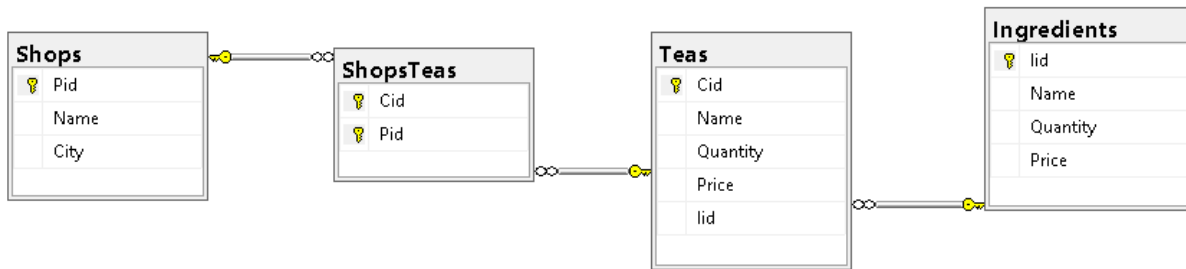


Populate the database with values, modify the database – modify values and delete records



```

Create database Lab2E
go
use Lab2E
go

CREATE TABLE Shops
(Pid INT PRIMARY KEY,
Name varchar(50),
City varchar(50) NOT NULL)

CREATE TABLE Ingredients
(Iid INT PRIMARY KEY IDENTITY,
Name varchar(50),
Quantity int DEFAULT 1,
Price int)
  
```

```

CREATE TABLE Teas
(Cid INT PRIMARY KEY,
Name varchar(50),
Quantity int,
Price int,
Iid int FOREIGN KEY REFERENCES Ingredients(Iid)
)

CREATE TABLE ShopsTeas
(Cid INT FOREIGN KEY REFERENCES Teas(Cid),
Pid INT FOREIGN KEY REFERENCES Shops(Pid),
CONSTRAINT pk_ShopsTeas PRIMARY KEY (Cid, Pid)
)
  
```

```

SELECT * FROM Shops
SELECT * FROM Ingredients
SELECT * FROM Teas
SELECT * FROM ShopsTeas
  
```

| Results | | | Messages | |
|---------|------|----------|----------|-----|
| Pid | Name | City | | |
| | | | | |
| Iid | Name | Quantity | Price | |
| | | | | |
| Cid | Name | Quantity | Price | Iid |
| | | | | |
| Cid | Pid | | | |
| | | | | |

1. Insert values in tables

**INSERT INTO table_name (col1, col2, ...)
VALUES (expr1, expr2, ...)**

```

-- insert in Shops
INSERT INTO Shops(Pid, Name, City) VALUES (1, 'Shop 1', 'Oradea')
INSERT INTO Shops VALUES (2, 'Shop 2', 'Bucuresti')
-- no, the same Pid as primary key
INSERT INTO Shops(Pid, Name, City) VALUES (1, 'Shop 3', 'Orsova')
INSERT INTO Shops VALUES (2, 'Shop 4', 'Oradea')
-- no, because City NOT NULL
INSERT INTO Shops VALUES (3, 'Plafar 5', NULL)
-- no, order and uncorresponding types
INSERT INTO Shops(Pid, Name, City) VALUES ('Shop 5', 2, 'Cluj')
  
```

```

Messages

(1 row(s) affected)

(1 row(s) affected)
Msg 2627, Level 14, State 1, Line 41
Violation of PRIMARY KEY constraint 'PK_Shops_C5705938E9BD14A0'. Cannot insert duplicate key in object 'dbo.Shops'. The duplicate key value is
The statement has been terminated.
Msg 2627, Level 14, State 1, Line 42
Violation of PRIMARY KEY constraint 'PK_Shops_C5705938E9BD14A0'. Cannot insert duplicate key in object 'dbo.Shops'. The duplicate key value is
The statement has been terminated.
  
