Задание 1.

Новые объекты:

Триггер:

```sql
CREATE TRIGGER [SpecialOfferHst_Trigger]
ON [Sales].[SpecialOffer]
AFTER INSERT, UPDATE, DELETE
AS
IF EXISTS (SELECT * FROM inserted) AND EXISTS (SELECT * FROM deleted)
    INSERT INTO [Sales].[SpecialOfferHst]
    SELECT
            'update'
        , CURRENT_TIMESTAMP
        , [SpecialOfferID]
        , CURRENT_USER
    FROM inserted
ELSE IF EXISTS (SELECT * FROM inserted)
    INSERT INTO [Sales].[SpecialOfferHst]
    SELECT
            'insert'
        , CURRENT_TIMESTAMP
        , [SpecialOfferID]
        , CURRENT_USER
    FROM inserted
ELSE IF EXISTS (SELECT * FROM deleted)
    INSERT INTO [Sales].[SpecialOfferHst]
    SELECT
            'delete'
        , CURRENT_TIMESTAMP
        , [SpecialOfferID]
        , CURRENT_USER
    FROM deleted;
```

Вью:

```sql
CREATE VIEW [SpecialOffer_View]
WITH ENCRYPTION
AS
SELECT * FROM [Sales].[SpecialOffer];
```

Результаты выполнения запросов:

1.a

Messages
    Command(s) completed successfully.

1.b

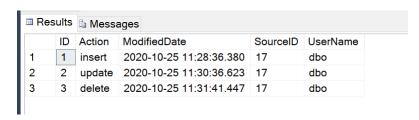Messages
    Command(s) completed successfully.

1.c

Messages
    Command(s) completed successfully.

1.d

(1 row(s) affected)

(1 row(s) affected)

 (1 row(s) affected)

 (1 row(s) affected)

 (1 row(s) affected)

 (1 row(s) affected)

Results   Messages

	ID	Action	ModifiedDate	SourceID	UserName
1	1	insert	2020-10-25 11:28:36.380	17	dbo
2	2	update	2020-10-25 11:30:36.623	17	dbo
3	3	delete	2020-10-25 11:31:41.447	17	dbo

Задание 2.
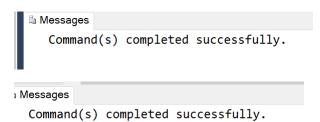
Новые объекты:

Вью:

```sql
CREATE VIEW [SpecialOfferInfo_View]
WITH SCHEMABINDING
AS
SELECT
        [sop].[ProductID]
    , [p].[Name]
    , [so].[SpecialOfferID]
    , [so].[Description]
    , [so].[DiscountPct]
    , [so].[Type]
    , [so].[Category]
    , [so].[StartDate]
    , [so].[EndDate]
    , [so].[MinQty]
    , [so].[MaxQty]
    , [so].[rowguid] [SpecialOfferRowGuid]
    , [so].[ModifiedDate] [SpecialOfferModifiedDate]
    , [sop].[rowguid] [SpecialOfferProductRowGuid]
    , [sop].[ModifiedDate] [SpecialOfferProductModifiedDate]
FROM [Sales].[SpecialOffer] [so]
INNER JOIN [Sales].[SpecialOfferProduct] [sop]
    ON ([sop].[SpecialOfferID] = [so].[SpecialOfferID])
INNER JOIN [Production].[Product] [p]
    ON ([p].[ProductID] = [sop].[ProductID]);
GO

CREATE UNIQUE CLUSTERED INDEX [SpecialOfferInfo_Index]
    ON [SpecialOfferInfo_View]([ProductID], [SpecialOfferID]);
GO
```

