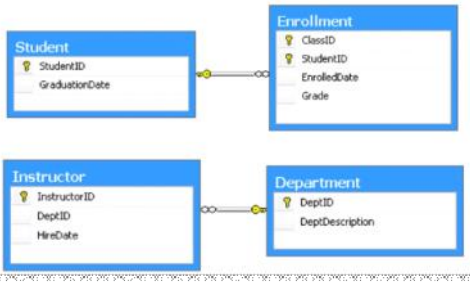
Relation Types

Tuesday, May 23, 2017 10:54 AM

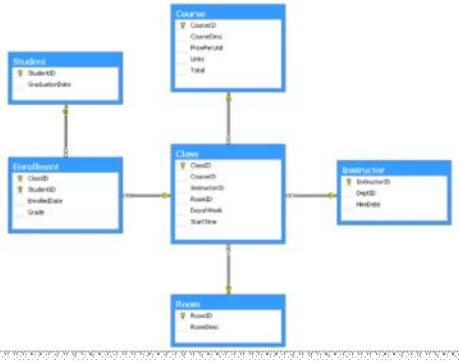
One-to-Many Relationships

- Primary key to non-primary key



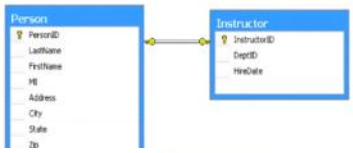
Many-to-Many Relationships

- Requires a third table



One-to-One Relationships

- In the School database, each person can be a student or instructor
  - Student and Instructor tables contain only relevant columns



- Partitioning data for security
  - Locate confidential data elsewhere and restrict access (also accomplished with Views)
- Partitioning data for performance
  - Store data in separate tables (perhaps on separate disks) and retrieve only on demand

Primary Keys

Sunday, May 21, 2017 3:28 PM

Primary Guids

PrimaryKeys.sql - (l...ls (LABS\dellp (56))* | Constraints.sql - (l...ols (LABS\dellp (55))*

```
USE Schools;
GO

CREATE TABLE CoursePrimaryGuid (
    ID uniqueidentifier DEFAULT NEWID() Primary Key,
    Name nvarchar(255) NULL UNIQUE,
);
GO

INSERT INTO CoursePrimaryGuid (Name) VALUES('Sql Server Development');
INSERT INTO CoursePrimaryGuid (Name) VALUES('Web Programming with C#');
INSERT INTO CoursePrimaryGuid (Name) VALUES('MVC Programming');

Select * From CoursePrimaryGuid;

Drop Table CoursePrimaryGuid;
GO
```

108 %

Results | Messages

	ID	Name
1	E2D2EBEE-01E2-433F-B37E-0260503C1AAA	Sql Server Development
2	6B72AA39-20AB-414F-85FB-49DC0EA6D8EE	Web Programming with C#
3	8A17EED6-7712-4979-AE65-3F335A20A802	MVC Programming

Primary Identity

PrimaryKeys.sql - (l...ls (LABS\dellp (56))* | Constraints.sql - (l...ols (LABS\dellp (55))*

```
USE Schools;
GO

CREATE TABLE CoursePrimaryUniqueID (
    ID int Identity(1,1) Primary Key,
    Name nvarchar(255) NULL UNIQUE,
);
GO

INSERT INTO CoursePrimaryUniqueID (Name) VALUES('Sql Server Development');
INSERT INTO CoursePrimaryUniqueID (Name) VALUES('Web Programming with C#');
INSERT INTO CoursePrimaryUniqueID (Name) VALUES('MVC Programming');

Select * From CoursePrimaryUniqueID;

Drop Table CoursePrimaryUniqueID;
GO
```

108 %

Results | Messages

	ID	Name
1	3	MVC Programming
2	1	Sql Server Development
3	2	Web Programming with C#

