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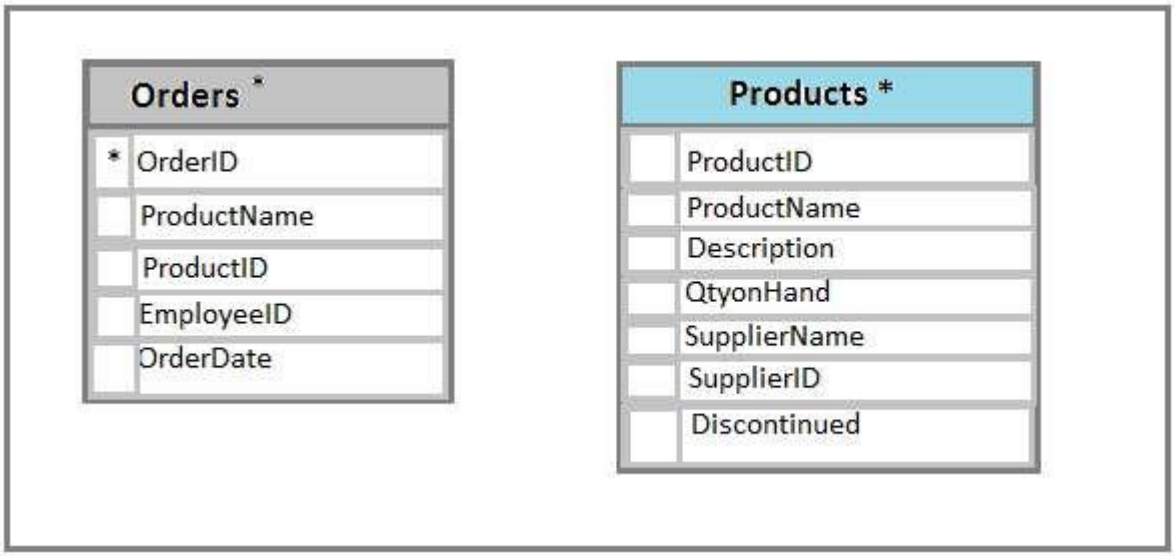
Exam Number/Code: 70-762

Exam Name: Developing SQL Databases

Version: Demo

Q1
DRAG DROP
You have a database named Sales that contains the following database tables: Customer, Order, and Products. The Products table and the Order table are shown in the following diagram.



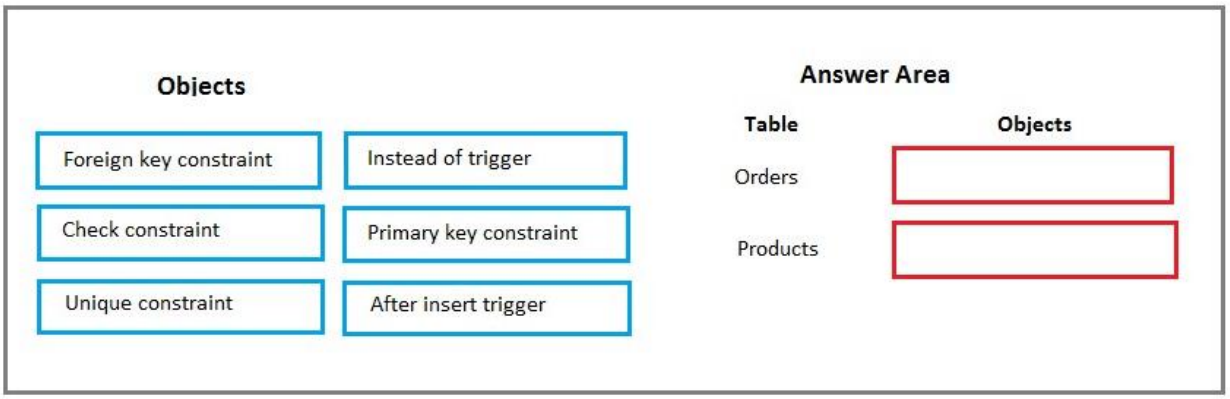
The customer table includes a column that stores the data for the last order that the customer placed.

You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized.

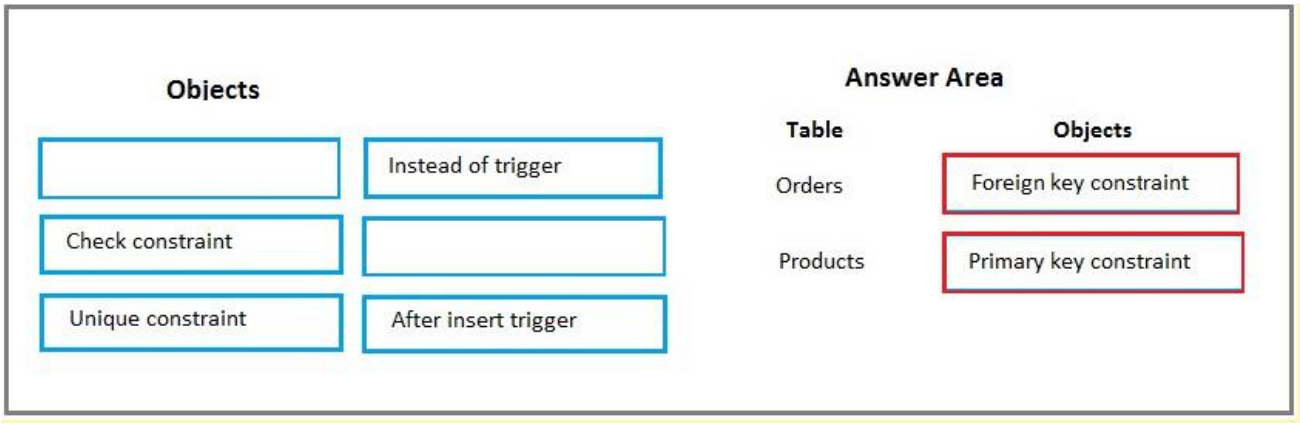
Changes to the price of any product must be less a 25 percent increase from the current price. The shipping department must be notified about order and shipping details when an order is entered into the database.

You need to implement the appropriate table objects.

Which object should you use for each table? To answer, drag the appropriate objects to the correct tables. 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.



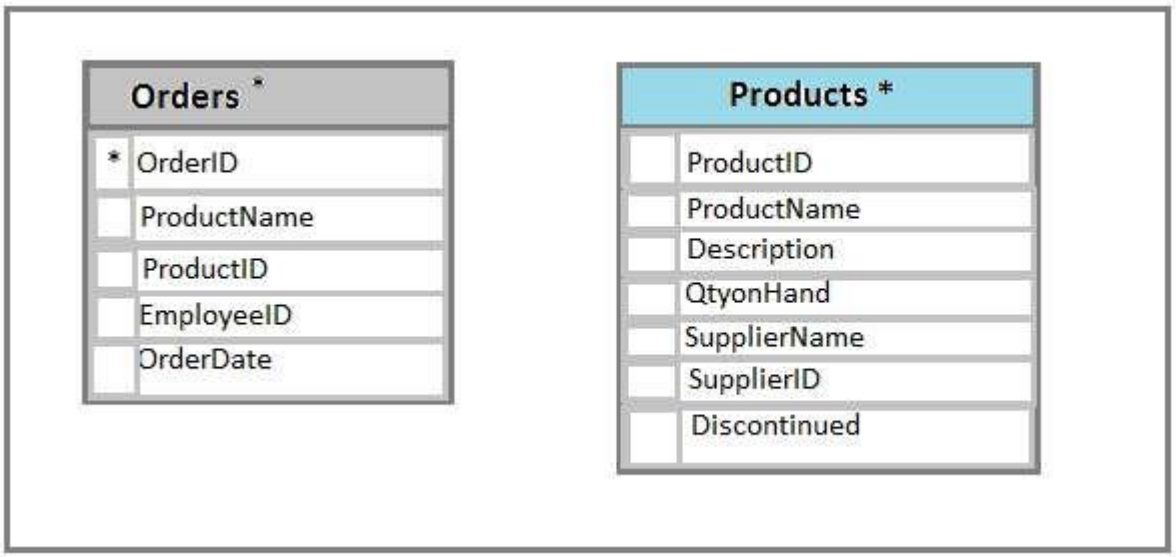
Answer:



Explanation:
The Products table needs a primary key constraint on the ProductID field. The Orders table needs a foreign key constraint on the productID field, with a reference to the ProductID field in the Products table.

