70-761

Number: 70-761
Passing Score: 800
Time Limit: 120 min
File Version: 1

70-761

https://www.gratisexam.com/

Exam A

QUESTION 1
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Products by running the following Transact-SQL statement:

```
CREATE TABLE Products (
      ProductID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
      ProductName nvarchar(100) NULL,
      UnitPrice decimal(18, 2) NOT NULL,
      UnitsInStock int NOT NULL,
      UnitsOnOrder int NULL
)
```


You have the following stored procedure:

```
CREATE PROCEDURE InsertProduct
     @ProductName nvarchar(100),
     @UnitPrice decimal(18,2),
     @UnitsInStock int,
     @UnitsOnOrder int
AS
BEGIN
     INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
     VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
END
```

You need to modify the stored procedure to meet the following new requirements:

- Insert product records as a single unit of work.
- Return error number 51000 when a product fails to insert into the database.
- If a product record insert operation fails, the product information must not be permanently written to the database.

Solution: You run the following Transact-SQL statement:

```
ALTER PROCEDURE InsertProduct
@ProductName nvarchar(100),
@UnitPrice decimal(18,2),
@UnitsInStock int,
@UnitsOnOrder int
AS
BEGIN
   SET XACT_ABORT ON
   BEGIN TRY
      BEGIN TRANSACTION
         INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
         VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
      COMMIT TRANSACTION
   END TRY
   BEGIN CATCH
      IF XACT_STATE() <> 0 ROLLBACK TRANSACTION
      THROW 51000, 'The product could not be created.', 1
   END CATCH
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
With X_ABORT ON the INSERT INTO statement and the transaction will be rolled back when an error is raised, it would then not be possible to ROLLBACK it again in the IF XACT_STATE() <> O ROLLBACK TRANSACTION statement.

Note: A transaction is correctly defined for the INSERT INTO ..VALUES statement, and if there is an error in the transaction it will be caughtant he transaction will be rolled back, finally an error 51000 will be raised.

Note: When SET XACT_ABORT is ON, if a Transact-SQL statement raises a run-time error, the entire transaction is terminated and rolled back.
XACT_STATE is a scalar function thatreports the user transaction state of a current running request. XACT_STATE indicates whether the request has an active user transaction, and whether the transaction is capable of being committed.

The states of XACT_STATE are:
- 0 There is no active user transaction for the current request.
- 1 The current request has an active user transaction. The request can perform any actions, including writing data and committing the transaction.
- 2 The current request has an active user transaction, but an error hasoccurred that has caused the transaction to be classified as an uncommittable transaction.

References:
https://msdn.microsoft.com/en-us/library/ms188792.aspx

https://msdn.microsoft.com/en-us/library/ms189797.aspx

QUESTION 2
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Products by running the following Transact-SQL statement:

```
CREATE TABLE Products (
      ProductID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
      ProductName nvarchar(100) NULL,
      UnitPrice decimal(18, 2) NOT NULL,
      UnitsInStock int NOT NULL,
      UnitsOnOrder int NULL
)
```

You have the following stored procedure:

```
CREATE PROCEDURE InsertProduct
     @ProductName nvarchar(100),
     @UnitPrice decimal(18,2),
     @UnitsInStock int,
     @UnitsOnOrder int
AS
BEGIN
     INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
     VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
END
```

You need to modify the stored procedure to meet the following new requirements:

- Insert product records as a single unit of work.
- Return error number 51000 when a product fails to insert into the database.
- If a product record insert operation fails, the product information must not be permanently written to the database.

Solution: You run the following Transact-SQL statement:

```
ALTER PROCEDURE InsertProduct
@ProductName nvarchar(100),
@UnitPrice decimal(18,2),
@UnitsInStock int,
@UnitsOnOrder int
AS
BEGIN
   BEGIN TRY
      BEGIN TRANSACTION
         INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
         VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
      COMMIT TRANSACTION
   END TRY
   BEGIN CATCH
      IF @@TRANCOUNT > 0 ROLLBACK TRANSACTION
         IF @@ERROR = 51000
            THROW
      END CATCH
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
A transaction is correctly defined for the INSERT INTO .VALUES statement, and if there is an error in the transaction it will be caught ant he transaction will be rolled back. However, error number 51000 will not be returned, as it is only used in an IF @ERROR = 51000 statement.

Note: @@TRANCOUNT returns the number of BEGIN TRANSACTION statements that have occurred on the current connection.

References:
https://msdn.microsoft.com/en-us/library/ms187967.aspx

QUESTION 3
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Products by running the following Transact-SQL statement:

```
CREATE TABLE Products (
      ProductID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
      ProductName nvarchar(100) NULL,
      UnitPrice decimal(18, 2) NOT NULL,
      UnitsInStock int NOT NULL,
      UnitsOnOrder int NULL
)
```

You have the following stored procedure:

```
CREATE PROCEDURE InsertProduct
     @ProductName nvarchar(100),
     @UnitPrice decimal(18,2),
     @UnitsInStock int,
     @UnitsOnOrder int
AS
BEGIN
     INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
     VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
END
```

You need to modify the stored procedure to meet the following new requirements:

- Insert product records as a single unit of work.
- Return error number 51000 when a product fails to insert into the database.
- If a product record insert operation fails, the product information must not be permanently written to the database.

Solution: You run the following Transact-SQL statement:

```
ALTER PROCEDURE InsertProduct
@ProductName nvarchar(100),
@UnitPrice decimal(18,2),
@UnitsInStock int,
@UnitsOnOrder int
AS
BEGIN
     BEGIN TRY
          INSERT INTO Products(ProductName,ProductPrice,ProductsInStock,ProductsOnOrder)
               VALUES (@ProductName,@UnitPrice,@UnitsInStock,@UnitsOnOrder)
     END TRY
     BEGIN CATCH
          THROW 51000, 'The product could not be created.', 1
          END CATCH
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
If the INSERT INTO statement raises an error, the statement will be caught and an error 51000 will be thrown. In this case no records will have been inserted.

Note:
You can implement error handling for the INSERT statement by specifying the statement in a TRY…CATCH construct.
If an INSERT statement violates a constraint or rule, or if it has a value incompatible with the data type of the column, the statement fails and an error message is returned.

References: https://msdn.microsoft.com/en-us/library/ms174335.aspx

QUESTION 4
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Customer by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
     CustomerID int IDENTITY(1,1) PRIMARY KEY,
     FirstName varchar(50) NULL,
     LastName varchar(50) NOT NULL,
     DateOfBirth date NOT NULL,
     CreditLimit money CHECK (CreditLimit < 10000),
     TownID int NULL REFERENCES dbo.Town(TownID),
     CreatedDate datetime DEFAULT(Getdate())
)
```

You must insert the following data into the Customer table:

Record	First name	Last name	Date of Birth	Credit limit	Town ID	Created date
Record 1	Yvonne	McKay	1984-05-25	9,000	no town details	current date and time
Record 2	Jossef	Goldberg	1995-06-03	5,500	no town details	current date and time

You need to ensure that both records are inserted or neither record is inserted.

Solution: You run the following Transact-SQL statement:

```
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit, CreatedDate)
VALUES ('Yvonne', 'McKay', '1984-05-25', 9000, GETDATE())
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit, CreatedDate)
VALUES ('Jossef', 'Goldberg', '1995-06-03', 5500, GETDATE())
GO
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
As there are two separate INSERT INTO statements we cannot ensure that both or neither records are inserted.

QUESTION 5
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Customer by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
     CustomerID int IDENTITY(1,1) PRIMARY KEY,
     FirstName varchar(50) NULL,
     LastName varchar(50) NOT NULL,
     DateOfBirth date NOT NULL,
     CreditLimit money CHECK (CreditLimit < 10000),
     TownID int NULL REFERENCES dbo.Town(TownID),
     CreatedDate datetime DEFAULT(Getdate())
)
```

You must insert the following data into the Customer table:

Record	First name	Last name	Date of Birth	Credit limit	Town ID	Created date
Record 1	Yvonne	McKay	1984-05-25	9,000	no town details	current date and time
Record 2	Jossef	Goldberg	1995-06-03	5,500	no town details	current date and time

You need to ensure that both records are inserted or neither record is inserted.

Solution: You run the following Transact-SQL statement:

```
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit, TownID, CreatedDate)
VALUES ('Yvonne', 'McKay', '1984-05-25', 9000, NULL, GETDATE())
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit, TownID, CreatedDate)
VALUES ('Jossef', 'Goldberg', '1995-06-03', 5500, NULL, GETDATE())
GO
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
As there are two separate INSERT INTO statements we cannot ensure that both or neither records are inserted.

QUESTION 6
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Customer by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
     CustomerID int IDENTITY(1,1) PRIMARY KEY,
     FirstName varchar(50) NULL,
     LastName varchar(50) NOT NULL,
     DateOfBirth date NOT NULL,
     CreditLimit money CHECK (CreditLimit < 10000),
     TownID int NULL REFERENCES dbo.Town(TownID),
     CreatedDate datetime DEFAULT(Getdate())
)
```

You must insert the following data into the Customer table:

Record	First name	Last name	Date of Birth	Credit limit	Town ID	Created date
Record 1	Yvonne	McKay	1984-05-25	9,000	no town details	current date and time
Record 2	Jossef	Goldberg	1995-06-03	5,500	no town details	current date and time

You need to ensure that both records are inserted or neither record is inserted.

Solution: You run the following Transact-SQL statement:

```
INSERT INTO dbo.Customer (FirstName, LastName, DateOfBirth, CreditLimit)
VALUES ('Yvonne', 'McKay', '1984-05-25', 9000), ("Jossef', 'Goldberg', '1995-06-03', 5500)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)

Explanation

Explanation/Reference:
Explanation:
With the INSERT INTO..VALUES statement we can insert both values with just one statement. This ensures that both records or neither is inserted.

References:https://msdn.microsoft.com/en-us/library/ms174335.aspx

QUESTION 7
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

The company's development team is designing a customer directory application. The application must list customers by the area code of their phone number. The area code is defined as the first three characters of the phone number.
The main page of the application will be based on an indexed view that contains the area and phone number for all customers.
You need to return the area code from the PhoneNumber field.

Solution: You run the following Transact-SQL statement:

```
CREATE FUNCTION AreaCode (
     @phoneNumber nvarchar(20)
)
RETURNS
TABLE
WITH SCHEMABINDING
AS
RETURN (
     SELECT TOP 1 @phoneNumber as PhoneNumber, VALUE as AreaCode
     FROM STRING_SPLIT(@phoneNumber, '-')
)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The function should return nvarchar(10) and not a TABLE.

References: https://sqlstudies.com/2014/08/06/schemabinding-what-why/

QUESTION 8
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

The company's development team is designing a customer directory application. The application must list customers by the area code of their phone number. The area code is defined as the first three characters of the phone number.

The main page of the application will be based on an indexed view that contains the area and phone number for all customers.

You need to return the area code from the PhoneNumber field.

Solution: You run the following Transact-SQL statement:

```
CREATE FUNCTION AreaCode (
     @phoneNumber nvarchar(20)
)
RETURNS nvarchar(10)
AS
BEGIN
     DECLARE @areaCode nvarchar(max)
     SELECT TOP 1 @areaCode = VALUE FROM STRING_SPLIT(@phoneNumber, '-')
     RETURN @areaCode
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
As the result of the function will be used in an indexed view we should use schemabinding.

References: https://sqlstudies.com/2014/08/06/schemabinding-what-why/

QUESTION 9
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

The company's development team is designing a customer directory application. The application must list customers by the area code of their phone number. The area code is defined as the first three characters of the phone number.

The main page of the application will be based on an indexed view that contains the area and phone number for all customers.

You need to return the area code from the PhoneNumber field.

Solution: You run the following Transact-SQL statement:

```
CREATE FUNCTION AreaCode (
     @phoneNumber nvarchar(20)
)
RETURNS nvarchar(10)
WITH SCHEMABINDING
AS
BEGIN
     DECLARE @areaCode nvarchar(max)
     SELECT @areaCode = value FROM STRING_SPLIT(@phoneNumber, '-')
     RETURN @areaCode
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
We need SELECT TOP 1 @areacode =.. to ensure that only one value is returned.

QUESTION 10
Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You query a database that includes two tables: Project and Task. The Project table includes the following columns:

Column name	Data type	Notes
ProjectId	int	This is a unique identifier for a project.
ProjectName	varchar(100)	
StartTime	datetime2(7)	
EndTime	datetime2(7)	A null value indicates the project is not finished yet.
UserId	int	Identifies the owner of the project.

The Task table includes the following columns:

Column name	Data type	Notes
TaskId	int	This is a unique identifier for a task.
TaskName	varchar(100)	A nonclustered index exists for this column.
ParentTaskId	int	Each task may or may not have a parent task.
ProjectId	int	A null value indicates the task is not assigned to a specific project.
StartTime	datetime2(7)	
EndTime	datetime2(7)	A null value indicates the task is not completed yet.
UserId	int	Identifies the owner of the task.

You plan to run the following query to update tasks that are not yet started:

UPDATE Task SET StartTime = GETDATE() WHERE StartTime IS NULL

You need to return the total count of tasks that are impacted by this UPDATE operation, but are not associated with a project.

What set of Transact-SQL statements should you run?

A.

```
DECLARE @startedTasks TABLE(ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.ProjectId INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NOT NULL
```

B.

```
DECLARE @startedTasks TABLE(TaskId int, ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.TaskId, deleted.ProjectId INTO @startedTasks
WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NULL
```

C.

```
DECLARE @startedTasks TABLE(TaskId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT inserted.TaskId, INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE TaskId IS NOT NULL
```

D.

```
DECLARE @startedTasks TABLE(TaskId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.TaskId, INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE TaskId IS NOT NULL
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The WHERE clause of the third line should be WHERE ProjectID IS NULL, as we want to count the tasks that are not associated with a project.

QUESTION 11
You need to create a database object that meets the following requirements:
- accepts a product identified as input
- calculates the total quantity of a specific product, including quantity on hand and quantity on order
- caches and reuses execution plans
- returns a value
- can be called from within a SELECT statement
- can be used in a JOIN clause

What should you create?

A. an extended stored procedure
B. a user-defined scalar function
C. a user-defined stored procedure that has an OUTPUT parameter

D. a temporary table that has a columnstore index

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
User-defined scalar functions are execution plans that accept parameters, perform an action such as a complex calculation, and returns the result of that action as a value. The return value can either be a single scalar value or a result set. Furthermore the execution plan is cached and reusable.
User-defined scalar functions can also be called from within a SELECT statement and can be used in a JOIN clause.

Incorrect Answers:
A: Using extended stored procedures is not recommended as they has been deprecated. CLR Integration should be used instead of extended stored procedures.
C: Stored procedures cannot be used in a SELECT statement or in a JOIN clause.
D: A temporary table is a result set and not a value.

References:
https://www.c-sharpcorner.com/UploadFile/996353/difference-between-stored-procedure-and-user-defined-functio/

QUESTION 12
You need to create an indexed view that requires logic statements to manipulate the data that the view displays.

Which two database objects should you use? Each correct answer presents a complete solution.

A. a user-defined table-valued function
B. a CRL function
C. a stored procedure
D. a user-defined scalar function

Correct Answer: BD
Section: (none)
Explanation

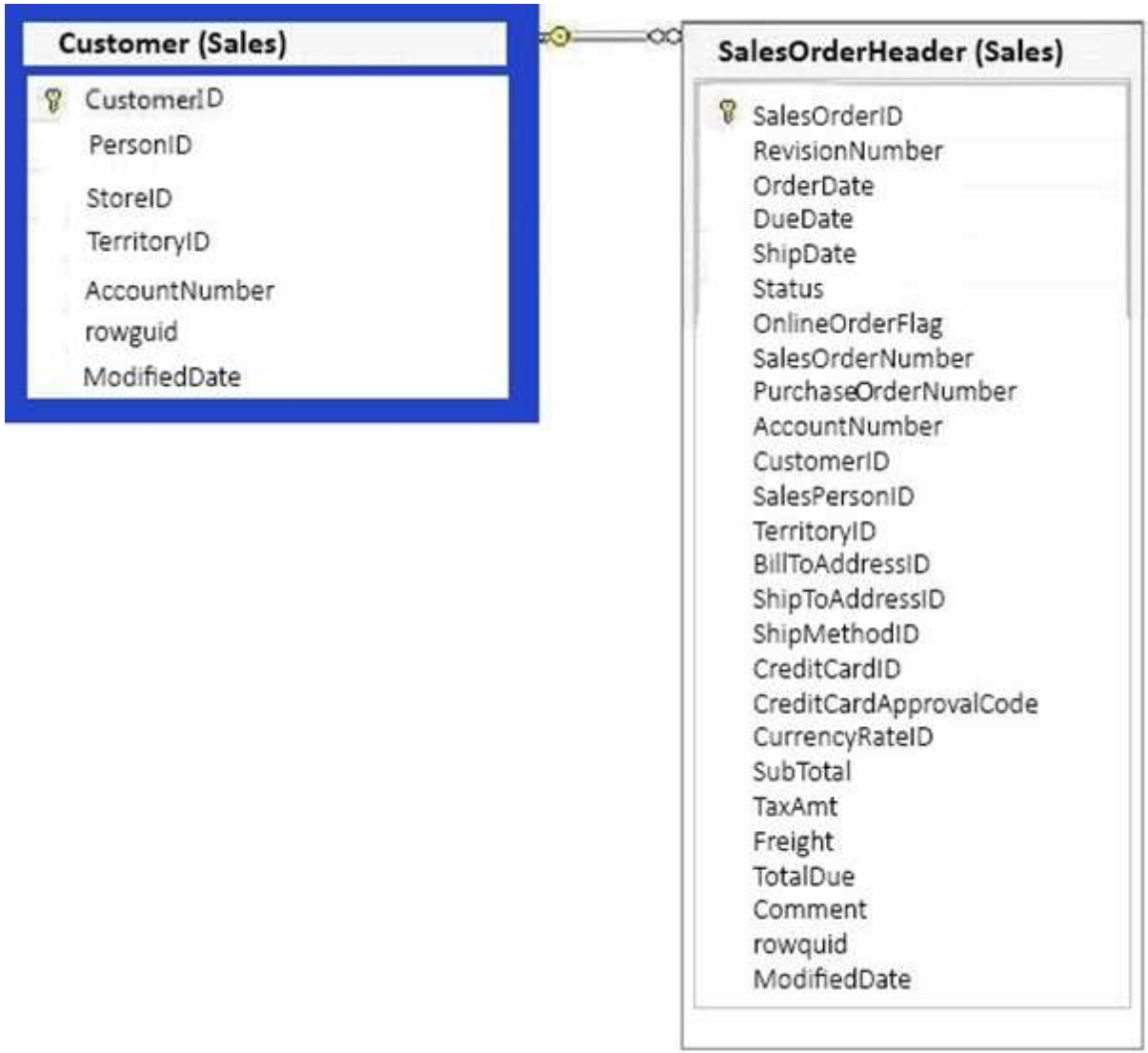
Explanation/Reference:
Explanation:
You can create a database object inside an instance of SQL Server that is programmed in an assembly created in the Microsoft .NET Framework common language runtime (CLR).

Incorrect Answers:

A: A table valued function cannot be called from indexed view
C: The Stored procedure cannot be called inside of a View.

References:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-function-transact-sql

QUESTION 13
You have a database that includes the tables shown in the exhibit. (Click the exhibit button.)



You need to create a list of all customers, the order ID for the last order that the customer placed, and the date that the order was placed. For customers who have not placed orders, you must substitute a zero for the order ID and 01/01/1990 for the date.

Which Transact-SQL statement should you run?

A.

```
SELECT C.CustomerID, ISNULL(SOH.SalesOrderID, 0) AS OrderID,ISNULL(MAX(OrderDate), '')
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

B.

```
SELECT C.CustomerID, SOH.SalesOrderID, MAX(OrderDate)
FROM Sales.Customer C INNER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

C.

