70-761.exam.87q

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

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70-761

Querying Data with Transact-SQL

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 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 new values
StandardDiscountPercentage	int	does not allow new values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow new values
DeliveryLocation	geography	does not allow new values
PhoneNumber	nvarchar(20)	does not allow new 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 2
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
```

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

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 3
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 plan
- 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 4
HOTSPOT

You need to develop a Transact-SQL statement that meets the following requirements:
- The statement must return a custom error when there are problems updating a table.
- The error number must be value50555.
- Theerror severity level must be14.
- A Microsoft SQL Server alert must be triggered when the error condition occurs.

Which Transact-SQL segment should you use for each requirement? To answer, select the appropriate Transact-SQL segments in the answer area.

Hot Area:

Answer Area

Requirement	Transact-SQL segment
Check for error condition	BEGIN TRANSACTION...END TRANSACTION TRY_PARSE BEGIN...END TRY...CATCH
Custom error implementation	THOW 50555, 'The update failed.', 1 RAISERROR (50555, 14,1, 'The update failed.') WITH LOG RAISERROR (50555, 14,1 'The update failed.') WITH NOWAIT RAISERROR (50555, 'The update failed.')

Correct Answer:

Answer Area

Requirement	Transact-SQL segment
Check for error condition	BEGIN TRANSACTION...END TRANSACTION TRY_PARSE BEGIN...END TRY...CATCH
Custom error implementation	THOW 50555, 'The update failed.', 1 RAISERROR (50555, 14,1, 'The update failed.') WITH LOG RAISERROR (50555, 14,1 'The update failed.') WITH NOWAIT RAISERROR (50555, 'The update failed.')

Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: TRY…CATCH
The TRY...CATCH Transact-SQL construct implements error handling for Transact-SQL that is similar to the exception handling in the Microsoft Visual C# and Microsoft Visual C++ languages. A group of Transact-SQL statements can be enclosed in a TRY block. If an error occurs in the TRY block, control is passed to another group of statements that is enclosed in a CATCH block.

Box 2: RAISERROR(50555, 14, 1 'The update failed.") WITH LOG
We must use RAISERROR to be able to specify the required severity level of 14, and we should also use the LOG option, which Logs the error in the error log and the application log for the instance of the Microsoft SQL Server Database Engine, as this enable a MS MS SQL SERVER alert to be triggered.

Note: RAISERROR generates an error message and initiates error processing for the session. RAISERROR can either reference a user-defined message stored in the sys.messages catalog view or build a message dynamically. The message is returned as a server error message to the calling application or to an associated CATCH block of a TRY…CATCH construct.

Incorrect Answers:
Not THROW: THROW does not have a severity parameter.

References:
https://msdn.microsoft.com/en-us/library/ms175976.aspx
https://msdn.microsoft.com/en-us/library/ms178592.aspx

QUESTION 5
DRAG DROP

You have a database that includes the following tables:

You need to create a list of all customer IDs and the date of the last order that each customer placed. If the customer has not placed any orders, you must return the date January 1, 1900. The column names must be CustomerID and LastOrderDate.

Which four Transact-SQL segments should you use to develop the solution? To answer, move the appropriate Transact-SQL segments from the list of Transact-SQL segments to the answer area and arrange them in the correct order.

Select and Place:

Transact-SQL segments

```
GROUP BY c.custid
```

```
FROM sales.Customers AS c INNER
JOIN sales.Orders AS o
```

```
ON c.orderid = o.orderid
```

```
SELECT c.custid AS CustomerID,
MAX(o.orderdate) AS LastOrderDate
```

```
FROM sales.Customers AS c LEFT
OUTER JOIN sales.Orders AS o
```

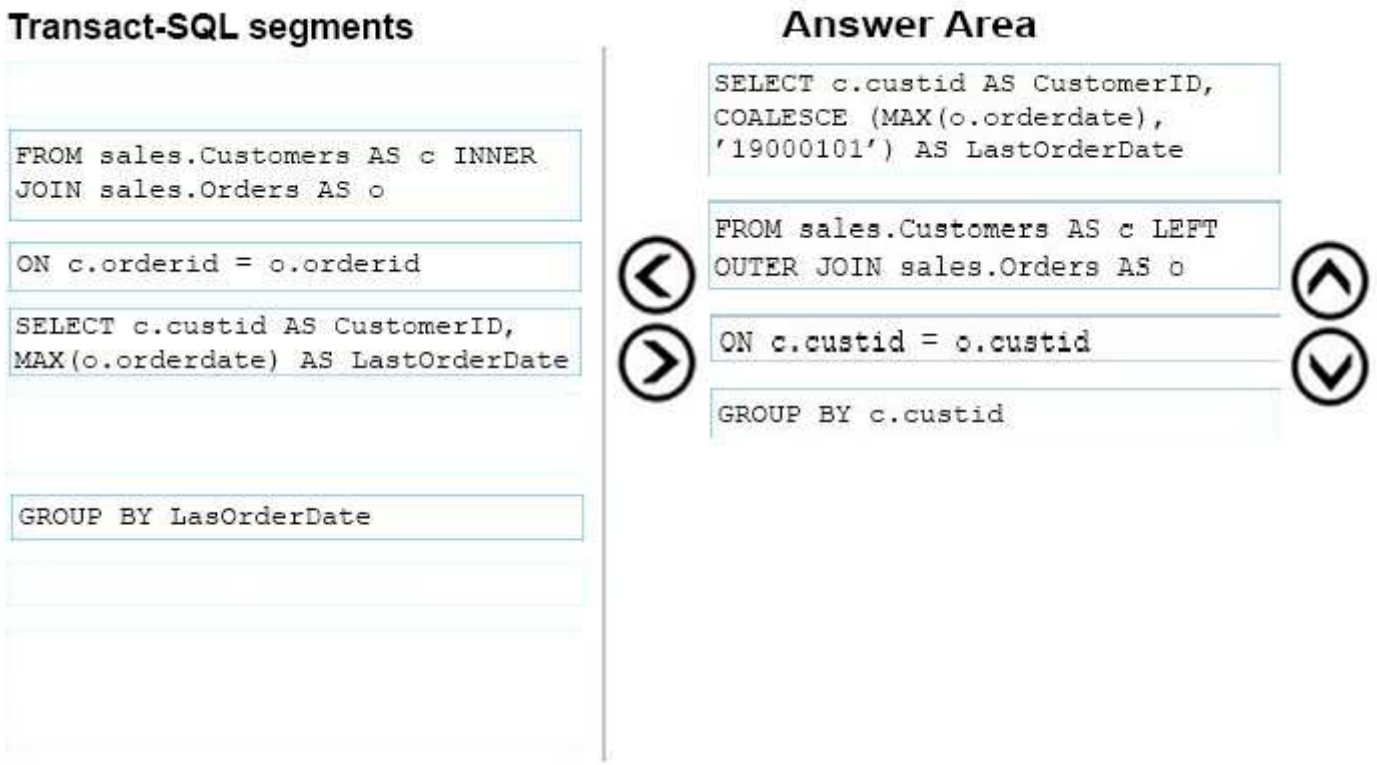
```
GROUP BY LasOrderDate
```

```
ON c.custid = o.custid
```

```
SELECT c.custid AS CustomerID,
COALESCE (MAX(o.orderdate),
'19000101') AS LastOrderDate
```

Answer Area

Correct Answer:



Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: SELECT..COALESCE…
The COALESCE function evaluates the arguments in order and returns the current value of the first expression that initially does not evaluate to NULL.

Box 2: ..LEFT OUTER JOIN..
The LEFT JOIN (LEFT OUTER JOIN) keyword returns all rows from the left table (table1), with the matching rows in the right table (table2). The result is NULL in the right side when there is no match. A customer might have no orders so the right table must be allowed have a NULL value.

Box 3: ON c.custid = o.custid

We JOIN on the custID column, which is available in both tables.

Box 4: GROUP BY c.custid

References:
https://technet.microsoft.com/en-us/library/ms189499(v=sql.110).aspx
http://www.w3schools.com/sql/sql_join_left.asp

QUESTION 6
SIMULATION

You create a table named Sales.Orders by running the following Transact-SQL statement:

