate budget.
- C) inadequate hardware.
- D) failure to implement a strong database administration function.

Answer: D

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

22) A rule that CANNOT be violated by database users is called a:

- A) password.
- B) constraint.
- C) program.
- D) view.

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

23) In a file processing environment, descriptions for data and the logic for accessing the data are built into:

- A) application programs.
- B) database descriptors.
- C) fields.
- D) records.

Answer: A

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

24) E. F. Codd developed the relational model in the:

- A) 1960s.
- B) 1970s.
- C) 1980s.
- D) 1990s.

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

25) Which of the following is NOT an objective that drove the development and evolution of database technology?

- A) The need to provide greater independence between programs and data.
- B) The desire to manage increasing complex data types and structures.
- C) The desire to require programmers to write all file handling functionality.
- D) The need to provide ever more powerful platforms for decision support applications.

Answer: C

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

26) The period that can be considered a "proof of concept" time was the:

- A) 1950s.
- B) 1960s.
- C) 1970s.
- D) 1990s.

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

27) A departmental multi-tiered client/server database is stored on a central device called a:

- A) client.
- B) server.
- C) remote PC.
- D) network.

Answer: B

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

28) Organizations that utilize the file processing approach spend as much as _____ of their IS development budget on maintenance.

- A) 40 percent
- B) 25 percent
- C) 60 percent
- D) 80 percent

Answer: D

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

29) Which of the following is NOT a cost and/or risk of the database approach?

- A) Specialized personnel
- B) Cost of conversion
- C) Improved responsiveness
- D) Organizational conflict

Answer: C

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

30) The need for consensus on data definitions is an example of which type of risk in the database environment?

- A) Specialized personnel needs
- B) Organizational conflict
- C) Conversion costs
- D) Legacy systems

Answer: B

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

31) A knowledge base of information or facts about an enterprise is called a(n):

- A) enterprise information system.
- B) repository.
- C) systems information unit.
- D) database process.

Answer: B

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

32) Which of the following is software used to create, maintain, and provide controlled access to databases?

- A) Network operating system
- B) User view
- C) Database management system (DBMS)
- D) Attribute

Answer: C

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

33) A centralized knowledge base of all data definitions, data relationships, screen and report formats, and other system components is called a(n):

- A) index.
- B) data warehouse.
- C) repository.
- D) database management system.

Answer: C

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

34) Languages, menus, and other facilities by which users interact with the database are collectively called a(n):

- A) client.
- B) user interface.
- C) icon.
- D) development environment.

Answer: B

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

35) Database development begins with _____, which establishes the range and general contents of organizational databases.

- A) database design
- B) cross-functional analysis
- C) departmental data modeling
- D) enterprise data modeling

Answer: D

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

36) The traditional methodology used to develop, maintain, and replace information systems is called the:

- A) Enterprise Resource Model.
- B) Systems Development Life Cycle.
- C) Unified Model.
- D) Systems Deployment Life Cycle.

Answer: B

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

37) The SDLC phase in which every data attribute is defined, every category of data is listed, and every business relationship between data entities is defined is called the _____ phase.

- A) planning
- B) design
- C) analysis
- D) implementation

Answer: C

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

38) The SDLC phase in which database processing programs are created is the _____ phase.

- A) planning
- B) design
- C) analysis
- D) implementation

Answer: D

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

39) The SDLC phase in which the detailed conceptual data model is created is the _____ phase.

- A) planning
- B) design
- C) analysis
- D) implementation

Answer: C

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

40) Specifying how data from a logical schema are stored in secondary memory is part of the:

- A) design.
- B) maintenance.
- C) analysis.
- D) implementation.

Answer: A

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

41) An iterative methodology that rapidly repeats the analysis, design, and implementation phases of the SDLC is called:

- A) CASE.
- B) CAD.
- C) RAD.
- D) MST.

Answer: C

LO: 1.9: Explain the prototyping and agile-development approaches to database and application development.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

42) One of the most popular RAD methods is:

- A) automated design.
- B) structured walkthrough.
- C) prototyping.
- D) crafting.