Primary Foreign Key

Monday, December 4, 2017 7:56 PM

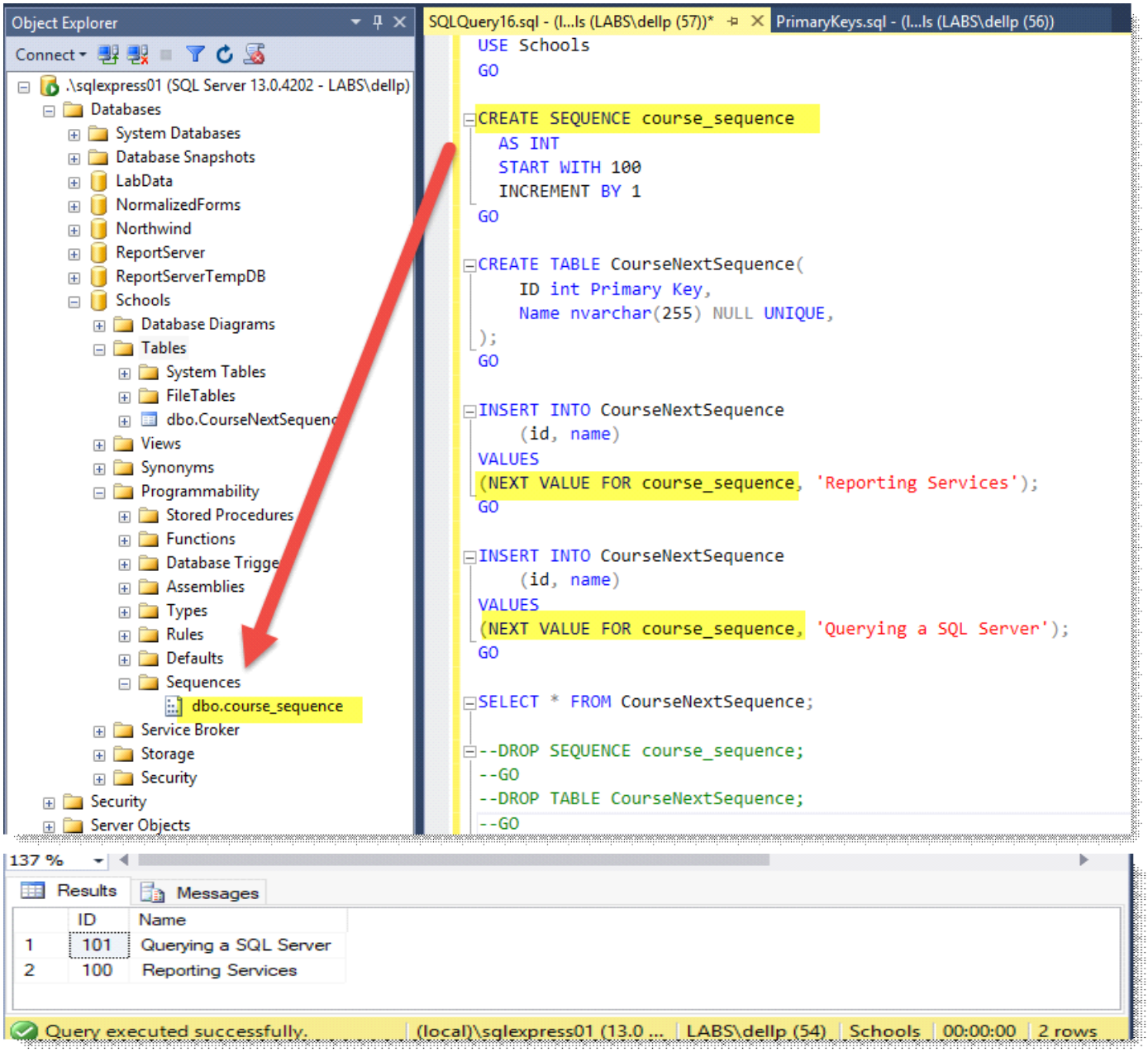
PrimaryForeignKey.s...a (LABS\dellp (52)) | PrimaryForeignCasc...r (LABS\dellp (58)) | UserDefinedType

```
CREATE TABLE dbo.Employee
(EmployeeID INT IDENTITY PRIMARY KEY,
 Name VARCHAR(25),
 Title varchar(25));

CREATE TABLE dbo.OrderDetail
(OrderID INT IDENTITY PRIMARY KEY,
 OrderNumber VARCHAR(255),
 EmployeeID INT FOREIGN KEY REFERENCES dbo.Employee(EmployeeID));
GO

Insert Into Employee Values ('Mickey Mouse','CEO');
Insert Into Employee Values ('Goofy Dog','COO');
Insert Into OrderDetail Values ('1011',1);
Insert Into OrderDetail Values ('1012',1);

Insert Into OrderDetail Values ('1013',2);

Select * From Employee e
    Inner Join  OrderDetail o On e.EmployeeID = o.EmployeeID;

Drop Table OrderDetail;
Drop Table Employee;
```

