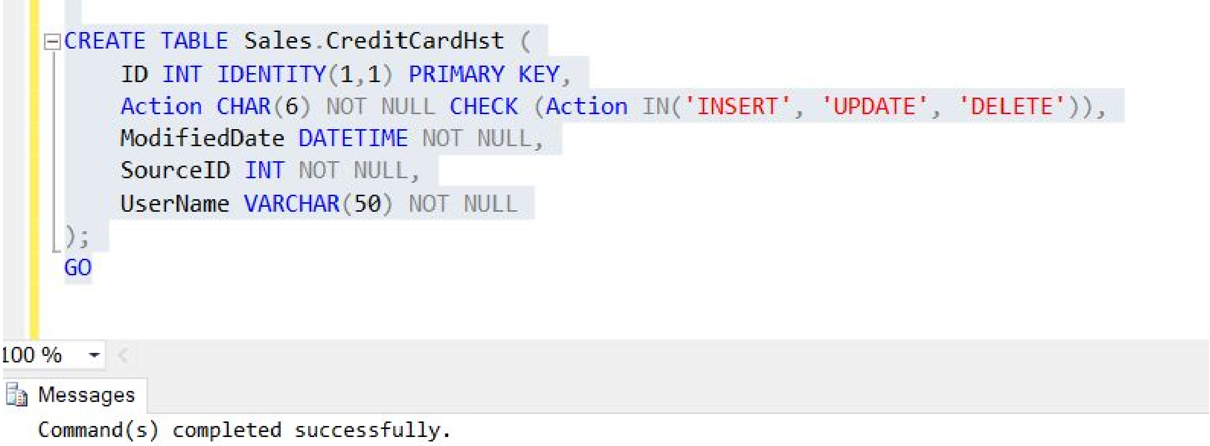
Лабораторная работа № 4

Вариант 5

Задание №1.

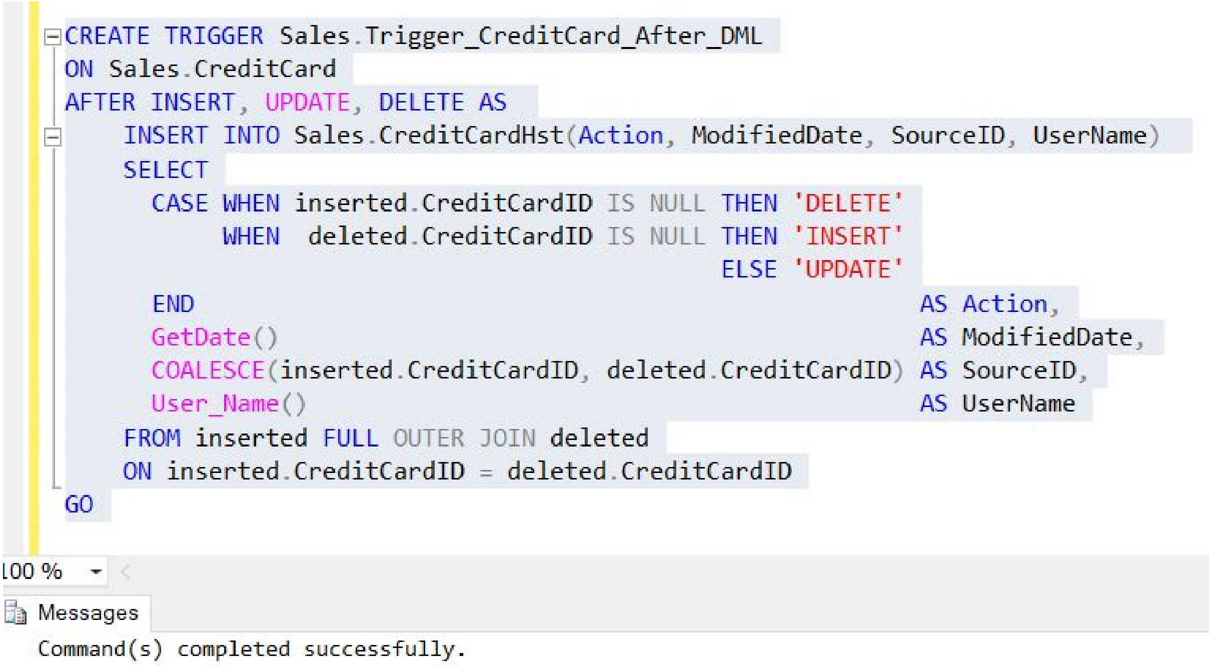
a)



```
CREATE TABLE Sales.CreditCardHst (
    ID INT IDENTITY(1,1) PRIMARY KEY,
    Action CHAR(6) NOT NULL CHECK (Action IN('INSERT', 'UPDATE', 'DELETE')),
    ModifiedDate DATETIME NOT NULL,
    SourceID INT NOT NULL,
    UserName VARCHAR(50) NOT NULL
);
GO
```