Q2
HOTSPOT

You have a database named Sales that contains the following database tables: Customer, Order, and Products. The Products table and the Order table are shown in the following diagram.



The customer table includes a column that stores the data for the last order that the customer placed.

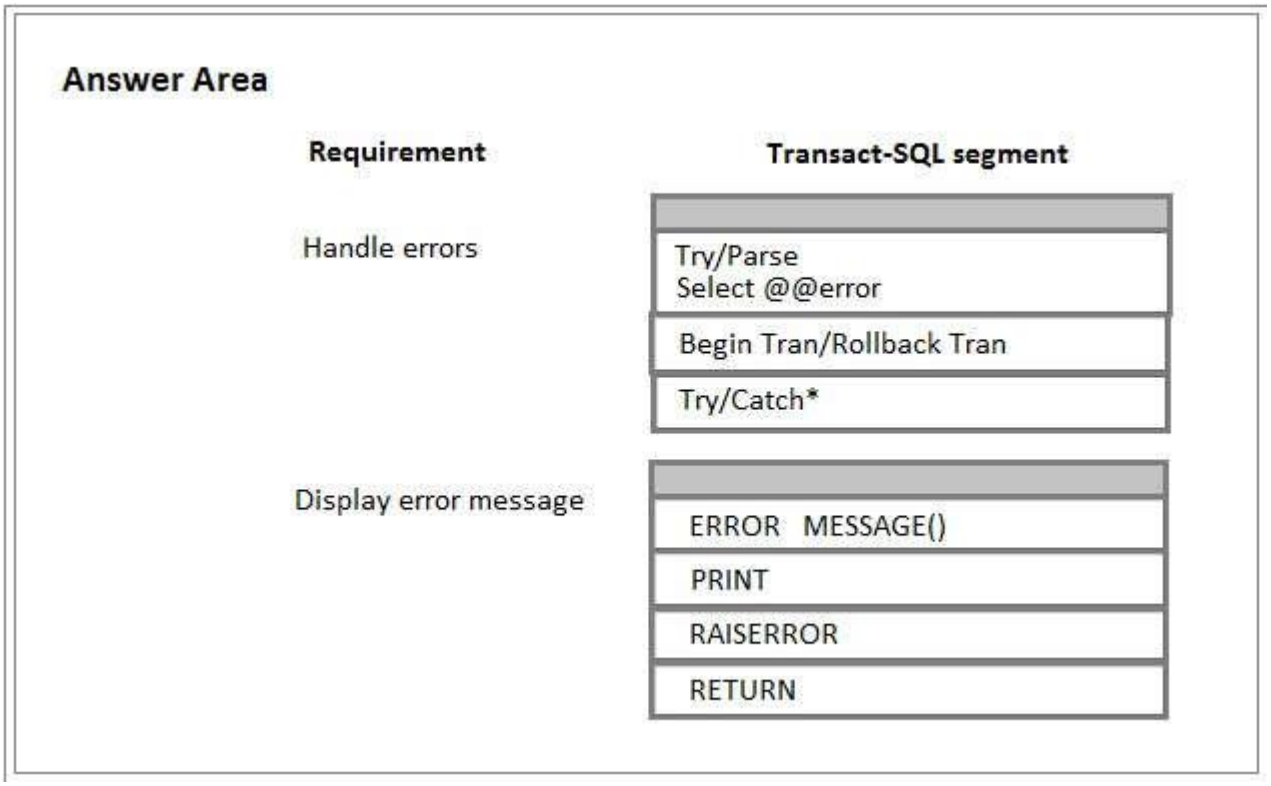
You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized.

You need to implement a stored procedure that deletes a discontinued product from the Products table. You identify the following requirements:

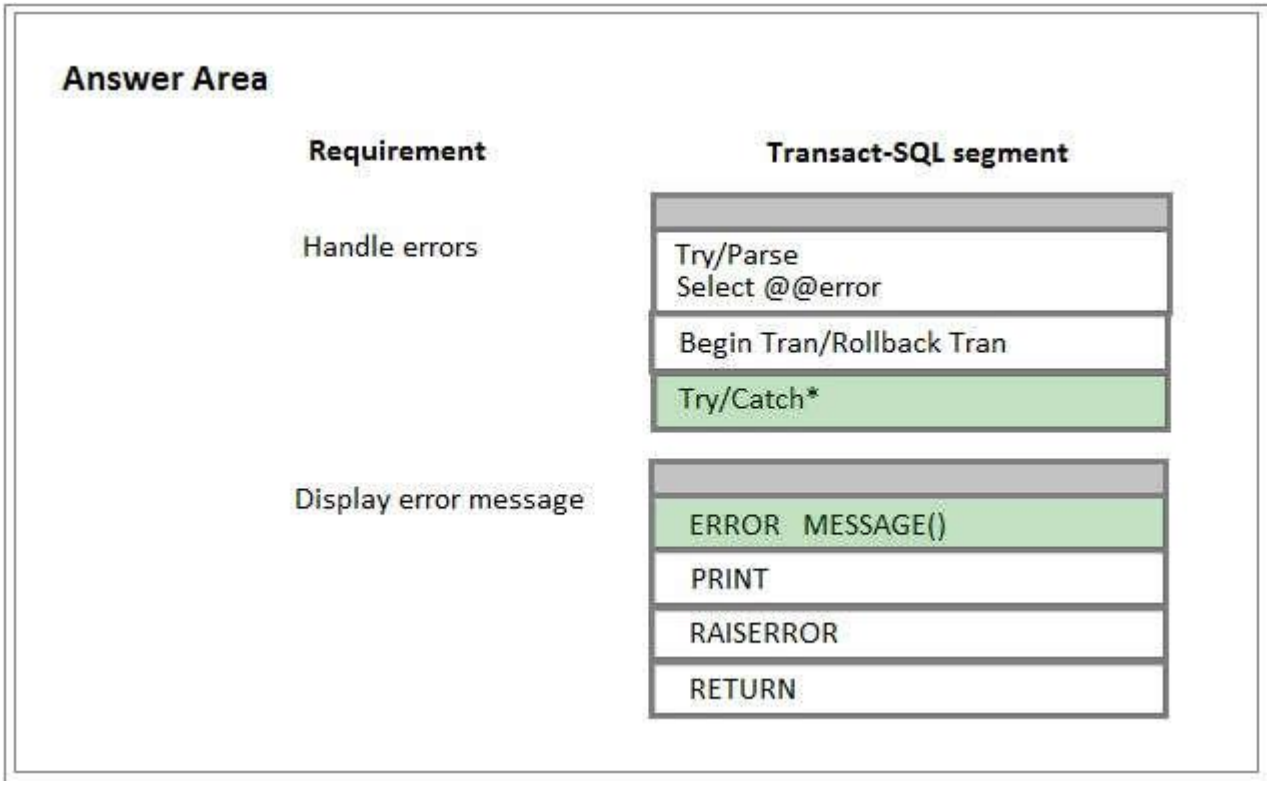
If an open order includes a discontinued product, the records for the product must not be deleted. The stored procedure must return a custom error message if a product record cannot be deleted. The message must identify the OrderID for the open order.