```
SELECT C.CustomerID, SOH.SalesOrderID, MAX(OrderDate)
FROM Sales.Customer C CROSS JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

D.

```
SELECT C.CustomerID, SOH.SalesOrderID, MAX(OrderDate)
FROM Sales.Customer C RIGHT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
ISNULL Syntax: ISNULL (check_expression , replacement_value) author:"Luxemburg, Rosa"

The ISNULL function replaces NULL with the specified replacement value. The value of check_expression is returned if it is not NULL; otherwise, replacement_value is returned after it is implicitly converted to the type of check_expression.

References: https://msdn.microsoft.com/en-us/library/ms184325.aspx

QUESTION 14
You have a database that contains the following tables:

Customer

Column name	Data type	Nullable	Default value
CustomerId	int	No	Identity property
FirstName	varchar(30)	Yes	
LastName	varchar(30)	No	
CreditLimit	money	No	

CustomerAudit

Column name	Data type	Nullable	Default value
CustomerId	int	No	
DateChanged	datetime	No	GETDATE()
OldCreditLimit	money	No	
NewCreditLimit	money	No	
ChangedBy	varchar(100)	No	SYSTEM_USER

Where the value of the CustomerID column equals 3, you need to update the value of the CreditLimit column to 1000 for the customer. You must ensure that the change to the record in the Customer table is recorded on the CustomerAudit table.

Which Transact-SQL statement should you run?

A.

```
UPDATE Customer
SET CreditLimit = 1000
WHERE CustomerId = 3
INSERT INTO dbo.CustomerAudit (CustomerId, OldCreditLimit, NewCreditLimit)
SELECT CustomerId, CreditLimit, CreditLimit
FROM Customer
WHERE CustomerId = 3
```

B.

```
UPDATE Customer
SET CreditLimit = 1000
WHERE CustomerId = 3
INSERT INTO dbo.CustomerAudit (CustomerId, OldCreditLimit, NewCreditLimit)
SELECT CustomerId, CreditLimit, CreditLimit
FROM Customer
```

C.

```
UPDATE Customer
SET CreditLimit = 1000
OUTPUT inserted.CustomerId, inserted.CreditLimit, deleted.CreditLimit
INTO CustomerAudit (CustomerId, OldCreditLimit, NewCreditLimit)
WHERE CustomerId = 3
```

D.

```
UPDATE Customer
SET CreditLimit = 1000
OUTPUT inserted.CustomerId, deleted.CreditLimit, inserted.CreditLimit
INTO CustomerAudit (CustomerId, OldCreditLimit, NewCreditLimit)
WHERE CustomerId = 3
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The OUTPUT Clause returns information from, or expressions based on, each row affected by an INSERT, UPDATE, DELETE, or MERGE statement. These results can be returned to the processing application for use in such things as confirmation messages, archiving, and other such application requirements. The

results can also be inserted into a table or table variable. Additionally, you can capture the results of an OUTPUT clause in a nested INSERT, UPDATE, DELETE, or MERGE statement, and insert those results into a target table or view.

Note: If the column modified by the .RITE clause is referenced in an OUTPUT clause, the complete value of the column, either the before image in deleted.column_name or the after image in inserted.column_name, is returned to the specified column in the tablevariable.

Incorrect Answers:
C: The deleted.Creditlimit should be inserted in the second column, the OldCreditLimit column, not the third column.

References: https://msdn.microsoft.com/en-us/library/ms177564.aspx

QUESTION 15
Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You have a database that tracks orders and deliveries for customers in North America. System versioning is enabled for all tables. The database contains the Sales.Customers, Application.Cities, and Sales.CustomerCategories tables.

Details for the Sales.Customers table are shown in the following table:

Column	Data type	Notes
CustomerId	int	primary key
CustomerCategoryId	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values, a value of 1 indicates that the account is on a credit hold
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values
ValidFrom	datetime2(7)	does not allow null values, GENERATED ALWAYS AS ROW START
ValidTo	datetime2(7)	does not allow null values, GENERATED ALWAYS AS ROW END

Details for the Application.Cities table are shown in the following table:

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Details for the Sales.CustomerCategories table are shown in the following table:

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

You need to create a query that meets the following requirements:

- For customers that are not on a credit hold, return the CustomerID and the latest recorded population for the delivery city that is associated with the customer.
- For customers that are on a credit hold, return the CustomerID and the latest recorded population for the postal city that is associated with the customer.

Which two Transact-SQL queries will achieve the goal? Each correct answer presents a complete solution.

A.

```
SELECT CustomerID, LatestRecordedPopulation
FROM Sales.Customers
CROSS JOIN Application.Cities
WHERE (IsOnCreditHold = 0 AND DeliveryCityID = CityID)
OR (IsOnCreditHold = 1 AND PostalCityID = CityID)
```

B.

```
SELECT CustomerID, LatestRecordedPopulation
FROM Sales.Customers
INNER JOIN Application.Cities AS A
ON A.CityID = IIF(IsOnCreditHold = 0, DeliveryCityID, PostalCityID)
```

C.

```
SELECT CustomerID, ISNULL(A.LatestRecordedPopulation, B.LatestRecorded Population)
FROM Sales.Customers
INNER JOIN Application.Cities AS A ON A.CityID = DeliveryCityID
INNER JOIN Application.Cities AS B ON B.CityID = PostalCityID
WHERE IsOnCreditHold = 0
```

D.

```
SELECT CustomerID,LatestRecordedPopulation,
IIF(IsOnCreditHold = 0, DeliveryCityID, PostalCityID) As CityId
FROM Sales.Customers
INNER JOIN Application.Cities AS A ON A.CityID = CityId
```

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:
Explanation:

Using Cross Joins

A cross join that does not have a WHERE clause produces the Cartesian product of the tables involved in the join. The size of a Cartesian product result set is the number of rows in the first table multiplied by the number of rows in the second table.
However, if a WHERE clause is added, the cross join behaves as an inner join.

B: You can use the IIF in the ON-statement.
IIF returns one of two values, depending on whether the Boolean expression evaluates to true or false in SQL Server.

References:
https://technet.microsoft.com/en-us/library/ms190690(v=sql.105).aspx
https://msdn.microsoft.com/en-us/library/hh213574.aspx

QUESTION 16
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a table named Products that contains information about the products that your company sells. The table contains many columns that do not always contain values.

You need to implement an ANSI standard method to convert the NULL values in the query output to the phrase “Not Applicable”.

What should you implement?

A. the COALESCE function
B. a view
C. a table-valued function
D. the TRY_PARSE function
E. a stored procedure
F. the ISNULL function
G. a scalar function

H. the TRY_CONVERT function

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
COALESCE evaluates the arguments in order and returns the current value of the first expression that initially doesn't evaluate to NULL.

Incorrect Answers:
F: ISNULL is not a ANSI standard function. The COALESCE function is preferred.

References:
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/coalesce-transact-sql?view=sql-server-2017

QUESTION 17
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that stores sales and order information.

Users must be able to extract information from the tables on an ad hoc basis. They must also be able to reference the extracted information as a single table.

You need to implement a solution that allows users to retrieve the data required, based on variables defined at the time of the query.

What should you implement?

A. the COALESCE function
B. a view
C. a table-valued function
D. the TRY_PARSE function
E. a stored procedure
F. the ISNULL function
G. a scalar function
H. the TRY_CONVERT function

Correct Answer: C
Section: (none)

Explanation

Explanation/Reference:
Explanation:
User-defined functions that return a table data type can be powerful alternatives to views. These functions are referred to as table-valued functions. A table-valued user-defined function can be used where table or view expressions are allowed in Transact-SQL queries. While views are limited to a single SELECT statement, user-defined functions can contain additional statements that allow more powerful logic than is possible in views.
A table-valued user-defined function can also replace stored procedures that return a single result set.

References: https://technet.microsoft.com/en-us/library/ms191165(v=sql.105).aspx

QUESTION 18
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a table named AuditTrail that tracks modifications to data in other tables. The AuditTrail table is updated by many processes. Data input into AuditTrail may contain improperly formatted date time values. You implement a process that retrieves data from the various columns in AuditTrail, but sometimes the process throws an error when it is unable to convert the data into valid date time values.
You need to convert the data into a valid date time value using the en-US format culture code. If the conversion fails, a null value must be returned in the column output. The conversion process must not throw an error.

What should you implement?

A. the COALESCE function
B. a view
C. a table-valued function
D. the TRY_PARSE function
E. a stored procedure
F. the ISNULL function
G. a scalar function
H. the TRY_CONVERT function

Correct Answer: H
Section: (none)
Explanation

Explanation/Reference:
Explanation:
A TRY_CONVERT function returns a value cast to the specified data type if the cast succeeds; otherwise, returns null.

References: https://msdn.microsoft.com/en-us/library/hh230993.aspx

QUESTION 19
You have a database named MyDb. You run the following Transact-SQL statements:

```
CREATE TABLE tblRoles (
     RoleId int NOT NULL IDENTITY(1,1) PRIMARY KEY CLUSTERED,
     RoleName varchar(20) NOT NULL
)
CREATE TABLE tblUsers (
     UserId int NOT NULL IDENTITY(10000,1) PRIMARY KEY CLUSTERED,
     UserName varchar(20) UNIQUE NOT NULL,
     RoleId int NULL FOREIGN KEY REFERENCES tbRoles(RoleId),
     IsActive bit NOT NULL DEFAULT(1)
)
```

A value of 1 in the IsActive column indicates that a user is active.

You need to create a count for active users in each role. If a role has no active users. You must display a zero as the active users count.

Which Transact-SQL statement should you run?

A.
```
SELECT R.RoleName, COUNT(U.UserId) AS ActiveUserCount FROM tblRoles R
LEFT JOIN (SELECT UserId, RoleId FROM tblUsers WHERE IsActive = 1) U ON U.RoleId = R.RoleId
GROUP BY R.RoleId, R.RoleName
```

B.
```
SELECT R.RoleName, U.ActiveUserCount FROM tblRoles R
INNER JOIN (SELECT RoleId, COUNT(*) AS ActiveUserCount FROM tblUsers WHERE IsActive = 1
GROUP BY RoleId) U ON R.RoleId = U.RoleId
```

C.
```
SELECT R.RoleName, COUNT(*) AS ActiveUserCount FROM tblRoles R
LEFT JOIN (SELECT UserId, RoleId FROM tblUsers WHERE IsActive = 1)U ON U.RoleId = R.RoleId
GROUP BY R.RoleId, R.RoleName
```

D.

```
SELECT R.RoleName, U.ActiveUserCount FROM tblRoles R CROSS JOIN
(SELECT COUNT(*) AS ActiveUserCount FROM tblUsers WHERE IsActive = 1) U
```

E.

```
SELECT R.RoleName, COUNT(*) AS ActiveUserCount FROM tblRoles R
CROSS JOIN (SELECT UserId, RoleId FROM tblUsers WHERE IsActive = 1) U WHERE U.RoleId = R.RoleId
GROUP BY R.RoleId, R.RoleName
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Incorrect Answers:
C: count(*) always give 1 as it will have some data in the overall table

QUESTION 20
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The tables include the following records:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.

You need to display a list of customers that do not appear in the Customer_HRSystem table.
Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.

```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.

```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.

```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.

```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.

```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
EXCEPT returns distinct rows from the left input query that aren't output by the right input query.

References:https://msdn.microsoft.com/en-us/library/ms188055.aspx

QUESTION 21
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The tables include the following records:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.
You need to display customers who appear in both tables and have a proper CustomerCode.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
When there are null values in the columns of the tables being joined, the null values do not match each other. The presence of null values in a column from one of the tables being joined can be returned only by using an outer join (unless the WHERE clause excludes null values).

References:
https://technet.microsoft.com/en-us/library/ms190409(v=sql.105).aspx

QUESTION 22
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The tables include the following records:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.
You need to display a Cartesian product, combining both tables.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: G
Section: (none)
Explanation

Explanation/Reference:
Explanation:

A cross join that does not have a WHERE clause produces the Cartesian product of the tables involved in the join. The size of a Cartesian product result set is the number of rows in the first table multiplied by the number of rows in the second table.

References: https://technet.microsoft.com/en-us/library/ms190690(v=sql.105).aspx

QUESTION 23
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

The tables include the following records:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.

You need to create a list of all unique customers that appear in either table.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Explanation:
UNION combines the results of two or more queries into a single result set that includes all the rows that belong to all queries in the union. The UNION operation is different from using joins that combine columns from two tables.

Incorrect Answers:
F: UNION ALL incorporates all rows into the results. This includes duplicates. If not specified, duplicate rows are removed.

References: https://msdn.microsoft.com/en-us/library/ms180026.aspx

QUESTION 24
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You need to audit all customer data.

Which Transact-SQL statement should you run?

A.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, AnnualRevenue, DateCreated
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName), (Address), (CustomerID, AnnualRevenue), (CustomerID), ())
ORDER BY CustomerID, FirstName, LastName, Address, AnnualRevenue
```

B.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, AnnualRevenue, DateCreated, ValidFrom, ValidTo
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.
```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.
```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The FOR SYSTEM_TIME ALL clause returns all the row versions from both the Temporal and History table.

Note: A system-versioned temporal table defined through is a new type of user table in SQL Server 2016, here defined on the last line WITH (SYSTEM_VERSIONING = ON…, is designed to keep a full history of data changes and allow easy point in time analysis.

To query temporal data, the SELECT statement FROM<table> clause has a new clause FOR SYSTEM_TIME with five temporal-specific sub-clauses to query data across the current and history tables.

References:https://msdn.microsoft.com/en-us/library/dn935015.aspx

QUESTION 25
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You need to return normalized data for all customers that were added in the year 2014.

Which Transact-SQL statement should you run?

A.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, AnnualRevenue, DateCreated
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName), (Address), (CustomerID, AnnualRevenue), (CustomerID), ())
ORDER BY CustomerID, FirstName, LastName, Address, AnnualRevenue
```

B.
```
SELECT  FirstName, LastName, Address
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.

```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.

```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: H

Section: (none)
Explanation

Explanation/Reference:

QUESTION 26
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWATS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You need to develop a query that meets the following requirements:
- Output data by using a tree-like structure.
- Allow mixed content types.
- Use custom metadata attributes.

Which Transact-SQL statement should you run?

A.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, AnnualRevenue, DateCreated
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName), (Address), (CustomerID, AnnualRevenue), (CustomerID), ())
ORDER BY CustomerID, FirstName, LastName, Address, AnnualRevenue
```

B.
```
SELECT FirstName, LastName, Address
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.
```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.
```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
Explanation:
In a FOR XML clause, you specify one of these modes: RAW, AUTO, EXPLICIT, and PATH.

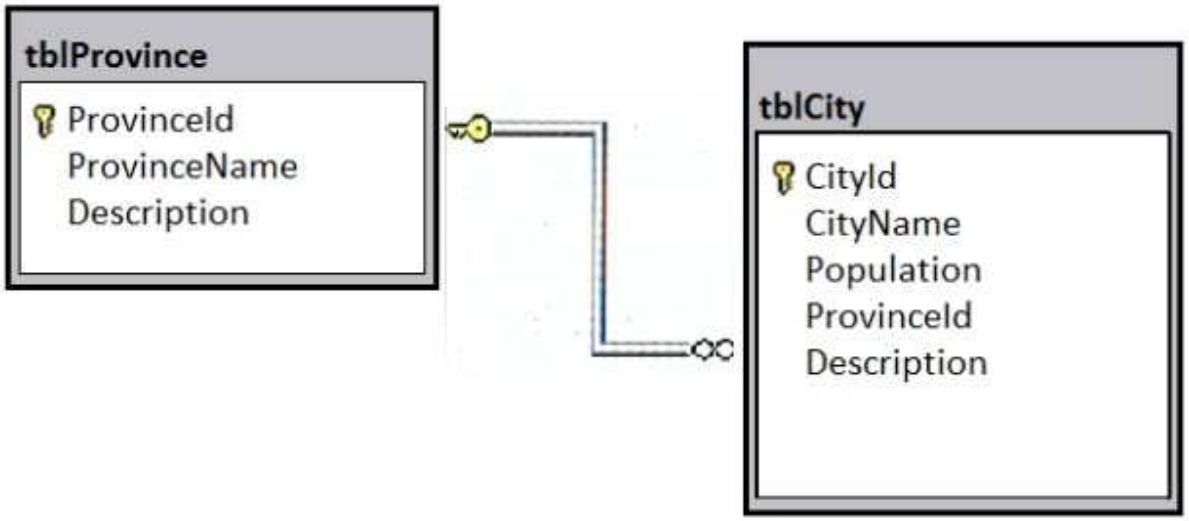
- The EXPLICIT mode allows more control over the shape of the XML. You can mix attributes and elements at will in deciding the shape of the XML. It requires a specific format for the resulting rowset that is generated because of query execution. This row set format is then mapped into XML shape. The power of EXPLICIT mode is to mix attributes and elements at will, create wrappers and nested complex properties, create space-separated values (for example, OrderID attribute may have a list of order ID values), and mixed contents.
- The PATH mode together with the nested FOR XML query capability provides the flexibility of the EXPLICIT mode in a simpler manner.

References: https://msdn.microsoft.com/en-us/library/ms178107.aspx

QUESTION 27
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A database has two tables as shown in the following database diagram:



You need to list all provinces that have at least two large cities. A large city is defined as having a population of at least one million residents. The query must return the following columns:

- tblProvince.ProvinceId
- tblProvince.ProvinceName
- a derived column named LargeCityCount that presents the total count of large cities for the province

Solution: You run the following Transact-SQL statement:

```
SELECT P.ProvinceId, P.ProvinceName, CitySummary.LargeCityCount
FROM tblProvince P
OUTER APPLY (
   SELECT COUNT(*) AS LargeCityCount FROM tblCity C
   WHERE C.Population>=1000000 AND C.ProvinceId = P. ProvinceId
) CitySummary
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B

Section: (none)
Explanation

Explanation/Reference:
Explanation:
We need to list all provinces that have at least two large cities. There is no reference to this in the code.

QUESTION 28
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

The company's development team is designing a customer directory application. The application must list customers by the area code of their phone number. The area code is defined as the first three characters of the phone number.

The main page of the application will be based on an indexed view that contains the area and phone number for all customers.

You need to return the area code from the PhoneNumber field.