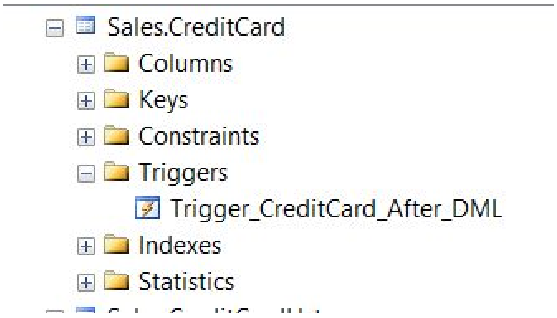
```
Command(s) completed successfully.
```

b)

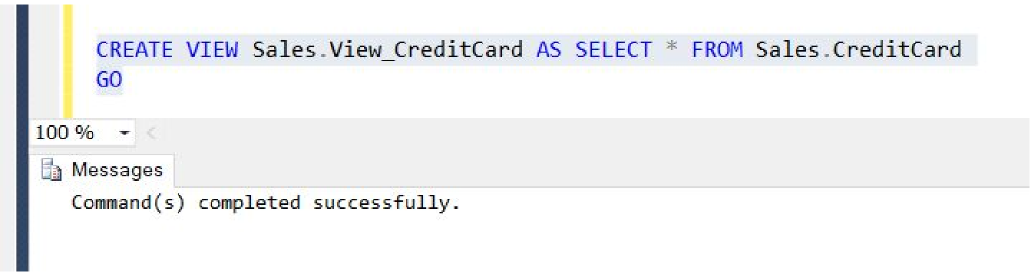


```
CREATE TRIGGER Sales.Trigger_CreditCard_After_DML
ON Sales.CreditCard
AFTER INSERT, UPDATE, DELETE AS
    INSERT INTO Sales.CreditCardHst(Action, ModifiedDate, SourceID, UserName)
    SELECT
      CASE WHEN inserted.CreditCardID IS NULL THEN 'DELETE'
           WHEN  deleted.CreditCardID IS NULL THEN 'INSERT'
                                           ELSE 'UPDATE'
      END                                                AS Action,
      GetDate()                                          AS ModifiedDate,
      COALESCE(inserted.CreditCardID, deleted.CreditCardID) AS SourceID,
      User_Name()                                        AS UserName
    FROM inserted FULL OUTER JOIN deleted
    ON inserted.CreditCardID = deleted.CreditCardID
GO
```

```
Command(s) completed successfully.
```

