

Assignment No: 3(Joins)

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- SQL Queries
 - Here I created a database named as 'Practice' and table named as 'Products' and 'OrderDetails' performed all the Join types.
 - Create database, Create tables and Inserted Data:
 - Create is a DDL command
 - Creating a database doesn't automatically set it as the active database, so we need USE command
 - While Creating Table we need to give all the column names there data types and constraints

```
SQLQuery1.sql - PRA... (PRATIK\de... (51))* ×
----Assignment 3

use practice;
-- Create the Products table
CREATE TABLE Products (
    ProductID INT PRIMARY KEY,
    ProductName NVARCHAR(255),
    SupplierID INT,
    CategoryID INT,
    Unit NVARCHAR(50),
    Price DECIMAL(10, 2)
);

-- Insert data into the Products table
INSERT INTO Products (ProductID, ProductName, SupplierID, CategoryID, Unit, Price)
VALUES
(1, 'Chais', 1, 1, '10 boxes x 20 bags', 18),
(2, 'Chang', 1, 1, '24 - 12 oz bottles', 19),
(3, 'Aniseed Syrup', 1, 2, '12 - 550 ml bottles', 10),
(4, 'Chef Anton''s Cajun Seasoning', 2, 2, '48 - 6 oz jars', 22),
(5, 'Chef Anton''s Gumbo Mix', 2, 2, '36 boxes', 21.35),
(6, 'Grandma''s Boysenberry Spread', 3, 2, '12 - 8 oz jars', 25),
(7, 'Uncle Bob''s Organic Dried Pears', 3, 7, '12 - 1 lb pkgs.', 30),
(8, 'Northwoods Cranberry Sauce', 3, 2, '12 - 12 oz jars', 40),
(9, 'Mishi Kobe Niku', 4, 6, '18 - 500 g pkgs.', 97);
```

```
-- Create the OrderDetails table
CREATE TABLE OrderDetails (
    OrderDetailID INT PRIMARY KEY,
    OrderID INT,
    ProductID INT references products(productid),
    Quantity INT
);

-- Insert data into the OrderDetails table
INSERT INTO OrderDetails (OrderDetailID, OrderID, ProductID, Quantity)
VALUES
(1, 10248, 1, 12),
(2, 10248, 9, 10),
(3, 10248, 7, 5),
(4, 10249, 6, 9),
(5, 10249, 5, 40),
(6, 10250, 4, 10),
(7, 10250, 5, 35),
(8, 10250, 6, 15),
(9, 10251, 2, 6),
(10, 10251, 7, 15);
```

- Select:
 - Select * gives all records

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```
(9, 10251, 2, 6),
(10, 10251, 7, 15);

select * from Products;
select * from OrderDetails;
```

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Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price
1	1	Chais	1	1	10 boxes x 20 bags	18.00
2	2	Chang	1	1	24 - 12 oz bottles	19.00
3	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00
4	4	Chef Anton's...	2	2	48 - 6 oz jars	22.00
5	5	Chef Anton's...	2	2	36 boxes	21.35
6	6	Grandma's ...	3	2	12 - 8 oz jars	25.00
7	7	Uncle Bob's...	3	7	12 - 1 lb pkgs.	30.00
8	8	Northwoods...	3	2	12 - 12 oz jars	40.00
9	9	Mishi Kobe ...	4	6	18 - 500 g pkgs.	97.00

	OrderDetailID	OrderID	ProductID	Quantity
1	1	10248	1	12
2	2	10248	9	10
3	3	10248	7	5
4	4	10249	6	9
5	5	10249	5	40
6	6	10250	4	10
7	7	10250	5	35
8	8	10250	6	15
9	9	10251	2	6
10	10	10251	7	15

▪ Joins:

1. Inner Join:

- The INNER JOIN keyword selects all rows from both the tables as long the condition is satisfied.
- This keyword will create the result-set by combining all rows from both the tables where the condition satisfies
- We need some common columns to perform the inner join

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```
--joins
```

```
--1)Inner Join
```

```
select products.*,orderdetails.* from products inner join  
orderdetails on products.ProductID=orderdetails.ProductID;
```

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Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10
3	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
4	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
7	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15

2. Left Join:

- This join returns all the rows of the table on the left side of the join and matches rows for the table on the right side of the join.
- For the rows for which there is no matching row on the right side, the result-set will contain null.
- Also known as Left Outer Join

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```
--2)Left join
```

```
select products.*,orderdetails.* from products left join  
orderdetails on products.ProductID=orderdetails.ProductID;
```

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Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
3	3	Aniseed Syrup	1	2	12 - 550 ml bottles	10.00	NULL	NULL	NULL	NULL
4	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
7	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15
11	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	NULL	NULL	NULL	NULL
12	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10

3. Right Join:

- This join returns all the rows of the table on the right side of the join and matching rows for the table on the left side of the join.
- For the rows for which there is no matching row on the left side, the result-set will contain null.
- Also known as Right Outer Join.

SQLQuery1.sql - PRA...(PRATIK\de11 (51))*

--3)Right Join

```
select products.*,orderdetails.* from products right join  
orderdetails on products.ProductID=orderdetails.ProductID;
```

142 %

Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10
3	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
4	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
7	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15

4. Full Join:

- FULL JOIN creates the result-set by combining results of both LEFT JOIN and RIGHT JOIN.
- The result-set will contain all the rows from both tables. For the rows for which there is no matching, the result-set will contain NULL values.
- Also known as Full Outer Join.

--4)Full Join

