Knowledge Assessment

Fill in the Blank

*Complete the following sentences by writing the correct word or words in the blanks provided.*

**1.** In order for a table to be in the , none of the columns should have multiple values in the same row of data.

**2.** The requires that all non-key columns are functionally dependent on the entire primary key.

**3.** The requires that there is no functional dependency among non-key attributes.

**4.** The basic building blocks for an entity-relationship diagram are , ,

And .

**5.** The clause in a SELECT statement evaluates each row for a condition and decides whether to include it in the result set.

**6.** The object used with the *using* statement must implement the

interface.

**7.** T-SQL’s statement can be used to create a stored procedure.

**8.** In the process of , you apply a set of rules to ensure that your database design helps with data integrity and ease of maintenance in the future.

**9.** You find classes for working with streams and backing stores in the namespace.

**10.** The format is a hierarchical data representation format.

Multiple Choice

*Circle the letter that corresponds to the best answer.*

**1.** Your application needs to store the product image out to a disk file. You’d like to minimize the size of this disk file. Which of the following objects should you use to write the file?

**a.** File Stream

**b.** Stream Writer

**c.** Binary Writer

**d.** Xml Writer

**2**. Your C# program needs to return the total number of customers in a database. The program will be used several times a day. What is the fastest way to return this information from your program?

a. Write a SQL query and use the SqlCommand.ExecuteScalar method to execute the query.

b. Create a stored procedure to return the total number of customers, then use the SqlCommand.ExecuteScalar method to execute the stored procedure.

c. Write a SQL query and use the SqlDataAdapter.Fill method to execute the query.

d. Create a stored procedure to return the total number of customers, then use the SqlDataAdapter.Fill method to execute the stored procedure.

**3.** You need to modify the records in a Products table by marking certain products as Discontinued. However, you need to do this only when the Units in Stock and Units on Order are both zero. Which of the following SQL statements should you use?

**a.** INSERT

**b.** SELECT

**c.** UPDATE

**d.** DELETE

**4.** You need to update the Region fields for customers in Japan. You write the following SQL UPDATE statement:

UPDATE Customers

SET Region = 'East Asia'

You test the query on a test database and find that more records were affected than you expected. You need to correct the SQL statement. What should you do?

**a.** Add a WHERE clause to the UPDATE statement.

**b.** Add an additional SET clause to the UPDATE statement.

**c.** Add a GROUP BY clause to the UPDATE statement.

**d.** Add a HAVING clause to the UPDATE statement.

**5.** You are developing an application that needs to retrieve a list of customers from a SQL Server database. The application should move through the list sequentially once, process- ing each customer’s record. Which of the following classes should you use to hold the customer list in order to achieve maximum performance?

**a.** Dataset

**b.** Data Table

**c.** Data View

**d.** Sql Data Reader

**6.** The application you are developing needs to read data from a flat file that include items such as a five-digit integer key, followed by a 20-character customer name, followed by two date and time fields. Which of the following classes should you use?

**a.** File Stream

**b.** Stream Reader

**c.** Binary Reader

**d.** Data Reader

**7.** You are developing an application that will need to copy data from a SQL Server view to a DataSet. You name the Data Set object ds Data. Which of the following methods should you use to copy the data?

**a.** Fill

**b.** Insert Command

**c.** Select Command

**d.** Update

**8.** You are developing an application that manages customers and their orders. Which of the following situations is not a good candidate for implementation with stored procedures in your application?

**a.** Retrieving the list of all customers in the database

**b.** Retrieving the list of all orders for particular customers

**c.** Inserting a new order into the Orders table

**d.** Ad hoc querying by the database administrator

**9.** Your application connects to a SQL Server database that contains a table called Employees with the following columns:

Employee ID (int, identity)

Employee Type (char(1))

Employee Date (datetime)

You need to write a query that deletes all rows from the table where the Employee Type value is either C or T. You do not want to delete any other rows. Which statement should you use?

**a.** DELETE FROM Employees WHERE Employee Type LIKE '[CT]'

**b.** DELETE FROM Employees WHERE Employee Type LIKE '[C-T]'

**c.** DELETE FROM Employees WHERE Employee Type LIKE 'C' OR 'T'

**d.** DELETE \* FROM Employees WHERE Employee Type IN ('C', 'T')

**10.** Your application includes a Sql Data Adapter object named sqlDataAdapter that connects to the Employees table. Based on this SQLDataAdapter, your application also includes a DataSet object dsEmployees. What line of code should you use to load the data from the database into the DataSet object?

**a.** dsEmployees = sqlDataAdapter.Fill("Employees");

**b.** sqlDataAdapter.Fill("dsEmployees", "Employees");

**c.** sqlDataAdapter.Fill(dsEmployees);

**d.** sqlDataAdapter.Fill(dsEmployees, "Employees");

Competency Assessment

Scenario 6-1: Creating an Entity-Relationship Diagram

A company has a number of employees, and each employee may be assigned to one or more projects. In addition, each project can have one or more employees working on it. Draw an entity-relationship diagram for this situation.

Scenario 6-2: Creating a Stored Procedure

You often need to generate a list of customers from a given country. Therefore, you decide to create a stored procedure that accepts the name of country as a parameter and returns all the customers from that country. How would you go about doing this?

Proficiency Assessment

Scenario 6-3: Normalizing Tables

You are converting an entity-relationship diagram into tables. You come up with the following table design:

**Books**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 1 | Cooking Light | 1001 | Cooking |
| 2 | Prophecy | 1002 | Mystery & Thriller |
| 3 | Shift | 1003 | Business |
| 4 | The Confession | 1002 | Mystery & Thriller |

BOOK ID BOOK NAME CATEGORY ID CATEGORY NAME

You need to apply normalization rules to ensure data integrity. How would you ensure that the Books table is in the third normal form?

Scenario 6-4: Creating and Handling Events

You are working on an application that requires you to save customer information from the Customers table of the North wind database into an XML file. This XML file will be used for various data-integration tasks. You need to make sure that the root node of the XML is called Customers. The root node will then have a Customer node for each customer in the Customers table. How should you accomplish this task?