Solution: You run the following Transact-SQL statement:

```
CREATE FUNCTION AreaCode (
     @phoneNumber nvarchar(20)
)
RETURNS nvarchar(10)
WITH SCHEMABINDING
AS
BEGIN
   DECLARE @areaCode nvarchar(max)
   SELECT TOP 1 @areaCode = value FROM STRING_SPLIT(@phoneNumber, '-')
   RETURN @areaCode
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The following indicates a correct solution:
- The function returns a nvarchar(10) value.
- Schemabinding is used.
- SELECT TOP 1 … gives a single value

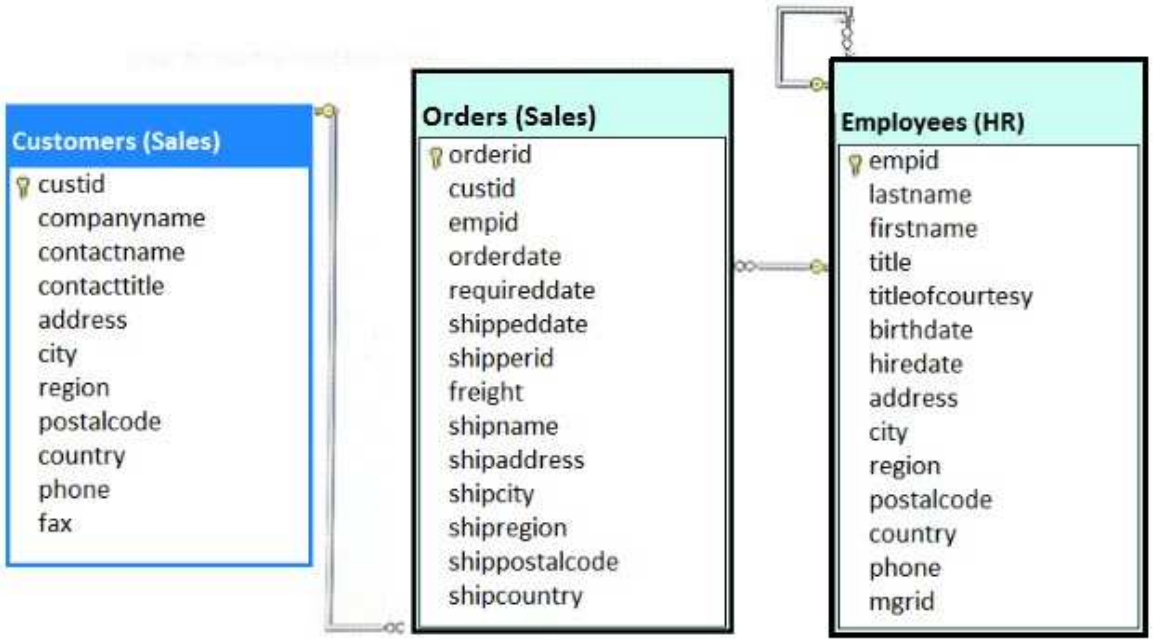
Note: nvarchar(max) is correct statement.
nvarchar [(n | max)]
Variable-length Unicode string data. n defines the string length and can be a value from 1 through 4,000. max indicates that the maximum storage size is 2^31-1 bytes (2 GB).

References:
https://docs.microsoft.com/en-us/sql/t-sql/data-types/nchar-and-nvarchar-transact-sql
https://sqlstudies.com/2014/08/06/schemabinding-what-why/

QUESTION 29
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that includes the tables shown in the exhibit (Click the Exhibit button.)



You need to create a Transact-SQL query that returns the following information:

- the customer number
- the customer contact name
- the date the order was placed, with a name of DateofOrder
- a column named Salesperson, formatted with the employee first name, a space, and the employee last name
- orders for customers where the employee identifier equals 4

The output must be sorted by order date, with the newest orders first.

The solution must return only the most recent order for each customer.

Solution: You run the following Transact-SQL statement:

```
SELECT c.custid, contactname, MAX(orderdate) AS DateofOrder,
e.firstname + ' ' + e.lastname AS Salesperson
FROM Sales.Customers AS c
INNER JOIN Sales.Orders AS o ON c.custid = o.custid
INNER JOIN HR.Employees AS e ON o.empid = e.empid
GROUP BY c.custid, contactname, firstname, lastname, o.empid
HAVING o.empid = 4
ORDER BY DateofOrder DESC
```

Does the solution meet the goal?

A. Yes
B. No

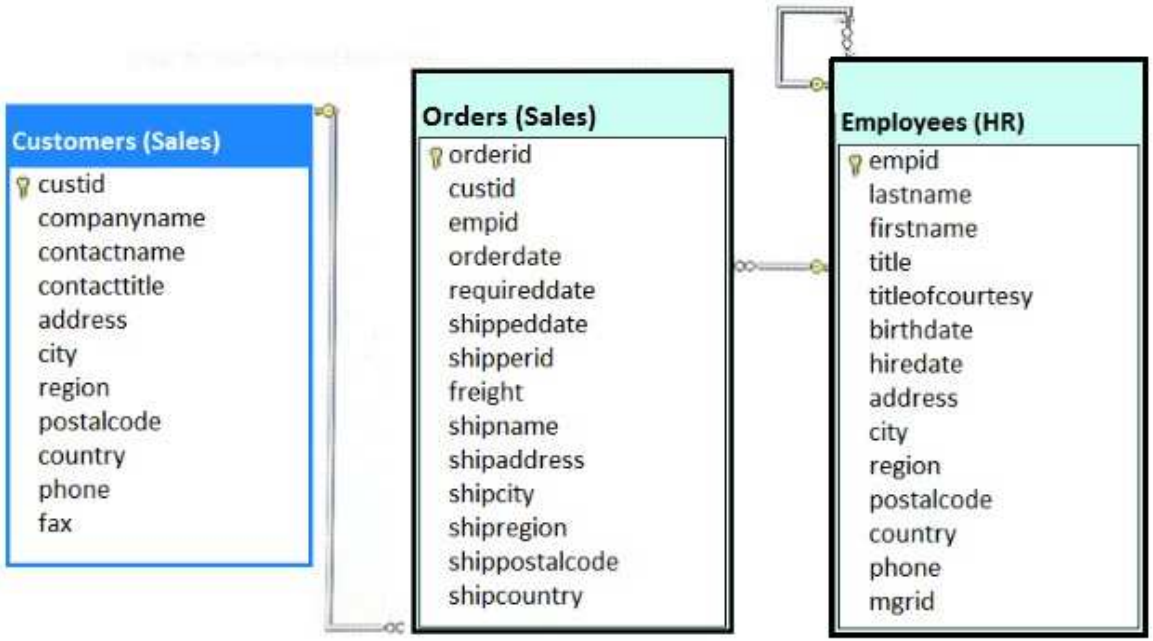
Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Complaints must be returned even if no interaction has occurred.

QUESTION 30
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that includes the tables shown in the exhibit (Click the Exhibit button.)



You need to create a Transact-SQL query that returns the following information:

- the customer number
- the customer contact name
- the date the order was placed, with a name of DateofOrder
- a column named Salesperson, formatted with the employee first name, a space, and the employee last name
- orders for customers where the employee identifier equals 4

The output must be sorted by order date, with the newest orders first.

The solution must return only the most recent order for each customer.

Solution: You run the following Transact-SQL statement:

```
SELECT c.custid, contactname, MAX(orderdate) AS DateofOrder,
e.firstname + ' ' + e.lastname AS Salesperson
FROM Sales.Customers AS c
INNER JOIN Sales.Orders AS o ON c.custid = o.custid
INNER JOIN HR.Employees AS e ON o.empid = e.empid
WHERE o.empid = 4
GROUP BY c.custid, contactname, firstname, lastname
ORDER BY DateofOrder DESC
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The MAX(orderdate) in the SELECT statement makes sure we return only the most recent order.

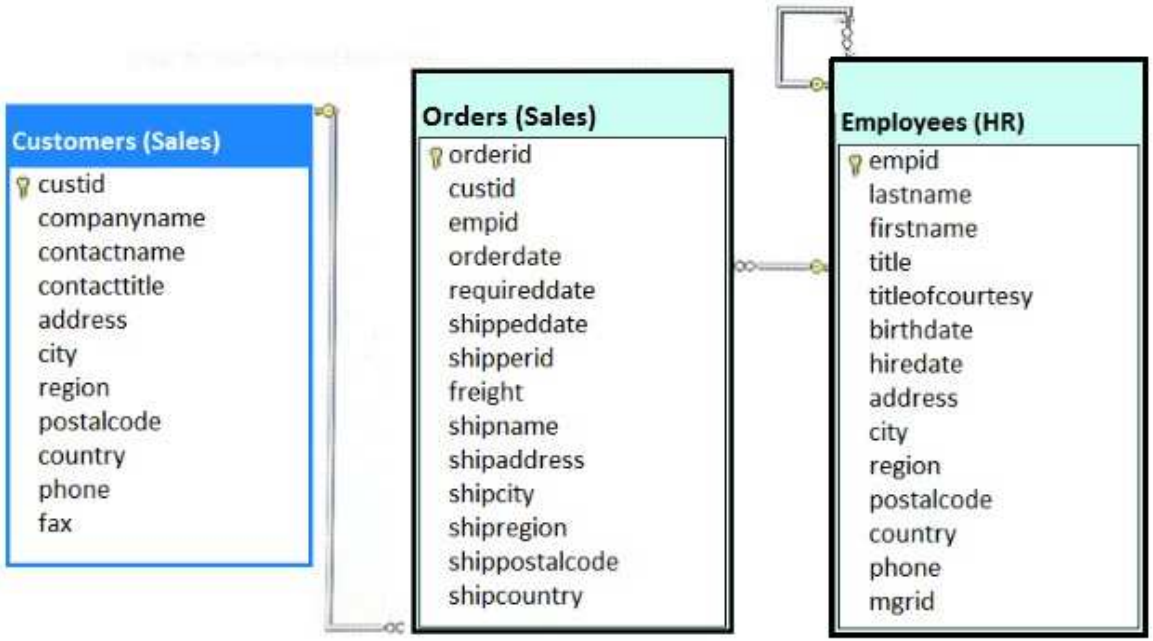
AWHERE o.empiD =4 clause is correctly used.

GROUP BY is also required.

QUESTION 31
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that includes the tables shown in the exhibit (Click the Exhibit button.)



You need to create a Transact-SQL query that returns the following information:

- the customer number
- the customer contact name
- the date the order was placed, with a name of DateofOrder
- a column named Salesperson, formatted with the employee first name, a space, and the employee last name
- orders for customers where the employee identifier equals 4

The output must be sorted by order date, with the newest orders first.

The solution must return only the most recent order for each customer.

Solution: You run the following Transact-SQL statement:

```
SELECT c.custid, contactname, MAX(orderdate) AS DateofOrder,
e.firstname + '' + e.lastname AS Salesperson
FROM Sales.Customers AS c
INNER JOIN Sales.Orders AS o ON c.custid = o.custid
INNER JOIN HR.Employees AS e ON o.empid = e.empid
WHERE o.empid = 4
ORDER BY DateofOrder DESC
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
We need a GROUP BY statement as we want to return an order for each customer.

QUESTION 32
You need to create a table named MiscellaneousPayment that meets the following requirements:

Column name	Requirements
Id	• primary key of the table • value must be globally unique • value must be automatically generated for INSERT operations
Reason	• stores reasons for the payment • supports multilingual values • supports values with 1 to 500 characters
Amount	• stores monetary values • must not produce rounding errors with calculations

Which Transact-SQL statement should you run?

A.
```
CREATE TABLE MiscellaneousPayment (Id uniqueidentifier
DEFAULT NEWSEQUENTIALID() PRIMARY KEY, Reason varchar(500),
Amount money)
```

B.
```
CREATE TABLE MiscellaneousPayment (Id
int identity(1,1)PRIMARY KEY, Reason nvarchar(500), Amount
numeric(19,4))
```

C.
```
CREATE TABLE MiscellaneousPayment (Id uniqueidentifier
DEFAULT NEWSEQUENTIALID() PRIMARY KEY, Reason varchar(500),
Amount decimal(19,4))
```

D.
```
CREATE TABLE MiscellaneousPayment (Id uniqueidentifier
DEFAULT NEWID() PRIMARY KEY, Reason nvarchar(500), Amount
decimal(19,4))
```

E.
```
CREATE TABLE MiscellaneousPayment (Id uniqueidentifier
DEFAULT NEWSEQUENTIALID() PRIMARY KEY, Reason nvarchar(500),
Amount decimal(19,4))
```

F.
```
CREATE TABLE MiscellaneousPayment (Id uniqueidentifier
DEFAULT NEWID() PRIMARY KEY, Reason nvarchar(500),
Amount money)
```

G.
```
CREATE TABLE MiscellaneousPayment (
  Id int identity(1,1) PRIMARY KEY,
  Reason nvarchar(500),
  Amount decimal(19,4)
)
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Incorrect Answers:
A: For column Reason we must use nvarchar, not varchar, as multilingual values must be supported. NEWSEQUENTIALID cannot be referenced in queries. In addition, the money datatype uses rounding and will result in rounding errors.
B: We cannot use INT for the Id column as new values must be automatically generated.
C: For column Reason we must use nvarchar, not varchar, as multilingual values must be supported.
E: NEWSEQUENTIALID cannot be referenced in queries.
F: The money datatype uses rounding and will result in rounding errors. We should use decimal instead.
Note: Nvarchar stores UNICODE data. If you have requirements to store UNICODE or multilingual data, nvarchar is the choice. Varchar stores ASCII data and should be your data type of choice for normal use.

References:
https://docs.microsoft.com/en-us/sql/t-sql/data-types/nchar-and-nvarchar-transact-sql

QUESTION 33
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

Multiple processes use the data from a table named Sales and place it in other databases across the organization. Some of the processes are not completely aware of the data types in the Sales table. This leads to data type conversion errors.

You need to implement a method that returns a NULL value id data conversion fails instead of throwing an error.

What should you implement?

A. the COALESCE function
B. a view
C. a table-valued function
D. the TRY_PARSE function
E. a stored procedure
F. the ISNULL function
G. a scalar function
H. the TRY_CONVERT function

Correct Answer: H
Section: (none)
Explanation

Explanation/Reference:
Explanation:
TRY_CONVERT returns a value cast to the specified data type if the cast succeeds; otherwise, returns null.

References: https://docs.microsoft.com/en-us/sql/t-sql/functions/try-convert-transact-sql

QUESTION 34
You have a database that contains the following tables:

You need to write a query that returns a list of all customers who have not placed orders.

Which Transact-SQL statement should you run?

A.
```
SELECT c.custid
FROM Sales.Customers c
INNER JOIN Sales.Order o
ON c.custid = o.custid
```

B.
```
SELECT custid
FROM Sales.Customers
INTERSECT
SELECT custid
FROM Sales.Orders
```

C.
```
SELECT c.custid
FROM Sales.Customers c
LEFT OUTER Sales.Order o
ON c.custid = o.custid
```

D.
```
SELECT c.custid
FROM Sales.Customers c
LEFT OUTER JOIN Sales.Order o
ON c.custid = o.custid
WHERE orderid IS NULL
```

E.
```
SELECT custid
FROM Sales.Customers
UNION ALL
SELECT custid
FROM Sales.Orders
```

F.
```
SELECT custid
FROM Sales.Customers
UNION
SELECT custid
FROM Sales.Orders
```

G.
```
SELECT c.custid
FROM Sales.Customers c
RIGHT OUTER JOIN Sales.Orders o
ON c.custid = o.custid
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Inner joins return rows only when there is at least one row from both tables that matches the join condition. Inner joins eliminate the rows that do not match with a row from the other table. Outer joins, however, return all rows from at least one of the tables or views mentioned in the FROM clause, as long as those rows meet any WHERE or HAVING search conditions. All rows are retrieved from the left table referenced with a left outer join, and all rows from the right table referenced in a right outer join. All rows from both tables are returned in a full outer join.

References: https://technet.microsoft.com/en-us/library/ms187518(v=sql.105).aspx

QUESTION 35
You have a database named MyDb. You run the following Transact-SQL statements:

```
CREATE TABLE tblRoles (
     RoleId int NOT NULL IDENTITY(1,1) PRIMARY KEY CLUSTERED,
     RoleName varchar(20) NOT NULL
)
CREATE TABLE tblUsers (
     UserId int NOT NULL IDENTITY(10000,1) PRIMARY KEY CLUSTERED,
     UserName varchar(20) UNIQUE NOT NULL,
     RoleId int NULL FOREIGN KEY REFERENCES tbRoles(RoleId),
     IsActive bit NOT NULL DEFAULT(1)
)
```

A value of 1 in the IsActive column indicates that a user is active.

You need to create a count for active users in each role. If a role has no active users. You must display a zero as the active users count.

Which Transact-SQL statement should you run?

A.
```
SELECT R.RoleName, COUNT(*) AS ActiveUserCount
 FROM tblRoles R
 CROSS JOIN (SELECT UserId, RoleId FROM tblUsers
   WHERE IsActive = 1) U
 WHERE U.RoleId = R.RoleId
 GROUP BY R.RoleId, R.RoleName
```

B.
```
SELECT R.RoleName, COUNT(*) AS ActiveUserCount
 FROM tblRoles R
 LEFT JOIN (SELECT UserId, RoleId FROM tblUsers
   WHERE IsActive = 1) U
 ON U.RoleId = R.RoleId
 GROUP BY R.RoleId, R.RoleName
```

C.
```
SELECT R.RoleName, U.ActiveUserCount
 FROM tblRoles R
 CROSS JOIN(SELECT RoleId, COUNT(*) AS ActiveUserCount
   FROM tblUsers WHERE IsActive = 1 GROUP BY R.RoleId) U
```

D.
```
SELECT R.RoleName, ISNULL (U.ActiveUserCount,0)
 AS ActiveUserCount
 FROM tblRoles R
 LEFT JOIN (SELECT RoleId, COUNT(*) AS ActiveUserCount
   FROM tblUsers WHERE IsActive = 1 GROUP BY R.RoleId) U
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 36
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables contain the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to determine the total number of customers who have either deposit accounts or loan accounts, but not both types of accounts.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
 FROM (SELECT AcctNo
   FROM tblDepositAcct
   INTERSECT
   SELECT AcctNo
   FROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
 FROM (SELECT CustNo
   FROM tblDepositAcct
   UNION
   SELECT CustNo
   FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
 FROM (SELECT CustNo
   FROMtblDepositAcct
   UNION ALL
   SELECT CustNo
   FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
 FROM tblDepositAcct D, tblLoanAcct L
 WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
 FROM tblDepositAcct D
 RIGHT JOIN tblLoanAcct L ON D.CustNo =L.CustNo
 WHERE D.CustNo IS NULL
```

F.
```
SELECT COUNT(*)
 FROM (SELECT CustNo
   FROM tblDepositAcct
   EXCEPT
   SELECT CustNo
   FROM tblLoanAcct) R
```

G.
```
SELECT COUNT (DISTINCT COALESCE(D.CustNo, L.CustNo))
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo =L.CustNo
 WHERE D.CustNo IS NULL OR L.CustNo IS NULL
```

H.
```
SELECT COUNT(*)
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo = L.CustNo
```

Correct Answer: G

Section: (none)
Explanation

Explanation/Reference:
Explanation:
SQL Server provides the full outer join operator, FULL OUTER JOIN, which includes all rows from both tables, regardless of whether or not the other table has a matching value.

Consider a join of the Product table and the SalesOrderDetail table on their ProductID columns. The results show only the Products that have sales orders on them. The ISO FULL OUTER JOIN operator indicates that all rows from both tables are to be included in the results, regardless of whether there is matching data in the tables.

You can include a WHERE clause with a full outer join to return only the rows where there is no matching data between the tables. The following query returns only those products that have no matching sales orders, as well as those sales orders that are not matched to a product.

```
USE AdventureWorks2008R2;
GO
-- The OUTER keyword following the FULL keyword is optional.
SELECT p.Name, sod.SalesOrderID
FROM Production.Product p
FULL OUTER JOIN Sales.SalesOrderDetail sod
ON p.ProductID = sod.ProductID
WHERE p.ProductID IS NULL
OR sod.ProductID IS NULL
ORDER BY p.Name
```

References: https://technet.microsoft.com/en-us/library/ms187518(v=sql.105).aspx

QUESTION 37
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables contain the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to determine the total number of customers who have only loan accounts.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
FROM (SELECT AcctNo
  FROM tblDepositAcct
  INTERSECT
  SELECT AcctNo
  FROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
FROM (SELECT CustNo
  FROM tblDepositAcct
  UNION
  SELECT CustNo
  FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
FROM (SELECTCustNo
  FROM tblDepositAcct
  UNION ALL
  SELECT CustNo
  FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
FROM tblDepositAcct D, tblLoanAcct L
WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
FROM tblDepositAcct D
RIGHT JOIN tblLoanAcct L OND.CustNo = L.CustNo
WHERE D.CustNo IS NULL
```

F.
```
SELECT COUNT(*)
FROM (SELECT CustNo
  FROM tblDepositAcct
  EXCEPT
  SELECT CustNo
  FROM tblLoanAcct) R
```

G.
```
SELECT COUNT (DISTINCT COALESCE(D.CustNo, L.CustNo))
FROM tblDepositAcct D
FULL JOIN tblLoanAcct L OND.CustNo = L.CustNo
WHERE D.CustNo IS NULL OR L.CustNo IS NULL
```

H.
```
SELECT COUNT(*)
FROM tblDepositAcct D
FULL JOIN tblLoanAcct L ON D.CustNo = L.CustNo
```

Correct Answer: E

Section: (none)
Explanation

Explanation/Reference:
Explanation:
The RIGHT JOIN keyword returns all records from the right table (table2), and the matched records from the left table (table1). The result is NULL from the left side, when there is no match.

References: https://www.w3schools.com/sql/sql_join_right.asp

QUESTION 38
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables contain the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to run a query to find the total number of customers who have both deposit and loan accounts.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
  FROM (SELECT AcctNo
    FROM tblDepositAcct
    INTER
    SECTSELECT Acct
    NoFROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
  FROM (SELECT CustNo
    FROM tblDepositAcct
    UNION
    SELECT CustNo
    FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
  FROM (SELECT CustNo
    FROM tblDepositAcct
    UNION ALL
    SELECT CustNo
    FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
  FROM tblDepositAcctD, tblLoanAcct L
  WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
  FROM tblDepositAcct D
  RIGHT JOIN tblLoanAcct L ON D.CustNo = L.CustNo
  WHERE D.CustNo IS NULL
```

F.
```
SELECT COUNT(*)
 FROM (SELECT CustNo
   FROM tblDepositAcct
   EXCEPT
   SELECT CustNo
   FROM tblLoanAcct) R
```

G.
```
SELECT COUNT (DISTINCT COALESCE(D.CustNo, L.CustNo))
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo = L.CustNo
 WHERE D.CustNo IS NULL OR L.CustNo IS NULL
```

H.
```
SELECT COUNT(*)
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo = L.CustNo
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The clause WHERE modifies the cross join defined between the two tables in the clause FROM. COUNT (DISTINCT expression) evaluates expression for each row in a group and returns the number of unique, non-null values.

QUESTION 39
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section. You will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table named Products that stores information about the products your company sells. The table has a column named ListPrice that stores retail pricing information for products.

Some products are used only internally by the company. Records for these products are maintained in the Products table for inventory purposes. The price for each of these products is $0.00. Customers are not permitted to order these products.

You need to increase the list price for products that cost less than $100 by 10 percent. You must only increase pricing for products that customers are permitted to order.