What should you do? To answer, select the appropriate Transact-SQL segments in the answer area.

Hot Area:


Answer Area
Requirement
Transact-SQL segment
Handle errors
Try/Parse
Select @@error
Begin Tran/Rollback Tran
Try/Catch*
Display error message
ERROR_MESSAGE()
PRINT
RAISERROR
RETURN

Answer:


Answer Area
Requirement
Transact-SQL segment
Handle errors
Try/Parse
Select @@error
Begin Tran/Rollback Tran
Try/Catch*
Display error message
ERROR_MESSAGE()
PRINT
RAISERROR
RETURN

Explanation:
Using TRY...CATCH in Transact-SQL

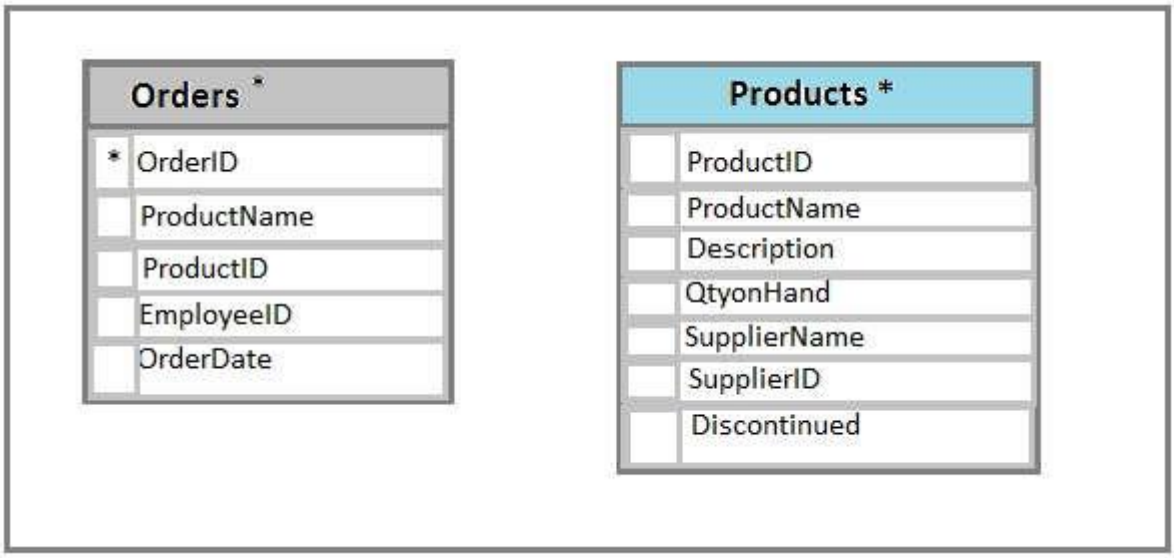
Errors in Transact-SQL code can be processed by using a TRY...CATCH construct.

TRY...CATCH can use the following error function to capture error information:
ERROR_MESSAGE() returns the complete text of the error message. The text includes the values supplied for any substitutable parameters such as lengths, object names, or times.

References:https://technet.microsoft.com/en-us/library/ms179296(v=sql.105).aspx

Q3
HOTSPOT

You have a database named Sales that contains the following database tables: Customer, Order, and Products. The Products table and the Order table are shown in the following diagram.



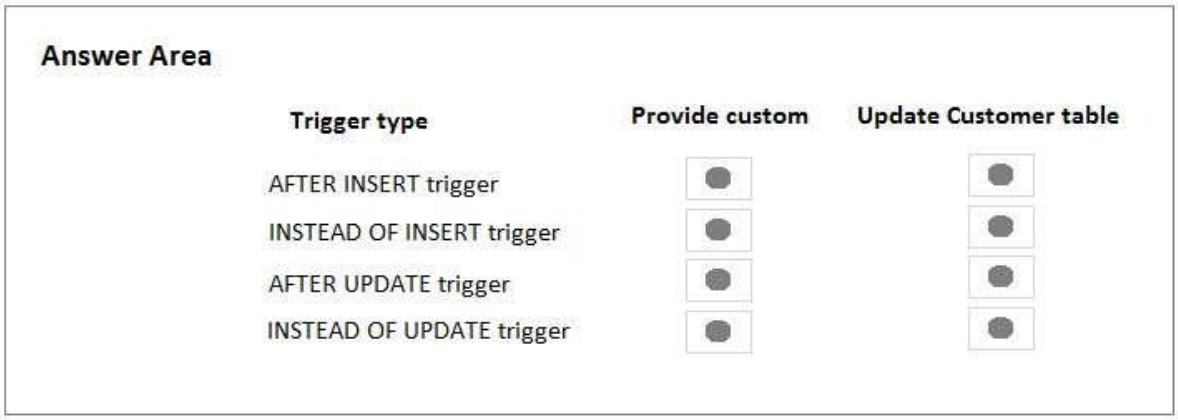
The customer table includes a column that stores the data for the last order that the customer placed.

You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized.

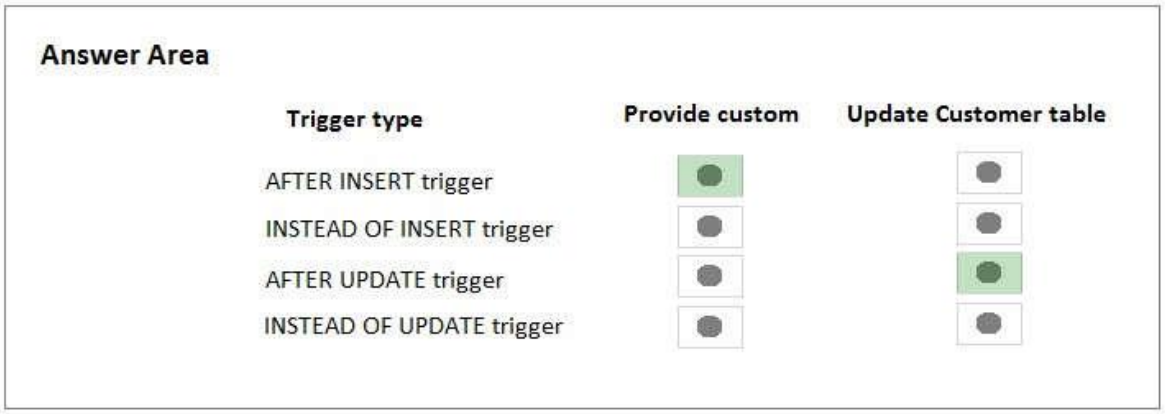
You need to create triggers that meet the following requirements:
Optimize the performance and data integrity of the tables. Provide a custom error if a user attempts to create an order for a customer that does not exist. In the Customers table, update the value for the last order placed. Complete all actions as part of the original transaction.