Триггер:

```sql
CREATE TRIGGER [SpecialOfferInfo_Trigger]
ON [SpecialOfferInfo_View]
INSTEAD OF INSERT, UPDATE, DELETE
AS
IF EXISTS (SELECT * FROM inserted) AND EXISTS (SELECT * FROM deleted)
    IF UPDATE([SpecialOfferID])
    BEGIN
        RAISERROR('UPDATE of SpecialOfferID is not allowed.', 18, 1);
        ROLLBACK;
    END
    ELSE
    BEGIN
        UPDATE [Sales].[SpecialOffer]
        SET
                [Description] = inserted.[Description]
            , [DiscountPct] = inserted.[DiscountPct]
            , [Type] = inserted.[Type]
            , [Category] = inserted.[Category]
            , [StartDate] = inserted.[StartDate]
            , [EndDate] = inserted.[EndDate]
            , [MinQty] = inserted.[MinQty]
            , [MaxQty] = inserted.[MaxQty]
            , [ModifiedDate] = CURRENT_TIMESTAMP
        FROM inserted
        INNER JOIN [Production].[Product] [p]
            ON ([p].[Name] = inserted.[Name])
        WHERE [Sales].[SpecialOffer].[SpecialOfferID] = inserted.[SpecialOfferID];
    END
ELSE IF EXISTS (SELECT * FROM inserted)
BEGIN
    INSERT INTO [Sales].[SpecialOffer]
    SELECT
            [Description]
        , [DiscountPct]
        , [Type]
        , [Category]
        , [StartDate]
        , [EndDate]
        , [MinQty]
        , [MaxQty]
        , NEWID()
        , CURRENT_TIMESTAMP
    FROM inserted
    INNER JOIN [Production].[Product] [p]
        ON ([p].[Name] = inserted.[Name]);
    INSERT INTO [Sales].[SpecialOfferProduct]
    SELECT
            SCOPE_IDENTITY()
        , [p].[ProductID]
        , NEWID()
        , CURRENT_TIMESTAMP
    FROM inserted
    INNER JOIN [Production].[Product] [p]
        ON ([p].[Name] = inserted.[Name]);
END
ELSE IF EXISTS (SELECT * FROM deleted)
BEGIN
    CREATE TABLE #SOToDelete (
        [SpecialOfferID] INT NOT NULL);
    INSERT INTO [#SOToDelete]
    SELECT DISTINCT
        [sop].[SpecialOfferID]
    FROM deleted
    INNER JOIN [Production].[Product] [p]
        ON ([p].[Name] = deleted.[Name])
    INNER JOIN [Sales].[SpecialOfferProduct] [sop]
        ON ([sop].[ProductID] = [p].[ProductID]);
    DELETE
    FROM [Sales].[SpecialOfferProduct]
    WHERE [Sales].[SpecialOfferProduct].[ProductID] IN (
        SELECT [p].[ProductID]
        FROM deleted
        INNER JOIN [Production].[Product] [p]
            ON ([p].[Name] = deleted.[Name]));
    DELETE
    FROM [Sales].[SpecialOffer]
    WHERE [Sales].[SpecialOffer].[SpecialOfferID] IN (
        SELECT [sotd].[SpecialOfferID]
        FROM [#SOToDelete] [sotd]
        LEFT JOIN [Sales].[SpecialOfferProduct] [sop]
            ON ([sop].[SpecialOfferID] = [sotd].[SpecialOfferID])
        WHERE [sop].[SpecialOfferID] IS NULL);
END;
GO
```

Результаты выполнения запросов:

2.a

Messages
   Command(s) completed successfully.

Messages
   Command(s) completed successfully.

2.b

Messages
   Command(s) completed successfully.

2.c

Insert:

	SpecialOfferID	Description	DiscountPct	Type	Category	StartDate	EndDate	MinQty	MaxQty	rowguid	Modi
5	5	Volume Discount 41 to 60	0,15	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	41	60	677E1D9D-944F-4E81-90E8-47EB0A82D48C	2005
6	6	Volume Discount over 60	0,20	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	61	NULL	8157F569-4E8D-46B6-9347-5D0F726A9439	2005
7	7	Mountain-100 Clearance Sale	0,35	Discontinued Product	Reseller	2006-05-15 00:00:00.000	2006-06-30 00:00:00.000	0	NULL	7DF15BF5-6C05-47E7-80A4-22BD1CE59A72	2006
8	8	Sport Helmet Discount-2002	0,10	Seasonal Discount	Reseller	2006-07-01 00:00:00.000	2006-07-31 00:00:00.000	0	NULL	20C5D2CC-A38F-48F8-AC9A-8F15943E52AE	2006
9	9	Road-650 Overstock	0,30	Excess Inventory	Reseller	2006-07-01 00:00:00.000	2006-08-31 00:00:00.000	0	NULL	0CF8472B-F9E6-4945-9E09-549D7DDE2198	2006
10	10	Mountain Tire Sale	0,50	Excess Inventory	Customer	2007-06-15 00:00:00.000	2007-08-30 00:00:00.000	0	NULL	220444AD-2EF3-4E4C-87E9-3AA6EE39A877	2007
11	11	Sport Helmet Discount-2003	0,15	Seasonal Discount	Reseller	2007-07-01 00:00:00.000	2007-07-31 00:00:00.000	0	NULL	E72DAB1D-F44D-448B-9FE2-F259A2F0210D	2007
12	12	LL Road Frame Sale	0,35	Excess Inventory	Reseller	2007-07-01 00:00:00.000	2007-08-15 00:00:00.000	0	NULL	C0AF1C89-9722-4235-9248-3FBA4D9E5841	2007
13	13	Touring-3000 Promotion	0,15	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	5061CCE4-E021-45A8-9A75-DFB36CBBCE85	2007
14	14	Touring-1000 Promotion	0,20	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	1AF84A9E-A98C-4BD9-B48F-DC2B8B6B010B	2007
15	15	Half-Price Pedal Sale	0,50	Seasonal Discount	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289C0C2E47	2007
16	16	Mountain-500 Silver Cleara...	0,40	Discontinued Product	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B20014174	2008
17	18	Ultra mega discount	0,99	Volume Discount	Reseller	2005-06-01 00:00:00.000	2005-10-01 00:00:00.000	0	10	B51107D6-CCDB-4065-9AF9-80F70C13C97C	2020