```
CREATE TABLE Sales.Orders (
     OrderID int NOT NULL,
     OrderDate date NULL,
     ShippedDate date NULL,
     Status varchar(10),
     CONSTRAINT PK_ORDERS PRIMARY KEY CLUSTERED
)
```

You need to write a query that meets the following requirements:
- removes orders from the table that were placed before January 1, 2012
- uses the date format of YYYYMMDD
- ensures that the order has been shipped before deleting the record

Construct the query using the following guidelines:
- use one-part column names and two-part table names
- do not use functions
- do not surround object names with square brackets
- do not use variables
- do not use aliases for column names and table names

Keywords

ADD
ALL
ALTER
AND
ANY
AS
ASC
AUTHORIZATION
BACKUP
BEGIN
BETWEEN
BREAK
BROWSE
BULK
BY
CASCADE
CASE
CHECK
CHECKPOINT
CLOSE
CLUSTERED
COALESCE
COLLATE
COLUMN
COMMIT
COMPUTE
CONCAT
CONSTRAINT
CONTAINS
CONTAINSTABLE
CONTINUE
CONVERT
CREATE
CROSS
CURRENT
CURRENT_DATE
EXIT
EXTERNAL
FETCH
FILE
FILLFACTOR
FORFOREIGN
FREETEXT
FREETEXTTABLE
FROM
FULL
FUNCTION
GOTO
GRANT
GROUP
HAVING
HOLDLOCK
IDENTITY
IDENTITY_INSERT
IDENTITYCOL
IF
IN
INDEX
INNER
INSERT
INTERSECT
INTO
IS
JOIN
KEY
KILL
LEFT
LIKE
LINENO
LOAD
MERGE
PROC
PROCEDURE
PUBLIC
RAISERROR
READ
READTEXT
RECONFIGURE
REFERENCES
REPLICATION
RESTORE
RESTRICT
RETURN
REVERT
REVOKE
RIGHT
ROLLBACK
ROWCOUNT
ROWGUIDCOL
RULE
SAVE
SCHEMA
SECURITYAUDIT
SELECT
SEMANTICKEYPHRASETABLE
SEMANTICSIMILARITYDETAILSTABLE
SEMANTICSIMILARITYTABLE
SESSION_USER
SET
SETUSER
SHUTDOWN
SOME
STATISTICS
SYSTEM_USER
TABLE
TABLESAMPLE

Part of the correct Transact-SQL has been provided in the answer area below. Enter the code in the answer area that resolves the problem and meets the stated goals or requirements. You can add code within the code that has been provided as well as below it.

Use the Check Syntax button to verify your work. Any syntax or spelling errors will be reported by line and character position.

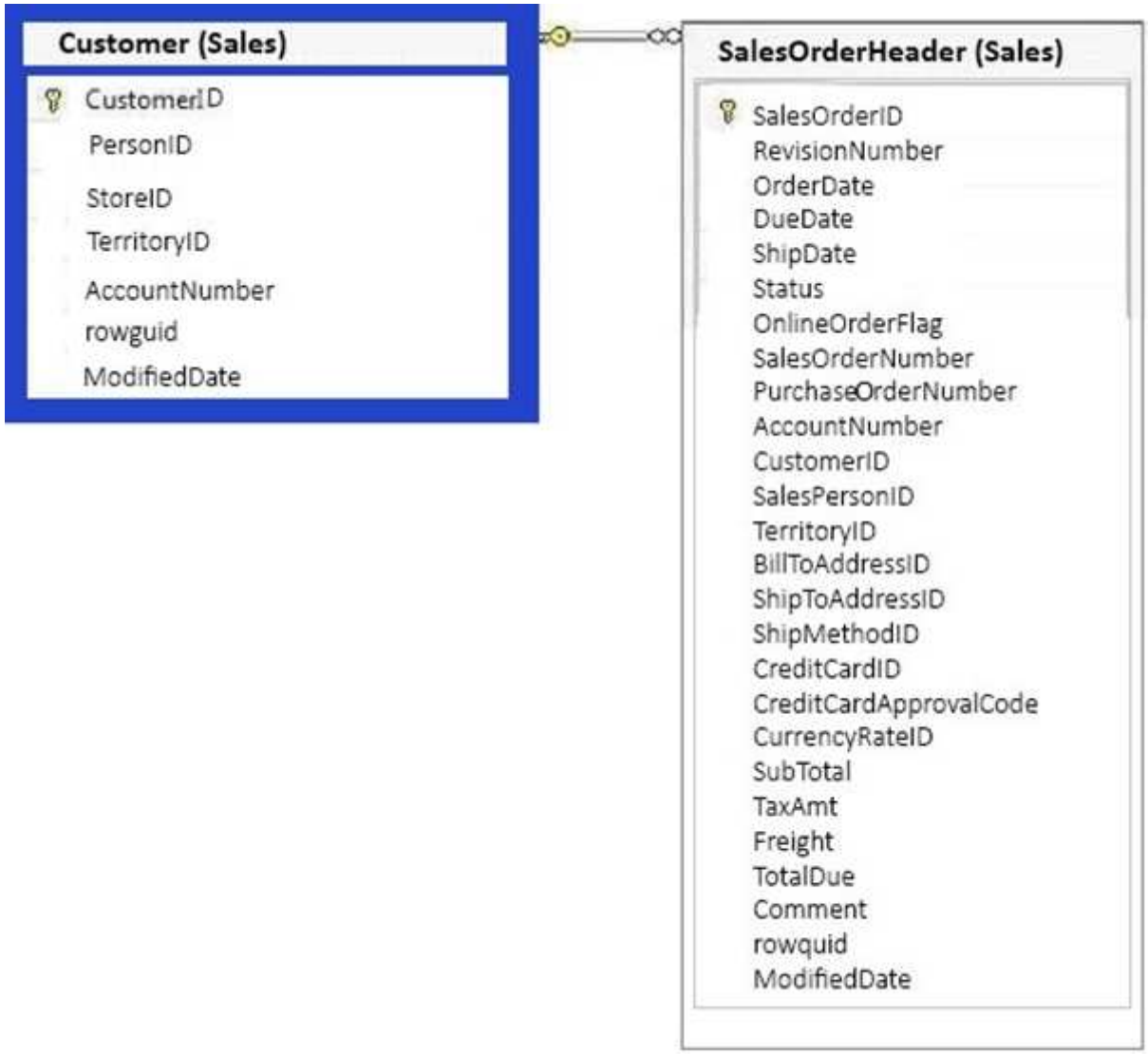
Correct Answer: See the solution below
Section: (none)
Explanation

Explanation/Reference:

```
DELETE FROM Sales.Orders
WHERE OrderDate < '2012-01-01' AND ShippedDate NOT NULL
```

References:
https://msdn.microsoft.com/en-us/library/ms189835.aspx
https://msdn.microsoft.com/en-us/library/bb630352.aspx

QUESTION 7
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 8
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
```

A. Option A
B. Option B

C. Option C
D. Option D

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 9
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 on 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 values
StandardDiscountPercentage	int	does not allow values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow values
DeliveryLocation	geography	does not allow values
PhoneNumber	nvarchar(20)	does not allow values
ValidFrom	datetime2(7)	does not allow values, GENERATED ALWAYS AS ROW START
ValidTo	datetime2(7)	does not allow 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.Citites
WHERE (IsOnCreditHold = 0 AND DeliveryCityID = CityID)
OR (IsOnCreditHold = 1 AND PostalCityID = CityID)
```

B.

```
SELECT CustomerID, LatestRecordedPopulation
FROM Sales.Customers
INNER JOIN Application.Citites 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.Citites AS A ON A.CityID = DeliveryCityID
INNER JOIN Application.Citites 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.Citites AS A ON A.CityID = CityId
```

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

Correct Answer: A
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 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 on 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 values
StandardDiscountPercentage	int	does not allow values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow values
DeliveryLocation	geography	does not allow values
PhoneNumber	nvarchar(20)	does not allow values
ValidFrom	datetime2(7)	does not allow values, GENERATED ALWAYS AS ROW START
ValidTo	datetime2(7)	does not allow 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 discover an application bug that impacts customer data for records created on or after January 1, 2014. In order to fix the data impacted by the bug, application programmers require a report that contains customer data as it existed on December 31, 2013.

You need to provide the query for the report.

Which Transact-SQL statement should you use?

A.

```
DECLARE @sdate DATETIME, @edate DATETIME
SET @sdate = DATEFROMPARTS (2013, 12, 31)
set @edate = DATEADD(d, 1, @sdate)
SELECT * FROM Sales.Customers FOR SYSTEM_TIME ALL
WHERE ValidFrom > @sdate AND ValidTo < @edate
```

B.

```
DECLARE @sdate DATETIME, @edate DATETIME
SET @sdate = DATEFROMPARTS (2013, 12, 31)
set @edate = DATEADD(d, -1, @sdate)
SELECT * FROM Sales.Customers FOR SYSTEM_TIME BETWEEN @sdate AND @edate
```

C.

```
DECLARE @date DATE
SET @date = DATEFROMPARTS (2013, 12, 31)
SELECT * FROM Sales.Customers FOR SYSTEM_TIME AS OF @date
```

D.