Solution: You run the following Transact-SQL statement:

```
UPDATE Production.Products
SET ListPrice = ListPrice + 1.1
WHERE ListPrice
BETWEEN 0 and 100
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Products with a price of $0.00 would also be increased.

QUESTION 40
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section. You will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table named Products that stores information about the products your company sells. The table has a column named ListPrice that stores retail pricing information for products.

Some products are used only internally by the company. Records for these products are maintained in the Products table for inventory purposes. The price for each of these products is $0.00. Customers are not permitted to order these products.

You need to increase the list price for products that cost less than $100 by 10 percent. You must only increase pricing for products that customers are permitted to order.

Solution: You run the following Transact-SQL statement:

```
UPDATE Production.Products
SET ListPrice = ListPrice + 1.1
WHERE ListPrice
BETWEEN .01 and 99.99
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Products with a price between $0.00 and $100 will be increased, while products with a price of $0.00 would not be increased.

QUESTION 41
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table that was created by running the following Transact-SQL statement:

```
CREATE TABLE Products (
      ProductID int NOT NULL PRIMARY KEY,
      ProductName nvarchar(100) NULL,
      UnitPrice decimal(18, 2) NOT NULL,
      UnitsInStock int NOT NULL,
      UnitsOnOrder int NULL
)
```

The Products table includes the data shown in the following table:

ProductID	ProductName	UnitPrice	UnitsInStock	UnitsOnOrder
1	ProductA	10.00	10	15
2	ProductB	30.00	20	Null
3	ProductC	15.00	5	20

TotalUnitPrice is calculated by using the following formula:

```
TotalUnitPrice = UnitPrice * (UnitsInStock + UnitsOnOrder)
```

You need to ensure that the value returned for TotalUnitPrice for ProductB is equal to 600.00.

Solution: You run the following Transact-SQL statement:

```
SELECT ProductName, UnitPrice*(UnitsInStock+ISNULL(UnitsOnOnrder,0)) AS
TotalUnitPrice FROM Products
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
ISNULL (check_expression , replacement_value)
Arguments:
check_expression
Is the expression to be checked for NULL. check_expression can be of any type.
replacement_value
Is the expression to be returned if check_expression is NULL. replacement_value must be of a type that is implicitly convertible to the type of check_expresssion.

References: https://docs.microsoft.com/en-us/sql/t-sql/functions/isnull-transact-sql

QUESTION 42
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table that was created by running the following Transact-SQL statement:

```
CREATE TABLE Products (
     ProductID int NOT NULL PRIMARY KEY,
     ProductName nvarchar(100) NULL,
     UnitPrice decimal(18, 2) NOT NULL,
     UnitsInStock int NOT NULL,
     UnitsOnOrder int NULL
)
```

The Products table includes the data shown in the following table:

ProductID	ProductName	UnitPrice	UnitsInStock	UnitsOnOrder
1	ProductA	10.00	10	15
2	ProductB	30.00	20	Null
3	ProductC	15.00	5	20

TotalUnitPrice is calculated by using the following formula:

```
TotalUnitPrice = UnitPrice * (UnitsInStock + UnitsOnOrder)
```

You need to ensure that the value returned for TotalUnitPrice for ProductB is equal to 600.00.

Solution: You run the following Transact-SQL statement:

```
SELECT ProductName, UnitPrice*(UnitsInStock+COALESCE(UnitsOnOnrder,0)) AS
TotalUnitPrice FROM Products
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
COALESCE evaluates the arguments in order and returns the current value of the first expression that initially does not evaluate to NULL.

References: https://docs.microsoft.com/en-us/sql/t-sql/language-elements/coalesce-transact-sql

QUESTION 43
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table that was created by running the following Transact-SQL statement:

```
CREATE TABLE Products (
     ProductID int NOT NULL PRIMARY KEY,
     ProductName nvarchar(100) NULL,
     UnitPrice decimal(18, 2) NOT NULL,
     UnitsInStock int NOT NULL,
     UnitsOnOrder int NULL
)
```

The Products table includes the data shown in the following table:

ProductID	ProductName	UnitPrice	UnitsInStock	UnitsOnOrder
1	ProductA	10.00	10	15
2	ProductB	30.00	20	Null
3	ProductC	15.00	5	20

TotalUnitPrice is calculated by using the following formula:

```
TotalUnitPrice = UnitPrice * (UnitsInStock + UnitsOnOrder)
```

You need to ensure that the value returned for TotalUnitPrice for ProductB is equal to 600.00.

Solution: You run the following Transact-SQL statement:

```
SELECT ProductName, UnitPrice*(UnitsInStock+UnitsOnOrder) AS
TotalUnitPrice FROM Products
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The NULL value in the UnitsOnOrder field would cause a runtime error.

QUESTION 44
You have a database that stores information about server and application errors. The database contains the following table:

Servers

Column	Data type	Notes
ServerID	int	This is the primary key for the table.
DNS	Nvarchar(100)	Null values are not permitted for this column.

Errors

Column	Data type	Notes
ErrorID	int	This is the primary key for the table.
ServerID	int	Null values are not permitted for this column. This column is a foreign key that is related for the `ServerID` column in the `Servers` table.
Occurrences	int	Null values are not permitted for this column.
LogMessage	nvarchar(max)	Null values are not permitted for this column.

You need to return all unique error log messages and the server where the error occurs most often.

Which Transact-SQL statement should you run?

A.
```
SELECT DISTINCT ServerID, LogMessage FROM Errors AS e1
WHERE LogMessage IN (
       SELECT TOP 1 e2.LogMessage FROM Errors AS e2
       WHERE e2.LogMessage = e1.LogMessage AND e2.ServerID <> e1.ServerID
       ORDER BY e2.Occurrences
)
```

B.
```
SELECT DISTINCT ServerID, LogMessage FROM Errors AS e1
WHERE Occurrences > ALL (
       SELECT e2.OccurrencesFROM Errors AS e2
       WHERE e2.LogMessage = e1.LogMessage AND e2.ServerID <> e1.ServerID
)
```

C.
```
SELECT DISTINCT ServerID, LogMessage FROM Errors AS e1
GROUP BY ServerID, LogMessage
HAVING MAX(Occurrences) = 1
```

D.
```
SELECT ServerID, LogMessage FROM Errors AS e1
GROUP BY ServerID, LogMessage, Occurrences
HAVING COUNT(*) = 1
ORDER BY Occurrences
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Incorrect Answers:
A: Would get all the serverID's, and not all the error logs.

QUESTION 45
You have a database that includes the following tables.

HumanResources.Employee

Column	Data type	Notes
BusinessEntityID	int	primary key

Sales.SalesPerson

Column	Data type	Notes
BusinessEntityID	int	primary key
CommissionPct	smallmoney	does not allow null values

The HumanResources.Employee table has 2,500 rows, and the Sales.SalesPerson table has 2,000 rows.

You review the following Transact-SQL statement:

```
SELECT e.BusinessEntityID
FROM HumanResources.Employee AS e
WHERE 0.015 IN
      (SELECT CommissionPct
      FROM Sales.SalesPerson AS sp
      WHERE e.BusinessEntityID = sp.BusinessEntityID)
```

You need to determine the performance impact of the query.

How many times will a lookup occur on the primary key index on the Sales.SalesPerson table?

A. 200
B. 2,000
C. 2,500
D. 5,500

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 46
You are building a stored procedure that will update data in a table named Table1 by using a complex query as the data source.

You need to ensure that the SELECT statement in the stored procedure meets the following requirements:
- Data being processed must be usable in several statements in the stored procedure.
- Data being processed must contain statistics.

What should you do?

A. Update Table1 by using a common table expression (CTE).
B. Insert the data into a temporary table, and then update Table1 from the temporary table.
C. Place the SELECT statement in a derived table, and then update Table1 by using a JOIN to the derived table.
D. Insert the data into a table variable, and then update Table1 from the table variable.

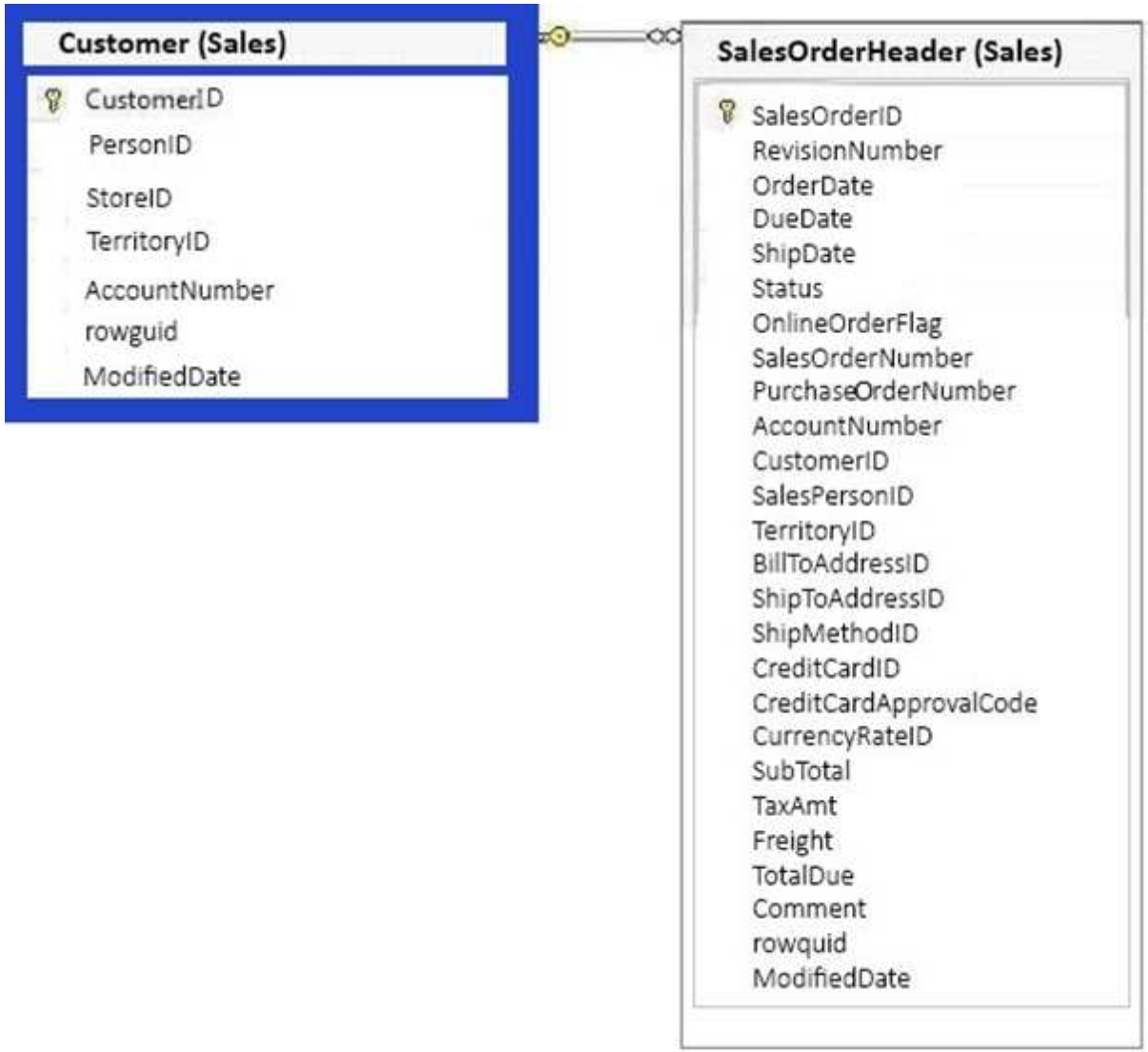
Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Temp Tables...
Are real materialized tables that exist in tempdb
Have dedicated stats generated by the engine
Can be indexed
Can have constraints
Persist for the life of the current CONNECTION
Can be referenced by other queries or subproce

Incorrect Answers:
A: CTEs do not have dedicated stats. They rely on stats on the underlying objects
C: Unlike a derived table, a CTE can be self-referencing and can be referenced multiple times in the same query.

References:
https://technet.microsoft.com/en-us/library/ms190766(v=sql.105).aspx
https://dba.stackexchange.com/questions/13112/whats-the-difference-between-a-cte-and-a-temp-table

QUESTION 47
You have a database that includes the tables shown in the exhibit. (Click the exhibit button.)



You need to create a list of all customers and the date that the customer placed their last order. For customers who have not placed orders, you must substitute a zero for the order ID and 01/01/1990 for the date.
Which Transact-SQL statement should you run?

A.
```
SELECT C.CustomerID, COALESCE(MAX(OrderDate), '19000101')
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

B.
```
SELECT C.CustomerID, MAX(OrderDate)
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

C.
```
SELECT C.CustomerID, MAX(OrderDate)
FROM Sales.Customer C CROSS JOIN Sales.SalesOrderHeader SOH
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

D.
```
SELECT C.CustomerID, SOH.SalesOrderID, MAX(OrderDate)
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
COALESCE evaluates the arguments in order and returns the current value of the first expression that initially does not evaluate to NULL.

References: https://docs.microsoft.com/en-us/sql/t-sql/language-elements/coalesce-transact-sql

QUESTION 48
You have a disk-based table that contains 15 columns.

You query the table for the number of new rows created during the current day.

You need to create an index for the query. The solution must generate the smallest possible index.

Which type of index should you create?

A. clustered
B. filtered nonclustered with a getdate() predicate in the WHERE statement clause
C. hash
D. nonclustered with compression enabled

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
A filtered index is an optimized nonclustered index especially suited to cover queries that select from a well-defined subset of data. It uses a filter predicate to index a portion of rows in the table. A well-designed filtered index can improve query performance as well as reduce index maintenance and storage costs compared with full-table indexes.

Creating a filtered index can reduce disk storage for nonclustered indexes when a full-table index is not necessary.

References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/create-filtered-indexes

QUESTION 49
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

You have the following partial query for the database. (Line numbers are included for reference only.)

```
01  SELECT CountryName, StateProviceName, CityName, Quantity*UnitPrice as TotalSales
02  FROM Sales
03
04  ORDER BY CountryName, StateProvinceName, CityName
```

You need to complete the query to generate the output shown in the following table.

CountryName	StateProvinceName	CityName	TotalSales
NULL	NULL	NULL	$23395792.75
Unites States	NULL	NULL	$23395792.75
Unites States	Alabama	NULL	$646508.75
Unites States	Alabama	Bazemore	$34402.00
Unites States	Alabama	Belgreen	$51714.65

Which statement clause should you add at line 3?

A. GROUP BY
B. MERGE
C. GROUP BY ROLLUP
D. LEFT JOIN
E. GROUP BY CUBE
F. CROSS JOIN
G. PIVOT
H. UNPIVOT

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Example of GROUP BY CUBE result set:
In the following example, the CUBE operator returns a result set that has one grouping for all possible combinations of columns in the CUBE list and a grand total grouping.

Region	Country	Store	SalesPersonID	Total Sales
NULL	NULL	NULL	NULL	254013.6014
NULL	NULL	NULL	287	28461.1854
NULL	NULL	NULL	288	17073.0655
NULL	NULL	NULL	290	208479.3505
NULL	NULL	Spa and Exercise Outfitters	NULL	236210.9015
NULL	NULL	Spa and Exercise Outfitters	287	27731.551
NULL	NULL	Spa and Exercise Outfitters	290	208479.3505
NULL	NULL	Versatile Sporting Goods Company	NULL	17802.6999
NULL	NULL	Versatile Sporting Goods Company	287	729.6344
NULL	NULL	Versatile Sporting Goods Company	288	17073.0655
NULL	DE	NULL	NULL	17802.6999
NULL	DE	NULL	287	729.6344
NULL	DE	NULL	288	17073.0655
NULL	DE	Versatile Sporting Goods Company	NULL	17802.6999
NULL	DE	Versatile Sporting Goods Company	287	729.6344

References: https://technet.microsoft.com/en-us/library/bb522495(v=sql.105).aspx

QUESTION 50
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

You have the following partial query for the database. (Line numbers are included for reference only.)

```
01  SELECT CountryName, StateProviceName, CityName, Quantity*UnitPrice as TotalSales
02  FROM Sales
03
04  ORDER BY CountryName, StateProvinceName, CityName
```

You need to complete the query to generate the output shown in the following table.

CountryName	StateProvinceName	CityName	TotalSales
NULL	NULL	NULL	$23395792.75
NULL	NULL	Abbottsburg	$45453.25
NULL	NULL	Absecon	$33140.15
NULL	NULL	Accomac	$43226.80
NULL	NULL	Aceitunas	$23001.40

Which statement clause should you add at line 3?

A. GROUP BY
B. MERGE
C. GROUP BY ROLLUP
D. LEFT JOIN
E. GROUP BY CUBE
F. CROSS JOIN
G. PIVOT
H. UNPIVOT

Correct Answer: C

Section: (none)
Explanation

Explanation/Reference:
In the result sets that are generated by the GROUP BY operators, NULL has the following uses:

- If a grouping column contains NULL, all null values are considered equal, and they are put into one NULL group.
- When a column is aggregated in a row, the value of the column is shown as NULL.

Example of GROUP BY ROLLUP result set:

Region	Country	Store	SalesPersonID	Total Sales
NULL	NULL	NULL	NULL	297597.8
NULL	NULL	NULL	284	33633.59
NULL	NULL	Spa and Exercise Outfitters	284	32774.36
NULL	FR	Spa and Exercise Outfitters	284	32774.36
Europe	FR	Spa and Exercise Outfitters	284	32774.36
NULL	NULL	Versatile Sporting Goods Company	284	859.232
NULL	DE	Versatile Sporting Goods Company	284	859.232
Europe	DE	Versatile Sporting Goods Company	284	859.232
NULL	NULL	NULL	286	246272.4
NULL	NULL	Spa and Exercise Outfitters	286	246272.4
NULL	FR	Spa and Exercise Outfitters	286	246272.4
Europe	FR	Spa and Exercise Outfitters	286	246272.4
NULL	NULL	NULL	289	17691.83
NULL	NULL	Versatile Sporting Goods Company	289	17691.83
NULL	DE	Versatile Sporting Goods Company	289	17691.83
Europe	DE	Versatile Sporting Goods Company	289	17691.83

References: https://technet.microsoft.com/en-us/library/bb522495(v=sql.105).aspx

QUESTION 51
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

You have the following partial query for the database. (Line numbers are included for reference only.)

```
01  SELECT CountryName, StateProviceName, CityName, Quantity*UnitPrice as TotalSales
02  FROM Sales
03
```

You need to complete the query to generate the output shown in the following table.

CountryName	StateProvinceName	CityName	TotalSales
United States	Wyoming	Yoder	$7638.11
United States	Wyoming	NULL	$1983745.99
United States	NULL	NULL	$2387435981.22
NULL	NULL	NULL	$2387435981.22

Which statement clause should you add at line 3?

A. GROUP BY
B. MERGE
C. GROUP BY ROLLUP
D. LEFT JOIN
E. GROUP BY CUBE
F. CROSS JOIN
G. PIVOT
H. UNPIVOT

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
A cross join that does not have a WHERE clause produces the Cartesian product of the tables involved in the join. The size of a Cartesian product result set is the number of rows in the first table multiplied by the number of rows in the second table.