	SpecialOfferID	ProductID	rowguid	ModifiedDate
526	15	936	09659C40-EE49-4D99-8A4E-EC09C366F383	2007-07-16 00:00:00.000
527	15	937	08A8EB19-1142-4E8E-BB80-38811E485200	2007-07-16 00:00:00.000
528	15	938	FF93AC1F-49DC-4A67-9C96-9592CCE6D2B1	2007-07-16 00:00:00.000
529	15	939	E91B2C2D-A400-4945-9CE0-A1D59063C3C6	2007-07-16 00:00:00.000
530	15	940	A497D0BD-5CF4-46CB-A596-FAA6B28932F7	2007-07-16 00:00:00.000
531	15	941	339358CA-F265-460E-8510-CBC10388DF38	2007-07-16 00:00:00.000
532	16	782	C643F9AE-F5C5-45B1-8D0B-E2BF4D78A315	2008-04-01 00:00:00.000
533	16	784	EEF40E39-872F-45A1-81B0-50857E089A11	2008-04-01 00:00:00.000
534	16	984	52DD0F65-0EA9-4848-9884-7594BA953274	2008-04-01 00:00:00.000
535	16	985	C8127A82-05C3-42FD-A5C6-215D58A236BD	2008-04-01 00:00:00.000
536	16	986	C60FB28D-2431-481C-985E-3FEA8119D705	2008-04-01 00:00:00.000
537	16	987	BEBD6F20-D6C2-4511-8C97-1F53B2099D1F	2008-04-01 00:00:00.000
538	16	988	2981C98B-A18F-4153-A6A2-EC453CB130CE	2008-04-01 00:00:00.000
539	18	1	57ED1929-C4DE-4715-918D-C96A963B5A81	2020-10-25 16:44:16.937

Query executed successfully.

Update:

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Results | Messages

	SpecialOfferID	Description	DiscountPct	Type	Category	StartDate	EndDate	MinQty	MaxQty	rowguid	Modi
5	5	Volume Discount 41 to 60	0,15	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	41	60	677E1D9D-944F-4E81-90E8-47EB0A82D48C	2005
6	6	Volume Discount over 60	0,20	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	61	NULL	8157F569-4E8D-46B6-9347-5D0F726A9439	2005
7	7	Mountain-100 Clearance Sale	0,35	Discontinued Product	Reseller	2006-05-15 00:00:00.000	2006-06-30 00:00:00.000	0	NULL	7DF15BF5-6C05-47E7-80A4-22BD1CE59A72	2006
8	8	Sport Helmet Discount-2002	0,10	Seasonal Discount	Reseller	2006-07-01 00:00:00.000	2006-07-31 00:00:00.000	0	NULL	20C5D2CC-A38F-48F8-AC9A-8F15943E52AE	2006
9	9	Road-650 Overstock	0,30	Excess Inventory	Reseller	2006-07-01 00:00:00.000	2006-08-31 00:00:00.000	0	NULL	0CF8472B-F9E6-4945-9E09-549D7DDE2198	2006
10	10	Mountain Tire Sale	0,50	Excess Inventory	Customer	2007-06-15 00:00:00.000	2007-08-30 00:00:00.000	0	NULL	220444AD-2EF3-4E4C-87E9-3AA6EE39A877	2007
11	11	Sport Helmet Discount-2003	0,15	Seasonal Discount	Reseller	2007-07-01 00:00:00.000	2007-07-31 00:00:00.000	0	NULL	E72DAB1D-F44D-448B-9FE2-F259A2F0210D	2007
12	12	LL Road Frame Sale	0,35	Excess Inventory	Reseller	2007-07-01 00:00:00.000	2007-08-15 00:00:00.000	0	NULL	C0AF1C89-9722-4235-9248-3FBA4D9E5841	2007
13	13	Touring-3000 Promotion	0,15	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	5061CCE4-E021-45A8-9A75-DFB36CBBCE85	2007
14	14	Touring-1000 Promotion	0,20	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	1AF84A9E-A98C-4BD9-B48F-DC2B8B6B010B	2007
15	15	Half-Price Pedal Sale	0,50	Seasonal Discount	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289C0C2E47	2007
16	16	Mountain-500 Silver Cleara...	0,40	Discontinued Product	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B20014174	2008
17	18	Some another cool discount	0,70	Volume Discount	Reseller	2005-07-01 00:00:00.000	2005-08-01 00:00:00.000	123	1254	B51107D6-CCDB-4065-9AF9-80F70C13C97C	2020