```
DECLARE @date DATE
SET @date = DATEFROMPARTS (2013, 12, 31)
SELECT * FROM Sales.Customers WHERE @date BETWEEN ValidFrom AND ValidTo
```

A. Option A
B. Option B

C. Option C
D. Option D

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The datetime datetype defines a date that is combined with a time of day with fractional seconds that is based on a 24-hour clock.
The DATEFROMPARTS function returns a date value for the specified year, month, and day.

Incorrect Answers:
A: ValidFrom should be less (<) than @sdate AND ValidTo should be greater (>) than @edate.
B: We should add a day with DATEADD, not subtract one day.
C: We cannot compare a date to an exact datetime.

References: https://msdn.microsoft.com/en-us/library/ms187819.aspx

QUESTION 11
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: F
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The ISNULL function replaces NULL with the specified replacement value.

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

QUESTION 12
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 is denormalized. Users make frequent changes to data in a primary table.

You need to ensure that users cannot change the tables directly, and that changes made to the primary table also update any related tables.

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:
Explanation:

Using an Indexed View would allow you to keep your base data in properly normalized tables and maintain data-integrity while giving you the denormalized "view" of that data.

References: http://stackoverflow.com/questions/4789091/updating-redundant-denormalized-data-automatically-in-sql-server

QUESTION 13
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 14
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
```

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 15
DRAG DROP

You create three tables by running 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(1,1) PRIMARY KEY CLUSTERED,
     UserName varchar(20) UNIQUE NOT NULL,
     IsActive bit NOT NULL DEFAULT(1)
)
CREATE TABLE tblUsersInRoles (
     UserId int NOT NULL FOREIGN KEY REFERENCES tblUsers(UserId),
     RoleId int NOT NULL FOREIGN KEY REFERENCES tblRoles(RolesId)
)
```

For reporting purposes, you need to find the active user count for each role, and the total active user count. The result must be ordered by active user count of each role. You must use common table expressions (CTEs).

Which four Transact-SQL segments should you use to develop the solution? To answer, move the appropriate Transact-SQL segments from the list of Transact-SQL segments to the answer area and arrange them in the correct order.

Select and Place:

Transact-SQL segments

```
Total AS (
     SELECT COUNT(*) AS TotalCountInAllRoles
     FROM ActiveUsers
)
SELECT S.*, Total.TotalCountInAllRoles
FROM RoleSummary S, Total
ORDER BY S.ActiveUserCount
```

```
WITH ActiveUsers AS (
     SELECT UserId
     FROM tblUsers
     WHERE IsActive=1
),
```

```
RoleNCount AS (
     SELECT RoleId, COUNT(*) AS ActiveUser-
Count
     FROM tblUsersInRoles BRG
     INNER JOIN ActiveUsers U ON BRG.UserId =
U.UserId
     GROUP BY BRG.RoleId
),
```

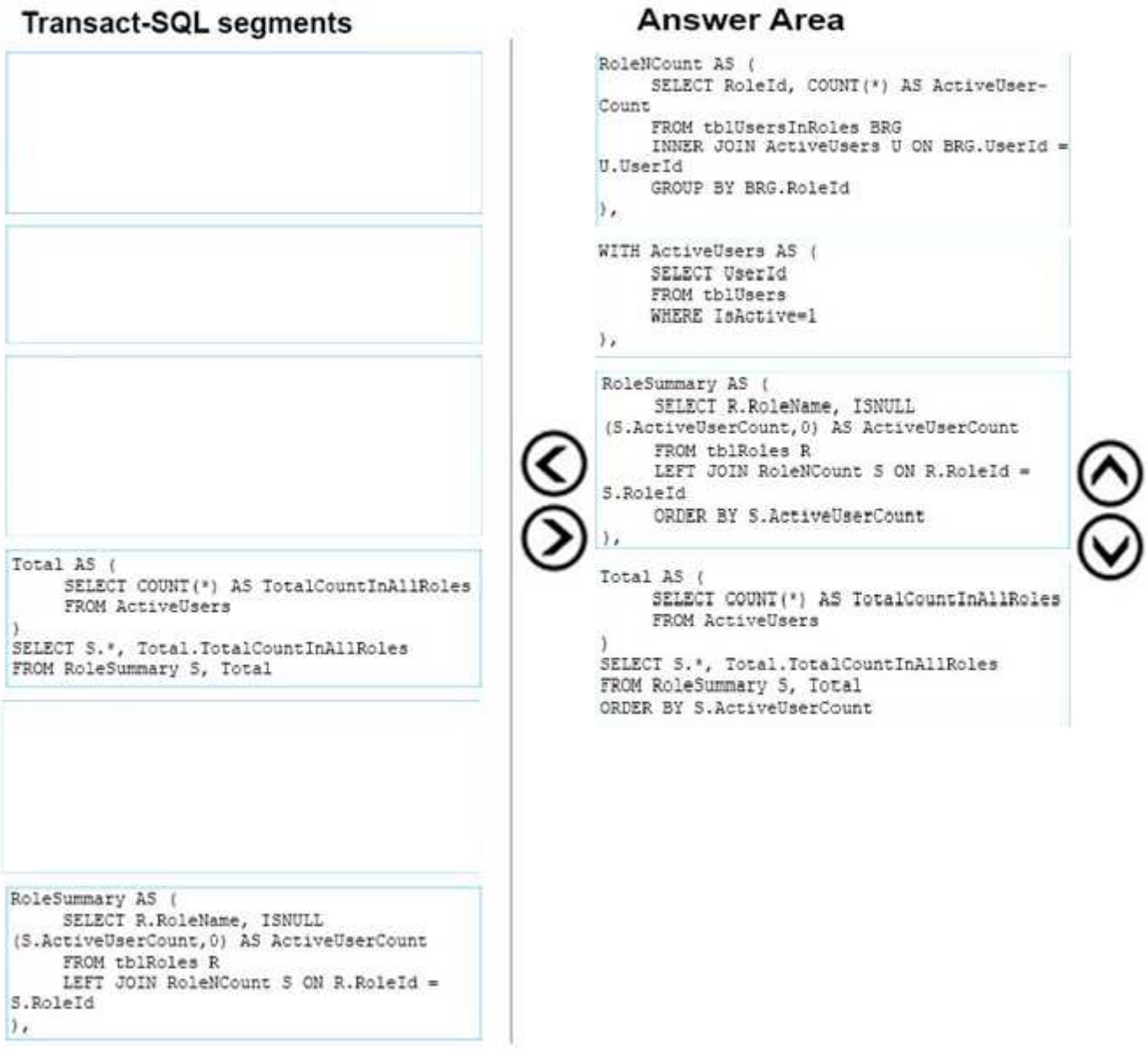
```
Total AS (
     SELECT COUNT(*) AS TotalCountInAllRoles
     FROM ActiveUsers
)
SELECT S.*, Total.TotalCountInAllRoles
FROM RoleSummary S, Total
```

```
RoleSummary AS (
     SELECT R.RoleName, ISNULL
(S.ActiveUserCount,0) AS ActiveUserCount
     FROM tblRoles R
     LEFT JOIN RoleNCount S ON R.RoleId =
S.RoleId
     ORDER BY S.ActiveUserCount
),
```

```
RoleSummary AS (
     SELECT R.RoleName, ISNULL
(S.ActiveUserCount,0) AS ActiveUserCount
     FROM tblRoles R
     LEFT JOIN RoleNCount S ON R.RoleId =
S.RoleId
),
```

Answer Area

Correct Answer:



Section: (none)
Explanation

Explanation/Reference:

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 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, h.CustomerCode, h.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
```

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: 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 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 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, h.CustomerCode, h.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
```

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

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 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 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, h.CustomerCode, h.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
```

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: 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 19
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, h.CustomerCode, h.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
```

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: 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 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 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'
```

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: 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 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 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 displays customer information. The report must contain a grand total column.

You need to write a query that returns the data for the report.

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'
```

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: E
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Calculate aggregate column through AVG function and GROUP BY clause.

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 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 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 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'
```

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: G
Section: (none)
Explanation

Explanation/Reference:

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 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'
```

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

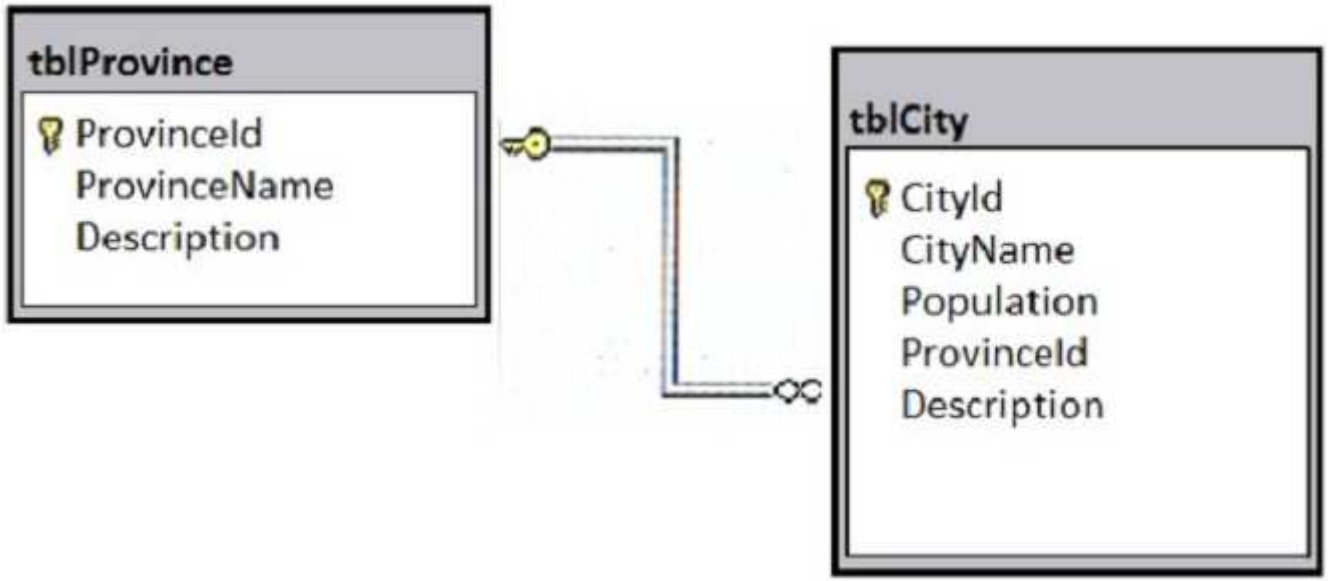
Explanation/Reference:
Explanation:
In a FOR XML clause, you specify one of these modes: RAW, AUTO, EXPLICIT, and PATH.

- 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 24
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
CROSS JOIN (
   SELECT COUNT(*) AS LargeCityCount FROM tblCity C
   WHERE C.Population>=1000000
) CitySummary
WHERE CitySummary.LargeCityCount >=2
```

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The SQL CROSS JOIN produces a result set which is the number of rowsin the first table multiplied by the number of rows in the second table if no WHERE clause is used along with CROSS JOIN. This kind of result is called as Cartesian Product.