In the table below, identify the trigger types that meet the requirements. NOTE: Make only selection in each column. Each correct selection is worth one point.

Hot Area:



Answer:

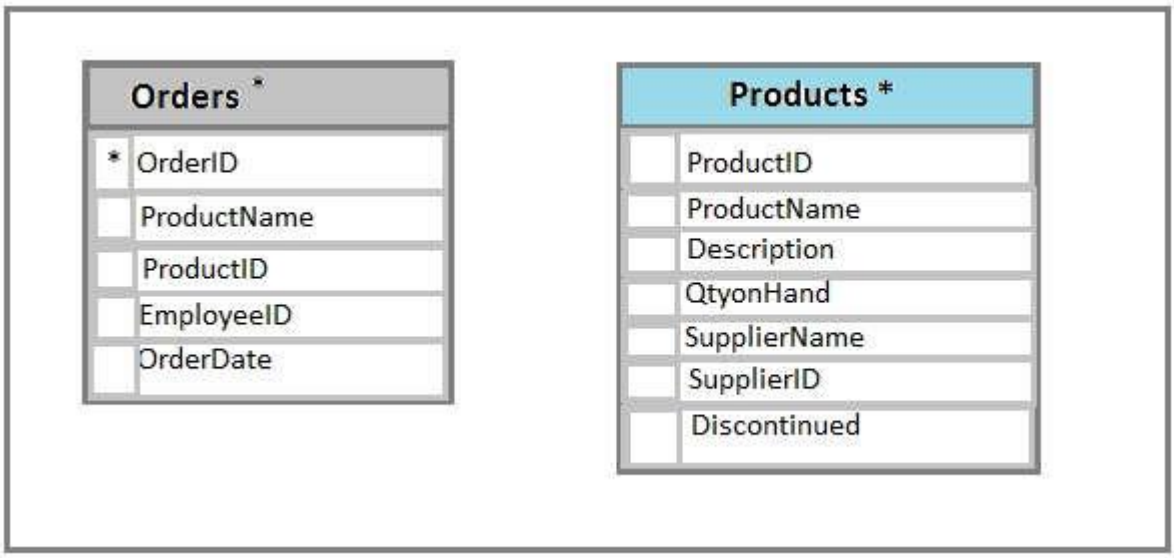


Explanation:
INSTEAD OF INSERT triggers can be defined on a view or table to replace the standard action of the INSERT statement.
AFTER specifies that the DML trigger is fired only when all operations specified in the triggering SQL statement have executed successfully.

References:https://technet.microsoft.com/en-us/library/ms175089(v=sql.105).aspx

Q4
HOTSPOT

You have a database named Sales that contains the following database tables: Customer, Order, and Products. The Products table and the Order table are shown in the following diagram.



The customer table includes a column that stores the data for the last order that the customer placed.

You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized. The Leads table must include the columns described in the following table.

Column name	Description
LeadID	This column stores a unique vale that is automatically assigned for each lead.
IsCustomer	This column indicates whether the lead is for a current customer.

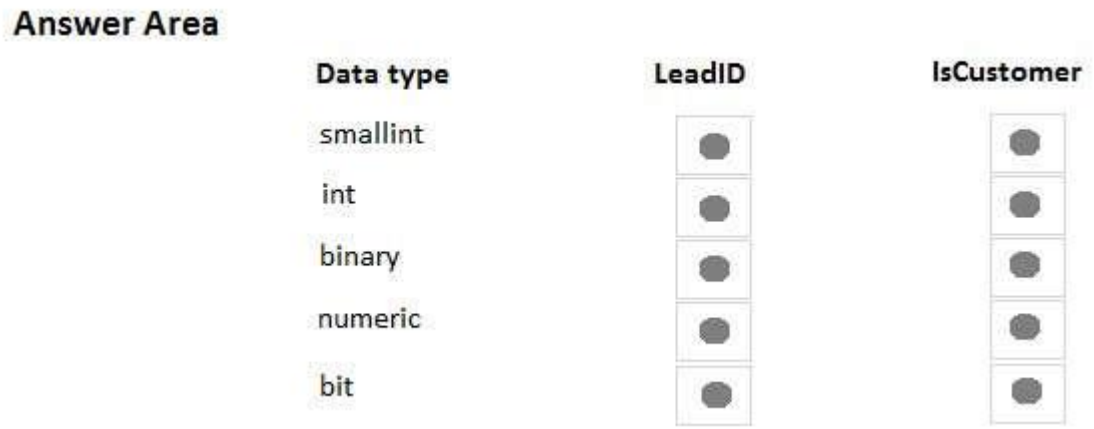
The data types chosen must consume the least amount of storage possible.

You need to select the appropriate data types for the Leads table.

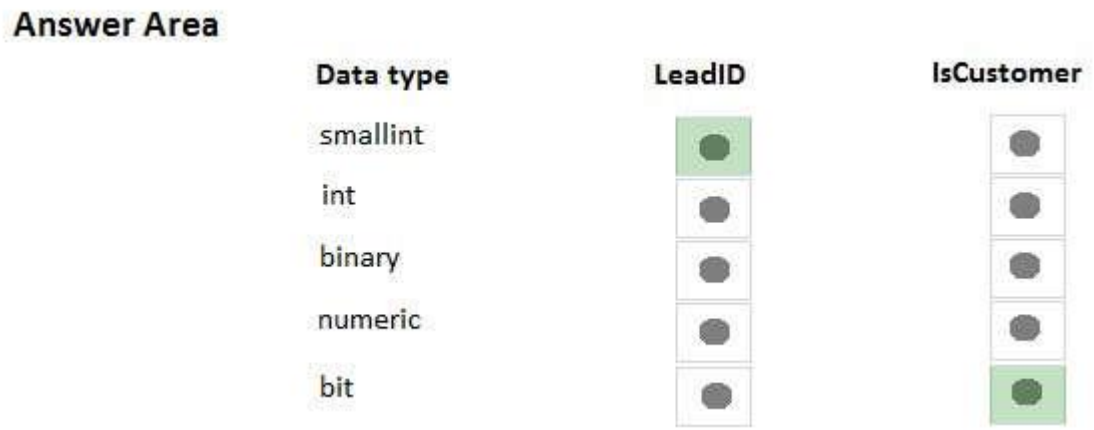
In the table below, identify the data type that must be used for each table column.

NOTE: Make only one selection in each column.