Delete:

Results | Messages

	SpecialOfferID	Description	DiscountPct	Type	Category	StartDate	EndDate	MinQty	MaxQty	rowguid	Modi
4	4	Volume Discount 25 to 40	0,10	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	25	40	504B5E85-8F3F-4EBC-9E1D-C1BC5DEA9AA8	2005
5	5	Volume Discount 41 to 60	0,15	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	41	60	677E1D9D-944F-4E81-90E8-47EB0A82D48C	2005
6	6	Volume Discount over 60	0,20	Volume Discount	Reseller	2005-07-01 00:00:00.000	2008-06-30 00:00:00.000	61	NULL	8157F569-4E8D-46B6-9347-5D0F726A9439	2005
7	7	Mountain-100 Clearance Sale	0,35	Discontinued Product	Reseller	2006-05-15 00:00:00.000	2006-06-30 00:00:00.000	0	NULL	7DF15BF5-6C05-47E7-80A4-22BD1CE59A72	2006
8	8	Sport Helmet Discount-2002	0,10	Seasonal Discount	Reseller	2006-07-01 00:00:00.000	2006-07-31 00:00:00.000	0	NULL	20C5D2CC-A38F-48F8-AC9A-8F15943E52AE	2006
9	9	Road-650 Overstock	0,30	Excess Inventory	Reseller	2006-07-01 00:00:00.000	2006-08-31 00:00:00.000	0	NULL	0CF8472B-F9E6-4945-9E09-549D7DDE2198	2006
10	10	Mountain Tire Sale	0,50	Excess Inventory	Customer	2007-06-15 00:00:00.000	2007-08-30 00:00:00.000	0	NULL	220444AD-2EF3-4E4C-87E9-3AA6EE39A877	2007
11	11	Sport Helmet Discount-2003	0,15	Seasonal Discount	Reseller	2007-07-01 00:00:00.000	2007-07-31 00:00:00.000	0	NULL	E72DAB1D-F44D-448B-9FE2-F259A2F0210D	2007
12	12	LL Road Frame Sale	0,35	Excess Inventory	Reseller	2007-07-01 00:00:00.000	2007-08-15 00:00:00.000	0	NULL	C0AF1C89-9722-4235-9248-3FBA4D9E5841	2007
13	13	Touring-3000 Promotion	0,15	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	5061CCE4-E021-45A8-9A75-DFB36CBBCE85	2007
14	14	Touring-1000 Promotion	0,20	New Product	Reseller	2007-07-01 00:00:00.000	2007-09-30 00:00:00.000	0	NULL	1AF84A9E-A98C-4BD9-B48F-DC2B8B6B010B	2007
15	15	Half-Price Pedal Sale	0,50	Seasonal Discount	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289C0C2E47	2007
16	16	Mountain-500 Silver Cleara...	0,40	Discontinued Product	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B20014174	2008

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Results | Messages

	ProductID	Name	SpecialOfferID	Description	DiscountPct	Type	Category	StartDate	EndDate	MinQty	MaxQty	SpecialOfferRowGuid
526	936	ML Mountain Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
527	937	HL Mountain Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
528	938	LL Road Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
529	939	ML Road Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
530	940	HL Road Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
531	941	Touring Pedal	15	Half-Price ...	0,50	Seasonal ...	Customer	2007-08-15 00:00:00.000	2007-09-15 00:00:00.000	0	NULL	03E3594D-6EBB-46A6-B8EE-A9289(
532	782	Mountain-200 Black, 38	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
533	784	Mountain-200 Black, 46	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
534	984	Mountain-500 Silver, 40	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
535	985	Mountain-500 Silver, 42	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
536	986	Mountain-500 Silver, 44	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
537	987	Mountain-500 Silver, 48	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2
538	988	Mountain-500 Silver, 52	16	Mountain-...	0,40	Discontin...	Reseller	2008-05-01 00:00:00.000	2008-06-30 00:00:00.000	0	NULL	EB7CB484-BCCF-4D2D-BF73-521B2