This is not what is required in this scenario.

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

QUESTION 25
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

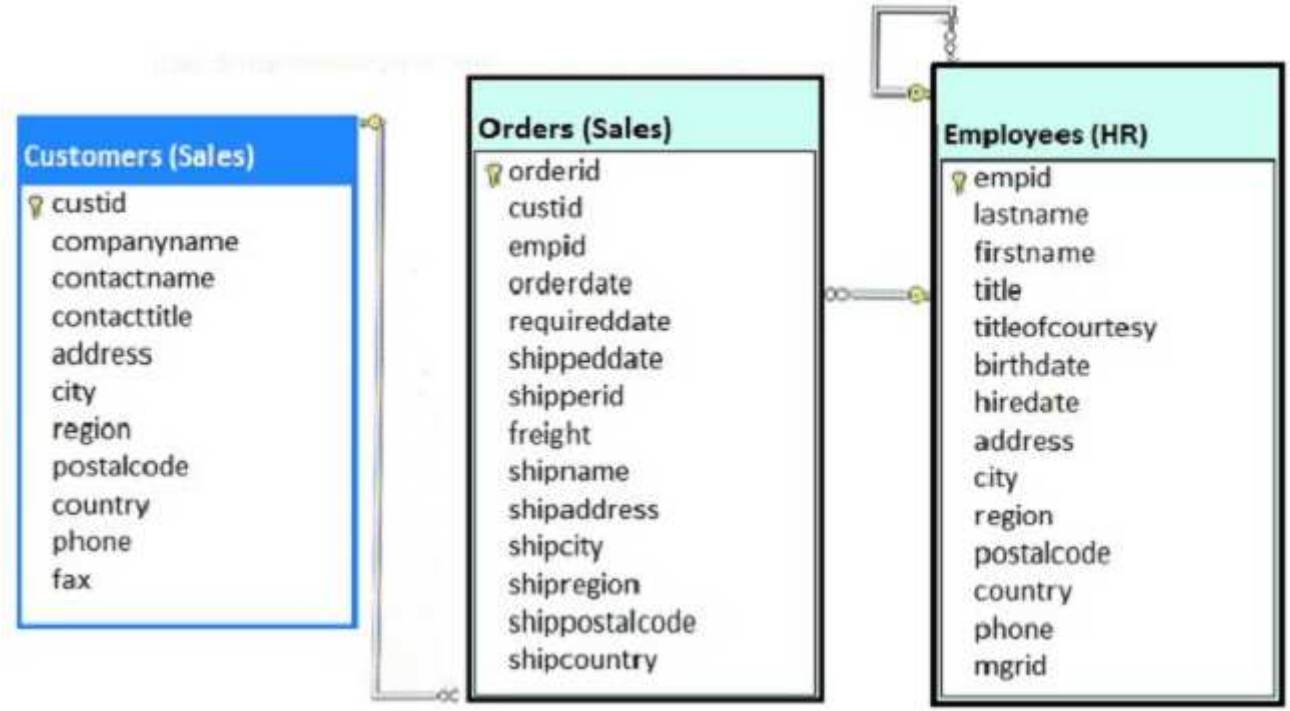
Note: nvarchar(max) is correct statement.
nvarchar [(n | max)]
Variable-length Unicode string data. n defines the string length and can be a value from 1 through 4,000. max indicates that the maximum storage size is 2^31-1 bytes (2 GB).

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 26
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?

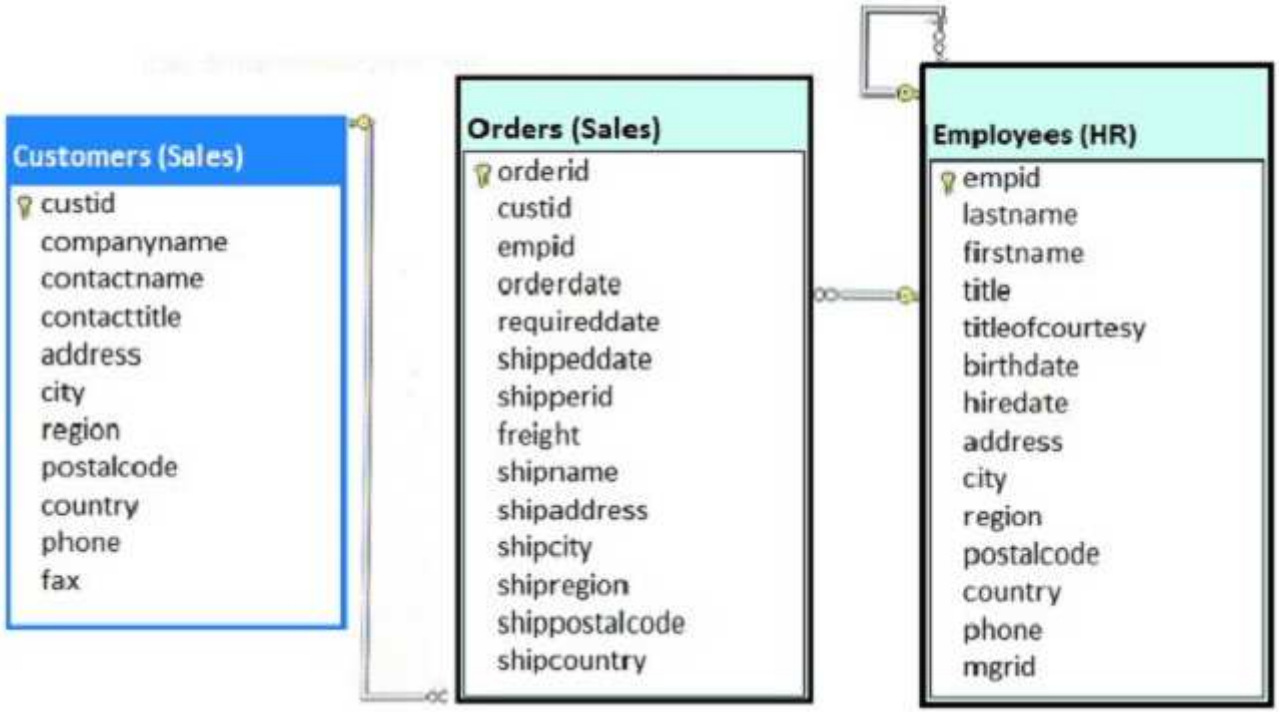
A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
We should use a WHERE clause, not a HAVING clause. The HAVING clause would refer to aggregate data.

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.