Answer: C

LO: 1.9: Explain the prototyping and agile-development approaches to database and application development.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

43) _____ specify computer systems requirements.

- A) Programmers
- B) Users
- C) Systems analysts
- D) Database analysts

Answer: C

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

44) _____ do NOT concentrate on determining the requirements for the database component of an information system.

- A) Database analysts
- B) Systems analysts
- C) Programmers
- D) End Users

Answer: D

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

45) The three-schema approach includes which of the following schemas?

- A) Internal
- B) Logical
- C) Cross-functional
- D) Dissecting

Answer: A

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

46) A data warehouse derives its data from:

- A) on-line transactions.
- B) various operational data sources.
- C) reports.
- D) a data mart.

Answer: B

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

47) Determining the structure of data and the relationships between data elements either right before or at the time of use of the data is called:

- A) tables on write.
- B) schema on write.
- C) on demand paging.
- D) caching.

Answer: B

LO: 1.5: Distinguish between operational (transactional) and informational (data warehousing and big data) data management approaches and related technologies.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

48) Information is processed data.

Answer: TRUE

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

49) Metadata are data that describe the properties of other data.

Answer: TRUE

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

50) Databases were developed as the first application of computers to data processing.

Answer: FALSE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

51) File processing systems have been replaced by database systems in most critical business applications today.

Answer: TRUE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

52) Unplanned duplicate data files are the rule rather than the exception in file processing systems.

Answer: TRUE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

53) Organizations that utilize the file processing approach spend only 20 percent of development time on maintenance.

Answer: FALSE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

54) Many of the disadvantages of file processing systems can also be limitations of databases.

Answer: TRUE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

55) With the traditional file processing approach, each application shares data files, thus enabling much data sharing.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

56) Development starts from scratch with the traditional file processing approach because new file formats, descriptions, and file access logic must be designed for each new program.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

57) A data model is a graphical system used to capture the nature and relationships among data.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

58) A well-structured database establishes the entities between relationships in order to derive the desired information.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

59) A person is an example of an entity.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

60) The data that you are interested in capturing about an entity is called an instance.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

61) A relational database establishes the relationships between entities by means of a common field.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

62) Separation of metadata from application programs that use the data is called data independence.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

63) Data redundancy is used to establish relationships between data but is never used to improve database performance.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Difficult

Classification: Concept

AACSB: Information Technology

64) Redundancy increases the risk of inconsistent data.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

65) A user view is how the user sees the data when it is produced.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

66) One reason for improved application development productivity with the database approach is that file design and low-level implementation details do not need to be handled by the application programmer.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

67) The data repository assists database administrators in enforcing standards.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

68) The failure to implement a strong database administrative function is the most common source of database failures in organizations.

Answer: TRUE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

69) A constraint is a rule in a database system that can be violated by users.

Answer: FALSE

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

70) Reduced program maintenance is an advantage of file processing systems.

Answer: FALSE

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

71) Cost and complexity are just two of the disadvantages of database processing.

Answer: TRUE

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

72) The term *legacy system* refers to a newly installed database management system.

Answer: FALSE

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

73) A modern database management system automates more of the backup and recovery tasks than a file system.

Answer: TRUE

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

74) Organizational commitment to a database project is not necessary for its success.

Answer: FALSE

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

75) Data management technologies are also increasing often used as information systems, as a foundation for analytics or the systematic analysis of data to understand a real-world problem better.

Answer: TRUE

LO: 1.5: Distinguish between operational (transactional) and informational (data warehousing and big data) data management approaches and related technologies.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

76) Repositories are always used in file processing systems.

Answer: FALSE

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

77) The user interface includes languages, menus, and other facilities by which users interact with various system components.

Answer: TRUE

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

78) Personal databases are designed to support a small group of individuals working together on a project.

Answer: FALSE

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

79) Database development begins with the design of the database.

Answer: FALSE

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

80) An enterprise data model describes the scope of data for only one information system.

Answer: FALSE

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

81) Database development projects are never done in a bottom-up fashion.

Answer: FALSE

LO: 1.7: Identify four categories of applications that use databases and their key characteristics.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

82) The systems development life cycle is the traditional methodology used to develop, maintain, and replace information systems.