```

Msg 515, Level 16, State 2, Line 44
 Cannot insert the value NULL into column 'City', table 'Lab2E.dbo.Shops'; column does not allow nulls. INSERT fails.
 The statement has been terminated.
 Msg 245, Level 16, State 1, Line 46
 Conversion failed when converting the varchar value 'Shop 5' to data type int.

select * from Plafaruri

| Pid | Name | City |
|-----|--------|-----------|
| 1 | Shop 1 | Oradea |
| 2 | Shop 2 | Bucuresti |

```
INSERT INTO Ingredients(Name, Quantity, Price) VALUES ('Mint', 3, 8)
INSERT INTO Ingredients(Name, Price) VALUES ('Berries', 4)
-- no, the same Iid as primary key
INSERT INTO Ingredients VALUES(2, 'Oranges', 3, 7)
-- no, the primary key is identity, so it won't be in the parameters list
INSERT INTO Ingredients(Iid, Name, Quantity, Price) VALUES (1, 'Lime', 4, 5)
```

(2 rows affected)

Messages
 Msg 8101, Level 16, State 1, Line 53
 An explicit value for the identity column in table 'Ingredients' can only be specified when a column list is used and IDENTITY_INSERT is ON.

Messages
 Msg 544, Level 16, State 1, Line 55
 Cannot insert explicit value for identity column in table 'Ingredients' when IDENTITY_INSERT is set to OFF.

select * from Ingredients

| Iid | Name | Quantity | Price |
|-----|---------|----------|-------|
| 1 | Mint | 3 | 8 |
| 2 | Berries | 1 | 4 |

```
-- insert Teas
INSERT INTO Teas(Cid, Name, Quantity, Price, Iid) VALUES (1, 'Mint tea', 1, 7, 1)
INSERT INTO Teas VALUES (2, 'Forest fruits tea', 2, 8, 1)
-- no, the foreign key does not exist as primary key in the Ingredients table - 6
INSERT INTO Teas(Cid, Name, Quantity, Price, Iid) VALUES (3, 'Lime tea', 4, 6, 6)
```

Messages
 (1 row(s) affected)
 (1 row(s) affected)
 Messages
 Msg 547, Level 16, State 0, Line 62
 The INSERT statement conflicted with the FOREIGN KEY constraint "FK_Teas_Iid__286302EC". The conflict occurred in database "Lab2E", table "dbo.Teas", column "Iid".
 The statement has been terminated.

select * from Teas

| Cid | Name | Quantity | Price | Iid |
|-----|-------------------|----------|-------|-----|
| 1 | Mint tea | 1 | 7 | 1 |
| 2 | Forest fruits tea | 2 | 8 | 1 |

```
-- insert ShopsTeas
INSERT INTO ShopsTeas(Pid, Cid) VALUES (1,2)
INSERT INTO ShopsTeas VALUES (2,2)
INSERT INTO ShopsTeas VALUES (1,1), (2,1)
-- no, because one of the keys does not exist in the left or right table or has already been added
INSERT INTO ShopsTeas(Pid, Cid) VALUES (1,4)
INSERT INTO ShopsTeas VALUES (6,9)
INSERT INTO ShopsTeas VALUES (2,2)
```

(1 row(s) affected)
 (1 row(s) affected)
 Msg 2627, Level 14, State 1, Line 68
 Violation of PRIMARY KEY constraint 'pk_ShopsTeas'. Cannot insert duplicate key in object 'dbo.ShopsTeas'. The duplicate key value is (2, 1).
 The statement has been terminated.