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 28
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 INSERTs 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
```

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 29
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 30
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 oON c.custid = o.custid`
B. `SELECT custid FROM Sales.Customers INTERSECTSELECT custid FROM Sales.Orders`
C. `SELECTc.custid FROM Sales.Customers c LEFT OUTER Sales.Order oON c.custid = o.custid`
D. `SELECT c.custid FROM Sales.Customers c LEFT OUTER JOIN Sales.Order oON 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.

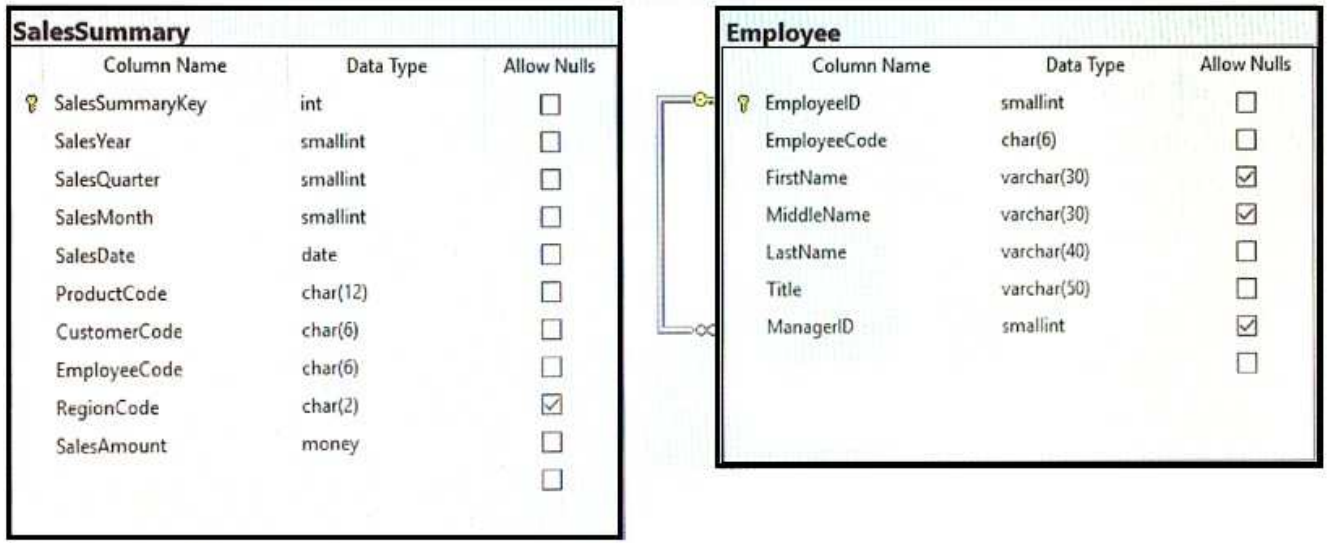
References: https://technet.microsoft.com/en-us/library/ms187518(v=sql.105).aspx

QUESTION 31
DRAG DROP

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.

Start of repeated scenario

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



You review the Employee table and make the following observations:

- Every record has a value in the ManagerID except for the Chief Executive Officer (CEO).
- The FirstName and MiddleName columns contain null values for some records.
- The valid values for the Title column are Sales Representative manager, and CEO.

You review the SalesSummary table and make the following observations:

- The ProductCode column contains two parts: The first five digits represent a product code, and the last seven digits represent the unit price. The unit price uses the following pattern: ####.##.
- You observe that for many records, the unit price portion of the ProductCode column contains values.
- The RegionCode column contains NULL for some records.
- Sales data is only recorded for sales representatives.

You are developing a series of reports and procedures to support the business. Details for each report or procedure follow.

Sales Summary report: This report aggregates data by year and quarter. The report must resemble the following table.

SalesYear	SalesQuarter	YearSalesAmount	QuarterSalesAmount
2015	1	2000.00	1000.00
2015	2	2000.00	500.00
2015	3	2000.00	250.00
2015	4	2000.00	250.00
2016	1	3500.00	500.00
2016	2	3500.00	1000.00

Sales Manager report: This report lists each sales manager and the total sales amount for all employees that report to the sales manager.

Sales by Region report: This report lists the total sales amount by employee and by region. The report must include the following columns: EmployeeCode, MiddleName, LastName, RegionCode, and SalesAmount. If MiddleName is NULL, FirstName must be displayed. If both FirstName and MiddleName have null values, the world Unknown must be displayed/ If RegionCode is NULL, the word Unknown must be displayed.

Report1: This report joins data from SalesSummary with the Employee table and other tables. You plan to create an object to support Report1. The object has the following requirements:

- be joinable with the SELECT statement that supplies data for the report
- can be used multiple times with the SELECT statement for the report
- be usable only with the SELECT statement for the report
- not be saved as a permanent object

Report2: This report joins data from SalesSummary with the Employee table and other tables.
You plan to create an object to support Report1. The object has the following requirements:

- be joinable with the SELECT statement that supplies data for the report
- can be used multiple times for this report and other reports
- accept parameters
- be saved as a permanent object

Sales Hierarchy report: This report aggregates rows, creates subtotal rows, and super-aggregates rows over the SalesAmount column in a single result-set. The report uses SaleYear, SaleQuarter, and SaleMonth as a hierarchy. The result set must not contain a grand total or cross-tabulation aggregate rows.

Current Price Stored Procedure: This stored procedure must return the unit price for a product when a product code is supplied. The unit price must include a dollar sign at the beginning. In addition, the unit price must contain a comma every three digits to the left of the decimal point, and must display two digits to the left of the decimal point. The stored procedure must not throw errors, even if the product code contains invalid data.

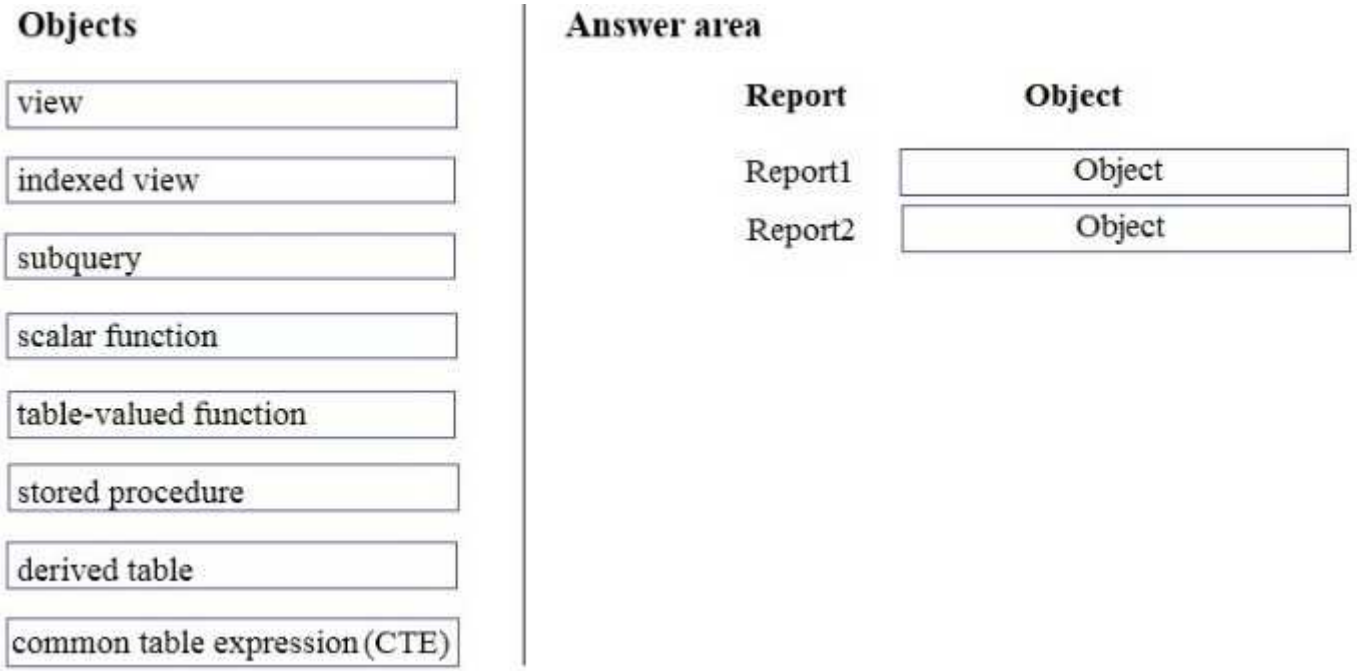
End of Repeated Scenario

You are creating the queries for Report1 and Report2.

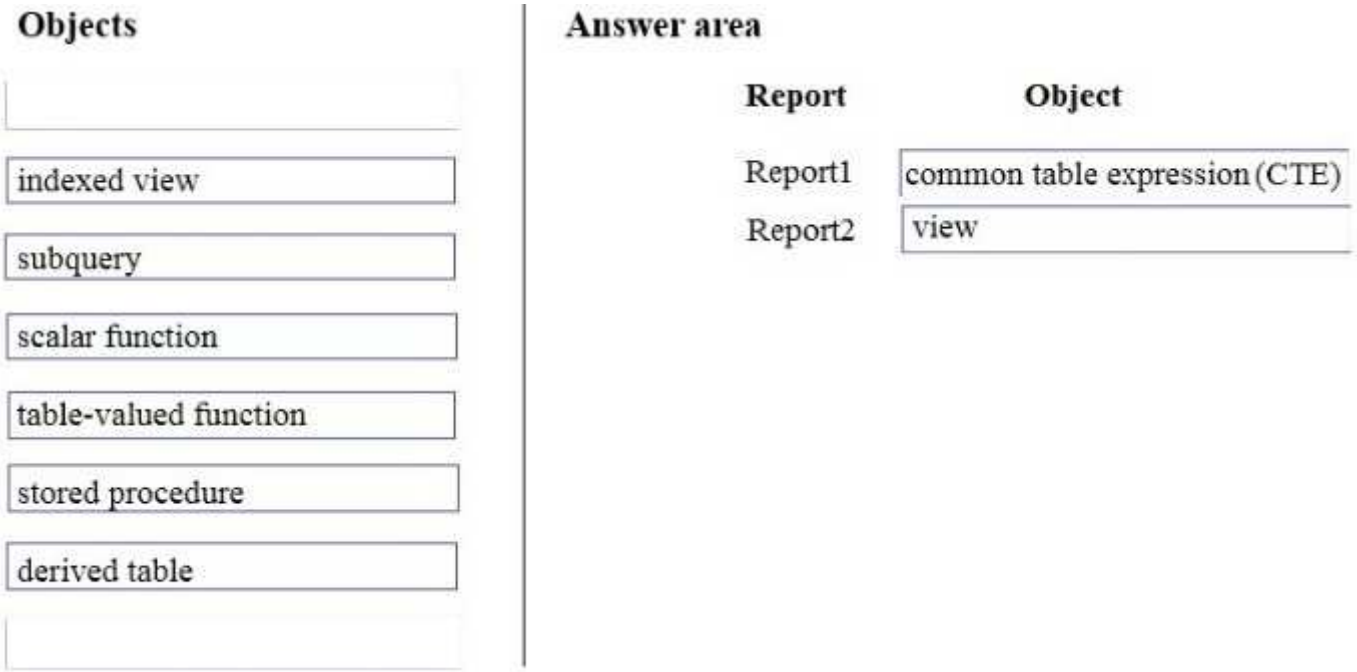
You need to create the objects necessary to support the queries.

Which object should you use to join the SalesSummary table with the other tables that each report uses? To answer, drag the appropriate objects to the correct reports. each object may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: common table expression (CTE)
A common tableexpression (CTE) can be thought of as a temporary result set that is defined within the execution scope of a single SELECT, INSERT, UPDATE, DELETE, or CREATE VIEW statement. A CTE is similar to a derived table in that it is not stored as an object and lasts only for the duration of the query. Unlike a derived table, a CTE can be self-referencing and can be referenced multiple times in the same query.

A CTE can be used to:
- Create a recursive query. For more information, see Recursive Queries Using CommonTable Expressions.
- Substitute for a view when the general use of a view is not required; that is, you do not have to store the definition in metadata.
- Enable grouping by a column that is derived from a scalar subselect, or a function that is either not deterministic or has external access.
- Reference the resulting table multiple times in the same statement.

From Scenario: Report1: This report joins data from SalesSummary with the Employee table and other tables. You plan to create an object to support Report1. The

object has the following requirements:
- be joinable with the SELECT statement that supplies data for the report
- can be used multiple times with the SELECT statement for the report
- be usable only with the SELECT statement for the report
- not be savedas a permanent object

Box 2: view
From scenario: Report2: This report joins data from SalesSummary with the Employee table and other tables.

You plan to create an object to support Report1. The object has the following requirements:
- be joinable with theSELECT statement that supplies data for the report