Hot Area:



Answer:



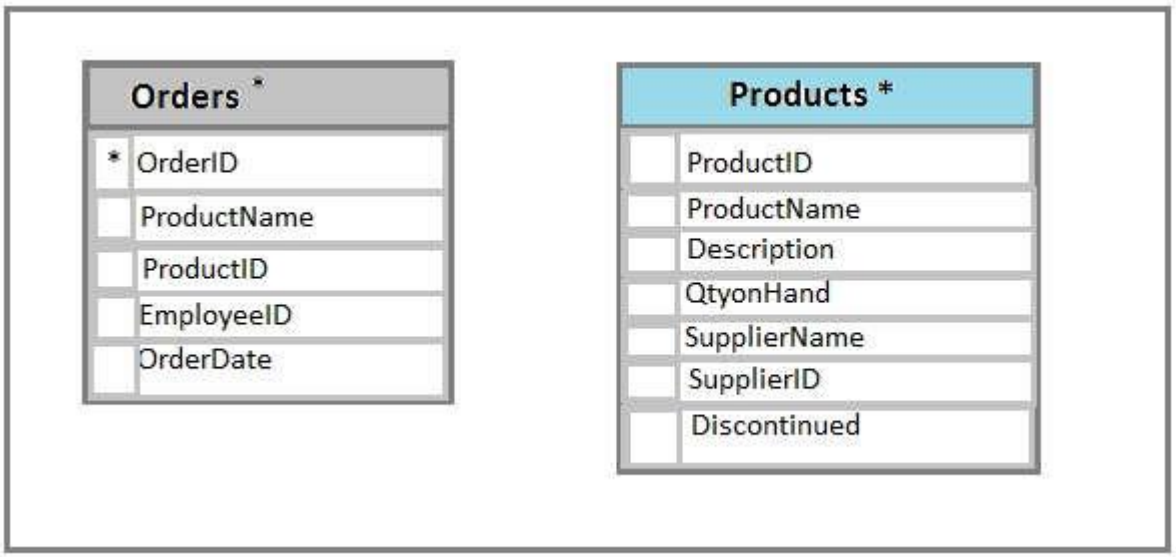
Explanation:
Bit is aTransact-SQL integer data type that can take a value of 1, 0, or NULL. Smallint is a Transact-SQL integer data type that can take a value in the range from -32,768 to 32,767.
int, bigint, smallint, and tinyint (Transact-SQL)
Exact-number data types that use integer data.

Data type	Range	Storage
bigint	-2^63 (-9,223,372,036,854,775,808) to 2^63-1 (9,223,372,036,854,775,807)	8 Bytes
int	-2^31 (-2,147,483,648) to 2^31-1 (2,147,483,647)	4 Bytes
smallint	-2^15 (-32,768) to 2^15-1 (32,767)	2 Bytes
tinyint	0 to 255	1 Byte

References:https://msdn.microsoft.com/en-us/library/ms187745.aspx
https://msdn.microsoft.com/en-us/library/ms177603.aspx

Q5
HOTSPOT

You have a database named Sales that contains the following database tables: Customer, Order, and Products. The Products table and the Order table are shown in the following diagram.



The customer table includes a column that stores the data for the last order that the customer placed.

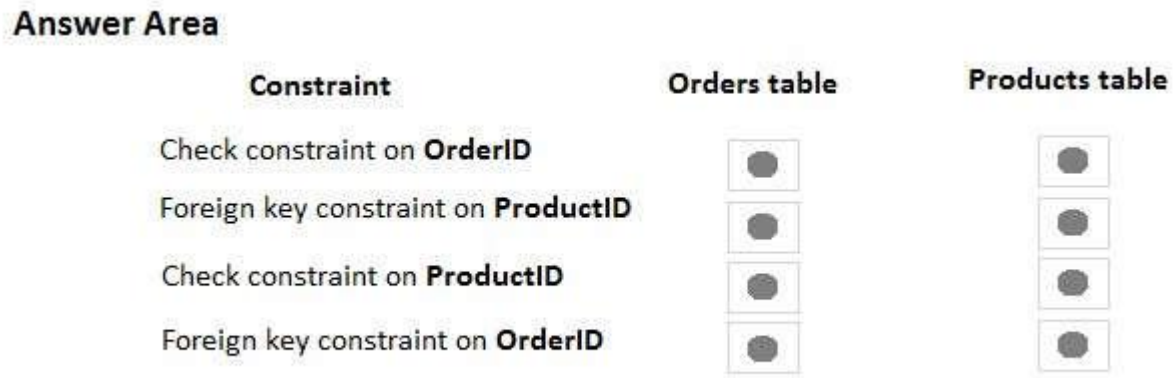
You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized.

You need to modify the database design to meet the following requirements:
Rows in the Orders table must always have a valid value for the ProductID column. Rows in the Products table must not be deleted if they arepart of any rows in the Orders table.
All rows in both tables must be unique.

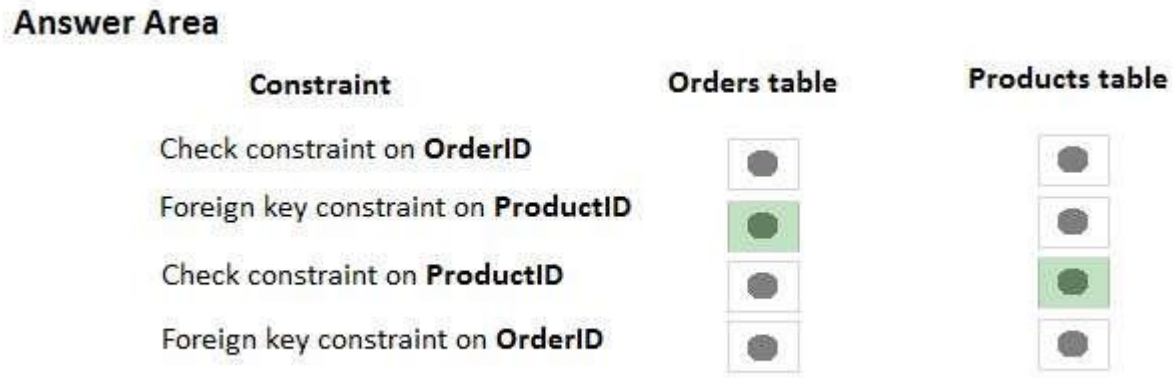
In the table below, identify the constraint that must be configured for each table.

NOTE: Make only one selection in each column.

Hot Area:



Answer:



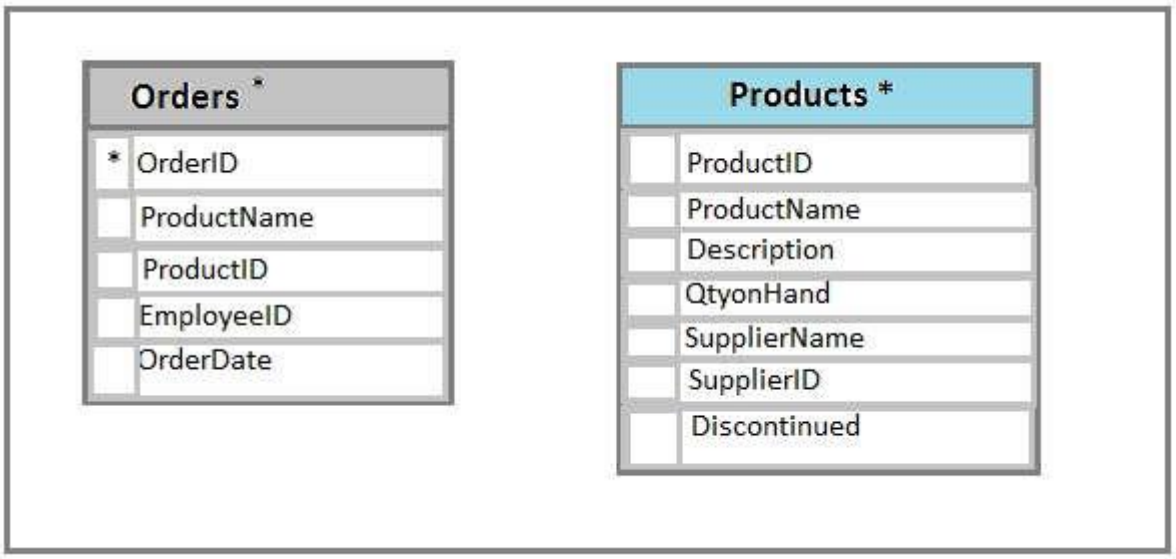
Explanation:
A FOREIGN KEY in one table points to a PRIMARY KEY in another table. Here the foreign key constraint is put on the ProductID in the Orders, and points to the ProductID of

the Products table. With a check constraint on the ProductID we can ensure that the Products table contains only unique rows.