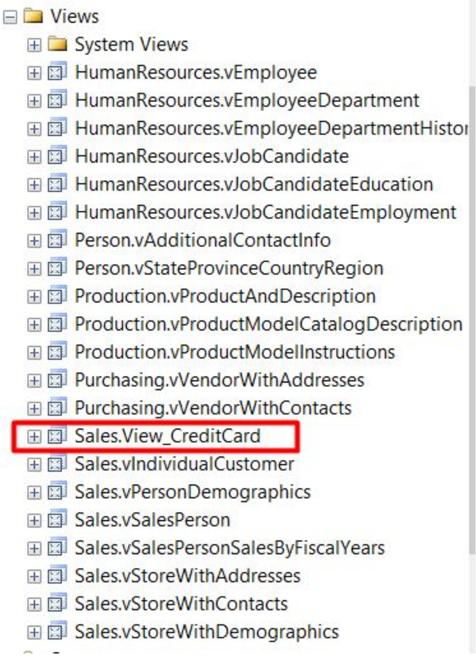


c)



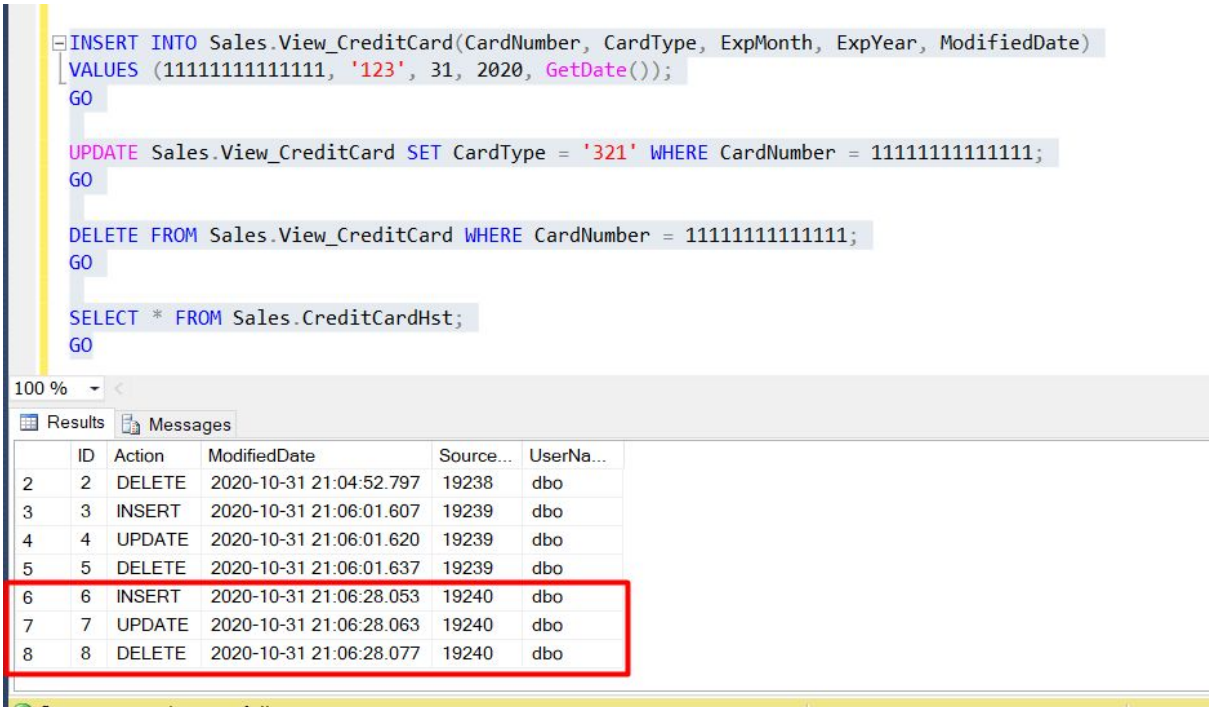
```
CREATE VIEW Sales.View_CreditCard AS SELECT * FROM Sales.CreditCard
GO
```

```
Command(s) completed successfully.
```