```
--select products.*,orderdetails.* from products full join  
orderdetails on products.ProductID=orderdetails.ProductID;
```

142 %

Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
3	3	Aniseed Syrup	1	2	12 - 550 ml bottles	10.00	NULL	NULL	NULL	NULL
4	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
7	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15
11	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	NULL	NULL	NULL	NULL
12	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10

5. Cross join:

- The Cross Join keyword returns all matching records from both tables whether the other table matches or not.
- Means simply we can say that it's cartesian product of two tables.

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```
--5)Cross Join
```

```
select products.*,orderdetails.* from products cross join orderdetails;
```

142 %

Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	1	Chais	1	1	10 boxes x 20 bags	18.00	2	10248	9	10
3	1	Chais	1	1	10 boxes x 20 bags	18.00	3	10248	7	5
4	1	Chais	1	1	10 boxes x 20 bags	18.00	4	10249	6	9
5	1	Chais	1	1	10 boxes x 20 bags	18.00	5	10249	5	40
6	1	Chais	1	1	10 boxes x 20 bags	18.00	6	10250	4	10
7	1	Chais	1	1	10 boxes x 20 bags	18.00	7	10250	5	35
8	1	Chais	1	1	10 boxes x 20 bags	18.00	8	10250	6	15
9	1	Chais	1	1	10 boxes x 20 bags	18.00	9	10251	2	6
10	1	Chais	1	1	10 boxes x 20 bags	18.00	10	10251	7	15
11	2	Chang	1	1	24 - 12 oz bottles	19.00	1	10248	1	12
12	2	Chang	1	1	24 - 12 oz bottles	19.00	2	10248	9	10
13	2	Chang	1	1	24 - 12 oz bottles	19.00	3	10248	7	5
14	2	Chang	1	1	24 - 12 oz bottles	19.00	4	10249	6	9
15	2	Chang	1	1	24 - 12 oz bottles	19.00	5	10249	5	40
16	2	Chang	1	1	24 - 12 oz bottles	19.00	6	10250	4	10
17	2	Chang	1	1	24 - 12 oz bottles	19.00	7	10250	5	35
18	2	Chang	1	1	24 - 12 oz bottles	19.00	8	10250	6	15
19	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
20	2	Chang	1	1	24 - 12 oz bottles	19.00	10	10251	7	15
21	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	1	10248	1	12
22	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	2	10248	9	10
23	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	3	10248	7	5
24	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	4	10249	6	9
25	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	5	10249	5	40
26	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	6	10250	4	10
27	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	7	10250	5	35
28	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	8	10250	6	15
29	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	9	10251	2	6
30	3	Aniseed Syr...	1	2	12 - 550 ml bottles	10.00	10	10251	7	15
31	4	Chef Anton's...	2	2	48 - 6 oz jars	22.00	1	10248	1	12
32	4	Chef Anton's...	2	2	48 - 6 oz jars	22.00	2	10248	9	10

6. Equi Join:

- EQUI JOIN creates a JOIN for equality or matching column(s) values of the relative tables.
- EQUI JOIN also create JOIN by using JOIN with ON and then providing the names of the columns with their relative tables to check equality using equal sign (=).

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```
--6) Equi Join

--select products.*,orderdetails.* from products,orderdetails where
products.ProductID=orderdetails.ProductID;

--or

--select products.*,orderdetails.* from products join orderdetails
on products.ProductID=orderdetails.ProductID;
```

142 %

Results Messages

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10
3	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
4	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
7	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15

	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	1	Chais	1	1	10 boxes x 20 bags	18.00	1	10248	1	12
2	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	2	10248	9	10
3	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	3	10248	7	5
4	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	4	10249	6	9
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	5	10249	5	40
6	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	6	10250	4	10
7	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	7	10250	5	35
8	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	8	10250	6	15
9	2	Chang	1	1	24 - 12 oz bottles	19.00	9	10251	2	6
10	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	10	10251	7	15

7. Non-Equi Join:

- NON EQUI JOIN performs a JOIN using comparison operator other than equal (=) sign like >, <, >=, <= with conditions.
- Instead of = we use >, <

SQLQuery1.sql - PRA...(PRATIK\deli (51))*

--7)Non-Equi Join:

```
select products.*,orderdetails.* from products join orderdetails  
on products.ProductID > orderdetails.ProductID;
```

Results										
	ProductID	ProductName	SupplierID	CategoryID	Unit	Price	OrderDetailID	OrderID	ProductID	Quantity
1	2	Chang	1	1	24 - 12 oz bottles	19.00	1	10248	1	12
2	3	Aniseed Syrup	1	2	12 - 550 ml bottles	10.00	1	10248	1	12
3	3	Aniseed Syrup	1	2	12 - 550 ml bottles	10.00	9	10251	2	6
4	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	1	10248	1	12
5	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22.00	9	10251	2	6
6	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	1	10248	1	12
7	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	6	10250	4	10
8	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	9	10251	2	6
9	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	1	10248	1	12
10	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	5	10249	5	40
11	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	6	10250	4	10
12	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	7	10250	5	35
13	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25.00	9	10251	2	6
14	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	1	10248	1	12
15	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	4	10249	6	9
16	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	5	10249	5	40
17	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	6	10250	4	10
18	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	7	10250	5	35
19	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	8	10250	6	15
20	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	9	10251	2	6
21	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	1	10248	1	12
22	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	3	10248	7	5
23	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	4	10249	6	9