References:http://www.w3schools.com/sql/sql_foreignkey.asp

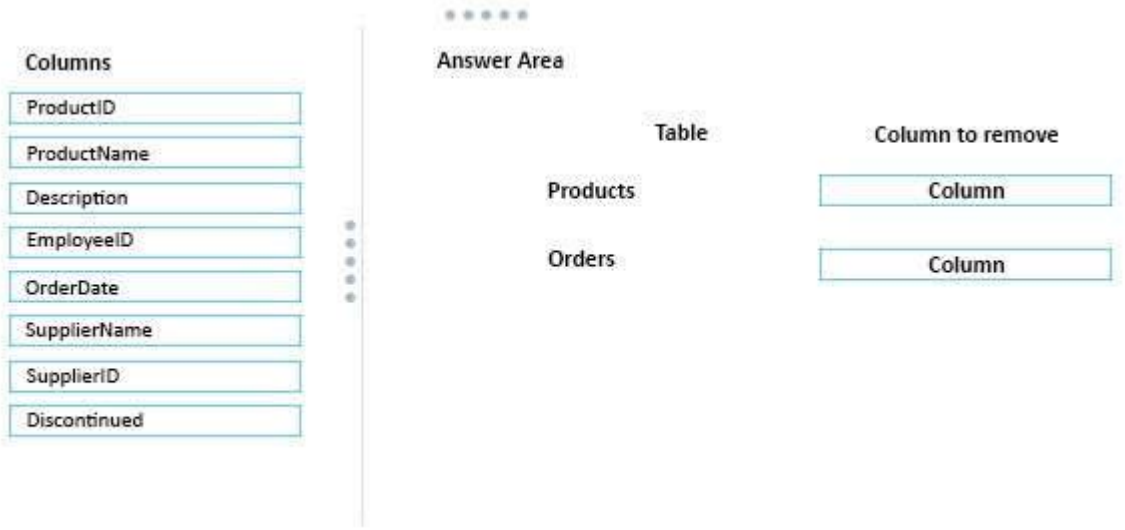
Q6
DRAG DROP

You have a database named Sales that contains the following database tables. Customer, Order, and Products. The Products table and the order table shown in the following diagram.

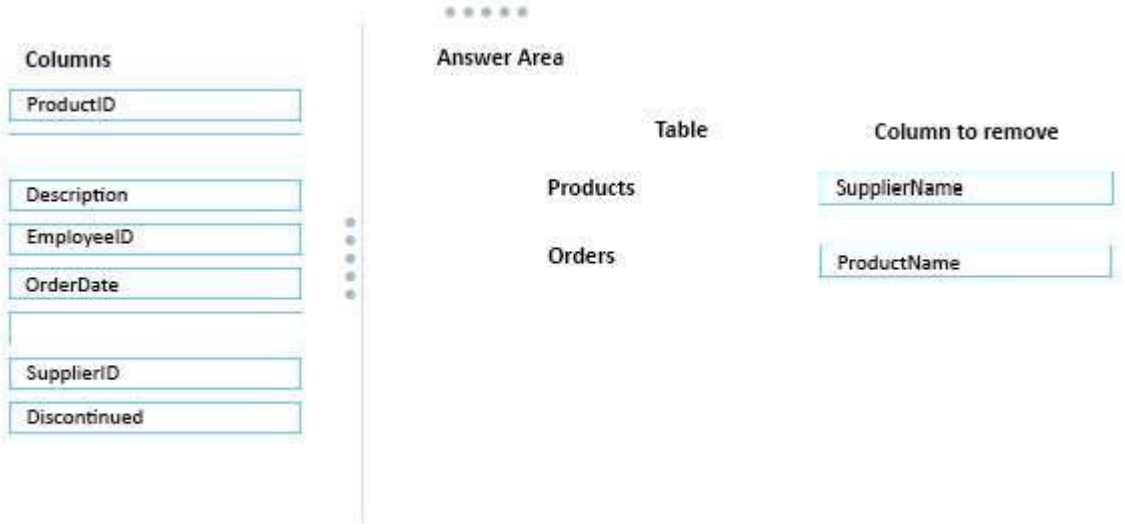


The Customer table includes a column that stores the date for the last order that the customer placed. You plan to create a table named Leads. The Leads table is expected to contain approximately 20,000 records. Storage requirements for the Leads table must be minimized.

You need to begin to modify the table design to adhere to third normal form. Which column should you remove for each table? To answer? drag the appropriate column names to the correct locations. Each column name 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.



Answer:



Explanation:
In the Products table the SupplierName is dependant on the SupplierID, not on the ProductID. In the Orders table the ProductName is dependant on the ProductID, not on the OrderID.

Note:
A table is in third normal form when the following conditions are met:
It is in second normal form.
All nonprimary fields are dependent on the primary key.

Second normal form states that it should meet all the rules for First 1Normnal Form and there must be no partial dependences of any of the columns onthe primary key.

First normal form (1NF) sets the very basic rules for an organized database:
Define the data items required, because they become the columns in a table. Place related data items in a table.
Ensure that there are no repeating groups ofdata.
Ensure that there is a primary key.

References:https://www.tutorialspoint.com/sql/third-normal-form.htm

Q7
HOTSPOT

You have a database that contains the following tables: BlogCategory, BlogEntry, ProductReview, Product, and SalesPerson. The tables were created using the following Transact SQL statements:

```
CREATE TABLE BlogCategory
(
      CategoryID int NOT NULL PRIMARY KEY,
      CategoryName nvarchar (20)
);

CREATE TABLE BlogEntry
(
      Entry int NOT PRIMARY KEY,
      Entrytitle nvarchar (50),
      Category int NOT NULL FOREIGN KEY REFERENCES BlogCategory
(CategoryID)
);

CREATE TABLE dbo.ProductReview
(
      ProductReviewID IDENTITY(1,1) PRIMARY KEY,
      Product int NOT NULL,
      Review varchar (1000) NOT NULL
);

CREATE TABLE dbo.Product
(
      ProductID int Identity(1,1) PRIMARY KEY,
      Name varchar(1000) NOT NULL
);
CREATE TABLE dbo.SalesPerson
(
      SalesPersonID int IDENTITY(1,1) PRIMARY KEY,
      Name varchar (1000) NOT NULL,
      SalesID Money
)
```

You must modify the ProductReview Table to meet the following requirements:
The table must reference the ProductID column in the Product table Existing records in the ProductReview table must not be validated with the Product table. Deleting records in the Product table must not be allowed if records are referenced by the ProductReview table.
Changes to records in the Product table must propagate to the ProductReview table.

You also have the following database tables: Order, ProductTypes, and SalesHistory, The transact-SQL statements for these tables are not available.

You must modify the Orders table to meet the following requirements:
Create new rows in the table without granting INSERT permissions to the table. Notify the sales person who places an order whether or not the order was completed.