- Views
  - System Views
  - HumanResources.vEmployee
  - HumanResources.vEmployeeDepartment
  - HumanResources.vEmployeeDepartmentHistor
  - HumanResources.vJobCandidate
  - HumanResources.vJobCandidateEducation
  - HumanResources.vJobCandidateEmployment
  - Person.vAdditionalContactInfo
  - Person.vStateProvinceCountryRegion
  - Production.vProductAndDescription
  - Production.vProductModelCatalogDescription
  - Production.vProductModelInstructions
  - Purchasing.vVendorWithAddresses
  - Purchasing.vVendorWithContacts
  - Sales.View_CreditCard
  - Sales.vIndividualCustomer
  - Sales.vPersonDemographics
  - Sales.vSalesPerson
  - Sales.vSalesPersonSalesByFiscalYears
  - Sales.vStoreWithAddresses
  - Sales.vStoreWithContacts
  - Sales.vStoreWithDemographics

d)

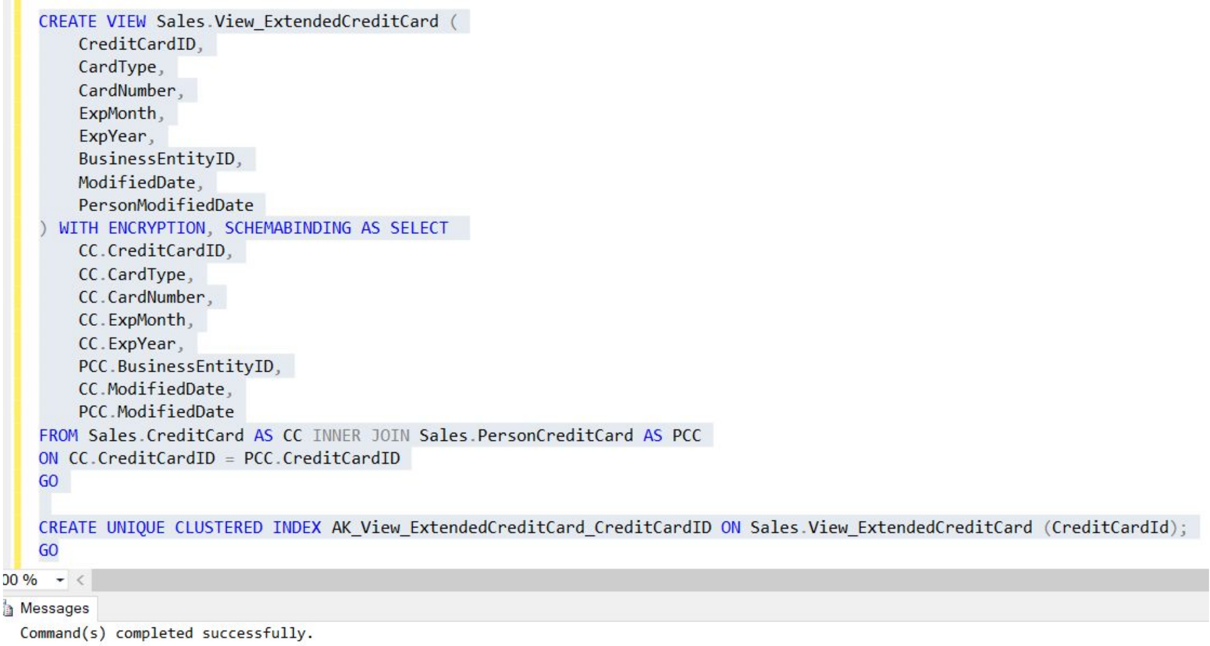


```
INSERT INTO Sales.View_CreditCard(CardNumber, CardType, ExpMonth, ExpYear, ModifiedDate)
VALUES (11111111111111, '123', 31, 2020, GetDate());
GO

UPDATE Sales.View_CreditCard SET CardType = '321' WHERE CardNumber = 11111111111111;
GO

DELETE FROM Sales.View_CreditCard WHERE CardNumber = 11111111111111;
GO

SELECT * FROM Sales.CreditCardHst;
GO
```

	ID	Action	ModifiedDate	Source...	UserNa...
2	2	DELETE	2020-10-31 21:04:52.797	19238	dbo
3	3	INSERT	2020-10-31 21:06:01.607	19239	dbo
4	4	UPDATE	2020-10-31 21:06:01.620	19239	dbo
5	5	DELETE	2020-10-31 21:06:01.637	19239	dbo
6	6	INSERT	2020-10-31 21:06:28.053	19240	dbo
7	7	UPDATE	2020-10-31 21:06:28.063	19240	dbo
8	8	DELETE	2020-10-31 21:06:28.077	19240	dbo

Задание №2.