Answer: TRUE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

83) The steps of the systems development life cycle can only be viewed as a linear process.

Answer: FALSE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

84) Enterprise modeling sets the range and general contents of organizational databases.

Answer: TRUE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

85) All projects move from the planning-enterprise modeling step to the planning-conceptual data modeling step of the systems development life cycle.

Answer: FALSE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

86) The repository is populated during the analysis phase of the systems development life cycle.

Answer: TRUE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

87) The physical structure and storage organization of the database is decided upon during the implementation phase of the systems development life cycle.

Answer: FALSE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

88) Database processing programs are coded and tested during the design stage of the systems development life cycle.

Answer: FALSE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

89) Data from prior systems is converted to the new system during the implementation phase of the systems development life cycle.

Answer: TRUE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

90) Database maintenance is typically the longest step of the database development process.

Answer: TRUE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

91) Characteristics of the structure of the database are generally changed during the implementation phase of the database development process.

Answer: FALSE

LO: 1.8: Describe the life cycle of a systems development project, with an emphasis on the purpose of database analysis, design, and implementation activities.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

92) Prototyping is a type of rapid application development.

Answer: TRUE

LO: 1.9: Explain the prototyping and agile-development approaches to database and application development.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

93) In prototyping, implementation and maintenance activities are repeated as necessary until the product is correct.

Answer: TRUE

LO: 1.9: Explain the prototyping and agile-development approaches to database and application development.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

94) Visual programming tools such as Visual Basic have made prototyping more difficult.

Answer: FALSE

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

95) Systems analysts work directly with both management and users to analyze the business situation and develop detailed project specifications.

Answer: FALSE

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

96) Database architects establish standards for data in business units.

Answer: TRUE

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

97) In 1998, ANSI/SPARC published an import document describing the three-schema architecture.

Answer: FALSE

LO: 1.12: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

98) The conceptual schema is always technology specific.

Answer: FALSE

LO: 1.12: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

99) The external schema contains a subset of the conceptual schema relevant to a particular group of users.

Answer: FALSE

LO: 1.12: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

100) A physical schema contains the specifications for how data from a conceptual schema are stored in a computer's secondary memory.

Answer: TRUE

LO: 1.12: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

101) The internal schema consists of the physical schema and the enterprise data model.

Answer: FALSE

LO: 1.12: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

102) E. F. Codd developed the relational data model during the 1970s.

Answer: TRUE

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

103) The relational data model is no longer popular in the 21st century.

Answer: FALSE

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

104) Although personal databases improve productivity, one risk is that data cannot be shared with other users.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

105) The most common way to support a group of individuals who work together on a project or group of similar projects is with a multi-tier client/server database.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

106) In multi-tier database architectures, little functionality needs to be programmed into the client application.

Answer: FALSE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

107) Multi-tier client/server database applications contain a business logic layer.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

108) An enterprise resource planning system integrates all functions of the enterprise.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Concept

AACSB: Information Technology

109) A data warehouse contains summarized and historical information.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

110) An extranet uses Internet protocols to establish limited access to company data by the company's customers and suppliers.

Answer: TRUE

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Easy

Classification: Concept

AACSB: Information Technology

111) Discuss the differences between data and information.

Answer: Data consists of raw facts, such as figures, strings, images, etc. Most of the time, data itself is not very meaningful until we add some additional information, such as descriptive fields as well as some structure. For example, if one were looking at set of student grades with just course numbers and a semester key, this might not be very useful. If we were to add in some additional information, such as course title, semester and year, then we would have information.

LO: 1.1: Define key terms.

Difficulty: Easy

Classification: Synthesis

AACSB: Reflective Thinking

112) Discuss some of the disadvantages of file processing systems.

Answer: File processing systems have several disadvantages, including:

1. Program-data dependence—The program is tied to the underlying data. Whenever the data changes, (in the sense of structurally), then the program must be modified.
2. Duplication of data—Applications are often developed separately, resulting in duplicate data.
3. Limited data sharing—This is closely related to disadvantage 2, since often applications are developed in a silo. So, for example, the accounting department might develop an application which uses some of the same data as another department. However, there is no data sharing, so two sets of data are maintained.
4. Excessive program maintenance and lengthy development times—Since the programmer has to write all of the low-level file I/O for the application, this adds to the complexity of the application. Also, since the program might need maintenance whenever there is a change to the attributes of the data, there is a need for a lot of program maintenance.