You must add the following constraints to the SalesHistory table:

a constraint on the SaleID column that allows the field to be used as a record identifier a constant that uses the ProductID column to reference the Product column of the ProductTypes table a constraint on the CategoryID column that allows one row with a null value in the column a constraint that limits the SalePrice column to values greater than four Finance department users must be able to retrieve data from the SalesHistory table for sales persons where the value of the SalesYTD column is above a certain threshold.

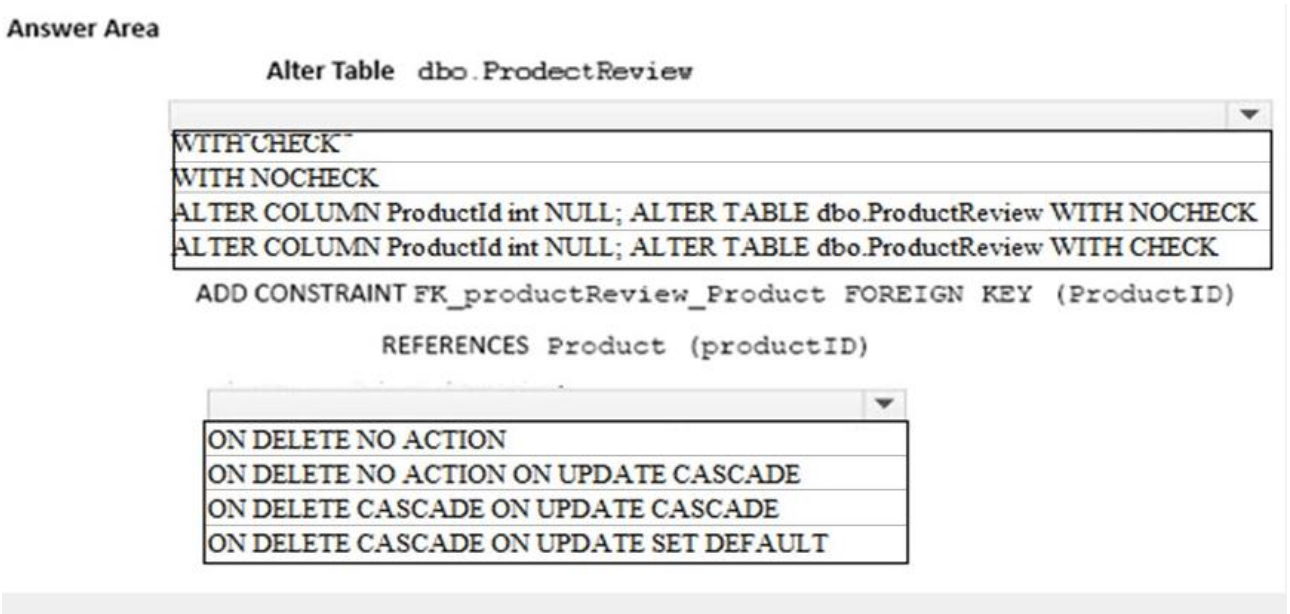
You plan to create a memory-optimized table named SalesOrder. The table must meet the following requirements:
The table must hold 10 million unique sales orders.
The table must use checkpoints to minimize I/O operations and must not use transaction logging.
Data loss is acceptable.

Performance for queries against the SalesOrder table that use Where clauses with exact equality operations must be optimized.

You need to enable referential integrity for the ProductReview table.

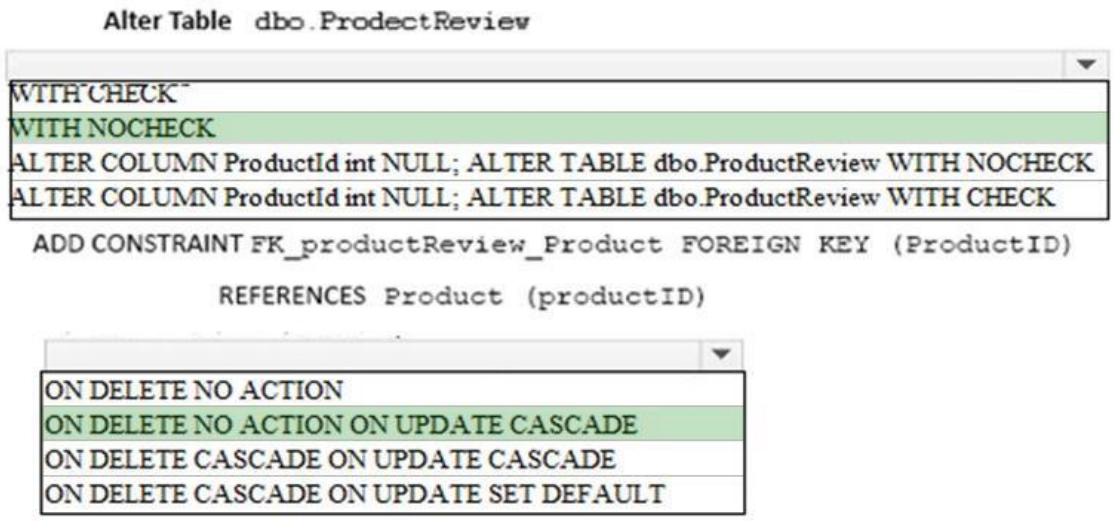
How should you complete the relevant Transact-SQL statement? To answer? select the appropriate Transact-SQL segments in the answer area.

Hot Area:



Answer:

Answer Area



Explanation:

Box 1: WITH NOCHECK
We should use WITH NOCHECK as existing records in the ProductReview table must not be validated with the Product table.

Box 2: ON DELETE NO ACTION ON DELETE NO CASCADE
Deletes should not be allowed, so we use ON DELETE NO ACTION. Updates should be allowed, so we use ON DELETE NO CASCADE

NO ACTION: the Database Engine raises an error, and the update action on the row in the parent table is rolled back.
CASCADE: corresponding rows are updated in the referencing table when that row is updated in the parent table.

Note: ON DELETE { NO ACTION | CASCADE | SET NULL | SET DEFAULT } Specifies what action happens to rows in the table that is altered, if those rows have a referential relationship and the referenced row is deleted from the parent table. The default is NO ACTION.

ON UPDATE { NO ACTION | CASCADE | SET NULL | SET DEFAULT } Specifies what action happens to rows in the table altered when those rows have a referential relationship and the referenced row is updated in the parent table. The default is NO ACTION.

Note: You must modify the ProductReview Table to meet the following requirements:

The table must reference the ProductID column in the Product table Existing records in the ProductReview table must not be validated with the Product table. Deleting records in the Product table must not be allowed if records are referenced by the ProductReview table.
Changes to records in the Product table must propagate to the ProductReview table.