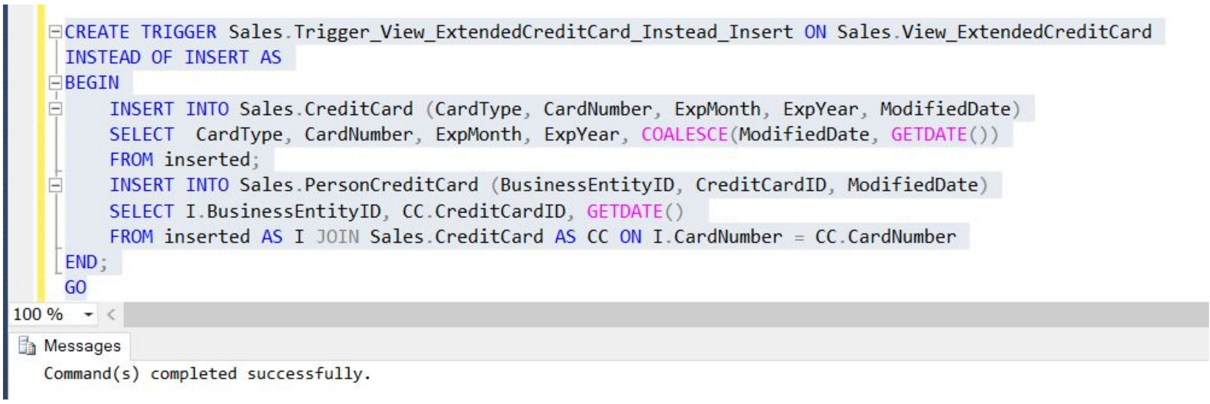
a)



```
CREATE VIEW Sales.View_ExtendedCreditCard (
    CreditCardID,
    CardType,
    CardNumber,
    ExpMonth,
    ExpYear,
    BusinessEntityID,
    ModifiedDate,
    PersonModifiedDate
) WITH ENCRYPTION, SCHEMABINDING AS SELECT
    CC.CreditCardID,
    CC.CardType,
    CC.CardNumber,
    CC.ExpMonth,
    CC.ExpYear,
    PCC.BusinessEntityID,
    CC.ModifiedDate,
    PCC.ModifiedDate
FROM Sales.CreditCard AS CC INNER JOIN Sales.PersonCreditCard AS PCC
ON CC.CreditCardID = PCC.CreditCardID
GO

CREATE UNIQUE CLUSTERED INDEX AK_View_ExtendedCreditCard_CreditCardID ON Sales.View_ExtendedCreditCard (CreditCardId);
GO
```

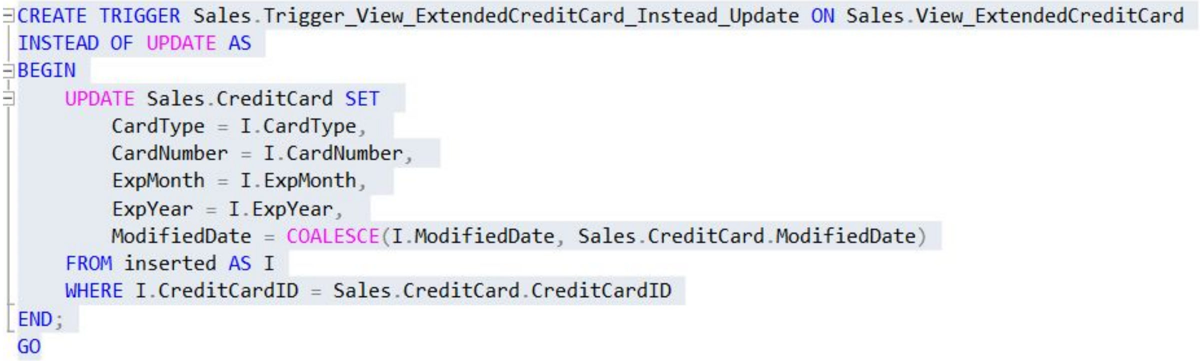
```
Command(s) completed successfully.
```

