Systems, Roles, and Development Methodologies, 8e **(Kendall/Kendall)**
Chapter 7 Using Data Flow Diagrams

7.1 Multiple Choice

1) Which graphically characterize(s) processes and data flows through a business system?
A) data dictionary
B) data flow diagrams
C) structured analysis
D) design
Answer: B
Diff: 1 Page Ref: 193

2) Which is the biggest advantage of the data flow approach over narrative explanations?
A) freedom from committing to the technical implementation of the system too early
B) further understanding of the interrelatedness of systems and subsystems
C) communicating current system knowledge of users through data flow diagrams
D) conceptual freedom found in the use of the four symbols
Answer: D
Diff: 1 Page Ref: 194

3) Which is <u>not</u> one of the four basic symbols used to chart data movement on data flow diagrams?
A) an oval
B) arrow
C) rectangle with rounded corners
D) open-ended rectangle
Answer: A
Diff: 2 Page Ref: 194

4) What is the middle of the process symbol used for?
A) process sequence
B) identifying number
C) process description
D) process implementation
Answer: C
Diff: 2 Page Ref: 194

5) A primitive process is:
A) a process that is not exploded to a child diagram.
B) the central process on a context level diagram.
C) a process that requires two or more data flow into it.
D) a process that has only base elements flowing in or out of it.
Answer: A
Diff: 3 Page Ref: 198

6) Which of the following is not an error when drawing a data flow diagram?
A) all data flowing into a process or out of a process
B) data flow on a child diagram that has only one end connected to a process, the other end is a point in space
C) connecting data stores and external entities directly to each other
D) placing more than nine processes on a data flow diagram
Answer: B
Diff: 3 Page Ref: 198

7) When the data flow in and out of a parent process do not match the data flow in or out of a child diagram, it is called:
A) a primitive process.
B) a disordered pair.
C) a logical data flow diagram.
D) unbalanced decomposition.
Answer: D
Diff: 3 Page Ref: 199

8) A logical data flow diagram:
A) includes types of programs, such as online or batch.
B) is a model of how the system will be implemented.
C) does not include any primitive processes.
D) is a model of how the business operates.
Answer: D
Diff: 2 Page Ref: 200

9) Which of the following is not an advantage of using a logical model?
A) A system based on a logical model is more stable.
B) The logical model helps the analyst understand the business being studied.
C) It facilitates communication with the users.
D) A logical model clarifies which processes are automated.
Answer: D
Diff: 2 Page Ref: 202

10) Which of the following is not an advantage of using a physical model?
A) Transaction data stores are identified.
B) It is easier to create compared with the logical model.
C) The sequence of processes is identified.
D) Controls are included.
Answer: B
Diff: 2 Page Ref: 203

11) Physical data flow diagrams:
A) include processes for adding, updating, changing and deleting records.
B) are used to model business events, along with their input and output.
C) enable the analyst to better understand the business.
D) include no interface data flow in or out of processes.
Answer: A
Diff: 2 Page Ref: 204

12) Transaction files:
A) are used when interface data flow exist on data flow diagrams.
B) may be used to link processes that execute at different times.
C) are included to store all derived elements.
D) are required to implement all on-line processes.
Answer: B
Diff: 1 Page Ref: 204

13) Which of the following is <u>not</u> a reason for partitioning processes into separate programs?
A) the processes represent different user groups
B) the processes execute at different times
C) to control system security
D) to maintain consistency of data
Answer: D
Diff: 3 Page Ref: 207

14) A CRUD matrix is used to show:
A) places in the system where the data is inaccurate.
B) where records are updated, added, deleted or used.
C) which Web pages that are placed on a secure server.
D) the partitioning of data flow diagrams in a client/server environment.
Answer: B
Diff: 1 Page Ref: 204

15) In a CRUD matrix, each row represents the data stores used for each:
A) Process.
B) Database table.
C) Data flow child diagram.
D) Activity.
Answer: D
Diff: 1 Page Ref: 204

16) The process of creating a simple data flow diagram fragment for each unique system trigger is called:
A) event modeling.
B) trigger analysis.
C) response cases.
D) CRUD model analysis.
Answer: A
Diff: 2 Page Ref: 205

17) The advantage of building data flow diagrams based on events is that:
A) events are small scale and easy to analyze for input and output.
B) users are familiar with the events within their business and know how the events drive other activities.
C) events fall into one of four categories: read, update, create, delete.
D) events are predictable and lend a high degree of stability to the data flow diagram.
Answer: B
Diff: 1 Page Ref: 205

18) A use case:
A) summarizes an activity, its trigger, input, and output.
B) describes a subsystem of a data flow diagram showing how the processes use data produced by other processes.
C) describes how the data is partitioned into programs for different users.
D) shows when the data is updated, read, created or deleted.
Answer: A
Diff: 3 Page Ref: 205

19) Partitioning on a data flow diagram for an ecommerce Web site may be used to show:
A) external events.
B) triggers.
C) security.
D) derived elements.
Answer: C
Diff: 1 Page Ref: 207