References: https://technet.microsoft.com/en-us/library/ms190690(v=sql.105).aspx

QUESTION 52
You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
    CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
    FirstName nvarchar(100) NOT NULL,
    LastName nvarchar(100) NOT NULL,
    TaxIdNumber varchar(20) NOT NULL,
    Address nvarchar(1024) NOT NULL,
    AnnualRevenue decimal(19,2) NOT NULL,
    DateCreated datetime(2) NOT NULL,
    ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
    ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
    PERIOD FOR SYSTEM_TIME(ValidFrom,ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomerHistory))
```

You need to view all customer data.

Which Transact-SQL statement should you run?

A.
```
SELECT FirstName, LastName, SUM(AnnualRevenue)
FROM Customers
GROUP BY GROUPING SETS(FirstName, LastName, AnnualRevenue), ())
ORDER BY FirstName, LastName, AnnualRevenue
```

B.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address,
AnnualRevenue, DateCreated, ValidFrom, ValidTo
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.
```
SELECT c.CustomerId, c.FirstName, c.LastName, c.Address, c.Validfrom,
c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.
```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address,
AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.
```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE Year(DateCreated) >= 2014
Group BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.
```
SELECT c.CustomerId, c.FirstName, c.LastName, c.Address,
c.Validfrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address,
ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.0000000' AND '2015-01-01 00:00:00.0000000'
```

H.
```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address,
ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' and '20141231'
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
The FOR SYSTEM_TIME ALL clause returns all the row versions from both the Temporal and History table.

References: https://msdn.microsoft.com/en-us/library/dn935015.aspx

QUESTION 53
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables contain the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to determine the total number of deposit and loan accounts.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
 FROM (SELECT AcctNo
   FROM tblDepositAcct
   INTERSECT
   SELECT AcctNo
   FROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
FROM (SELECT CustNo
  FROM tblDepositAcct
  UNION
  SELECT CustNo
  FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
FROM (SELECT CustNo
  FROMtblDepositAcct
  UNION ALL
  SELECT CustNo
  FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
FROM tblDepositAcct D, tblLoanAcct L
WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
FROM tblDepositAcct D
RIGHT JOIN tblLoanAcct L ON D.CustNo =L.CustNo
WHERE D.CustNo IS NULL
```

F.
```
SELECT COUNT(*)
 FROM (SELECT CustNo
   FROM tblDepositAcct
   EXCEPT
   SELECT CustNo
   FROM tblLoanAcct) R
```

G.
```
SELECT COUNT (DISTINCT COALESCE(D.CustNo, L.CustNo))
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo =L.CustNo
 WHERE D.CustNo IS NULL OR L.CustNo IS NULL
```

H.
```
SELECT COUNT(*)
 FROM tblDepositAcct D
 FULL JOIN tblLoanAcct L ON D.CustNo = L.CustNo
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Would list the customers with duplicates, which would equal the number of accounts.

Incorrect Answers:
A: INTERSECT returns distinct rows that are output by both the left and right input queries operator.

B: Would list the customers without duplicates.

D: Number of customers.

F: EXCEPT returns distinct rows from the left input query that aren't output by the right input query.

References:
https://msdn.microsoft.com/en-us/library/ms180026.aspx

QUESTION 54
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

Your company is developing a new social application that connects customers to each other based on the distance between their delivery locations.

You need to write a query that returns the nearest customer.

Solution: You run the following Transact-SQL statement:

```
WITH DIST_CTE (CustA, CustB, Dist)
AS (
      SELECT A.CustomerID AS CustA, B.CustomerID AS CustB,
B.DeliveryLocation.ShortestLineTo(A.DeliveryLocation).STLength() AS Dist
      FROM Sales.Customers AS A
      CROSS JOIN Sales.Customers AS B
      WHERE A.CustomerID <> B.CustomerID
)
SELECT TOP 1 CustB, Dist
FROM DIST_CTE
WHERE CustA = @custID
ORDER BY Dist
```

The variable @custID is set to a valid customer.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
ShortestLineTo (geometry Data Type) Returns a LineString instance with two points that represent the shortest distance between the two geometry instances. The length of the LineString instance returned is the distance between the two geometry instances.

STLength (geometry Data Type) returns the total length of the elements in a geometry instance.

References: https://docs.microsoft.com/en-us/sql/t-sql/spatial-geometry/shortestlineto-geometry-data-type

QUESTION 55
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

Your company is developing a new social application that connects customers to each other based on the distance between their delivery locations.

You need to write a query that returns the nearest customer.

Solution: You run the following Transact-SQL statement:

```
SELECT TOP 1 B.CustomerID, A.DeliveryLocation.STDistance(B.DeliveryLocation) AS Dist
FROM Sales.Customers AS A
CROSS JOIN Sales.Customers AS B
WHERE A.CustomerID = @custID AND A.CustomerID <> B.CustomerID
ORDER BY Dist
```

The variable @custID is set to a valid customer.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

Explanation:
Instead, use the ShortestLineTo (geometry Data Type) which returns a LineString instance with two points that represent the shortest distance between the two geometry instances. The length of the LineString instance returned is the distance between the two geometry instances.

Note: STDistance returns the shortest distance between a point in a geography instance and a point in another geography instance.

References:
https://docs.microsoft.com/en-us/sql/t-sql/spatial-geometry/shortestlineto-geometry-data-type

https://docs.microsoft.com/en-us/sql/t-sql/spatial-geography/stdistance-geography-data-type

QUESTION 56
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

Your company is developing a new social application that connects customers to each other based on the distance between their delivery locations.

You need to write a query that returns the nearest customer.

Solution: You run the following Transact-SQL statement:

```
SELECT TOP 1 B.CustomerID, A.DeliveryLocation.STDistance(B.DeliveryLocation) AS Dist
FROM Sales.Customers AS A
CROSS JOIN Sales.Customers AS B
WHERE A.CustomerID = @custID AND A.CustomerID <> B.CustomerID
ORDER BY Dist
```

The variable @custID is set to a valid customer.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:

`STDistance` returns the shortest distance between a point in a geography instance and a point in another geography instance.

Note : Alternatively, the ShortestLineTo (geometry Data Type), which returns a LineString instance with two points that represent the shortest distance between the two geometry instances, can also be used. The length of the LineString instance returned is the distance between the two geometry instances.

References:
https://docs.microsoft.com/en-us/sql/t-sql/spatial-geometry/shortestlineto-geometry-data-type

QUESTION 57
You need to create a table named Sales that meets the following requirements:

Column name	Requirements
SalesID	- uniquely identify the row of data - automatically generate when data is inserted - use the least amount of storage space
SalesDate	- store the date and time of the sale based on 24-hour clock - use an ANSI SQL compliant data type
SalesAmount	- store the amount of the sale - avoid rounding errors when used in arithmetic calculations

Which Transact-SQL statement should you run?

A.
```
CREATE TABLE Sales (
      SalesID int IDENTITY(1,1),
      SalesDate DateTime NOT NULL,
      SalesAmount decimal(18,2) NULL
)
```

B.
```
CREATE TABLE Sales (
      SalesID UNIQUEIDENTIFIER DEFAULT NEWSEQUENTIALID() PRIMARY KEY,
      SalesDate DateTime2 NOT NULL,
      SalesAmount money NULL
)
```

C.

```
CREATE TABLE Sales (
      SalesID UNIQUEIDENTIFIER DEFAULT NEWSEQUENTIALID() PRIMARY KEY,
      SalesDate DateTime2 NOT NULL,
      SalesAmount decimal(18,2) NULL
)
```

D.

```
CREATE TABLE Sales (
      SalesID int NOT NULL IDENTITY(1,1),
      SalesDate DateTime2 NOT NULL,
      SalesAmount decimal(18,4) NULL,
      CONSTRAINT PK_SalesID PRIMARY KEY CLUSTERED (SalesID)
)
```

E.

```
CREATE TABLE Sales (
      SalesID UNIQUEIDENTIFIER DEFAULT NEWID() PRIMARY KEY,
      SalesDate DateTime NOT NULL,
      SalesAmount money NULL
)
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
datetime2 Defines a date that is combined with a time of day that is based on 24-hour clock. datetime2 can be considered as an extension of the existing datetime type that has a larger date range, a larger default fractional precision, and optional user-specified precision.

Incorrect Answers:
B, C, E: NEWQSEQUENTIALID creates a GUID that is greater than any GUID previously generated by this function on a specified computer since Windows was started. A GUID uses more space then IDENTITY value.

References:
https://docs.microsoft.com/en-us/sql/t-sql/data-types/datetime2-transact-sql
https://docs.microsoft.com/en-us/sql/t-sql/functions/newsequentialid-transact-sql

QUESTION 58

You have a database named DB1 that contains two tables named Sales.Customers and Sales.CustomerTransaction. Sales.CustomerTransactions has a foreign key relationship to column named CustomerID in Sales.Customers.

You need to recommend a query that returns the number of customers who never completed a transaction.

Which query should you recommend?

A.
```
SELECT
      COUNT(Cust.CustomerID)
FROM
      Sales.Customers Cust
            LEFT JOIN
      Sales.CustomerTransactions Trans
            ON Cust.CustomerID = Trans.CustomerID
WHERE
      Trans.CustomerTransactionID IS NULL;
```

B.
```
SELECT
      COUNT(CustomerID)
FROM
      Sales.Customers Cust
            LEFT JOIN
      Sales.CustomerTransactions Trans
            ON Cust.CustomerID = Trans.CustomerID
WHERE
      Trans.CustomerTransactionID IS NULL;
```

C.

```
SELECT
      COUNT(Cust.CustomerID)
FROM
      Sales.Customers Cust
            LEFT JOIN
      Sales.CustomerTransactions Trans
            ON Cust.CustomerID = Trans.CustomerID
```

D.

```
SELECT
      COUNT(Cust.CustomerID)
FROM
      Sales.Customers Cust
            INNER JOIN
      Sales.CustomerTransactions Trans
            ON Cust.CustomerID = Trans.CustomerID
WHERE
      Trans.CustomerTransactionID IS NULL;
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Incorrect Answers:
B: The count should be on the Cust instance of Sales.Customers as it is to the right side of the join.
C: Need a WHERE statement with an IS NULL clause.
D: Must use a LEFT JOIN to obtain the NULL values.

References: https://technet.microsoft.com/en-us/library/ms190014(v=sql.105).aspx

QUESTION 59
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to

that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The following records exist in the tables:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Yossi
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Yossi
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.

You need to display distinct customers that appear in both tables.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
You need to display distinct customers that appear in both tables.

INTERSECT returns distinct rows that are output by both the left and right input queries operator.

Incorrect Answers:
A: Inner joins return rows only when there is at least one row from both tables that matches the join condition. Inner joins eliminate the rows that do not match with a row from the other table.
D: EXCEPT returns distinct rows from the left input query that aren't output by the right input query.
E: UNION specifies that multiple result sets are to be combined and returned as a single result set, but this will not work here as the CustomerID column values do not match.
F: UNION ALL incorporates all rows into the results. This includes duplicates. If not specified, duplicate rows are removed.
G: A cross join would produce the Cartesian product of the two tables.
H: To retain the nonmatching information by including nonmatching rows in the results of a join, use a full outer join. SQL Server provides the full outer join operator, FULL OUTER JOIN, which includes all rows from both tables, regardless of whether or not the other table has a matching value.

References:
https://technet.microsoft.com/en-us/library/ms187518(v=sql.105).aspx

QUESTION 60
You have a database named DB1 that contains a temporal table named Sales.Customers.

You need to create a query that returns the credit limit that was available to each customer in DB1 at the beginning of 2017.

Which query should you execute?

A.
```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME CONTAINED IN ('2017-01-01 00:00:00');
```

B.
```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME CONTAINED IN ('2017-01-01');
```

C.
```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME AS OF '2017-01-01';
```

D.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME ALL;
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
AS OF: Returns a table with a rows containing the values that were actual (current) at the specified point in time in the past.

Incorrect Answers:
A, B: CONTAINED IN has two parameters: CONTAINED IN (<start_date_time> , <end_date_time>)

References: https://docs.microsoft.com/en-us/sql/relational-databases/tables/querying-data-in-a-system-versioned-temporal-table

QUESTION 61
You need to create a database object that meets the following requirements:
- accepts a product identifies as input
- calculates the total quantity of a specific product, including quantity on hand and quantity on order
- caches and reuses execution plans
- returns a value
- can be called from within a SELECT statement
- can be used in a JOIN clause

What should you create?

A. a temporary table that has a columnstore index
B. a user-defined table-valued function
C. a memory-optimized table that has updated statistics
D. a natively-compiled stored procedure that has an OUTPUT parameter

Correct Answer: B

Section: (none)
Explanation

Explanation/Reference:
Explanation:
A table-valued user-defined function can also replace stored procedures that return a single result set. The table returned by a user-defined function can be referenced in the FROM clause of a Transact-SQL statement, but stored procedures that return result sets cannot.

References: https://technet.microsoft.com/en-us/library/ms191165(v=sql.105).aspx

QUESTION 62
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Products by running the following Transact-SQL statement:

```
CREATE TABLE Products (
  ProductID int IDENTITY (1, 1), NOT NULL PRIMARY KEY,
  ProductName nvarchar (100), NULL,
  UnitPrice decimal (18, 2) NOT NULL,
  UnitsInStock int NOT NULL,
  UnitsOnOrder int NULL
)
```

You have the following stored procedure:

```
CREATE PROCEDURE InsertProduct
  @ProductName nvarchar(100),
  @UnitPrice decimal (18, 2),
  @UnitsInStock int,
  @UnitsOnOrder int
AS
BEGIN
  INSERT INTO Products (ProductName, UnitPrice, UnitsInStock, UnitsOnOrder)
  VALUES (@ProductName, @UnitPrice, @UnitsInStock, @UnitsOnOrder)
END
```

You need to modify the stored procedure to meet the following new requirements:

- Insert product records as a single unit of work.
- Return error number 51000 when a product fails to insert into the database.
- If a product record insert operation fails, the product information must not be permanently written to the database.

Solution: You run the following Transact-SQL statement:

```
ALTER PROCEDURE InsertProduct
@ProductName nvarchar (100),
@UnitPrice decimal (18, 2),
@UnitsInStock int,
@UnitsOnOrder int
AS
BEGIN
  SET XACT_ABORT ON
  BEGIN TRY
    BEGIN TRANSACTION
      INSERT INTO Products (ProductName, UnitPrice, UnitsInStock, UnitsOnOrder)
      VALUES (@ProductName, @UnitPrice, @UnitsInStock, @UnitsOnOrder)
    COMMIT TRANSACTION
  END TRY
  BEGIN CATCH
    IF XACT_STATE () <> 0 ROLLBACK TRANSACTION
    THROW 51000, 'The product could not be created,' 1
  END CATCH
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 63
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Products by running the following Transact-SQL statement:

```
CREATE TABLE Products (
  ProductID int IDENTITY (1, 1), NOT NULL PRIMARY KEY,
  ProductName nvarchar (100), NULL,
  UnitPrice decimal (18, 2) NOT NULL,
  UnitsInStock int NOT NULL,
  UnitsOnOrder int NULL
)
```

You have the following stored procedure:

```
CREATE PROCEDURE InsertProduct
  @ProductName nvarchar(100),
  @UnitPrice decimal (18, 2),
  @UnitsInStock int,
  @UnitsOnOrder int
AS
BEGIN
  INSERT INTO Products (ProductName, UnitPrice, UnitsInStock, UnitsOnOrder)
  VALUES (@ProductName, @UnitPrice, @UnitsInStock, @UnitsOnOrder)
END
```

You need to modify the stored procedure to meet the following new requirements:

- Insert product records as a single unit of work.
- Return error number 51000 when a product fails to insert into the database.
- If a product record insert operation fails, the product information must not be permanently written to the database.

Solution: You run the following Transact-SQL statement:

```
ALTER PROCEDURE InsertProduct
@ProductName nvarchar (100),
@UnitPrice decimal (18, 2),
@UnitsInStock int,
@UnitsOnOrder int
AS
BEGIN
  BEGIN TRY
    BEGIN TRANSACTION
      INSERT INTO Products (ProductName, UnitPrice, UnitsInStock, UnitsOnOrder)
      VALUES (@ProductName, @UnitPrice, @UnitsInStock, @UnitsOnOrder)
    COMMIT TRANSACTION
  END TRY
  BEGIN CATCH
IF @@TRANCOUNT > 0ROLLBACK TRANSACTION
  RAISERROR (51000,16, 1)
  END CATCH
END
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 64
You have a database that contains the following tables:

Customer

Column name	Data type	Nullable	Default value
CustomerId	int	No	Identity property
FirstName	varchar(30)	Yes	
LastName	varchar(30)	No	
CreditLimit	money	No	

CustomerAudit

Column name	Data type	Nullable	Default value
CustomerId	int	No	
DateChanged	datetime	No	GETDATE()
OldCreditLimit	money	No	
NewCreditLimit	money	No	
ChangedBy	varchar(100)	No	SYSTEM_USER

Where the value of the CustomerID column equals 3, you need to update the value of the CreditLimit column to 1000 for the customer. You must ensure that the change to the record in the Customer table is recorded on the CustomerAudit table.

Which Transact-SQL statement should you run?

A.

```
UPDATE Customer
SET CreditLimit= 1000
OUTPUT inserted. CustomerId, deleted. CreditLimit, deleted. CreditLimit
INTO CustomerAudit (CustomerID, OldCreditLimit, NewCreditLimit, ChangedBy)
WHERE CustomerId=3
```

B.

```
UPDATE Customer
SET CreditLimit= 1000
OUTPUT inserted. CustomerId, GETDATE (), deleted. CreditLimit, inserted. CreditLimit, SYSTEM_USER
INTO CustomerAudit (CustomerID, DateChanged, OldCreditLimit, NewCreditLimit, ChangedBy)
WHERE CustomerId=3
```

C.

```
UPDATE Customer
SET CreditLimit= 1000
WHERE CustomerId=3
INSERT INTO CustomerAudit (CustomerId, DateChanged, OldCreditLimit, NewCreditLimit,
ChangedBy)
SELECT CustomerId, GETDATE (), CreditLimit, CreditLimit, SYSTEM_USER
FROM Customer
WHERE CustomerID =3
```

D.

```
UPDATE Customer
SET CreditLimit= 1000
OUTPUT inserted. CustomerId, inserted. CreditLimit, inserted. CreditLimit
INTO CustomerAudit (CustomerId, OldCreditLimit, NewCreditLimit)
WHERE CustomerId=3
```

A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The OUTPUT Clause returns information from, or expressions based on, each row affected by an INSERT, UPDATE, DELETE, or MERGE statement. These results can be returned to the processing application for use in such things as confirmation messages, archiving, and other such application requirements. The results can also be inserted into a table or table variable. Additionally, you can capture the results of an OUTPUT clause in a nested INSERT, UPDATE, DELETE, or MERGE statement, and insert those results into a target table or view.

Note: If the column modified by the .RITE clause is referenced in an OUTPUT clause, the complete value of the column, either the before image in deleted.column_name or the after image in inserted.column_name, is returned to the specified column in the tablevariable.

Incorrect Answers:
A: The OUTPUT and INTO statements do no match, as they do not have the same amount of items.
D: The deleted.Creditlimit should be inserted in the second column, the OldCreditLimit column, not the third column.

References:
https://msdn.microsoft.com/en-us/library/ms177564.aspx

QUESTION 65
You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables contain the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to determine the total number of customers who have only deposit accounts.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
FROM (SELECT AcctNo
FROM tblDepositAcct
INTERSECT
SELECT AcctNo
FROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
FROM (SELECT CustNo
FROM tblDepositAcct
UNION
SELECT CustNo
FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
FROM (SELECT CustNo
FROM tblDepositAcct
UNION ALL
SELECT CustNo
FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
FROM tblDepositAcct D, tblLoanAcct L
WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
FROM tblDepositAcct D
RIGHT JOIN tblLoanAcct L ON D.CustNo = L.CustNo
WHERE D.CustNo IS NULL
```

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E
F. Option F
G. Option G
H. Option H

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/language-elements/set-operators-except-and-intersect-transact-sql?view=sql-server-2017

QUESTION 66
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named Customer by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
     CustomerID int IDENTITY(1,1) PRIMARY KEY,
     FirstName varchar(50) NULL,
     LastName varchar(50) NOT NULL,
     DateOfBirth date NOT NULL,
     CreditLimit money CHECK (CreditLimit < 10000),
     TownID int NULL REFERENCES dbo.Town(TownID),
     CreatedDate datetime DEFAULT(Getdate())
)
```

You must insert the following data into the Customer table:

Record	First name	Last name	Date of Birth	Credit limit	Town ID	Created date
Record 1	Yvonne	McKay	1984-05-25	9,000	no town details	current date and time
Record 2	Jossef	Goldberg	1995-06-03	5,500	no town details	current date and time

You need to ensure that both records are inserted or neither record is inserted.

Solution: You run the following Transact-SQL statement:

```
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit)
VALUES ('Yvonne', 'McKay', '1984-05-25', 9000)
INSERT INTO Customer (FirstName, LastName, DateOfBirth, CreditLimit)
VALUES ('Jossef', 'Goldberg', '1995-06-03', 5500)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Reference: https://docs.microsoft.com/it-it/sql/t-sql/statements/insert-transact-sql?view=sql-server-2017

QUESTION 67
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that contains a single table named `tblVehicleRegistration`. The table is defined as follows:

Column name	Data type	Description
`VehicleId`	int	the primary key for the table
`RegistrationNumber`	varchar(5)	a vehicle registration number that contains only letters and numbers
`RegistrationDate`	date	the vehicle registration date
`UserId`	int	an identifier for the vehicle owner

You run the following query:

```
SELECT UserId FROM tblVehicleRegistration
WHERE RegistrationNumber = 20012
AND RegistrationDate > '2016-01-01'
```

The query output window displays the following error message: "Conversion failed when converting the varchar value 'AB012' to data type int."
You need to resolve the error.
Solution: You modify the Transact-SQL statement as follows:

```
SELECT UserId FROM tblVehicleRegistration
WHERE RegistrationNumber = '20012'
AND RegistrationDate > '2016-01-01'
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The Date is casted as the column type so this should not cause any problems.

References:
https://docs.microsoft.com/en-us/sql/t-sql/functions/cast-and-convert-transact-sql?view=sql-server-2017

QUESTION 68
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that contains a single table named `tblVehicleRegistration`. The table is defined as follows:

Column name	Data type	Description
`VehicleId`	int	the primary key for the table
`RegistrationNumber`	varchar(5)	a vehicle registration number that contains only letters and numbers
`RegistrationDate`	date	the vehicle registration date
`UserId`	int	an identifier for the vehicle owner

You run the following query:

```
SELECT UserId FROM tblVehicleRegistration
WHERE RegistrationNumber = 20012
AND RegistrationDate > '2016-01-01'
```

The query output window displays the following error message: “Conversion failed when converting the varchar value ‘AB012’ to data type int.”
You need to resolve the error.
Solution: You modify the Transact-SQL statement as follows:

```
SELECT UserId FROM tblVehicleRegistration
WHERE RegistrationNumber =  20012
AND RegistrationDate > CONVERT(DATE, '2016-01-01', 120)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 69
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section. You will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a table named Products that stores information about the products your company sells. The table has a column named ListPrice that stores retail pricing information for products.