b)

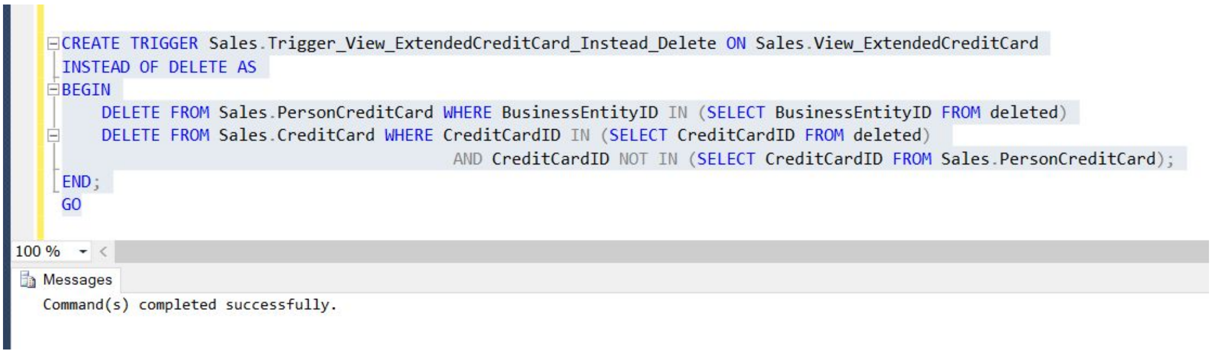


```
CREATE TRIGGER Sales.Trigger_View_ExtendedCreditCard_Instead_Insert ON Sales.View_ExtendedCreditCard
INSTEAD OF INSERT AS
BEGIN
    INSERT INTO Sales.CreditCard (CardType, CardNumber, ExpMonth, ExpYear, ModifiedDate)
    SELECT  CardType, CardNumber, ExpMonth, ExpYear, COALESCE(ModifiedDate, GETDATE())
    FROM inserted;
    INSERT INTO Sales.PersonCreditCard (BusinessEntityID, CreditCardID, ModifiedDate)
    SELECT I.BusinessEntityID, CC.CreditCardID, GETDATE()
    FROM inserted AS I JOIN Sales.CreditCard AS CC ON I.CardNumber = CC.CardNumber
END;
GO
```

```
Command(s) completed successfully.
```