20) Which of the following is a goal of dividing a Web site into a series of Web pages?
A) Improve the ease of maintaining the Web site.
B) Improve the collection of Web metrics.
C) Improve tracking of page movement by the customer.
D) Improve the revenue obtained by page marketing.
Answer: A
Diff: 1 Page Ref: 213

21) What should be created each time data must be obtained from an external partner?
A) A transaction data store.
B) A new browser window and DFD process to validate the window's data.
C) A unique Web form and DFD process to validate and process the data.
D) A Web form that extends the previous Web form.
Answer: C
Diff: 2 Page Ref: 213

22) Ajax is used to:
A) Partition Web sites into different Web forms.
B) Obtain data from a Web server and update the current Web form.
C) Confirm credit card accounts using a secure transaction.
D) Transmit data to an external partner using XML documents.
Answer: B
Diff: 3 Page Ref: 213

23) Having separate Web forms to collect transaction data means that:
A) the forms are each quite complex with complex validation.
B) the forms are less complex and easier to fill out.
C) the processing will take place slowly.
D) the Web site will not be as attractive.
Answer: B
Diff: 2 Page Ref: 214

24) Each time an external company or system is involved:
A) The processes that handle each of the interactions should be partitioned into one program for security reasons.
B) A new temporary data store must be used with a process to create the data store.
C) The process that handles the interaction must be on a secure server.
D) The process involved needs to be partitioned into a separate program.
Answer: D
Diff: 3 Page Ref: 217

25) Each time an external company or system is involved in the activities of a Web site, the process that handles them must be _____.
A) partitioned into a separate program
B) collected for use in a single program
C) deleted from the system completely
D) printed and stored in paper form
Answer: A
Diff: 1 Page Ref: 217

7.2 True/False

1) The data flow diagram graphically characterizes data processes and flows in a business system.
Answer: TRUE
Diff: 1 Page Ref: 193

2) The biggest advantage of the data flow approach lies in the conceptual freedom found in the use of the four symbols.
Answer: TRUE
Diff: 1 Page Ref: 194

3) The data flow diagram may be used to analyze the proposed system.
Answer: TRUE
Diff: 1 Page Ref: 194

4) An arrow is used to depict an external entity that can give and receive data from the system.
Answer: FALSE
Diff: 1 Page Ref: 194

5) Each external entity is labeled with a noun.
Answer: TRUE
Diff: 1 Page Ref: 194

6) A rectangle with rounded corners is used to show the occurrence of a transforming process.
Answer: TRUE
Diff: 1 Page Ref: 194

7) Processes in a rectangle with rounded corners sometimes denote something other than a change in or transformation of data or a system/subsystem.
Answer: FALSE
Diff: 2 Page Ref: 194

8) Processes that transform data should be named with a noun which indicates the data that has been transformed.
Answer: FALSE
Diff: 2 Page Ref: 194

9) In logical data flow diagrams, the type of physical storage is unspecified.
Answer: TRUE
Diff: 1 Page Ref: 195

10) The name of the data flow coming out of a process should be different than the name of the data flow going into the process.
Answer: TRUE
Diff: 1 Page Ref: 195

11) The systems analyst needs to conceptualize data flows from a top-down perspective.
Answer: TRUE
Diff: 1 Page Ref: 195

12) The highest level data flow diagram is called Diagram 0.
Answer: FALSE
Diff: 2 Page Ref: 196

13) With a top-down approach, the diagrams move from specific to general.
Answer: FALSE
Diff: 2 Page Ref: 195

14) More detail is achievable through using a process called "exploding the diagrams."
Answer: TRUE
Diff: 1 Page Ref: 196

15) Data flow diagrams must be drawn working from left to right on the page.
Answer: FALSE
Diff: 1 Page Ref: 197

16) Data stores must always have data flow into them in a proper diagram.
Answer: FALSE
Diff: 3 Page Ref: 197

17) Linear data flow from process to process is normal in higher level data flow diagrams.
Answer: FALSE
Diff: 2 Page Ref: 199

18) Unbalanced decomposition means that the data flow to or from a parent process does not match the data flow in or out of a child diagram.
Answer: TRUE
Diff: 1 Page Ref: 199

19) A logical data flow diagram shows how the business operates.
Answer: TRUE
Diff: 2 Page Ref: 200

20) A physical data flow diagram shows how the system will be constructed.
Answer: TRUE
Diff: 2 Page Ref: 200

21) Transaction files are used to link all logical data flow diagram processes.
Answer: FALSE
Diff: 2 Page Ref: 204

22) A CRUD matrix is a tool used to represent where master files are read, updated, created, and deleted within the system.
Answer: TRUE
Diff: 2 Page Ref: 204

23) A use case summarizes an event and defines one activity.
Answer: TRUE
Diff: 1 Page Ref: 205

24) Ajax may be used to obtain data for a Web form without changing Web pages.
Answer: TRUE
Diff: 1 Page Ref: 213

25) Having separate Web forms means that the forms will become more complex.
Answer: FALSE
Diff: 2 Page Ref: 213