Some products are used only internally by the company. Records for these products are maintained in the Products table for inventory purposes. The price for each of these products is $0.00. Customers are not permitted to order these products.

You need to increase the list price for products that cost less than $100 by 10 percent. You must only increase pricing for products that customers are permitted to order.

Solution: You run the following Transact-SQL statement:

```
UPDATE Production.Products
SET ListPrice = ListPrice * 1.1
WHERE ListPrice
BETWEEN 0   and   100
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 70
You have a database named DB1 that contains a temporal table named Sales.Customers.

You need to create a query that returns the credit limit that was available to each customer in DB1 at the beginning of 2017.

Which query should you execute?

A.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME CONTAINED IN ('2017-01-01 ');
```

B.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME AS OF '2017-01-01';
```

C.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME ALL;
```

D.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME BETWEEN '2016-12-31' AND '2017-01-01');
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Answer: B
Explanation:
AS OF: Returns a table with a rows containing the values that were actual (current) at the specified point in time in the past.

Incorrect Answers:

A, B: CONTAINED IN has two parameters: CONTAINED IN (<start_date_time> , <end_date_time>)

References: https://docs.microsoft.com/en-us/sql/relational-databases/tables/querying-data-in-a-system-versioned-temporal-table

QUESTION 71
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

You need to create a query that generates sample data for a sales table in the database. The query must include every product in the inventory for each customer.

Which statement clause should you use?

A. `GROUP BY`
B. `MERGE`
C. `GROUP BY ROLLUP`
D. `LEFT JOIN`
E. `GROUP BY CUBE`
F. `CROSS JOIN`
G. `PIVOT`
H. `UNPIVOT`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Reference: https://docs.microsoft.com/en-us/sql/t-sql/queries/select-group-by-transact-sql?view=sql-server-2017

QUESTION 72
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

All the sales data is stored in a table named table1. You have a table named table2 that contains city names.

You need to create a query that lists only the cities that have no sales.

Which statement clause should you add to the query?

A. `GROUP BY`
B. `MERGE`
C. `GROUP BY ROLLUP`
D. `LEFT JOIN`
E. `GROUP BY CUBE`
F. `CROSS JOIN`
G. `PIVOT`
H. `UNPIVOT`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Reference: https://docs.microsoft.com/en-us/sql/t-sql/queries/from-transact-sql?view=sql-server-2017

QUESTION 73
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains several connected tables. The tables contain sales data for customers in the United States only.

You have the following partial query for the database. (Line numbers are included for reference only.)

```
01  SELECT CountryName, StateProviceName, CityName, Quantity*UnitPrice as TotalSales
02  FROM Sales
03
04 ORDER BY CountryName, StateProvinceName, CityName
```

You need to complete the query to generate the output shown in the following table.

CountryName	StateProvinceName	CityName	TotalSales
United States	Alabama	Bazemore	$34402.00
United States	Alabama	Belgreen	$51714.65
United States	Alabama	Broomtown	$59349.20
United States	Alabama	Coker	$26409.50
United States	Alabama	Eulaton	$54225.35

Which statement clause should you add at line 3?

A. `GROUP BY`
B. `MERGE`
C. `GROUP BY ROLLUP`
D. `LEFT JOIN`
E. `GROUP BY CUBE`
F. `CROSS JOIN`
G. `PIVOT`
H. `UNPIVOT`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 74
Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You query a database that includes two tables: Project and Task. The Project table includes the following columns:

Column name	Data type	Notes
ProjectId	int	This is a unique identifier for a project.
ProjectName	varchar(100)	
StartTime	datetime2(7)	
EndTime	datetime2(7)	A null value indicates the project is not finished yet.
UserId	int	Identifies the owner of the project.

The Task table includes the following columns:

Column name	Data type	Notes
TaskId	int	This is a unique identifier for a task.
TaskName	varchar(100)	A nonclustered index exists for this column.
ParentTaskId	int	Each task may or may not have a parent task.
ProjectId	int	A null value indicates the task is not assigned to a specific project.
StartTime	datetime2(7)	
EndTime	datetime2(7)	A null value indicates the task is not completed yet.
UserId	int	Identifies the owner of the task.

You plan to run the following query to update tasks that are not yet started:

```
UPDATE Task SET StartTime = GETDATE() WHERE StartTime IS NULL
```

You need to return the total count of tasks that are impacted by this UPDATE operation, but are not associated with a project.

What set of Transact-SQL statements should you run?

A.
```
DECLARE @startedTasks TABLE(ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT inserted.ProjectId INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NOT NULL
```

B.
```
DECLARE @startedTasks TABLE(TaskId int, ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.TaskId, deleted.ProjectId INTO @startedTasks
WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NULL
```

C.
```
DECLARE @startedTasks TABLE(TaskId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.TaskId, INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE TaskId IS NOT NULL
```

D.
```
UPDATE Task SET StartTime = GETDATE() WHERE StartTime IS NULL
SELECT @@ROWCOUNT
```

E.
```
DECLARE @startedTasks TABLE(ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT deleted.ProjectId INTO @startedTasks WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NOT NULL
```

F.
```
DECLARE @startedTasks TABLE(TaskId int, ProjectId int)
UPDATE Task SET StartTime = GETDATE() OUTPUT inserted.TaskId, deleted.ProjectId INTO @startedTasks
WHERE StartTime is NULL
SELECT COUNT(*) FROM @startedTasks WHERE ProjectId IS NULL
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 75
You have a database named DB1 that contains a temporal table named Sales.Customers.

You need to create a query that returns the credit limit that was available to each customer in DB1 at the beginning of 2017.

Which query should you execute?

A.
```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME CONTAINED IN ('2017-01-01 00:00:00'));
```

B.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME AS OF '2017-01-01 00:00:00';
```

C.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME CONTAINED IN ('2016-12-31', '2017-01-01');
```

D.

```
SELECT
      CustomerID,
      CustomerName,
      CreditLimit
FROM
      Sales.Customers
            FOR SYSTEM_TIME BETWEEN '2016-12-31' AND '2017-01-01';
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
AS OF: Returns a table with a rows containing the values that were actual (current) at the specified point in time in the past.

Incorrect Answers:
A, B: CONTAINED IN has two parameters: CONTAINED IN (<start_date_time> , <end_date_time>)

References: https://docs.microsoft.com/en-us/sql/relational-databases/tables/querying-data-in-a-system-versioned-temporal-table

QUESTION 76
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You are developing a report that aggregates customer data only for the year 2014. The report requires that the data be denormalized.

You need to return the data for the report.

Which Transact-SQL statement should you run?

A.
```
SELECT FirstName, LastName, SUM(AnnualRevenue)
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName, AnnualRevenue),())
ORDER BY FirstName, LastName, AnnualRevenue
```

B.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, AnnualRevenue, DateCreated, ValidFrom, ValidTo
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.

```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.

```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: G
Section: (none)
Explanation

Explanation/Reference:

QUESTION 77
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You need to return normalized data for all customers that were added in the year 2014.

Which Transact-SQL statement should you run?

A.
```
SELECT FirstName, LastName, SUM(AnnualRevenue)
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName, AnnualRevenue),())
ORDER BY FirstName, LastName, AnnualRevenue
```

B.
```
SELECT  FirstName, LastName, Address
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.
```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.
```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: G
Section: (none)
Explanation

Explanation/Reference:

QUESTION 78
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You create a table by running the following Transact-SQL statement:

```
CREATE TABLE Customers (
     CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
     FirstName nvarchar(100) NOT NULL,
     LastName nvarchar(100) NOT NULL,
     TaxIdNumber varchar(20) NOT NULL,
     Address nvarchar(1024) NOT NULL,
     AnnualRevenue decimal(19,2) NOT NULL,
     DateCreated datetime2(2) NOT NULL,
     ValidFrom datetime2(2) GENERATED ALWAYS AS ROW START NOT NULL,
     ValidTo datetime2(2) GENERATED ALWAYS AS ROW END NOT NULL,
     PERIOD FOR SYSTEM_TIME(ValidFrom, ValidTo)
)
WITH (SYSTEM_VERSIONING = ON (HISTORY_TABLE = CustomersHistory))
```

You need to develop a query that meets the following requirements:

- Output data by using a tree-like structure.
- Allow mixed content types.
- Use custom metadata attributes.

Which Transact-SQL statement should you run?

A.
```
SELECT FirstName, LastName, SUM(AnnualRevenue)
FROM Customers
GROUP BY GROUPING SETS((FirstName, LastName, AnnualRevenue),())
ORDER BY FirstName, LastName, AnnualRevenue
```

B.
```
SELECT  FirstName, LastName, Address
FROM Customers
FOR SYSTEM_TIME ALL ORDER BY ValidFrom
```

C.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c
ORDER BY c.CustomerID
FOR JSON AUTO, ROOT('Customers')
```

D.

```
SELECT * FROM (SELECT CustomerID, FirstName, LastName, Address, AnnualRevenue, DateCreated
FROM Customers) AS Customers PIVOT(AVG(AnnualRevenue)
FOR DateCreated IN([2014])) AS PivotCustomers
ORDER BY LastName, FirstName
```

E.

```
SELECT CustomerID, AVG(AnnualRevenue)
AS AverageAnnualRevenue, FirstName, LastName, Address, DateCreated
FROM Customers WHERE YEAR(DateCreated) >= 2014
GROUP BY CustomerID, FirstName, LastName, Address, DateCreated
```

F.

```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Address, c.ValidFrom, c.ValidTo
FROM Customers AS c ORDER BY c.CustomerID
FOR XML PATH ('CustomerData'), root ('Customers')
```

G.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers FOR SYSTEM_TIME
BETWEEN '2014-01-01 00:00:00.000000' AND '2015-01-01 00:00:00.000000'
```

H.

```
SELECT CustomerID, FirstName, LastName, TaxIdNumber, Address, ValidFrom, ValidTo
FROM Customers
WHERE DateCreated
BETWEEN '20140101' AND '20141231'
```

Correct Answer: F

Section: (none)
Explanation

Explanation/Reference:

QUESTION 79
You need to create a database object that meets the following requirements:
- accepts a product identifies as input
- calculates the total quantity of a specific product, including quantity on hand and quantity on order
- caches and reuses execution plans
- returns a value
- can be called from within a SELECT statement
- can be used in a JOIN clause

What should you create?

A. an extended stored procedure
B. a user-defined table-valued function
C. a user-defined stored procedure that has an OUTPUT parameter
D. a memory-optimized table that has updated statistics

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
References: https://www.techrepublic.com/blog/the-enterprise-cloud/understand-when-to-use-user-defined-functions-in-sql-server/

QUESTION 80
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are building a stored procedure that will be used by hundreds of users concurrently.

You need to store rows that will be processed later by the stored procedure. The object that stores the rows must meet the following requirements:
- Be indexable
- Contain up-to-date statistics

- Be able to scale between 10 and 100,000 rows

The solution must prevent users from accessing one another's data.

Solution: You create a global temporary table in the stored procedure.

Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 81
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are building a stored procedure that will be used by hundreds of users concurrently.

You need to store rows that will be processed later by the stored procedure. The object that stores the rows must meet the following requirements:
- Be indexable
- Contain up-to-date statistics
- Be able to scale between 10 and 100,000 rows

The solution must prevent users from accessing one another's data.

Solution: You create a local temporary table in the stored procedure.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B

Section: (none)
Explanation

Explanation/Reference:

QUESTION 82
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are building a stored procedure that will be used by hundreds of users concurrently.

You need to store rows that will be processed later by the stored procedure. The object that stores the rows must meet the following requirements:
- Be indexable
- Contain up-to-date statistics
- Be able to scale between 10 and 100,000 rows

The solution must prevent users from accessing one another's data.

Solution: You create a table variable in the stored procedure.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 83
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are creating indexes in a data warehouse.

You have a dimension table named Table1 that has 10,000 rows. The rows are used to generate several reports.

The reports join a column that is the primary key.

The execution plan contains bookmark lookups for Table1.

You discover that the reports run slower than expected.

You need to reduce the amount of time it takes to run the reports.

Solution: You create a hash index on the primary key column.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Reference: https://msdn.microsoft.com/en-us/library/dn133190.aspx

QUESTION 84
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are creating indexes in a data warehouse.

You have a dimension table named Table1 that has 10,000 rows. The rows are used to generate several reports.

The reports join a column that is the primary key.

The execution plan contains bookmark lookups for Table1.

You discover that the reports run slower than expected.

You need to reduce the amount of time it takes to run the reports.

Solution: You create a clustered index on the primary key column.

Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 85
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are creating indexes in a data warehouse.

You have a dimension table named Table1 that has 10,000 rows. The rows are used to generate several reports.

The reports join a column that is the primary key.

The execution plan contains bookmark lookups for Table1.

You discover that the reports run slower than expected.

You need to reduce the amount of time it takes to run the reports.

Solution: You create a nonclustered index on the primary key column that includes the bookmark lookup columns.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 86
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database named DB1 that contains two tables named Sales.Customers and Sales.Orders. Sales.Customers has a foreign key relationship to a column named CustomerID in SalesOrders.

You need to recommend a query that returns all the customers. The query must also return the number of orders that each customer placed in 2016.

Solution: You recommend the following query:

```
SELECT
     Cust.CustomerName,
     NumberOfOrders = COUNT(*)
FROM
     Sales.Customers Cust
LEFT JOIN
     Sales.Orders Ord
          ON Cust.CustomerID = Ord.OrderID
GROUP BY
     Cust.CustomerName;
```

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Reference: https://docs.microsoft.com/en-us/sql/t-sql/functions/count-transact-sql?view=sql-server-2017

QUESTION 87
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database named DB1 that contains two tables named Sales.Customers and Sales.Orders. Sales.Customers has a foreign key relationship to a column named CustomerID in Sales.Orders.

You need to recommend a query that returns all the customers. The query must also return the number of orders that each customer placed in 2016.

Solution: You recommend the following query:

```
SELECT
     Cust.CustomerName,
     NumberOfOrders = COUNT(Ord.OrderID)
FROM
     Sales.Customers Cust
LEFT JOIN
     Sales.Orders Ord
          ON Cust.CustomerID = Ord.OrderID
GROUP BY
     Cust.CustomerName;
```

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 88
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that contains a single table named `tblVehicleRegistration`. The table is defined as follows:

Column name	Data type	Description
`VehicleId`	int	the primary key for the table
`RegistrationNumber`	varchar(5)	a vehicle registration number that contains only letters and numbers
`RegistrationDate`	date	the vehicle registration date
`UserId`	int	an identifier for the vehicle owner

You run the following query:

```
SELECT UserId FROM tblVehicleRegistration
WHERE RegistrationNumber = 20012
AND RegistrationDate > '2016-01-01'
```

The query output window displays the following error message: “Conversion failed when converting the varchar value ‘AB012’ to data type int.”

You need to resolve the error.

Solution: You modify the Transact-SQL statement as follows:

```
SELECT UserId FROM tblVehicleRegistration
WHERE CAST(RegistrationNumber AS int) = 20012
AND RegistrationDate > '2016-01-01'
```

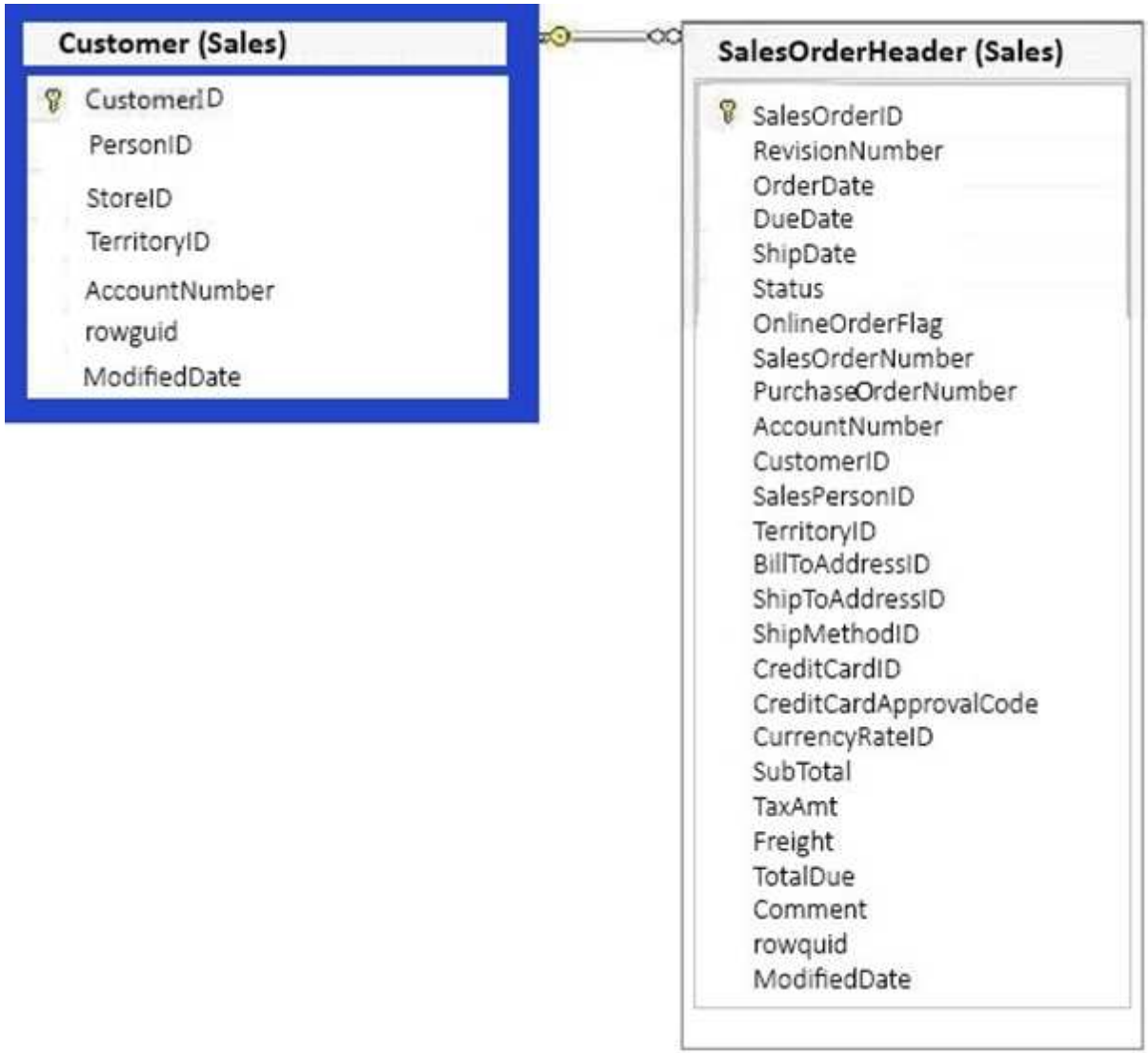
Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The Casting of the nvarchar into int will through am error.

QUESTION 89
You have a database that includes the tables shown in the exhibit. (Click the exhibit button.)



You need to create a list of all customers and the date that the customer placed their last order. For customers who have not placed orders, you must substitute 01/01/1990 for the date.

Which Transact-SQL statement should you run?

A.
```
SELECT C.CustomerID,  ISNULL (MAX(OrderDate), '19000101')
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

B.
```
SELECT C.CustomerID, SOH.SalesOrderID, MAX(OrderDate)
FROM Sales.Customer C LEFT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID, SOH.SalesOrderID
ORDER BY C.CustomerID
```

C.
```
SELECT C.CustomerID, MAX(OrderDate)
FROM Sales.Customer C RIGHT OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

D.
```
SELECT C.CustomerID, MAX(OrderDate)
FROM Sales.Customer C LEFT  OUTER JOIN Sales.SalesOrderHeader SOH
ON C.CustomerID = SOH.CustomerID
GROUP BY C.CustomerID
ORDER BY C.CustomerID
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 90
You develop and deploy a project management application. The application uses a Microsoft SQL Server database to store data. You are developing a software bug tracking add-on for the application.