References: https://msdn.microsoft.com/en-us/library/ms190273.aspx
https://msdn.microsoft.com/en-us/library/ms188066.aspx

Q8
HOTSPOT

You have a database that contains the following tables: BlogCategory, BlogEntry, ProductReview, Product, and SalesPerson. The tables were created using the following Transact SQL statements:

```
CREATE TABLE BlogCategory
(
      CategoryID int NOT NULL PRIMARY KEY,
      CategoryName nvarchar (20)
);

CREATE TABLE BlogEntry
(
      Entry int NOT PRIMARY KEY,
      Entrytitle nvarchar (50),
      Category int NOT NULL FOREIGN KEY REFERENCES BlogCategory
(CategoryID)
);

CREATE TABLE dbo.ProductReview
(
      ProductReviewID IDENTITY(1,1) PRIMARY KEY,
      Product int NOT NULL,
      Review varchar (1000) NOT NULL
);

CREATE TABLE dbo.Product
(
      ProductID int Identity(1,1) PRIMARY KEY,
      Name varchar(1000) NOT NULL
);
CREATE TABLE dbo.SalesPerson
(
      SalesPersonID int IDENTITY(1,1) PRIMARY KEY,
      Name varchar (1000) NOT NULL,
      SalesID Money
)
```

You must modify the ProductReview Table to meet the following requirements:
The table must reference the ProductID column in the Product table Existing records in the ProductReview table must not be validated with the Product table. Deleting records in the Product table must not be allowed if records are referenced by the ProductReview table.
Changes to records in the Product table must propagate to the ProductReview table.

You also have the following database tables: Order, ProductTypes, and SalesHistory, The transact-SQL statements for these tables are not available.

You must modify the Orders table to meet the following requirements:
Create new rows in the table without granting INSERT permissions to the table. Notify the sales person who places an order whether or not the order was completed.

You must add the following constraints to the SalesHistory table:
a constraint on the SaleID column that allows the field to be used as a record identifier a constant that uses the ProductID column to reference the Product column of the ProductTypes table a constraint on the CategoryID column that allows one row with a null value in the column a constraint that limits the SalePrice column to values greater than four

Finance department users must be able to retrieve data from the SalesHistory table for sales persons where the value of the SalesYTD column is above a certain threshold.

You plan to create a memory-optimized table named SalesOrder. The table must meet the following requirements:
The table must hold 10 million unique sales orders.
The table must use checkpoints to minimize I/O operations and must not use transaction logging.
Data loss is acceptable.

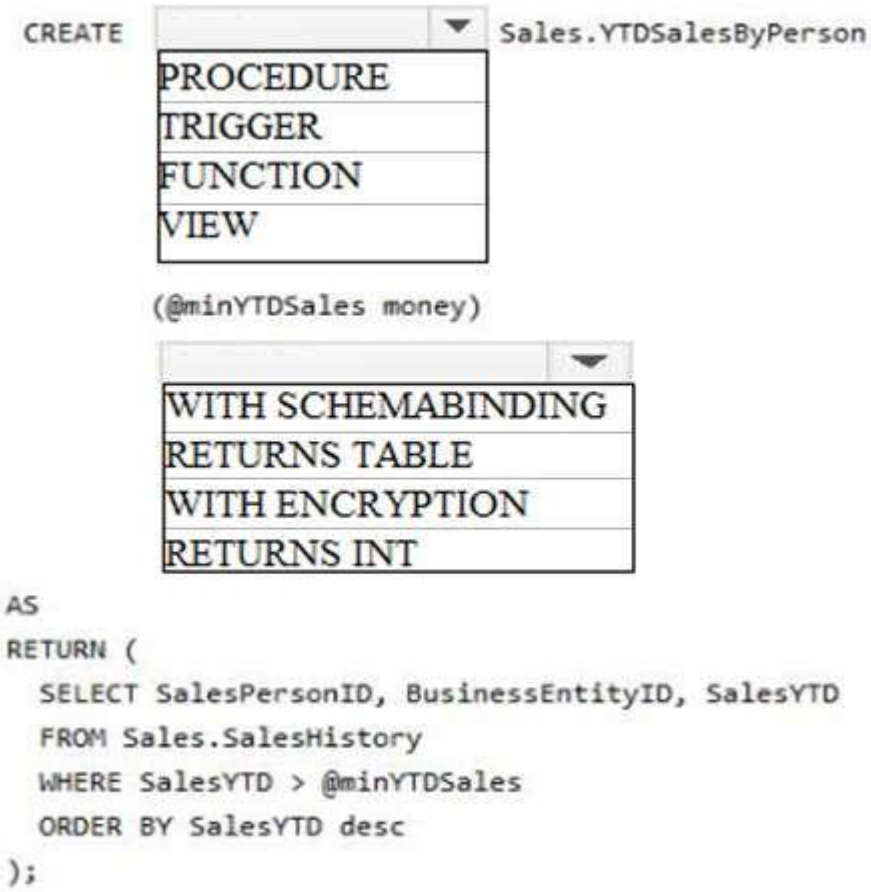
Performance for queries against the SalesOrder table that use Where clauses with exact equality operations must be optimized.

You need to create an object that allows finance users to be able to retrieve the required data. The object must not have a negative performance impact.

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

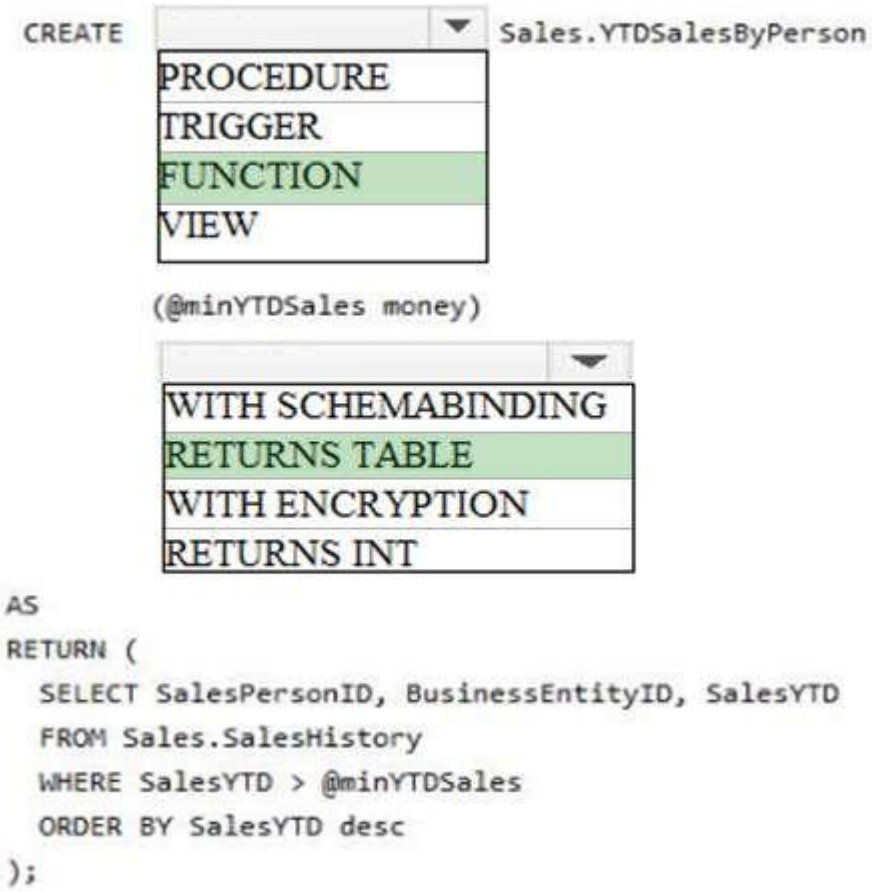
Hot Area:

Answer Area



Answer:

Answer Area



Explanation:

A user defined function can return a table, which can be produces by a SELECT statement.

From question: Finance department users must be able to retrieve data from the SalesHistory table for sales persons where the value of the SalesYTD column is above a certain threshold.

Incorrect:
Not VIEW: The RETURN clause is not used when you create a view.

References:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-function-transact-sql?view=sql- server-2017