- can be used multiple times for this report and other reports
- accept parameters
- be saved as a permanent object

References: https://technet.microsoft.com/en-us/library/ms190766(v=sql.105).aspx

QUESTION 32
HOTSPOT

You have a database that contains the following tables: tblRoles, tblUsers, and tblUsersInRoles.

The table tblRoles is defined as follows.

Column name	Data type	Nullable	Primary key
RoleID	int	No	Yes
RoleName	varchar(20)	No	No

You have a function named ufnGetRoleActiveUsers that was created by running the following Transact-SQL statement:

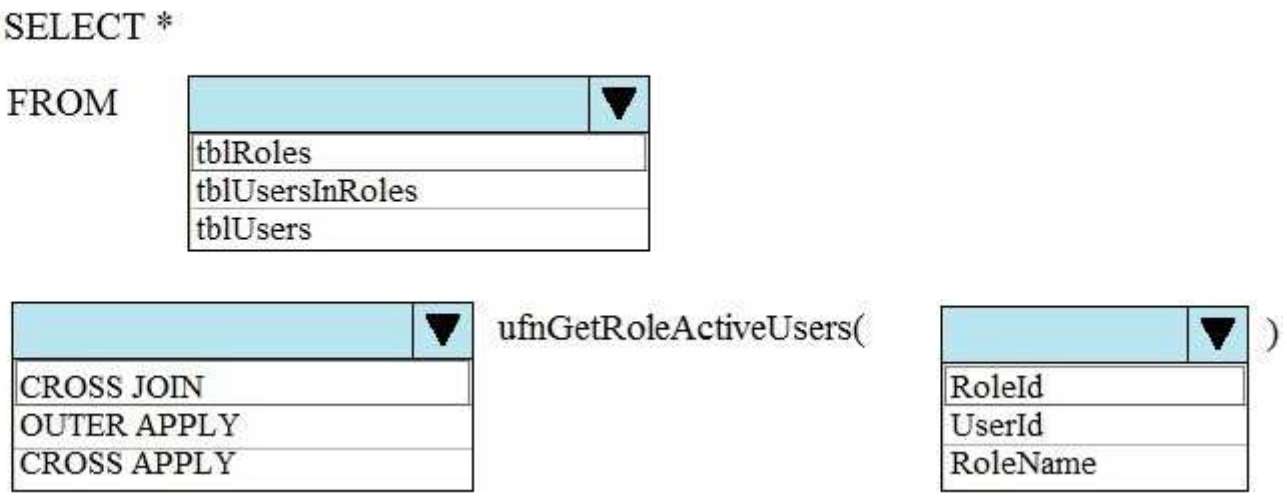
```
CREATE FUNCTION ufnGetRoleActiveUsers(@RoleId AS int)
RETURNS @roleSummary TABLE(UserName varchar (20))
AS
BEGIN
  INSERT INTO @roleSummary
  SELECT U.UserName FROM tblUsersInRoles BRG
  INNER JOIN tblUsers U
  ON U.UserId = BRG.UserId
  WHERE BRG.RoleId = @RoleId AND U.IsActive = 1
  RETURN
END
```

You need to list all roles and their corresponding active users. The query must return the RoleId, RoleName, and UserName columns. If a role has no active users, a NULL value should be returned as the UserName for that role.

How should you complete the Transact-SQL statement? To answer, select the appropriate Transact-SQL segments in the answer area.

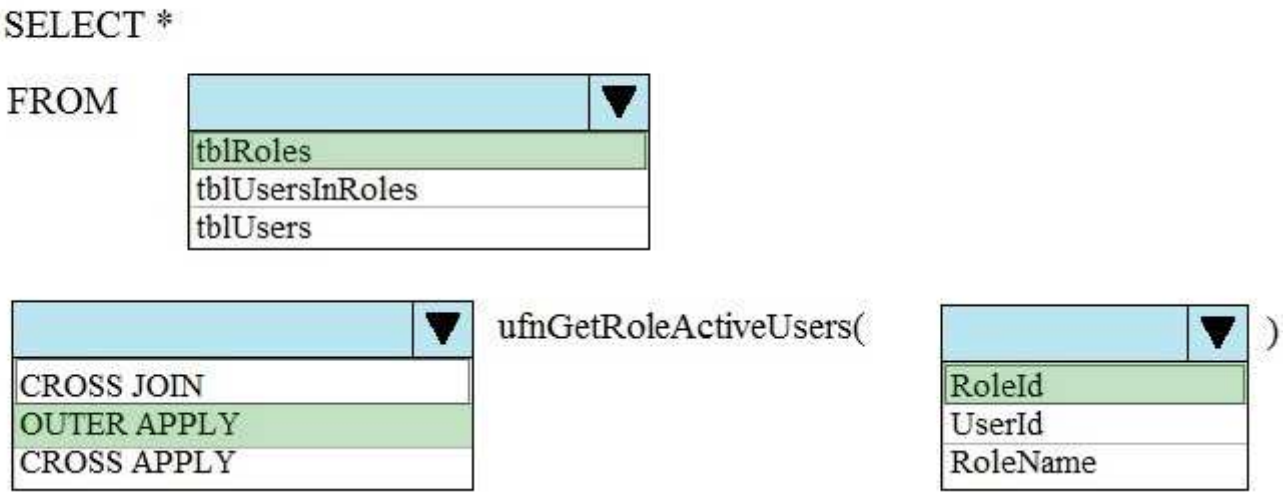
Hot Area:

Answer area



Correct Answer:

Answer area



Section: (none)
Explanation

Explanation/Reference:

QUESTION 33
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: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 34
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 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 a customer 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 35
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 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 a customer 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 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 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 a customer 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: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The SQL INTERSECT operator is used to return the results of 2 or more SELECT statements. However, it only returns the rows selected by all queries or data sets. If a record exists in one query and not in the other, it will be omitted from the INTERSECT results.

References: https://www.techonthenet.com/sql/intersect.php

QUESTION 37
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 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 < 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 38
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 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 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 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 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 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 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+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 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+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 43
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.LogMessage FROM 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: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 44
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 45
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 46

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 47
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 48
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 SYSTE_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 PivorCustomers
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 49
SIMULATION

You have a table named Cities that has the following two columns: CityID and CityName. The CityID column uses the int data type, and CityName uses nvarchar (max).

You have a table named RawSurvey. Each row includes an identifier for a question and the number of persons that responded to that question from each of four cities. The table contains the following representative data:

QuestionID	Tokyo	Boston	London	New York
Q1	1	42	48	51
Q2	22	39	58	42
Q3	29	41	61	33
Q4	62	70	60	50
Q5	63	31	41	21
Q6	32	1	16	34

A reporting table named SurveyReport has the following columns: CityID, QuestionID, and RawCount, where RawCount is the value from the RawSurvey table.

You need to write a Transact-SQL query to meet the following requirements:
- Retrieve data from the RawSurvey table in the format of the SurveyReport table.

- The CityID must contain the CityID of the city that was surveyed.
- The order of cities in all SELECT queries must match the order in the RawSurvey table.
- The order of cities in all IN statements must match the order in the RawSurvey table.

Construct the query using the following guidelines:
- Use one-part names to reference tables and columns, except where not possible.
- ALL SELECT statements must specify columns.
- Do not use column or table aliases, except those provided.
- Do not surround object names with square brackets.

Keywords

ADD
ALL
ALTER
AND
ANY
AS
ASC
AUTHORIZATION
BACKUP
BEGIN
BETWEEN
BREAK
BROWSE
BULK
BY
CASCADE
CASE
CHECK
CHECKPOINT
CLOSE
CLUSTERED
COALESCE
COLLATE
COLUMN
COMMIT
COMPUTE
CONCAT
CONSTRAINT
CONTAINS
CONTAINSTABLE
CONTINUE
CONVERT
CREATE
CROSS
CURRENT
CURRENT_DATE
CURRENT_TIME
CURRENT_TIMESTAMP
CURENT_USER
CURSOR
DATABASE
DBCC
EXIT
EXTERNAL
FETCH
FILE
FILLFACTOR
FORFOREIGN
FREETEXT
FREETEXTTABLE
FROM
FULL
FUNCTION
GOTO
GRANT
GROUP
HAVING
HOLDLOCK
IDENTITY
IDENTITY_INSERT
IDENTITYCOL
IF
IN
INDEX
INNER
INSERT
INTERSECT
INTO
IS
JOIN
KEY
KILL
LEFT
LIKE
LINENO
LOAD
MERGE
NATIONAL
NOCHECK
NONCLUSTERED
NOT
NULL
NULLIF
OF
PROC
PROCEDURE
PUBLIC
RAISERROR
READ
READTEXT
RECONFIGURE
REFERENCES
REPLICATION
RESTORE
RESTRICT
RETURN
REVERT
REVOKE
RIGHT
ROLLBACK
ROWCOUNT
ROWGUIDCOL
RULE
SAVE
SCHEMA
SECURITYAUDIT
SELECT
SEMANTICKEYPHRASETABLE
SEMANTICSIMILARITYDETAILSTABLE
SEMANTICSIMILARITYTABLE
SESSION_USER
SET
SETUSER
SHUTDOWN
SOME
STATISTICS
SYSTEM_USER
TABLE
TABLESAMPLE
TEXTSIZE
THEN
TO
TOP
TRAN
TRANSACTION
TRIGGER

Part of the correct Transact-SQL has been provided in the answer area below. Enter the code in the answer area that resolves the problem and meets the stated goals or requirements. You can add code within the code that has been provided as well as below it.