7.3 Fill-in-the-Blank

1) A method that provides conceptional freedom for representing processes and flows in a business system is the _____.
Answer: data flow diagram
Diff: 1 Page Ref: 193

2) _____ depict the broadest possible overview of system inputs, processes, and outputs.
Answer: Data flow diagrams
Diff: 1 Page Ref: 193

3) By using combinations of only four symbols, the systems analyst is able to create a pictorial depiction of data flows that eventually can provide solid system _____.
Answer: documentation
Diff: 1 Page Ref: 193

4) The data flow approach enables the systems analyst to better understand the interrelatedness of the _____ and its _____.
Answer: system; subsystems
Diff: 1 Page Ref: 193

5) An external entity is called a source or _____ of data, and is considered to be external to the study.
Answer: destination
Diff: 2 Page Ref: 194

6) Data flows occurring simultaneously can be depicted doing just that through the use of _____ arrows.
Answer: parallel
Diff: 2 Page Ref: 194

7) The data store symbol is simply showing a depository for data which allows addition or _____ of data.
Answer: retrieval
Diff: 2 Page Ref: 195

8) With a _____ approach, the diagrams move from general to specific.
Answer: top-down
Diff: 1 Page Ref: 195

9) While the first _____ diagram helps the systems analyst grasp basic data _____ its general nature limits its usefulness.
Answer: context; movement
Diff: 1 Page Ref: 195

10) When the first _____ diagram is made, _____ and _____ are specified and these remain constant throughout all of the following diagrams.
Answer: context; inputs; outputs
Diff: 2 Page Ref: 196

11) A clear _____ makes it easier to understand what the process is accomplishing.
Answer: name
Diff: 1 Page Ref: 195

12) A _____ is one that does not explode to a child diagram.
Answer: primitive process
Diff: 3 Page Ref: 198

13) When a process has all input or all output data flow, it means that an _____ is pointing in the wrong direction or there is a missing _____.
Answer: arrowhead; data flow
Diff: 2 Page Ref: 199

14) _____ is when the data flow in or out of a child diagram does not match the data flow in or out of a parent process.
Answer: Unbalanced decomposition
Diff: 1 Page Ref: 199

15) A _____ data flow diagram focuses on how the business operates.
Answer: logical
Diff: 2 Page Ref: 200

16) A _____ data flow diagram shows how the system will be implemented.
Answer: physical
Diff: 2 Page Ref: 200

17) A _____ links two processes that execute at different times.
Answer: transaction file
Diff: 2 Page Ref: 204

18) _____ are elements that need to be keyed into the system.
Answer: Base elements
Diff: 2 Page Ref: 205

19) _____ are elements that are created by a process using a formula or some logic.
Answer: Derived elements
Diff: 1 Page Ref: 205

20) _____ data flow diagrams is the process of deciding which processes are manual procedures and which processes should be grouped into which computer programs.
Answer: Partitioning
Diff: 1 Page Ref: 206

21) _____ on data flow diagrams is a top priority.
Answer: Effective labels
Diff: 3 Page Ref: 211

22) A _____ matrix shows where records are added, changed, used, and deleted from a file.
Answer: CRUD
Diff: 1 Page Ref: 204

23) A _____ summarizes an event and defines one activity, its trigger, input and output.
Answer: use case
Diff: 2 Page Ref: 205

24) Each time an external company or system is involved in the activities of a Web site, the process that handles them must be partitioned into a _____.
Answer: separate program
Diff: 3 Page Ref: 206

25) _____ is a technique used to obtain data from a server and update the current Web page.
Answer: Ajax
Diff: 2 Page Ref: 213

7.4 Short Answer

1) List three of the five advantages of a logical data flow diagram.
Answer: 1. Better communication with users
2. More stable systems
3. Better understanding of the business by analysts
4. Flexibility and maintenance
5. Elimination of redundancies and easier creation of the physical model
Diff: 2 Page Ref: 202

2) What are the four advantages of using a data flow approach over narrative explanations of data
movement?
Answer: 1. Freedom from committing to the technical implementation of the system too early
2. Further understanding of the interrelatedness of systems and subsystems
3. Communicating current system knowledge to users through data flow diagrams
4. Analysis of a proposed system to determine if the necessary data and processes have been defined
Diff: 2 Page Ref: 193

3) What is the difference between a logical and physical data flow diagram?
Answer: A logical data flow diagram focuses on the business and how the business operates; while a physical data flow diagram shows how the system will be implemented.
Diff: 3 Page Ref: 200

4) Describe each of the four data items that can be symbolized on a data flow diagram?
Answer: A double square is used to depict an external entity. An arrow shows movement of data. A rectangle with rounded corners is used to show the occurrence of a transforming process. An open ended rectangle is used to represent a data store.
Diff: 3 Page Ref: 194

5) Why is partitioning useful when designing a Web site?
Answer: Partitioning is useful when designing a Web site because it allows the designer to separate the site into a series of pages that will increase the site's useability, the speed of human processing, and the ease of maintaining the site.
Diff: 3 Page Ref: 213