The add-on must meet the following requirements:

• Allow case sensitive searches for product.
• Filter search results based on exact text in the description.
• Support multibyte Unicode characters.

You run the following Transact-SQL statement:

```
CREATE TABLE Bug (
      Id UNIQUEIDENTIFIER NOT NULL,
      Product NVARCHAR(255) NOT NULL,
      Description NVARCHAR(max) NOT NULL,
      DateCreated DATETIME NULL,
      ReportingUser VARCHAR(50) NULL
)
```

You need to ensure that users can perform searches of descriptions.

Which Transact-SQL statement should you run?

A.
```
DECLARE @term NVARCHAR(255)
...
SELECT Id, Description
FROM Bug
WHERE PATINDEX('%' + @term + '%', Description) > 0
```

B.
```
DECLARE @term NVARCHAR(255)
...
SELECT Id, Description
FROM Bug
WHERE DIFFERENCE(@term, Description) > 0
```

C.
```
DECLARE @term NVARCHAR(255)
...
SELECT Id, Description
FROM Bug
WHERE CHARINDEX('%' + @term + '%', Description) > 0
```

D.
```
DECLARE @term NVARCHAR(255)
...
SELECT Id, Description
FROM Bug
WHERE DIFFERENCE('%' + @term + '%', Description) > 0
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
References:
https://docs.microsoft.com/en-us/sql/t-sql/functions/patindex-transact-sql?view=sql-server-ver15

https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sql-server-2017

QUESTION 91
You are building a stored procedure named SP1 that calls a stored procedure named SP2.

SP2 calls another stored procedure named SP3 that returns a Recordset. The Recordset is stored in a temporary table.

You need to ensure that SP2 returns a text value to SP1.

What should you do?

A. Create a temporary table in SP2, and then insert the text value into the table.

B. Return the text value by using the ReturnValue when SP2 is called.
C. Add the text value to an OUTPUT parameter of SP2.
D. Create a table variable in SP2, and then insert the text value into the table.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 92
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are creating indexes in a data warehouse.

You have a dimension table named Table1 that has 10,000 rows. The rows are used to generate several reports.

The reports join a column that is the primary key.

The execution plan contains bookmark lookups for Table1.

You discover that the reports run slower than expected.

You need to reduce the amount of time it takes to run the reports.

Solution: You create a nonclustered index on the primary key column that does NOT include columns.

Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described?view=sql-server-2017

QUESTION 93
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named `Customer` by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
      CustomerID int IDENTITY(1,1) PRIMARY KEY,
      FirstName varchar(50) NULL,
      LastName varchar(50) NOT NULL,
      DateOfBirth date NOT NULL,
      CreditLimit money CHECK (CreditLimit < 10000),
      TownID int NULL REFERENCES Town(TownID),
      CreatedDate datetime DEFAULT(GETDATE())
)
```

You create a cursor by running the following Transact-SQL statement:

```
DECLARE cur CURSOR
FOR
SELECT LastName, CreditLimit
FROM Customer

DECLARE @LastName varchar(50), @CreditLimit money
OPEN cur
FETCH NEXT FROM cur INTO @LastName, @CreditLimit
WHILE (@@FETCH_STATUS = 0)
BEGIN
  FETCH NEXT FROM cur INTO @LastName, @CreditLimit
END
CLOSE cur
DEALLOCATE cur
```

If the credit limit is zero, you must delete the customer record while fetching data.

You need to add the DELETE statement.

Solution: You add the following Transact-SQL statement:

```
IF @CreditLimit = 0
  DELETE Customer
  WHERE CustomerID IN (SELECT CustomerID)
  FROM Customer WHERE LastName = @LastName)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)

Explanation

Explanation/Reference:
Explanation:
Use a WHERE CURRENT OF clause, which deletes at the current position of the specified cursor.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/delete-transact-sql

QUESTION 94
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named `Customer` by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
      CustomerID int IDENTITY(1,1) PRIMARY KEY,
      FirstName varchar(50) NULL,
      LastName varchar(50) NOT NULL,
      DateOfBirth date NOT NULL,
      CreditLimit money CHECK (CreditLimit < 10000),
      TownID int NULL REFERENCES Town(TownID),
      CreatedDate datetime DEFAULT(GETDATE())
)
```

You create a cursor by running the following Transact-SQL statement:

```
DECLARE cur CURSOR
FOR
SELECT LastName, CreditLimit
FROM Customer

DECLARE @LastName varchar(50), @CreditLimit money
OPEN cur
FETCH NEXT FROM cur INTO @LastName, @CreditLimit
WHILE (@@FETCH_STATUS = 0)
BEGIN
  FETCH NEXT FROM cur INTO @LastName, @CreditLimit
END
CLOSE cur
DEALLOCATE cur
```

If the credit limit is zero, you must delete the customer record while fetching data.

You need to add the `DELETE` statement.

Solution: You add the following Transact-SQL statement:

```
IF @CreditLimit = 0
  DELETE Customer
  WHERE CURRENT OF cur
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
CURRENT OF specifies that the DELETE is performed at the current position of the specified cursor.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/delete-transact-sql

QUESTION 95
You have a database that tracks customer complaints.

The database contains a table named Complaints that includes the following columns:

Column name	Column description
ComplaintID	This is a unique identifier for a complaint record.
CustomerTranscript	This column stores a transcribed verbatim record of a customer complaint.

You need to create a query that lists complaints about defective products. The report must include complaints where the exact phrase “defective product” occurs, as well as complaints where similar phrases occur.

Which Transact-SQL statement should you run?

A.
```
SELECT ComplaintID, ComplaintTranscript FROM Complaints
    WHERE CONTAINS(CustomerTranscript, 'defective')
    AND CONTAINS(CustomerTranscript, 'product')
```
B.
```
SELECT ComplaintID, CustomerTranscript FROM Complaints
    WHERE SOUNDEX('defective') = SOUNDEX('product')
```
C.
```
SELECT ComplaintID, CustomerTranscript FROM Complaints
    WHERE FREETEXT(CustomerTranscript, 'defective product')
```
D.
```
SELECT ComplaintID, Customer Transcript FROM Complaints
    WHERE CustomerTranscript like '%defective product%'
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sql-server-2017

QUESTION 96

You run the following Transact-SQL statement:

```
CREATE TABLE CourseParticipants
 (
  CourseID INT NOT NULL,
  CourseDate DATE NOT NULL,
  LocationDescription VARCHAR(100) NOT NULL,
  NumParticipants INT NOT NULL
 )
```

You need to create a query that returns the total number of attendees for each combination of CourseID, CourseDate, and the following locations: Lisbon, London, and Seattle. The result set should resemble the following:

	CourseID	CourseDate	Lisbon	London	Seattle
1	1	2018-02-01	NULL	NULL	15
2	2	2018-02-01	33	NULL	NULL
3	1	2018-02-02	NULL	20	NULL
4	1	2018-02-03	20	10	NULL
5	2	2018-02-03	NULL	20	NULL

Which Transact-SQL code segment should you run?

A.

```
SELECT *
   FROM CourseParticipants
   PIVOT(SUM(NumParticipants) FOR LocationDescription
   IN (Lisbon, London, Seattle))
```

B.
```
SELECT *
   FROM CourseParticipants
   PIVOT(SUM(NumParticipants) FOR LocationDescription
   IN (Lisbon, London, Seattle)) as PVTTable
```

C.
```
SELECT *
   FROM CourseParticipants
   UNPIVOT(SUM(NumParticipants) FOR LocationDescription
   IN (Lisbon, London, Seattle)
```

D.
```
SELECT *
   FROM CourseParticipants
   UNPIVOT(SUM(NumParticipants) FOR LocationDescription
   IN (Lisbon, London, Seattle) AS PVTTable
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
References: https://www.techonthenet.com/sql_server/pivot.php

QUESTION 97
You have a project management application. The application uses a Microsoft SQL Server database to store data. You are developing a software bug tracking add-on for the application.

The add-on must meet the following requirements:

- Allow case sensitive searches for product.
- Filter search results based on exact text in the description.
- Support multibyte Unicode characters.

You run the following Transact-SQL statement:

```
CREATE TABLE Bug (
      Id UNIQUEIDENTIFIER NOT NULL,
      Product NVARCHAR(255) NOT NULL,
      Description NVARCHAR(max) NOT NULL,
      DateCreated DATETIME NULL,
      ReportingUser VARCHAR(50) NULL
)
```

Users connect to an instance of the bug tracking application that is hosted in New York City. Users in Seattle must be able to display the local date and time for any bugs that they create.

You need to ensure that the DateCreated column displays correctly.

Which Transact-SQL statement should you run?

A.
```
SELECT Id,Product,
      DateCreated AT TIME ZONE 'Pacific Standard Time'
      FROM Bug
```

B.
```
SELECT Id,Product,
      DATEADD(hh, -8, DateCreated)
      FROM Bug
```

C.
```
SELECT Id,Product,
      TODATETIMEOFFSET(DateCreated, -8)
      FROM Bug
```

D.
```
SELECT Id,Product,
      CAST(DateCreated AS DATETIMEOFFSET)
      FROM Bug
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/functions/todatetimeoffset-transact-sql?view=sql-server-2017

QUESTION 98
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one

question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a table named Person that contains information about employees. Users are requesting a way to access specific columns from the Person table without specifying the Person table in the query statement. The columns that users can access will be determined when the query is running against the data. There are some records that are restricted, and a trigger will evaluate whether the request is attempting to access a restricted record.

You need to ensure that users can access the needed columns while minimizing storage on the database server.

What should you implement?

A. the COALESCE function
B. a view
C. a table-valued function
D. the TRY_PARSE function
E. a stored procedure
F. the ISNULL function
G. a scalar function
H. the TRY_CONVERT function

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/statements/create-view-transact-sql?view=sql-server-2017

QUESTION 99
You have a table that was created by running the following Transact-SQL statement:

```
CREATE TABLE Courses(
 CourseID INT IDENTITY(1,1) NOT NULL,
 Course VARCHAR(50) NULL)
```

You need to query the Courses table and return the result set as JSON. The output from the query must resemble the following format:

```
{
"Courses":
 [
  {
   "Course ID":1,
   "Name":"Database Development"
  },
  {
   "Course ID":2,
   "Name":"Programming in C#"
  }
 ]
}
```

Which Transact-SQL statement should you run?

A.
```
SELECT CourseID AS [Course ID], Course as Name
FROM Courses
FOR JSON PATH('Courses')
```

B.
```
SELECT CourseID AS 'Course ID', Course AS Name
FROM Courses
FOR JSON ROOT('Courses')
```

C.
```
SELECT CourseID AS [Course ID], Course AS Name
FROM Courses
FOR JSON AUTO, ROOT('Courses')
```

D.
```
SELECT CourseID AS 'Course ID', Course AS Name
FROM Courses
FOR JSON AUTO, INCLUDE_NULL_VALUES('Courses')
```

Correct Answer: C

Section: (none)
Explanation

Explanation/Reference:
Explanation:
Incorrect Aswers:
D: The input would cause error as INCLUDE_NULL_VALUES doesn't accepts any input parameters.

References:
https://docs.microsoft.com/en-us/sql/relational-databases/json/include-null-values-in-json-include-null-values-option?view=sql-server-2017

QUESTION 100
A company's sales team is divided in two different regions, North and South. You create tables named SalesNorth and SalesSouth. The SalesNorth table stores sales data from the North region. The SalesSouth table stores sales data from the South region. Both tables use the following structure:

Column name	Data type	Allow nulls
region	CHAR(1)	Yes
salesID	INT	Yes
customer	VARCHAR(150)	Yes
amount	MONEY	Yes

You need to create a consolidated result set that includes all records from both tables.

Which Transact-SQL statement should you run?

A.
```
SELECT SalesNorth.salesID, SalesNorth.customer,
SalesNorth.amount, SalesSouth.SalesID, SalesSouth.customer,
SalesSouth.amount
FROM SalesNorth
JOIN SalesSouth ON SalesNorth.salesID = SalesSouth.salesID
```

B.
```
SELECT SalesNorth.salesID, SalesNorth.customer,
SalesNorth.amount, SalesSouth.salesID, SalesSouth.customer,
SalesSouth.amount
FROM SalesNorth
LEFT JOIN SalesSouth
ON SalesNorth.salesID=SalesSouth.salesID
```

C.
```
SELECT salesID, customer, amount
FROM SalesNorth
UNION ALL
```

```
   SELECT salesID, customer, amount
   FROM SalesSouth
```
D.
```
   SELECT salesID, customer, amount
   FROM SalesNorth
   UNION
   SELECT salesID, customer, amount
   FROM SalesSouth
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/queries/from-transact-sql?view=sql-server-2017

QUESTION 101
You have a date related query that would benefit from an indexed view.

You need to create the indexed view.

Which two Transact-SQL functions can you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A. `DATEADD`
B. `AT TIME ZONE`
C. `GETUTCDATE`
D. `DATEDIFF`

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:
Explanation:
An indexed view will accept only deterministic functions.

Incorrect Answers:
C: GETUTCDATE is not deterministic.

References:
https://docs.microsoft.com/en-us/sql/t-sql/functions/date-and-time-data-types-and-functions-transact-sql?view=sql-server-2017#DateandTimeFunctions

QUESTION 102
You are developing a database to track employee progress relative to training goals. You run the following Transact-SQL statements:

```
CREATE TABLE Employees(
  EmployeeID INT IDENTITY(1,1) NOT NULL,
  Name VARCHAR(150) NULL,
  CONSTRAINT PK_Employees PRIMARY KEY CLUSTERED (
   EmployeeID ASC
   ) WITH (STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF) ON PRIMARY
   ) ON PRIMARY
CREATE TABLE CoursesTaken(
  CourseID INT NOT NULL,
  EmployeeID INT NOT NULL,
  CourseTakenOn DATE NULL,
  CONSTRAINT PK_CoursesTaken PRIMARY KEY CLUSTERED (
   CourseID ASC, EmployeeID ASC
   ) WITH (STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF) ON PRIMARY
CREATE TABLE Courses(
  CourseID INT IDENTITY(1,1) NOT NULL,
  Course VARCHAR(50) NULL,
  CONSTRAINT PK_Courses PRIMARY KEY CLUSTERED (
   CourseID ASC
   ) WITH (STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF) ON PRIMARY
   ) ON PRIMARY
```

You must build a report that shows all Employees and the courses that they have taken. Employees that have not taken training courses must still appear in the report. The report must display NULL in the course column for these employees.

You need to create a query for the report.

Which Transact-SQL code statement should you run?

A.
```
SELECT e.Name, c.Course
FROM dbo.Courses c
JOIN dbo.CoursesTaken ct ON c.CourseID = ct.CourseID
INNER JOIN dbo.Employees e ON ct.EmployeeID = e.EmployeeID
```

B.
```
SELECT e.Name, c.Course
FROM dbo.Courses c
JOIN dbo.CoursesTaken ct ON c.CourseID = ct.CourseID
JOIN dbo.Employees e ON ct.EmployeeID = e.EmployeeID
```

C.
```
SELECT e.Name, c.Course
FROM dbo.Courses c
JOIN dbo.CoursesTaken ct ON c.CourseID = ct.CourseID
LEFT JOIN dbo.Employees e ON ct.EmployeeID = e.EmployeeID
```

D.
```
SELECT e.Name, c.Course
FROM dbo.Courses c
JOIN dbo.CoursesTaken ct ON c.CourseID = ct.CourseID
RIGHT JOIN dbo.Employees e ON ct.EmployeeID = e.EmployeeID
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Employee data should be there and employee is in the end and Left join gives complete set on left side not on the right side

Incorrect Answers:
A, B: JOIN and INNER JOIN displays only the rows that have a match in both joined tables
C: Employee data should be there and employee is in the end and Left join gives complete set on left side not on the right side

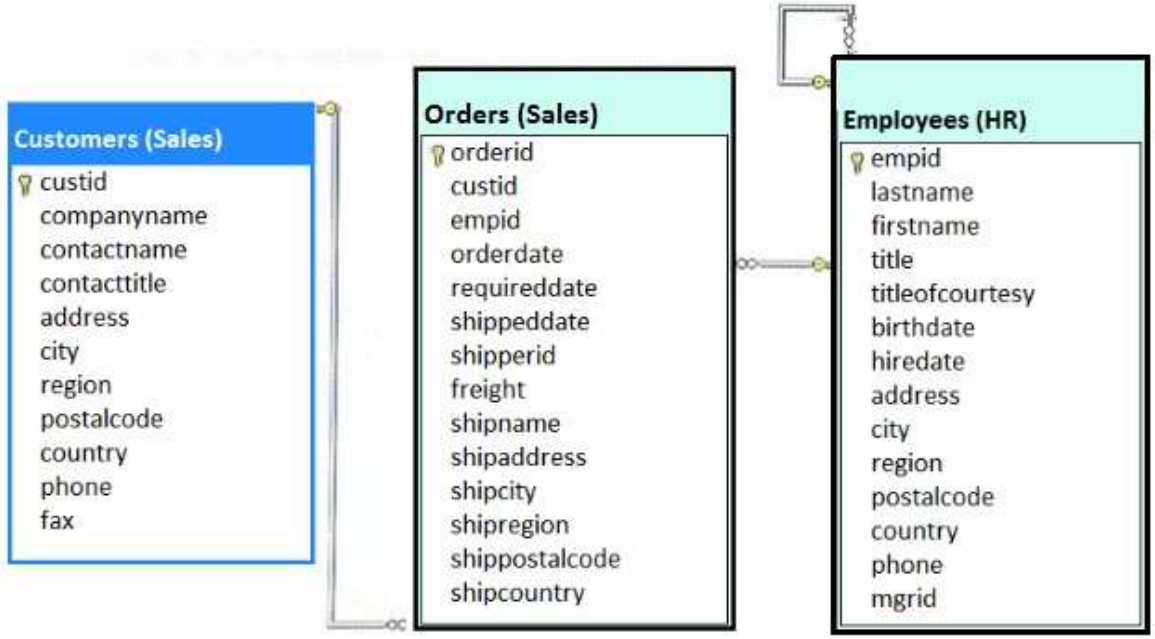
References:
https://www.mssqltips.com/sqlservertip/1667/sql-server-join-example/

QUESTION 103
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might

meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that includes the tables shown in the exhibit (Click the Exhibit button.)



You need to create a Transact-SQL query that returns the following information:

- the customer number
- the customer contact name
- the date the order was placed, with a name of DateofOrder
- a column named Salesperson, formatted with the employee first name, a space, and the employee last name
- orders for customers where the employee identifier equals 4

The output must be sorted by order date, with the newest orders first.

The solution must return only the most recent order for each customer.

Solution: You run the following Transact-SQL statement:

```
SELECT c.custid, contactname, MAX(orderdate) AS DateofOrder,
e.firstname + '' + e.lastname AS Salesperson
FROM Sales.Customers AS c
INNER JOIN Sales.Orders AS o ON c.custid = o.custid
INNER JOIN HR.Employees AS e ON o.empid = e.empid
WHERE o.empid = 4
GROUP BY c.custid, contactname, Salesperson
ORDER BY DateofOrder DESC
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
We cannot use the column alias Salesperson in the GROUP BY clause, since in Oracle and SQL Server, you cannot use a term in the GROUP BY clause that you define in the SELECT clause because the GROUP BY is executed before the SELECT clause.

References: https://stackoverflow.com/questions/3841295/sql-using-alias-in-group-by/3841804

QUESTION 104
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database named DB1 that contains two tables named Sales.Customers and Sales.Orders. Sales.Customers has a foreign key relationship to a column named CustomerID in Sales.Orders.

You need to recommend a query that returns all the customers. The query must also return the number of orders that each customer placed in 2016.

Solution: You recommend the following query:

```
SELECT
     Cust.CustomerName,
     NumberOfOrders = COUNT(Ord.OrderID)
FROM
     Sales.Customers Cust
LEFT JOIN
     Sales.Orders Ord
          ON Cust.CustomerID = Ord.OrderID
GROUP BY
     Cust.CustomerName;
HAVING
    COUNT (Ord.OrderID) > 0;
```

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/functions/count-transact-sql?view=sql-server-2017

QUESTION 105
You are performing a code review of stored procedures. Code at line SP03 fails to run (Line numbers are included for reference only.)