Msg 547, Level 16, State 0, Line 70
The INSERT statement conflicted with the FOREIGN KEY constraint "FK_ShopsTeas_Cid_2B3F6F97". The conflict occurred in database "Lab2E", table "dbo.ShopsTeas". The statement has been terminated.
Msg 547, Level 16, State 0, Line 71
The INSERT statement conflicted with the FOREIGN KEY constraint "FK_ShopsTeas_Cid_2B3F6F97". The conflict occurred in database "Lab2E", table "dbo.ShopsTeas". The statement has been terminated.
Msg 2627, Level 14, State 1, Line 72
Violation of PRIMARY KEY constraint 'pk_ShopsTeas'. Cannot insert duplicate key in object 'dbo.ShopsTeas'. The duplicate key value is (2, 2).
The statement has been terminated.

```
select * from ShopsTeas
```

| Cid | Pid |
|-----|-----|
| 1 | 2 |
| 2 | 2 |

```
select * from Shops p
INNER JOIN ShopsTeas pc ON p.Pid=pc.Pid
INNER JOIN Teas c ON pc.Cid=c.Cid
```

| Pid | Name | City | Cid | Pid | Cid | Name | Quantity | Price | lid |
|-----|--------|-----------|-----|-----|-----|-------------------|----------|-------|-----|
| 1 | Shop 1 | Oradea | 2 | 1 | 2 | Forest fruits tea | 2 | 8 | 1 |
| 2 | Shop 2 | Bucuresti | 2 | 2 | 2 | Forest fruits tea | 2 | 8 | 1 |

2. Modify values from the table

UPDATE table_name

SET col1=expr1,col2=expr2, ...

[WHERE condition]

- Composed condition with logical operators

```
UPDATE Shops
SET City='Alba Iulia'
WHERE City Like 'O%' OR Pid>3
Select * from Shops
```

```
UPDATE Teas
SET Price=10
WHERE Quantity<=2 AND Name Like '_a'
Select * from Teas
```

| Pid | Name | City |
|-----|--------|------------|
| 1 | Shop 1 | Alba Iulia |
| 2 | Shop 2 | Bucuresti |

| Cid | Name | Quantity | Price | lid |
|-----|-------------------|----------|-------|-----|
| 1 | Mint tea | 1 | 7 | 1 |
| 2 | Forest fruits tea | 2 | 8 | 1 |

- Condition with relational operators

```
UPDATE Ingredients
SET Name='Oranges'
WHERE Price>=5 AND Quantity<3
Select * from Ingredients
```

| lid | Name | Quantity | Price |
|-----|---------|----------|-------|
| 1 | Mint | 3 | 8 |
| 2 | Berries | 1 | 4 |

- IS [NOT] NULL

```
UPDATE Ingredients
SET Price=8
WHERE Quantity IS NULL
Select * from Ingredients
```

```
UPDATE Teas
SET Name='Flowers'
WHERE Price IS NOT NULL
Select * from Teas
```

| lid | Name | Quantity | Price |
|-----|---------|----------|-------|
| 1 | Mint | 3 | 8 |
| 2 | Berries | 1 | 4 |

| Cid | Name | Quantity | Price | lid |
|-----|---------|----------|-------|-----|
| 1 | Flowers | 1 | 7 | 1 |
| 2 | Flowers | 2 | 8 | 1 |

- IN

```
UPDATE Teas
SET Price=20
WHERE Quantity IN (2,4,6,8)
select * from Teas
```

| Cid | Name | Quantity | Price | lid |
|-----|---------|----------|-------|-----|
| 1 | Flowers | 1 | 7 | 1 |
| 2 | Flowers | 2 | 20 | 1 |

- BETWEEN

```
Update Ingredients
SET Name='Cherries'
WHERE Quantity BETWEEN 2 AND 4
Select * from Ingredients
```

| lid | Name | Quantity | Price |
|-----|----------|----------|-------|
| 1 | Cherries | 3 | 8 |
| 2 | Berries | 1 | 4 |

- LIKE

```
UPDATE Ingredients
SET Quantity=2
WHERE Name LIKE '_an%'
Select * from Ingredients
```

| Results | | Messages | | |
|---------|-----|----------|----------|-------|
| | lid | Name | Quantity | Price |
| 1 | 1 | Cherries | 3 | 8 |
| 2 | 2 | Berries | 1 | 4 |

3. Delete records from the table

DELETE FROM table_name

[WHERE condition]

- Composed condition with logical operators

```
Delete From Shops
WHERE City Like 'O%' OR Pid>=5
Select * from Shops
```

```
Delete From Teas
WHERE Quantity=1 AND Name='a'
Select * from Teas
```

| Results | | Messages | | |
|---------|-----|----------|------------|--|
| | Pid | Name | City | |
| 1 | 1 | Shop 1 | Alba Iulia | |
| 2 | 2 | Shop 2 | Bucuresti | |

| | Cid | Name | Quantity | Price | lid |
|---|-----|---------|----------|-------|-----|
| 1 | 1 | Flowers | 1 | 7 | 1 |
| 2 | 2 | Flowers | 2 | 20 | 1 |

- Condition with relational operators

```
DELETE FROM
Ingredients
WHERE Price>=5 AND
Quantity<=3
Select * from
Ingredients
```

Msg 547, Level 16, State 0, Line 139
The DELETE statement conflicted with the REFERENCE constraint "FK_Teas_lid_2863028C". The conflict occurred in database "Lab2E", table "dbo.1". The statement has been terminated.

(2 row(s) affected)

| Results | | Messages | | |
|---------|-----|----------|----------|-------|
| | lid | Name | Quantity | Price |
| 1 | 1 | Cherries | 3 | 8 |
| 2 | 2 | Berries | 1 | 4 |

- IS [NOT] NULL

```
DELETE FROM Ingredients
WHERE Quantity IS NULL
Select * from Ingredients
```

```
DELETE FROM Teas
WHERE Price IS NOT NULL AND Cid>8
Select * from Teas
```

| Results | | Messages | | |
|---------|-----|----------|----------|-------|
| | lid | Name | Quantity | Price |
| 1 | 1 | Cherries | 3 | 8 |
| 2 | 2 | Berries | 1 | 4 |

| | Cid | Name | Quantity | Price | lid |
|---|-----|---------|----------|-------|-----|
| 1 | 1 | Flowers | 1 | 7 | 1 |
| 2 | 2 | Flowers | 2 | 20 | 1 |

- IN

```
DELETE FROM Teas
WHERE Quantity IN (2,4,6,8)
select * from Teas
```

Msg 547, Level 16, State 0, Line 153
The DELETE statement conflicted with the REFERENCE constraint "FK_ShopsTeas_Cid_2B3F6F97". The conflict occurred in database "Lab2E", table "dbo.1". The statement has been terminated.

(2 row(s) affected)

| | Cid | Name | Quantity | Price | lid |
|---|-----|---------|----------|-------|-----|
| 1 | 1 | Flowers | 1 | 7 | 1 |
| 2 | 2 | Flowers | 2 | 20 | 1 |

- BETWEEN

```
DELETE FROM Ingredients
WHERE Quantity BETWEEN 2 AND 4
Select * from Ingredients
```

Msg 547, Level 16, State 0, Line 150
The DELETE statement conflicted with the REFERENCE constraint "FK_Teas_lid_2863028C". The conflict occurred in database "Lab2E", table "dbo.1". The statement has been terminated.

(2 row(s) affected)

| Results | | Messages | | |
|---------|-----|----------|----------|-------|
| | lid | Name | Quantity | Price |
| 1 | 1 | Cherries | 3 | 8 |
| 2 | 2 | Berries | 1 | 4 |

- LIKE

```
DELETE FROM Ingredients
WHERE Name LIKE '_an%'
Select * from Ingredients
```

| Results | | Messages | | |
|---------|-----|----------|----------|-------|
| | lid | Name | Quantity | Price |
| 1 | 1 | Cherries | 3 | 8 |
| 2 | 2 | Berries | 1 | 4 |