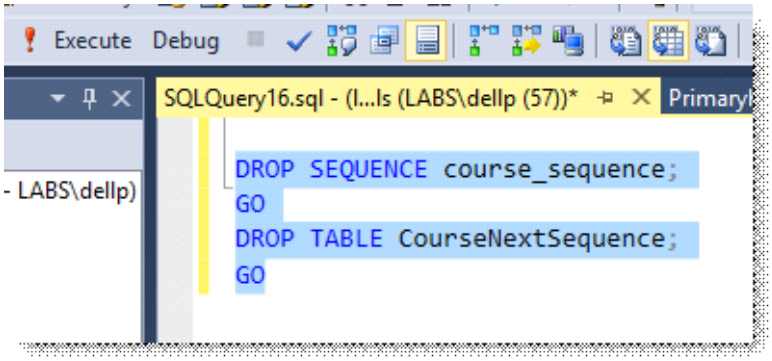
Sequences

Sunday, May 21, 2017 10:08 PM

File: Sequences.sql



Check out Object in Explorer and then Drop


Execute
Debug
SQLQuery16.sql - (l...ls (LABS\dellp (57))*
Primary
- LABS\dellp)
DROP SEQUENCE course_sequence;
GO
DROP TABLE CourseNextSequence;
GO

Primary-Foreign Cascade

Sunday, May 21, 2017 11:09 PM

Try with Cascade OFF

1) Create Tables

PrimaryForeignCasc...s (LABS\dellp (56)) | Sequences.sql - (loc...ls (LABS\dellp (60))

```
1   USE Schools;
2   GO
3
4   CREATE TABLE dbo.[Orders](
5       OrderID int NOT NULL,
6       OrderDate DateTime NOT Null
7   CONSTRAINT PK_Orders PRIMARY KEY
8   (
9       OrderID ASC
10  )) ON [PRIMARY]
11
12  CREATE TABLE dbo.OrderDetails(
13      OrderDetailID int NOT NULL,
14      OrderID int NOT NULL,
15      Quantity SmallMoney NOT Null,
16      Price SmallMoney NOT NULL,
17  CONSTRAINT PK_OrderDetails PRIMARY KEY
18  (
19      OrderDetailID ASC
20  )) ON [PRIMARY]
21  GO
22
23  ALTER TABLE dbo.OrderDetails ADD CONSTRAINT
24      FK_OrderDetails FOREIGN KEY(OrderID)
25      REFERENCES dbo.[Orders] (OrderID)
26  --ON UPDATE CASCADE
27  --ON DELETE CASCADE
```

2) Insert Tables

PrimaryForeignCasc...s (LABS\dellp (56)) | Sequences.sql - (loc...ls (LABS\dellp (60))

```sql
USE Schools;
GO

CREATE TABLE dbo.[Orders](
    OrderID int NOT NULL,
    OrderDate DateTime NOT Null
CONSTRAINT PK_Orders PRIMARY KEY
(
    OrderID ASC
)) ON [PRIMARY]

CREATE TABLE dbo.OrderDetails(
    OrderDetailID int NOT NULL,
    OrderID int NOT NULL,
    Quantity SmallMoney NOT Null,
    Price SmallMoney NOT NULL,
CONSTRAINT PK_OrderDetails PRIMARY KEY
(
    OrderDetailID ASC
)) ON [PRIMARY]
GO

ALTER TABLE dbo.OrderDetails ADD CONSTRAINT
    FK_OrderDetails FOREIGN KEY(OrderID)
    REFERENCES dbo.[Orders] (OrderID)
--ON UPDATE CASCADE
--ON DELETE CASCADE
```

3) Delete Product 1 - with Cascade Delete OFF (Default)

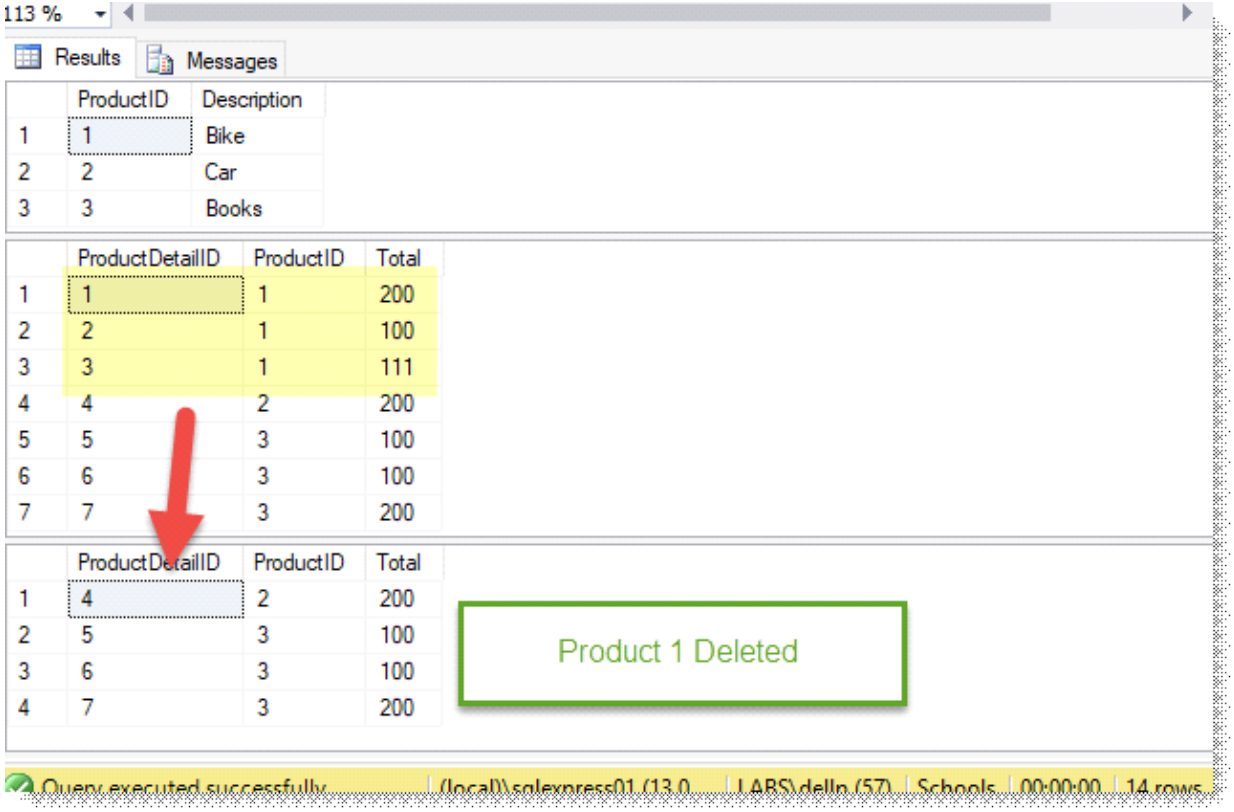
```sql
--Cascade Delete
DELETE
    FROM Orders
    WHERE OrderID = 1

SELECT *
FROM OrderDetails

DROP TABLE OrderDetails
DROP TABLE Orders
```

```
Msg 547, Level 16, State 0, Line 57
The DELETE statement conflicted with the REFERENCE constraint "FK_ProductDetails
The statement has been terminated.
```

4) Turn Cascade On

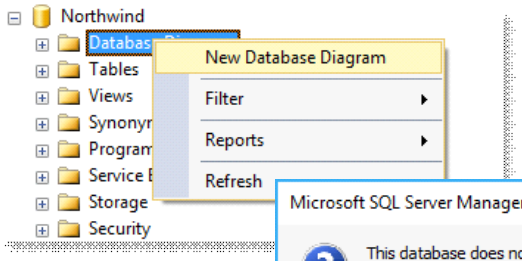
```
ALTER TABLE dbo.ProductDetails ADD CONSTRAINT
    FK_ProductDetails_Products FOREIGN KEY(ProductID)
    REFERENCES dbo.Products (ProductID)
ON UPDATE CASCADE
ON DELETE CASCADE
```

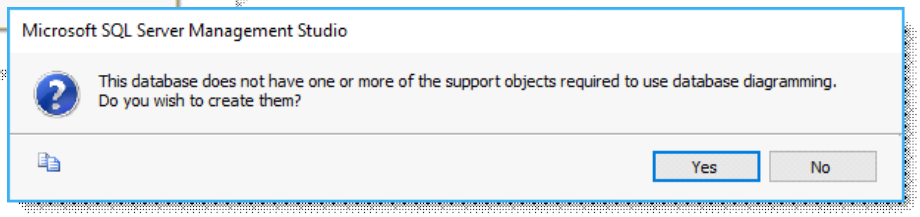
5) Drop Tables and Run Again

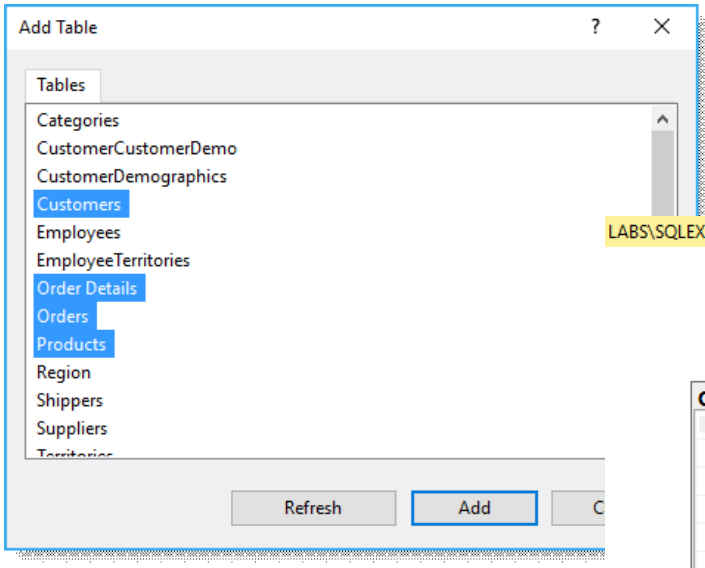


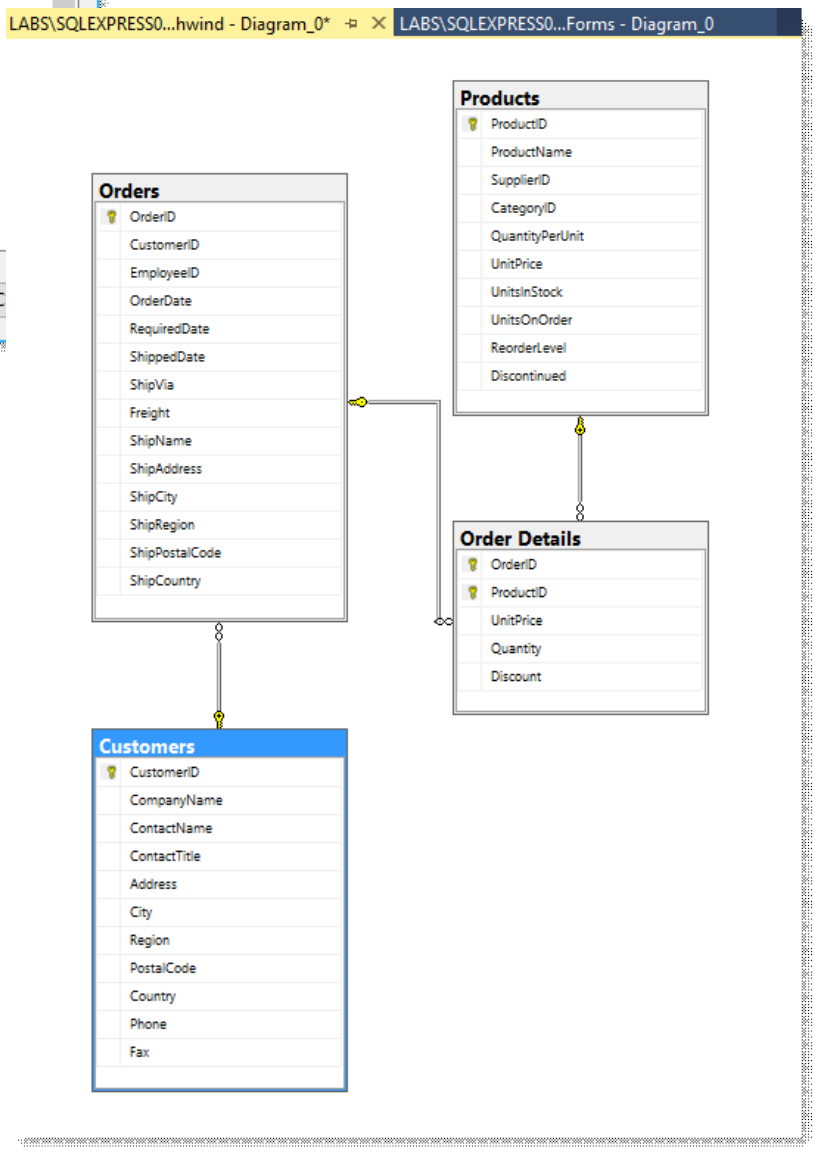
Database Diagrams

Tuesday, May 23, 2017 11:10 AM



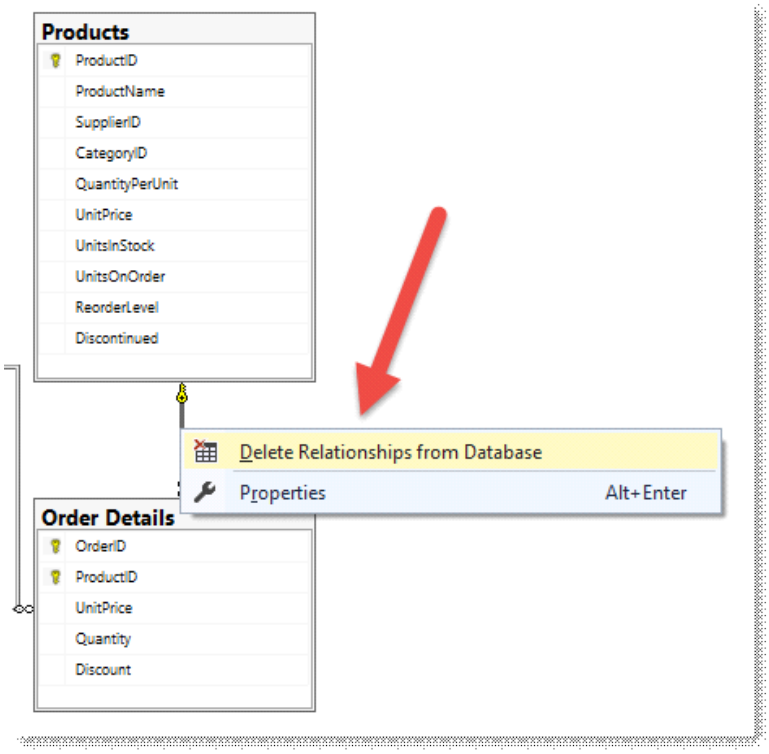




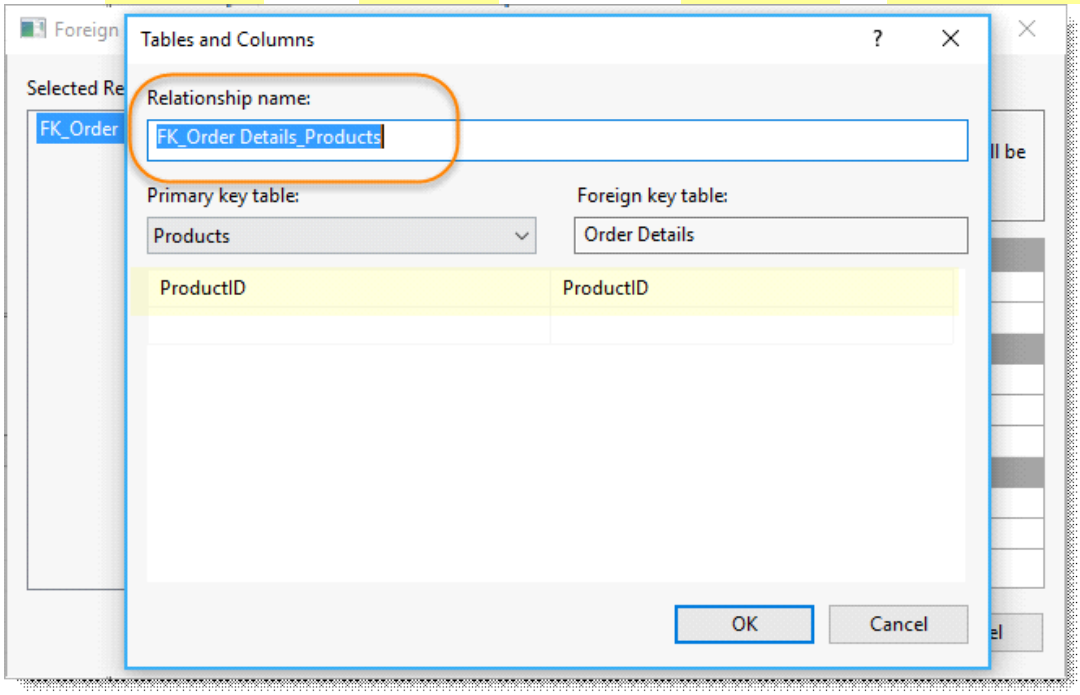


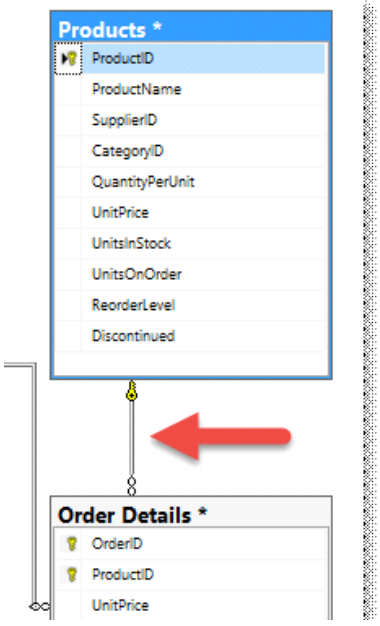
Create Relation

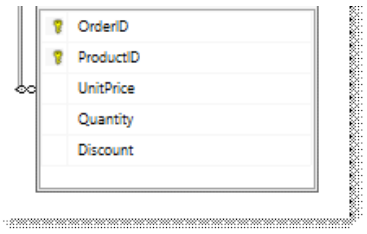
Tuesday, May 23, 2017 12:00 PM



DRAG ProductID from Products and Touch ProductID in OrderDetails






OrderID
ProductID
UnitPrice
Quantity
Discount