```
1    SELECT Rawcount
2    from (select cityid,questionid,rawcount) AS t1
3    unpivot
4    (rawcount for questionid in (QuestionID)) AS t2
```

Use the Check Syntax button to verify your work. Any syntax or spelling errors will be reported by line and character position.

Correct Answer: Please see explanation
Section: (none)
Explanation

Explanation/Reference:
Explanation:

```
1 SELECT Rawcount
2 from (select cityid,questioned,rawcount) AS t1
3 unpivot
4 (rawcount for questioned in (QuestionID)) AS t2
5 JOIN t2
6. ON t1.CityName = t2.cityName
```

UNPIVOT must be used to rotate columns of the Rawsurvey table into column values.

References: https://technet.microsoft.com/en-us/library/ms177410(v=sql.105).aspx

QUESTION 50
SIMULATION

You create a table named Sales.Orders by running the following Transact-SQL statement:

```
CREATE TABLE Sales.Orders (
     OrderID int NOT NULL,
     OrderDate date NULL,
     ShippedDate date NULL,
     Status varchar(10),
     CONSTRAINT PK_ORDERS PRIMARY KEY CLUSTERED OrderID
)
```

You need to write a query that removes orders from the table that have a Status of Canceled.

Construct the query using the following guidelines:

- use one-part column names and two-part table names
- use single quotes around literal values
- do not use functions
- do not surround object names with square brackets
- do not use variables
- do not use aliases for column names and table names

Keywords

ADD
ALL
ALTER
AND
ANY
AS
ASC
AUTHORIZATION
BACKUP
BEGIN
BETWEEN
BREAK
BROWSE
BULK
BY
CASCADE
CASE
CHECK
CHECKPOINT
CLOSE
CLUSTERED
COALESCE
COLLATE
COLUMN
COMMIT
COMPUTE
CONCAT
CONSTRAINT
CONTAINS
CONTAINSTABLE
CONTINUE
CONVERT
CREATE
CROSS
CURRENT
CURRENT_DATE
CURRENT_TIME
CURRENT_TIMESTAMP
CURENT_USER
CURSOR
DATABASE
DBCC
DEALLOCATE
DECLARE
DEFAULT
DELETE
DENY
EXIT
EXTERNAL
FETCH
FILE
FILLFACTOR
FORFOREIGN
FREETEXT
FREETEXTTABLE
FROM
FULL
FUNCTION
GOTO
GRANT
GROUP
HAVING
HOLDLOCK
IDENTITY
IDENTITY_INSERT
IDENTITYCOL
IF
IN
INDEX
INNER
INSERT
INTERSECT
INTO
IS
JOIN
KEY
KILL
LEFT
LIKE
LINENO
LOAD
MERGE
NATIONAL
NOCHECK
NONCLUSTERED
NOT
NULL
NULLIF
OF
OFF
OFFSETS
ON
OPEN
OPENDATASOURCE
PROC
PROCEDURE
PUBLIC
RAISERROR
READ
READTEXT
RECONFIGURE
REFERENCES
REPLICATION
RESTORE
RESTRICT
RETURN
REVERT
REVOKE
RIGHT
ROLLBACK
ROWCOUNT
ROWGUIDCOL
RULE
SAVE
SCHEMA
SECURITYAUDIT
SELECT
SEMANTICKEYPHRASETABLE
SEMANTICSIMILARITYDETAILSTABLE
SEMANTICSIMILARITYTABLE
SESSION_USER
SET
SETUSER
SHUTDOWN
SOME
STATISTICS
SYSTEM_USER
TABLE
TABLESAMPLE
TEXTSIZE
THEN
TO
TOP
TRAN
TRANSACTION
TRIGGER
TRUNCATE
TRY_CONVERT
TSEQUAL
UNION
UNIQUE

Part of the correct Transact-SQL has been provided in the answer area below. Enter the code in the answer area that resolves the problem and meets the stated goals or requirements. You can add code within the code that has been provided as well as below it.

```
1 DELETE from sales.orders where status='calceled'
```

Use the Check Syntax button to verify your work. Any syntax or spelling errors will be reported by line and character position.

Correct Answer: Please see explanation
Section: (none)
Explanation

Explanation/Reference:
Explanation:
```
1. DELETE from sales.orders where status='Canceled'
```

Note: On line 1 change calceled to Canceled

Example: Using the WHERE clause to delete a set of rows
The following example deletes all rows from the ProductCostHistory table in the AdventureWorks2012 database in which the value in the StandardCost column is more than 1000.00.
DELETE FROM Production.ProductCostHistory
WHERE StandardCost > 1000.00;

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

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 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 a customer 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 52
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 new values
StandardDiscountPercentage	int	does not allow new values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow new values
DeliveryLocation	geography	does not allow new values
PhoneNumber	nvarchar(20)	does not allow new values

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 53
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 new values
StandardDiscountPercentage	int	does not allow new values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow new values
DeliveryLocation	geography	does not allow new values
PhoneNumber	nvarchar(20)	does not allow new values

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, B.DeliveryLocation ^ A.DeliveryLocation AS Dist
FROM Sales.Customers AS A
JOIN Sales.Customers AS B
ON A.DeliveryCityID = B.DeliveryCityID
WHERE A.CustomerID = @custID AND A.CustomerID <> B.CustomerID
```

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:

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 new values
StandardDiscountPercentage	int	does not allow new values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow new values
DeliveryLocation	geography	does not allow new values
PhoneNumber	nvarchar(20)	does not allow new values

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:

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 new values
StandardDiscountPercentage	int	does not allow new values
CreditLimit	decimal(18,2)	null values are permitted
IsOnCreditHold	bit	does not allow new values
DeliveryLocation	geography	does not allow new values
PhoneNumber	nvarchar(20)	does not allow new 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:

QUESTION 56
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 57
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 58
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 plan
- 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-complied 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 59
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 60
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 61
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: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 62
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 a customer 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 (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

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 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 have a table named Products that stores information about 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)
WHERE ListPrice <100
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Mathematical equation will only return 10 % of the value.

QUESTION 64
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(UnitsOnOrder,
NULL)) AS TotalUnitPrice  FROM Products
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 65
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 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 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 = CAST(20012 AS varchar(5))
AND RegistrationDate > '2016-01-01'
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
https://docs.microsoft.com/en-us/sql/t-sql/functions/cast-and-convert-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: B
Section: (none)
Explanation

Explanation/Reference:

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 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: A
Section: (none)
Explanation

Explanation/Reference:

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

QUESTION 70
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 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 71
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:

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.

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 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.