```
SP01 BEGIN TRY
SP02  BEGIN TRANSACTION
SP03  . . .
SP04  COMMIT TRANSACTION
SP05 END TRY
SP06 BEGIN CATCH
SP07
SP08  ROLLBACK TRANSACTION
SP09 END CATCH
```

You need to ensure that transactions are rolled back when an error occurs.

Which Transact-SQL segment should you insert at line SP07?

A. `If @@Error <> 0`
B. `If @@ TRANCOUNT = 0`
C. `If @@ TRANCOUNT > 0`
D. `If @@ Error = 0`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Using TRY...CATCH in a transaction
The following example shows how a TRY...CATCH block works inside a transaction. The statement inside the TRY block generates a constraint violation error.

```
BEGIN TRANSACTION;

BEGIN TRY
   -- Generate a constraint violation error.
   DELETE FROM Production.Product
   WHERE ProductID = 980;
END TRY
BEGIN CATCH
   SELECT
```

```
        ERROR_NUMBER() AS ErrorNumber
        ,ERROR_SEVERITY() AS ErrorSeverity
        ,ERROR_STATE() AS ErrorState
        ,ERROR_PROCEDURE() AS ErrorProcedure
        ,ERROR_LINE() AS ErrorLine
        ,ERROR_MESSAGE() AS ErrorMessage;

    IF @@TRANCOUNT > 0
        ROLLBACK TRANSACTION;
END CATCH;

IF @@TRANCOUNT > 0
    COMMIT TRANSACTION;
GO
```

References: https://docs.microsoft.com/en-us/sql/t-sql/language-elements/try-catch-transact-sql

QUESTION 106
You have a database that tracks customer complaints.

The database contains a table named Complaints that includes the following columns:

Column name	Column description
ComplaintID	This is a unique identifier for a complaint record.
CustomerTranscript	This column stores a transcribed verbatim record of a customer complaint.

You need to create a query that lists complaints about defective products. The report must include complaints where the exact phrase “defective product” occurs, as well as complaints where similar phrases occur.

A.
```
SELECT ComplaintID, CustomerTranscript FROM Complaints
INNER JOIN FREETEXTABLE (Complaints, CustomerTranscript, 'defective product') AS Matches
ON Complaints.ComplaintID = Matches.[KEY]
```

B.
```
SELECT ComplaintID, CustomerTranscript FROM Complaints
INNER JOIN CONTAINSTABLE(Complaints, CustomerTranscript, '%defective% product%') AS Matches
ON Complaints.ComplaintID = Matches.[KEY]
```

C.
```
SELECT ComplaintID, CustomerTranscript, FROM Complaints
WHERE CONTAINS(CustomerTranscript, 'defective product')
```

D.
```
SELECT ComplaintID, ComplaintTranscript FROM Complaints
WHERE CONTAINS(CustomerTranscript,'defective') AND CONTAINS (CustomerTranscript, 'product')
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sql-server-2017

QUESTION 107
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named `Customer` by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
      CustomerID int IDENTITY(1,1) PRIMARY KEY,
      FirstName varchar(50) NULL,
      LastName varchar(50) NOT NULL,
      DateOfBirth date NOT NULL,
      CreditLimit money CHECK (CreditLimit < 10000),
      TownID int NULL REFERENCES Town(TownID),
      CreatedDate datetime DEFAULT(GETDATE())
)
```

You create a cursor by running the following Transact-SQL statement:

```
DECLARE cur CURSOR
FOR
SELECT LastName, CreditLimit
FROM Customer

DECLARE @LastName varchar(50), @CreditLimit money
OPEN cur
FETCH NEXT FROM cur INTO @LastName, @CreditLimit
WHILE (@@FETCH_STATUS = 0)
BEGIN
  FETCH NEXT FROM cur INTO @LastName, @CreditLimit
END
CLOSE cur
DEALLOCATE cur
```

If the credit limit is zero, you must delete the customer record while fetching data.

You need to add the DELETE statement.

Solution: You add the following Transact-SQL statement:

```
IF @CreditLimit = 0
   DELETE TOP (1) Customer
   WHERE LastName = @LastName
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Use a WHERE CURRENT OF clause, which deletes at the current position of the specified cursor.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/delete-transact-sql

QUESTION 108
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are building a stored procedure that will be used by hundreds of users concurrently.

You need to store rows that will be processed later by the stored procedure. The object that stores the rows must meet the following requirements:

- Be indexable
- Contain up-to-date statistics
- Be able to scale between 10 and 100,000 rows

The solution must prevent users from accessing one another's data.

Solution: You create a user-defined table in the stored procedure.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 109
You run the following Transact-SQL statement:

```
CREATE TABLE CourseParticipants
(
CourseID INT NOT NULL,
CourseDate DATE NOT NULL,
LocationDescription VARCHAR(100) NOT NULL,
NumParticipants INT NOT NULL
)
```

You use the table to store data about training courses: when they finished the location, and the number of participants in the courses.

You need to display a result set that shows aggregates for all possible combinations of the number of participants.

Which Transact-SQL statement should you run?

A.
```
SELECT CourseID, CourseDate, SUM(NumParticipants)
FROM CourseParticipants
GROUP BY CourseID, CourseDate
```

B.
```
SELECT CourseID, CourseDate, SUM(DISTINCT NumParticipants)
FROM CourseParticipants
GROUP BY CourseID, CourseDate
```

C.
```
SELECT CourseID, CourseDate, SUM(NumParticipants)
FROM CourseParticipants
GROUP BY CourseID, CourseDate WITH CUBE
```

D.
```
SELECT CourseID, CourseDate, SUM(DISTINCT NumParticipants)
```

```
FROM CourseParticipants
GROUP BY CourseID, CourseDate WITH ROLLUP
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The WITH CUBE clause causes the query to compute all possible totals

References:
https://blogs.msdn.microsoft.com/craigfr/2007/09/27/aggregation-with-cube/

QUESTION 110
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named Customer_CRMSystem and Customer_HRSystem. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The tables include the data below:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for CustomerCode can be uniquely identified by CustomerName.

You need to display customers who appear in both tables and have a non-null `CustomerCode`.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.

```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.

```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
INTERSECT returns distinct rows that are output by both the left and right input queries operator.

Incorrect Answers:
A: INNER JOIN returns records that have matching values in both tables but it returns duplicate records.

C: LEFT OUTER JOIN returns ALL records from the left table, and the matched records from the right table.

D: EXCEPT returns distinct rows from the left input query that are not output by the right input query.

E, F: UNION and UNION ALL combines the results of two or more queries into a single result set that includes all the rows that belong to all queries in the union.

G: CROSS JOIN returns all possible combinations of data from both tables.

H: FULL OUTER JOIN returns all records when there is a match in either left or right table

Note: NULL values are treated as distinct values in join operations.

References:
https://docs.microsoft.com/en-us/sql/relational-databases/performance/joins?view=sql-server-2017
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/set-operators-except-and-intersect-transact-sql?view=sql-server-2017
https://docs.microsoft.com/en-us/sql/t-sql/language-elements/set-operators-union-transact-sql?view=sql-server-2017
https://www.w3schools.com/sql/sql_join.asp

QUESTION 111
You have a database named MyDb. You run the following Transact-SQL statements:

```
CREATE TABLE tblRoles (
     RoleId int NOT NULL IDENTITY(1,1) PRIMARY KEY CLUSTERED,
     RoleName varchar(20) NOT NULL
)
CREATE TABLE tblUsers (
     UserId int NOT NULL IDENTITY(10000,1) PRIMARY KEY CLUSTERED,
     UserName varchar(20) UNIQUE NOT NULL,
     RoleId int NULL FOREIGN KEY REFERENCES tbRoles(RoleId),
     IsActive bit NOT NULL DEFAULT(1)
)
```

A value of 1 in the IsActive column indicates that a user is active.

You need to create a count for active users in each role. If a role has no active users, you must display a zero as the active users count.

Which Transact-SQL statement should you run?

A.
```
SELECT R.RoleName, COUNT(U.UserId) AS ActiveUserCount FROM tblRoles R
LEFT JOIN (SELECT UserId, RoleId FROM tblUsers WHERE IsActive = 1) U ON U.RoleId = R.RoleId
GROUP BY R.RoleId, R.RoleName
```

B.
```
SELECT R.RoleName, U.ActiveUserCount FROM tblRoles R CROSS JOIN
(SELECT COUNT(*) AS ActiveUserCount FROM tblUsers WHERE IsActive = 1) U
```

C.
```
Select R.RoleName, U.ActiveUserCount FROM tblRoles R CROSS JOIN
(SELECT RoleId, COUNT(*) AS ActiveUserCount FROM tblUsers WHERE IsActive = 1
GROUP BY RoleId) U
```

D.
```
SELECT R.RoleName, COUNT(*) ActiveUserCount FROM tblRoles R
INNER JOIN tblUsers U ON U.RoleId = R.RoleId
WHERE U.IsActive = 1 Group BY R.RoleId, R.RoleName
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 112
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a database that tracks orders and deliveries for customers in North America. The database contains the following tables:

Sales.Customers

Column	Data type	Notes
CustomerID	int	primary key
CustomerCategoryID	int	foreign key to the Sales.CustomerCategories table
PostalCityID	int	foreign key to the Application.Cities table
DeliveryCityID	int	foreign key to the Application.Cities table
AccountOpenedDate	datetime	does not allow null values
StandardDiscountPercentage	int	does not allow null values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow null values
DeliveryLocation	geography	does not allow null values
PhoneNumber	nvarchar(20)	does not allow null values data is formatted as follows: 425-555-0187

Application.Cities

Column	Data type	Notes
CityID	int	primary key
LatestRecordedPopulation	bigint	null values are permitted

Sales.CustomerCategories

Column	Data type	Notes
CustomerCategoryID	int	primary key
CustomerCategoryName	nvarchar(50)	does not allow null values

Your company is developing a new social application that connects customers to each other based on the distance between their delivery locations.

You need to write a query that returns the nearest customer.

Solution: You run the following Transact-SQL statement:

```
SELECT TOP 1 B.CustomerID, Min( A.DeliveryLocation.ShortestLineTo(B.DeliveryLocation).STLength()) AS Dist
FROM Sales.Customers AS A
CROSS JOIN Sales.Customers AS B
WHERE A.CustomerID = @custID AND A.CustomerID <> B.CustomerID
GROUP BY B.CustomerID
ORDER BY Dist
```

The variable @custID is set to a valid customer.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
It is better to use add a WITH ... AS statement in this solution.

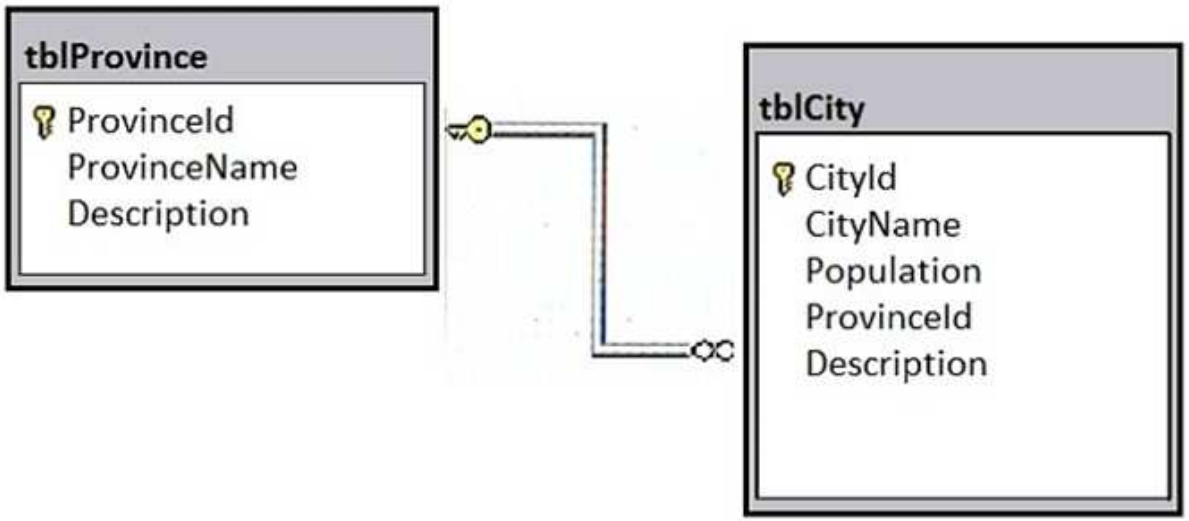
References:
https://blogs.msdn.microsoft.com/isaac/2008/10/22/nearest-neighbors/

https://docs.microsoft.com/en-us/sql/t-sql/spatial-geometry/shortestlineto-geometry-data-type

QUESTION 113
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A database has two tables as shown in the following database diagram:



You need to list all provinces that have at least two large cities. A large city is defined as having a population of at least one million residents. The query must return the following columns:

- tblProvince.ProvinceId
- tblProvince.ProvinceName
- a derived column named LargeCityCount that presents the total count of large cities for the province

Solution: You run the following Transact-SQL statement:

```
SELECT P.ProvinceId, P.ProvinceName, CitySummary.LargeCityCount
FROM tblProvince P
OUTER APPLY (
  SELECT COUNT(*) AS LargeCityCount FROM tblCity C
  WHERE C.Population>=1000000 AND C.ProvinceId = P. ProvinceId
) CitySummary
WHERE CitySummary.LargeCityCount >=2
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
We should use CROSS APPLY rather than OUTER APPLY.

Note:
The APPLY operator allows you to invoke a table-valued function for each row returned by an outer table expression of a query. The table-valued function acts as the right input and the outer table expression acts as the left input. The right input is evaluated for each row from the left input and the rows produced are combined for the final output. The list of columns produced by the APPLY operator is the set of columns in the left input followed by the list of columns returned by the right input.

There are two forms of APPLY: CROSS APPLY and OUTER APPLY. CROSS APPLY returns only rows from the outer table that produce a result set from the table-valued function. OUTER APPLY returns both rows that produce a result set, and rows that do not, with NULL values in the columns produced by the table-valued function.

References:
https://technet.microsoft.com/en-us/library/ms175156(v=sql.105).aspx

QUESTION 114

Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database that contains tables named `Customer_CRMSystem` and `Customer_HRSystem`. Both tables use the following structure:

Column name	Data type	Allow null
CustomerID	int	No
CustomerCode	char(4)	Yes
CustomerName	varchar(50)	No

The tables include the data below:

Customer_CRMSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS9	Almudena
3	CUS4	Jack
4	NULL	Jane
5	NULL	Francisco

Customer_HRSystem

CustomerID	CustomerCode	CustomerName
1	CUS1	Roya
2	CUS2	Jose
3	CUS9	Almudena
4	NULL	Jane

Records that contain null values for `CustomerCode` can be uniquely identified by `CustomerName`.

You need to display customers that have a proper `CustomerCode` and do not appear in the `Customer_HRSystem` table.

Which Transact-SQL statement should you run?

A.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
INNER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

B.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
INTERSECT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

C.
```
SELECT c.CustomerCode, c.CustomerName
FROM Customer_CRMSystem c
LEFT OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode
WHERE h.CustomerCode IS NULL AND c.CustomerCode IS NOT NULL
```

D.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
EXCEPT
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

E.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

F.
```
SELECT CustomerCode, CustomerName
FROM Customer_CRMSystem
UNION ALL
SELECT CustomerCode, CustomerName
FROM Customer_HRSystem
```

G.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
CROSS JOIN Customer_HRSystem h
```

H.
```
SELECT c.CustomerCode, c.CustomerName, h.CustomerCode, h.CustomerName
FROM Customer_CRMSystem c
FULL OUTER JOIN Customer_HRSystem h
ON c.CustomerCode = h.CustomerCode AND c.CustomerName = h.CustomerName
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
To return records from the left table which are not found in the right table use Left outer join and filter out the rows with NULL values for the attributes from the right

side of the join.

Reference:
https://stackoverflow.com/questions/25685545/how-to-return-rows-from-left-table-not-found-in-right-table

QUESTION 115
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

You have a database for a banking system. The database has two tables named tblDepositAcct and tblLoanAcct that store deposit and loan accounts, respectively. Both tables include the following columns:

Column name	Data type	Primary key column	Description
CustNo	int	No	This column uniquely identifies a customer in the bank. A customer may have both deposit and loan accounts.
AcctNo	int	Yes	This column uniquely identifies an account in the bank.
ProdCode	varchar(3)	No	This column identifies the product type of an account. A customer may have multiple accounts for the same product type.

You need to determine the total number of different customers who have at least one account.

Which Transact-SQL statement should you run?

A.
```
SELECT COUNT(*)
FROM (SELECT AcctNo
FROM tblDepositAcct
INTERSECT
SELECT AcctNo
FROM tblLoanAcct) R
```

B.
```
SELECT COUNT(*)
FROM (SELECT CustNo
FROM tblDepositAcct
UNION
SELECT CustNo
FROM tblLoanAcct) R
```

C.
```
SELECT COUNT(*)
FROM (SELECT CustNo
FROM tblDepositAcct
UNION ALL
SELECT CustNo
FROM tblLoanAcct) R
```

D.
```
SELECT COUNT (DISTINCT D.CustNo)
FROM tblDepositAcct D, tblLoanAcct L
WHERE D.CustNo = L.CustNo
```

E.
```
SELECT COUNT(DISTINCT L.CustNo)
FROM tblDepositAcct D
RIGHT JOIN tblLoanAcct L ON D.CustNo = L.CustNo
WHERE D.CustNo IS NULL
```

F.
```
SELECT COUNT(*)
FROM (SELECT CustNo
FROM tblDepositAcct
EXCEPT
```

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E
F. Option F
G. Option G
H. Option H

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 116
A company produces and ships concrete blocks. You store information about factory and shipping centers in tables that were created by running the following Transact-SQL statements:

```
CREATE TABLE Factory (
  FactoryID INT NOT NULL,
  Region NVARCHAR(50) NOT NULL,
  Capacity INT NOT NULL
)

CREATE TABLE ShippingCenter (
  ShippingCenterID INT NOT NULL,
  Region NVARCHAR(50) NOT NULL,
  Trucks INT NOT NULL
)
```

You must create a report that shows the regions that have a factory but do not have a shipping center.

You need to create the query for the report.

Which two Transact-SQL statements can you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A.
```
SELECT Region
FROM Factory
WHERE NOT EXISTS
(SELECT * FROM ShippingCenter WHERE ShippingCenter.Region = Factory.Region)
```

B.
```
SELECT Factory.Region
FROM Factory
INNER JOIN
ShippingCenter ON ShippingCenter.Region = Factory.Region
```

C.
```
SELECT Region
FROM Factory
where Region NOT IN
(SELECT Region FROM ShippingCenter)
```

D.
```
SELECT Factory.Region
FROM Factory
LEFT JOIN
ShippingCenter ON ShippingCenter.Region = Factory.Region
```

Correct Answer: AC

Section: (none)
Explanation

Explanation/Reference:

QUESTION 117
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a table named `Customer` by running the following Transact-SQL statement:

```
CREATE TABLE Customer (
      CustomerID int IDENTITY(1,1) PRIMARY KEY,
      FirstName varchar(50) NULL,
      LastName varchar(50) NOT NULL,
      DateOfBirth date NOT NULL,
      CreditLimit money CHECK (CreditLimit < 10000),
      TownID int NULL REFERENCES Town(TownID),
      CreatedDate datetime DEFAULT(GETDATE())
)
```

You create a cursor by running the following Transact-SQL statement:

```
DECLARE cur CURSOR
FOR
SELECT LastName, CreditLimit
FROM Customer

DECLARE @LastName varchar(50), @CreditLimit money
OPEN cur
FETCH NEXT FROM cur INTO @LastName, @CreditLimit
WHILE (@@FETCH_STATUS = 0)
BEGIN
  FETCH NEXT FROM cur INTO @LastName, @CreditLimit
END
CLOSE cur
DEALLOCATE cur
```

If the credit limit is zero, you must delete the customer record while fetching data.

You need to add the `DELETE` statement.

Solution: You add the following Transact-SQL statement:

```
IF @CreditLimit = 0
   DELETE Customer
   WHERE LastName = @LastName)
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference: