Chapter 10 Databases

Section 10.1 An Introduction to Databases

1. A rectangular array of data is called a
   (A) field.
   (B) record.
   (C) table.
   (D) database management system.
       C

2. Each row in a table is also called a(n)
   (A) record.
   (B) array.
   (C) field.
   (D) selection.
       A

3. Which one of the following statements is NOT true about tables?
   (A) Each column of a table represents a field.
   (B) Each row of a table represents a record.
   (C) Each record in a table contains unrelated collections of fields.
   (D) A table is a rectangular array of data.
       C

4. Which of the following is a collection of one or more (usually related) rectangular arrays of data?
   (A) a table
   (B) a field
   (C) a record
   (D) a database
       D

5. Each entry of a field of a table must contain some information. (T/F)
    F

6. The management of databases is one of the major uses of computers today. (T/F)
    T

7. *DataBase Explorer* can be used to browse through all parts of a connected database. (T/F)
    T
8. What is a primary key?
   (A) A field that uniquely identifies each record.
   (B) The first field in every record.
   (C) The largest field in every record.
   (D) The first field specified when a table is created.
   A

9. The requirement that no record may have a null primary key and that entries for primary keys be unique is called the
   (A) Rule of Referential Integrity.
   (B) Rule of Primary Keys.
   (C) Rule of Entity Integrity.
   (D) Rule of Null Values.
   C

10. Which one of the following statements is true about primary keys?
    (A) A column of names is usually a good choice for use as a primary key.
    (B) Only a single record can be used as a primary key.
    (C) Social Security numbers are never used as a primary key.
    (D) A primary key is used to uniquely identify records in a table.
    D

11. Which of the following is used to uniquely identify records in a table?
    (A) a Rule of Referential Integrity
    (B) a foreign key
    (C) a primary key
    (D) a relational database
    C

12. Which of the following is used to insure that each value for a foreign key also appears as a value for the primary key in any related table?
    (A) the Rule of Referential Integrity
    (B) the Join statement
    (C) SQL
    (D) a relational database
    A

13. Which of the following terms is defined as two or more interdependent tables?
    (A) Rule of Referential Integrity
    (B) join
    (C) joined database
    (D) relational database
    D
14. Which of the following allows the linking together of two or more interdependent tables in a meaningful way?
   (A) ANSI
   (B) foreign keys
   (C) duplicate entries in a single field
   (D) null values
   B

15. The error message
   You cannot add or change a record because a related record is required in table 'Countries'.

   will be generated by attempting which of the following with the Megacities database?
   (A) A user tries to enter a record in the table Countries that doesn’t contain data in the primary key.
   (B) A user tries to add a record to a table that is related to the Countries table, and that record contains a foreign key value that does not correspond to a primary key value in the Countries table.
   (C) A user tries to enter a record to the table Countries with the same primary key as another record.
   (D) The user tries to request a joined table using LINQ.
   B

16. The error message
   Index or primary key cannot contain a Null Value.

   will be generated by attempting which of the following?
   (A) A user tries to enter a record in the table Countries that doesn’t contain data in the primary key.
   (B) A user tries to add a record to a table that is related to the Countries table, and that record contains a foreign key value that does NOT correspond to a primary key value in the Countries table.
   (C) A user tries to enter a record in the table Countries with the same primary key as another record.
   (D) A user tries to request a joined table using LINQ.
   A
17. The error message

The changes you requested to the table were not successful because they would create duplicate values in the index, primary key, or relationship. Change the data in the field or fields that contain duplicate data, remove the index, or redefine the index to permit duplicate entries and try again.

will be generated by attempting which of the following?

(A) A user tries to enter a record in the table Countries that doesn’t contain data in the primary key.
(B) A user tries to add a record to a table that is related to the Countries table, and that record contains a foreign key value that does NOT correspond to a primary key value in the Countries table.
(C) A user tries to enter a record in the table Countries with the same primary key as another record.
(D) A user tries to request a joined table using the SQL language.

C

18. The Rule of Referential Integrity insists that each value in the foreign key must also appear in the primary key of the other table. (T/F)

T

19. A foreign key allows Visual Basic to join together two tables from a relational database in a meaningful way. (T/F)

T

20. Once a field has been specified as a primary key, Visual Basic will not allow that field to contain an empty entry for any record. (T/F)

T

21. LINQ can be used in Visual Basic to sort records. (T/F)

T

22. Consider the Countries table discussed in the text. The table has three fields - name, pop2010, and monetaryUnit - with name as the key field. Give a LINQ query that can be used to show the records from Countries in descending order based on the 2010 population.

```csharp
Dim query = From country In MegacitiesDataSet.Countries
Order By country.pop2010 Descending
Select country.name, country.pop2010, country.monetaryUnit
```

23. Consider the Countries table discussed in the text. The table has three fields - name, pop2010, and monetaryUnit - with name as the key field. Give a LINQ query that can be used to show the records from Countries whose 2010 population is greater than 100 million.

```csharp
Dim query = From country In MegacitiesDataSet.Countries
Where country.pop2010 > 100
Select country.name, country.pop2010, country.monetaryUnit
```
24. A LINQ clause beginning with `Join` and ending with a phrase of the form
   
   On foreign key of tblA Equals primary key of tblB
   
   causes two tables to be joined. (T/F)
   
   T

Section 10.2 Editing and Designing Databases

1. What control causes a binding navigator toolbar to appear anchored to the top of the form?
   
   (A) BindingNavigator
   (B) NavigatorToolbar
   (C) Navigator
   (D) BindingToolbar

   A

2. Which of the following is NOT a button on the navigation toolbar?
   
   (A) Current position
   (B) Add new
   (C) Find
   (D) Delete

   C

3. When a navigation toolbar is used with a table from a database, the first record of the table
   has position _______.
   
   (A) 0
   (B) 1
   (C) First
   (D) -1

   B

4. When a navigation toolbar is used with a table from a database, the first record of the table
   has index _______.
   
   (A) 0
   (B) 1
   (C) First
   (D) -1

   A

5. The Move next button of a navigator toolbar is never disabled. (T/F)

   F

6. When a navigation toolbar is used with a table from a database, the value of
   BindingSource1.Position is the position of the current record. (T/F)

   F
7. When a navigation toolbar is used with a table from a database, the statement
   `BindingSource1.Position = n` makes the record of index `n` the current record. (T/F)
   T

8. When a navigation toolbar is used with a table from a database, the Find method of the
   BindingSource control returns the position of a record. (T/F)
   F

9. When a navigation toolbar is used with a table from a database, the Find method of the
   BindingSource control returns the value `-1` if it cannot locate the sought after record. (T/F)
   F

10. Data normalization is the process of avoiding redundancy by splitting a table into two or
    more related tables.
    T

11. For purposes of readability it is often a good idea to have fields whose values can be
    computed from other fields. (T/F)
    F

12. Dragging a field name form the Data Sources window to the form automatically generates a
    label and a text box bound to the field. (T/F)
    T