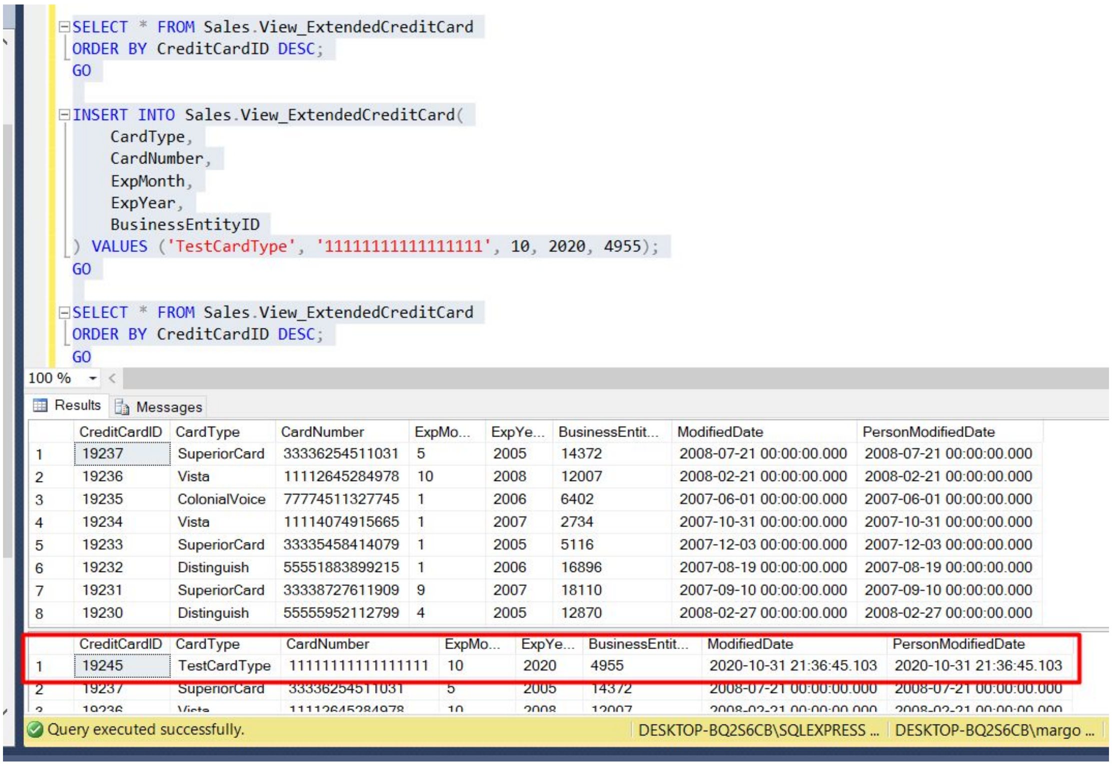
```
CREATE TRIGGER Sales.Trigger_View_ExtendedCreditCard_Instead_Update ON Sales.View_ExtendedCreditCard
INSTEAD OF UPDATE AS
BEGIN
    UPDATE Sales.CreditCard SET
        CardType = I.CardType,
        CardNumber = I.CardNumber,
        ExpMonth = I.ExpMonth,
        ExpYear = I.ExpYear,
        ModifiedDate = COALESCE(I.ModifiedDate, Sales.CreditCard.ModifiedDate)
    FROM inserted AS I
    WHERE I.CreditCardID = Sales.CreditCard.CreditCardID
END;
GO
```



```sql
CREATE TRIGGER Sales.Trigger_View_ExtendedCreditCard_Instead_Delete ON Sales.View_ExtendedCreditCard
INSTEAD OF DELETE AS
BEGIN
    DELETE FROM Sales.PersonCreditCard WHERE BusinessEntityID IN (SELECT BusinessEntityID FROM deleted)
    DELETE FROM Sales.CreditCard WHERE CreditCardID IN (SELECT CreditCardID FROM deleted)
                                    AND CreditCardID NOT IN (SELECT CreditCardID FROM Sales.PersonCreditCard);
END;
GO
```

```
Command(s) completed successfully.
```

c)

