###### MIS 781: Business Intelligence and Database

Module 3 & 4 Tutorial

**1.1 Multiple Choice Questions**

1) Which of the following is a *format* in which data can appear?

A) Text

B) Numbers

C) Image

D) All of the above

E) None of the above

**Answer: D**

2) The *description of the structure and the properties of the data* best defines which category?

A) Information

B) Data

C) Metadata

D) DBMS

E) Front-End Application

**Answer: C**

3) *Joe* is an example of:

A) Data

B) Metadata

C) Data Type

D) DBMS

E) All of the above

**Answer: A**

4) *FirstName* is an example of:

A) Data

B) Metadata

C) Data Type

D) DBMS

E) All of the above

**Answer: B**

5) Which of the following is typically found in the database *metadata*?

A) Employee names (e.g. Joe, Bob, Lisa)

B) Data types (e.g. Integer, Date, Character)

C) Student grades (e.g. A, A-, B+)

D) Product prices (e.g. $10, $15, $20)

E) Customer ages (e.g. 25, 40, 53)

**Answer: B**

6) Which of the following is typically NOT found in the database *metadata*?

A) Table names

B) Column data types

C) Column names

D) Row names

E) All of the above is found in database metadata

**Answer: D**

7) *DBMS* is software used for the following *purpose*:

A) Creation of databases

B) Insertion, storage, retrieval, update, and deletion of the data in the database

C) Maintenance of databases

D) All of the above

E) None of the above

**Answer: D**

8) Which of the following is a *component of a database system*?

A) Database

B) DBMS

C) Front-end applications

D) All of the above

E) None of the above

**Answer: D**

9) Which of the following requires that the end user knows how to *issue commands to the specific DBMS*?

A) Direct interaction

B) Indirect interaction

C) Both direct and indirect interaction

D) Neither direct nor indirect interaction

E) Sometimes direct and sometimes indirect interaction (but not both at the same time)

**Answer: A**

10) *Front-end applications* facilitate:

A) Direct interaction

B) Indirect interaction

C) Both direct and indirect interaction

D) Neither direct nor indirect interaction

E) Sometimes direct and sometimes indirect interaction (but not both at the same time)

**Answer: B**

11) Which of the following is a database *use* action?

A) Inserting data

B) Deleting data

C) Modifying data

D) Retrieving data

E) All of the above

**Answer: E**

12) \_\_\_\_\_\_\_\_ are in charge of *implementing the database model as a functioning database* using the DBMS software.

A) Database analysts

B) Database architects

C) Database developers

D) DBAs

E) Database end users

**Answer: C**

13) *End users* can vary in:

A) Their level of technical sophistication

B) The amount of data they need

C) The frequency with which they access the database system

D) All of the above

E) None of the above

**Answer: D**

14) Which of the following is an example of a *daily operational procedure* or *task supported by an operational database*?

A) Bank deducting the correct amount of money from a customer's checking account upon an ATM withdrawal

B) E-business issuing a correct bill to a customer who purchased a camera

C) Flight attendant courteously greeting passengers entering an aircraft

D) All of the above

E) A and B only

**Answer: E**

15) Which of the following is an example of *analytical information*?

A) Information about the amount of money in a checking account

B) Information showing which airline routes in the United States have the most sales

C) Information about the cost of a product

D) Information showing the destination and origin of a particular airline route in the United States

E) Information about the age of a student

**Answer: B**

16) A *regular entity* must have *at least one* of the following attributes:

A) Unique attribute

B) Composite attribute

C) Multivalued attribute

D) Derived attribute

E) Optional attribute

**Answer:** A

17) The following attribute represents a *collection of attributes*:

A) Unique attribute

B) Composite attribute

C) Multivalued attribute

D) Derived attribute

E) Optional attribute

**Answer:** B

**1.2 True/False Questions**

1) The term *data* refers to facts that are recorded and can be accessed.

**Answer: TRUE**

2) The term *information* refers to the data that is accessed by a user for some particular purpose.

**Answer: TRUE**

3) *Metadata* is a subset of data that is most recently entered.

**Answer: FALSE**

4) A *DBMS* can be used for creation of databases.

**Answer: TRUE**

5) A *DBMS* can be used for insertion and retrieval of the data in the database.

**Answer: TRUE**

6) The type of interaction between the end user and the database that involves front-end applications is called *direct interaction*.

**Answer: FALSE**

7) *Database administration* encompasses the tasks related to the maintenance and supervision of a database system.

**Answer: TRUE**

8) Information that is collected in database systems can be used, in general, for two purposes: an *operational purpose* and a *transactional purpose*.

**Answer: FALSE**

9) The term *operational information* refers to the information collected and used in *support of day-to-day operational needs*.

**Answer: TRUE**

10) *Analytical databases* collect and present operational information in *support of daily operational procedures and processes*.

**Answer: FALSE**

11) Analytical information is *based* on operational information. **Answer: TRUE**

**1.3 Essay Questions**

1) Explain the relationship between the terms *data* and *information*.

**Answer:** The term data refers to facts that are recorded and can be accessed. The data is recorded and kept because it is considered to be of use to an intended user. The term information refers to the data that is accessed by a user for some particular purpose. Typically, getting the needed information from a collection of data requires performing an activity, such as searching through, processing, or manipulating the data in some form or fashion. The terms *data* and *information* are often interchanged and used as synonyms for each other. Such practice is very common and is not necessarily wrong, since information is simply the data that we need. If the data that an organization gathers and stores has a purpose and satisfies a user's need, then such data is also information.

2) What is *metadata*?

**Answer:** Metadata is the data that describes the structure and the properties of the data. Metadata is essential for the proper understanding and use of the data.

3) What is a *database and what is its purpose*?

**Answer:** A database is a structured collection of related data stored on a computer medium. The purpose of a database is to organize the data in a way that facilitates straightforward access to the information captured in the data.

4) What does the *database metadata contain*?

**Answer:** The database metadata contains the names of data structures (e.g., names of tables, names of columns), data types, data descriptions, and other information describing the characteristics of the data that is being stored in a database.

5) What is the *purpose of a DBMS*?

**Answer:** A database management system (DBMS) is software used for creation of databases, for insertion, storage, retrieval, update, and deletion of the data in the database, and for maintenance of databases.

6) List the general *categories of people* involved with database projects and systems.

**Answer:** Database analysts, designers, and developers. Front-end applications analysts and developers. Database administrators. Database end users.

7) Using an example, describe how *operational* and *analytical* information are related.

**Answer:** Analytical information is based on operational (transactional) information. For example, to create the analytical information showing a pattern of use of ATM machines at different times of the day, we have to combine numerous instances of transactional information resulting from individual ATM withdrawals.