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 74
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	$59.349.20
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 75
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 76
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:

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 ALWATS 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 78
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 plan
- 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 79
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 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 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 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 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 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 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(Cust.CustomerID)
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: A
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 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 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 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'
```

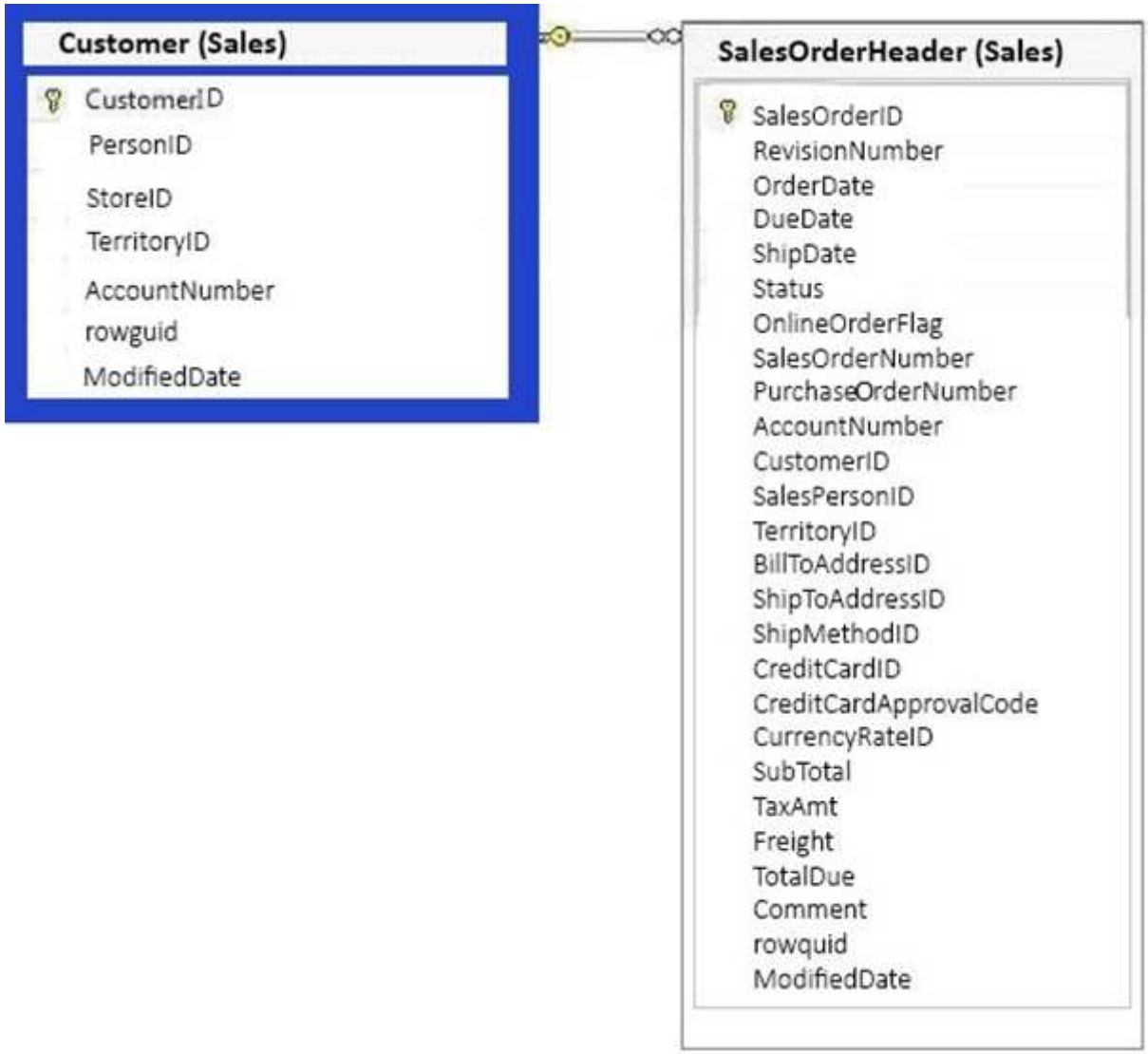
Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 85
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 86
HOTSPOT

You need to develop a function that returns a list of courses grouped by the total number of students in a course.

The function must list only courses that have more than a specific number of students. The specific number of students is defined as an input variable for the function.

How should you complete the function? To answer, select the appropriate Transact-SQL segments in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
CREATE FUNCTION CoursesWithMoreThan (@totalStudents INT)
RETURNS [ ▼ ]
AS
RETRUN
 SELECT c.Course, [ ▼ ]
FROM dbo.Courses c
INNER JOIN dbo.CourseStudents cp ON c.CourseID = cp.CourseID
[ ▼ ] SUM(cp.NumStudents) > @totalStudents
```

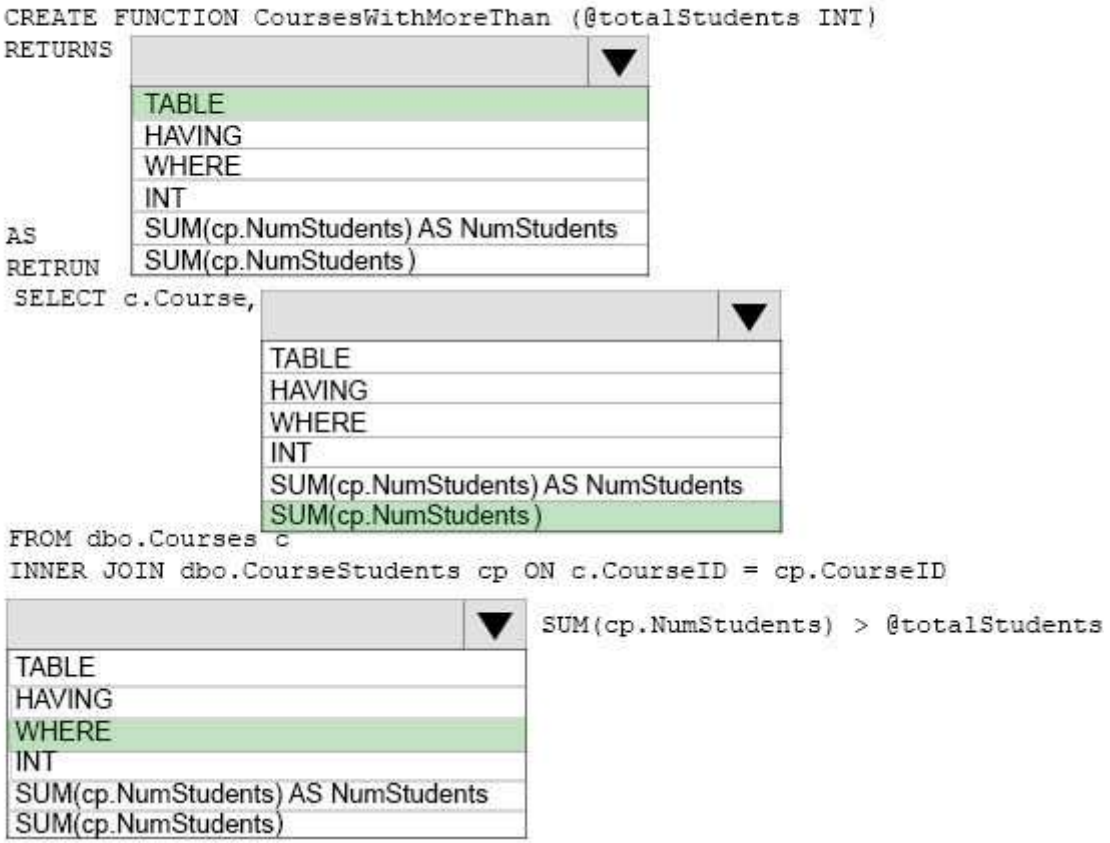
RETURNS options: TABLE, HAVING, WHERE, INT, SUM(cp.NumStudents) AS NumStudents, SUM(cp.NumStudents)

SELECT c.Course, options: TABLE, HAVING, WHERE, INT, SUM(cp.NumStudents) AS NumStudents, SUM(cp.NumStudents)

[▼] SUM(cp.NumStudents) > @totalStudents options: TABLE, HAVING, WHERE, INT, SUM(cp.NumStudents) AS NumStudents, SUM(cp.NumStudents)

Correct Answer:

Answer Area



Section: (none)
Explanation

Explanation/Reference:
Explanation:

QUESTION 87
You are developing a mobile app to manage meetups. The app allows for users to view the 25 closest people with similar interests. You have a table that contains records for approximately two million people. You create the table by running the following Transact-SQL statement:

```
CREATE TABLE Person (
     PersonID INT,
     Name NVARCHAR(155) NOT NULL,
     Location GEOGRAPHY,
     Interests NVARCHAR(MAX)
)
```

You create the following table valued function to generate lists of people:

```
CREATE FUNCTION dbo.nearby  (@person AS INT)
     RETURNS @Res TABLE (
     PersonId INT NOT NULL,
     Location GEOGRAPHY
     )
     AS
     BEGIN
        . . .
     END
```

You need to build a report that shows meetings with at least two people only.

What should you use?

A. OUTER APPLY
B. CROSS APPLY
C. PIVOT
D. LEFT OUTER JOIN

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

References: https://www.sqlshack.com/the-difference-between-cross-apply-and-outer-apply-in-sql-server/