LO: 1.2: Name several limitations of conventional file processing systems.

Difficulty: Easy

Classification: Synthesis

AACSB: Reflective Thinking

113) Discuss some of the advantages to the database approach.

Answer: The database approach has several advantages including:

1. Program-data independence—Since the metadata is stored in a repository, the underlying data can change and evolve without the need for maintenance to the applications.
2. Improved data consistency—Since there is less redundant data, the data is much more consistent.
3. Improved data sharing—A database can be created once, and then several different applications for organization units can access the underlying tables.
4. Increased application development productivity—Increased productivity since database management systems contain tools for development which aid in productivity. In addition, the developer does not have to worry about writing low-level file I/O.
5. Improved data quality—Data quality improves because of integrity constraints and range controls that can be built into the database.

LO: 1.3: Explain at least 10 advantages of the database approach, compared to traditional file processing.

Difficulty: Moderate

Classification: Synthesis

AACSB: Reflective Thinking

114) Discuss some of the costs associated with the database approach.

Answer: The database approach does not come without additional costs. These are specifically tied to the following:

1. New specialized personnel
2. Cost of installation and management
3. Conversion costs
4. Need for explicit backup and recovery

LO: 1.4: Identify several costs and risks of the database approach.

Difficulty: Moderate

Classification: Synthesis

AACSB: Reflective Thinking

115) Provide a brief overview of the various components of the database environment.

Answer: Components of the database environment include: CASE tools, a repository, the database management system, the database itself, application programs and the user interface. In addition, there are people such as the end users, system developers, data and database administrators. All of this is an integrated environment which improves the productivity of the organization.

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Moderate

Classification: Synthesis

AACSB: Reflective Thinking

116) Discuss why alternative IS development approaches have evolved, and provide an overview of a couple of these methodologies.

Answer: The SDLC is often criticized for being too long from the time of system start until a finished product is delivered. As such, organizations have begun to adopt rapid application development techniques. One technique is prototyping, where a system is designed as a prototype, given to the user for testing and then corrected as needed. This is an iterative process. Another methodology is Agile software development, which focuses more on people than processes.

LO: 1.6: List and briefly describe nine components of a typical database environment.

Difficulty: Moderate

Classification: Synthesis

AACSB: Analytical Thinking

117) Discuss who is involved in the database development process.

Answer: There are many different types of individuals involved in the database development process. First there are the users, next the business analysts who work with the users to develop business specifications. Systems analysts turn the specifications into technical specifications. Database analysts and modelers develop the actual database design. Programmers write the application. Project managers manage the entire project from start to finish.

LO: 1.10: Explain the roles of individuals who design, implement, use, and administer databases.

Difficulty: Moderate

Classification: Synthesis

AACSB: Reflective Thinking

118) Discuss Enterprise Resource Planning Systems, and contrast these to data warehouses.

Answer: An ERP system integrates all functions of the enterprise. ERP systems provide the data necessary for an organization to manage all of its data. While ERP systems rely on operational data, data warehouses are designed to use summarized, historical data and are used more in the role of decision support.

LO: 1.11: Explain the differences among external, conceptual, and internal schemas and the reasons for the three-schema architecture for databases.

Difficulty: Moderate

Classification: Synthesis

AACSB: Analytical Thinking

119) Discuss big data and data warehousing. How is it different from operational systems?

Answer: Data warehousing systems use static data and are used for reporting and some analytics. A data warehouse is implemented using the same technology as relational database management systems. Big data, on the other hand, can use a variety of data, both structured and unstructured. Often, big data uses a schema on read mode, where the database is built just before or while it is being used.

LO: 1.5: Distinguish between operational (transactional) and informational (data warehousing and big data) data management approaches and related technologies.

Difficulty: Moderate

Classification: Synthesis

AACSB: Analytical Thinking