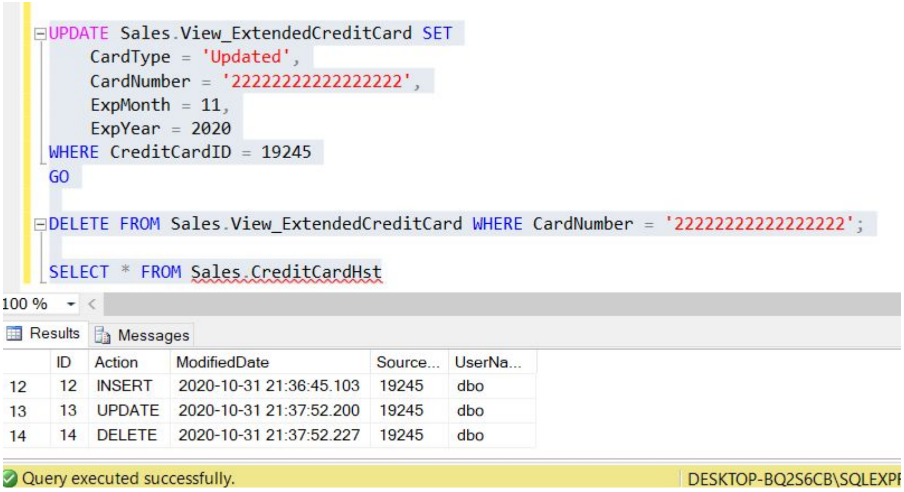


```sql
SELECT * FROM Sales.View_ExtendedCreditCard
ORDER BY CreditCardID DESC;
GO

INSERT INTO Sales.View_ExtendedCreditCard(
    CardType,
    CardNumber,
    ExpMonth,
    ExpYear,
    BusinessEntityID
) VALUES ('TestCardType', '1111111111111111', 10, 2020, 4955);
GO

SELECT * FROM Sales.View_ExtendedCreditCard
ORDER BY CreditCardID DESC;
GO
```

	CreditCardID	CardType	CardNumber	ExpMo...	ExpYe...	BusinessEntit...	ModifiedDate	PersonModifiedDate
1	19237	SuperiorCard	33336254511031	5	2005	14372	2008-07-21 00:00:00.000	2008-07-21 00:00:00.000
2	19236	Vista	11112645284978	10	2008	12007	2008-02-21 00:00:00.000	2008-02-21 00:00:00.000
3	19235	ColonialVoice	77774511327745	1	2006	6402	2007-06-01 00:00:00.000	2007-06-01 00:00:00.000
4	19234	Vista	11114074915665	1	2007	2734	2007-10-31 00:00:00.000	2007-10-31 00:00:00.000
5	19233	SuperiorCard	33335458414079	1	2005	5116	2007-12-03 00:00:00.000	2007-12-03 00:00:00.000
6	19232	Distinguish	55551883899215	1	2006	16896	2007-08-19 00:00:00.000	2007-08-19 00:00:00.000
7	19231	SuperiorCard	33338727611909	9	2007	18110	2007-09-10 00:00:00.000	2007-09-10 00:00:00.000
8	19230	Distinguish	55555952112799	4	2005	12870	2008-02-27 00:00:00.000	2008-02-27 00:00:00.000

	CreditCardID	CardType	CardNumber	ExpMo...	ExpYe...	BusinessEntit...	ModifiedDate	PersonModifiedDate
1	19245	TestCardType	1111111111111111	10	2020	4955	2020-10-31 21:36:45.103	2020-10-31 21:36:45.103
2	19237	SuperiorCard	33336254511031	5	2005	14372	2008-07-21 00:00:00.000	2008-07-21 00:00:00.000
3	19236	Vista	11112645284978	10	2008	12007	2008-02-21 00:00:00.000	2008-02-21 00:00:00.000

Query executed successfully. | DESKTOP-BQ2S6CB\SQLEXPRESS ... | DESKTOP-BQ2S6CB\margo ...



```sql
UPDATE Sales.View_ExtendedCreditCard SET
    CardType = 'Updated',
    CardNumber = '2222222222222222',
    ExpMonth = 11,
    ExpYear = 2020
WHERE CreditCardID = 19245
GO

DELETE FROM Sales.View_ExtendedCreditCard WHERE CardNumber = '2222222222222222';

SELECT * FROM Sales.CreditCardHst
```

	ID	Action	ModifiedDate	Source...	UserNa...
12	12	INSERT	2020-10-31 21:36:45.103	19245	dbo
13	13	UPDATE	2020-10-31 21:37:52.200	19245	dbo
14	14	DELETE	2020-10-31 21:37:52.227	19245	dbo

Query executed successfully. | DESKTOP-BQ2S6CB\SQLEXPI