www.PragimTech.com

Pragim@PragimTech.com

Part 12 – JOINS

Venkat
PRAGIM Technologies
kudvenkat@gmail.com
http://csharp-video-tutorials.blogspot.com

In this session we will learn

- The different types of Joins in SQL Server
- Cross Join
- Inner Join
- Outer Join – Left, Right and Full Outer Join

Pre-requisite:

Part 3 - Creating and Working with tables

Part 5 - Cascading referential integrity constraint

PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

Joins in SQL Server

Joins in SQL Server are used to retrieve data from 2 or more related tables. In general tables are related to each other using foreign key constraints.

In SQL server, there are different types of JOINS

1. INNER JOIN
2. OUTER JOIN
3. CROSS JOIN

Outer Joins are again divided into

1. Left Join or Left Outer Join
2. Right Join or Right Outer Join
3. Full Join or Full Outer Join

Name	Gender	Salary	DepartmentName
Tom	Male	4000	IT
Pam	Female	3000	HR
John	Male	3500	IT
Sam	Male	4500	Payroll
Todd	Male	2800	Payroll
Ben	Male	7000	IT
Sara	Female	4800	HR
Valarie	Female	5500	IT

ID	Name	Gender	Salary	DepartmentId
1	Tom	Male	4000	1
2	Pam	Female	3000	3
3	John	Male	3500	1
4	Sam	Male	4500	2
5	Todd	Male	2800	2
6	Ben	Male	7000	1
7	Sara	Female	4800	3
8	Valarie	Female	5500	1
9	James	Male	6500	NULL
10	Russell	Male	8800	NULL

Id	DepartmentName	Location	DepartmentHead
1	IT	London	Rick
2	Payroll	Delhi	Ron
3	HR	New York	Christie
4	Other Department	Sydney	Cindrella

PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

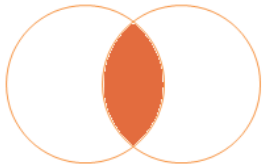
Inner Join or Join

ID	Name	Gender	Salary	DepartmentId
1	Tom	Male	4000	1
2	Pam	Female	3000	3
3	John	Male	3500	1
4	Sam	Male	4500	2
5	Todd	Male	2800	2
6	Ben	Male	7000	1
7	Sara	Female	4800	3
8	Valarie	Female	5500	1
9	James	Male	6500	NULL
10	Russell	Male	8800	NULL

Id	DepartmentName	Location	DepartmentHead
1	IT	London	Rick
2	Payroll	Delhi	Ron
3	HR	New York	Christie
4	Other Department	Sydney	Cindrella

INNER JOIN or JOIN

Matching Rows only – Non matching rows eliminated



Employees - Departments

Name	Gender	Salary	DepartmentName
Tom	Male	4000	IT
Pam	Female	3000	HR
John	Male	3500	IT
Sam	Male	4500	Payroll
Todd	Male	2800	Payroll
Ben	Male	7000	IT
Sara	Female	4800	HR
Valarie	Female	5500	IT

INNER JOIN returns only the matching rows between both the tables. Non matching rows are eliminated.

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
INNER JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```

OR

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```


PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

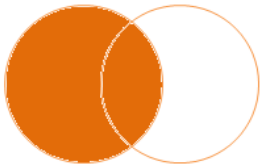
Left Outer Join or Left Join

ID	Name	Gender	Salary	DepartmentId
1	Tom	Male	4000	1
2	Pam	Female	3000	3
3	John	Male	3500	1
4	Sam	Male	4500	2
5	Todd	Male	2800	2
6	Ben	Male	7000	1
7	Sara	Female	4800	3
8	Valarie	Female	5500	1
9	James	Male	6500	NULL
10	Russell	Male	8800	NULL

Id	DepartmentName	Location	DepartmentHead
1	IT	London	Rick
2	Payroll	Delhi	Ron
3	HR	New York	Christie
4	Other Department	Sydney	Cindrella

LEFT OUTER JOIN or LEFT JOIN

Matching Rows + Non matching rows from the left table



Employees - Departments

Name	Gender	Salary	DepartmentName
Name	Gender	Salary	DepartmentName
Tom	Male	4000	IT
Pam	Female	3000	HR
John	Male	3500	IT
Sam	Male	4500	Payroll
Todd	Male	2800	Payroll
Ben	Male	7000	IT
Sara	Female	4800	HR
Valarie	Female	5500	IT
James	Male	6500	NULL
Russell	Male	8800	NULL

LEFT JOIN returns all the matching rows + non matching rows from the left table.

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
LEFT OUTER JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```

OR

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
LEFT JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```


PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

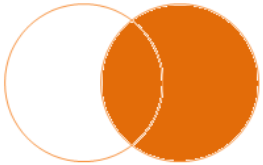
Right Outer Join or Right Join

ID	Name	Gender	Salary	DepartmentId
1	Tom	Male	4000	1
2	Pam	Female	3000	3
3	John	Male	3500	1
4	Sam	Male	4500	2
5	Todd	Male	2800	2
6	Ben	Male	7000	1
7	Sara	Female	4800	3
8	Valarie	Female	5500	1
9	James	Male	6500	NULL
10	Russell	Male	8800	NULL

Id	DepartmentName	Location	DepartmentHead
1	IT	London	Rick
2	Payroll	Delhi	Ron
3	HR	New York	Christie
4	Other Department	Sydney	Cindrella

RIGHT OUTER JOIN or RIGHT JOIN

Matching Rows + Non matching rows from the right table



Employees - Departments

Name	Gender	Salary	DepartmentName
Tom	Male	4000	IT
John	Male	3500	IT
Ben	Male	7000	IT
Valarie	Female	5500	IT
Sam	Male	4500	Payroll
Todd	Male	2800	Payroll
Pam	Female	3000	HR
Sara	Female	4800	HR
NULL	NULL	NULL	Other Department

RIGHT JOIN returns all the matching rows + non matching rows from the right table

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
RIGHT OUTER JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```

OR

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
RIGHT JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```


PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

Full Outer Join or Full Join

ID	Name	Gender	Salary	DepartmentId
1	Tom	Male	4000	1
2	Pam	Female	3000	3
3	John	Male	3500	1
4	Sam	Male	4500	2
5	Todd	Male	2800	2
6	Ben	Male	7000	1
7	Sara	Female	4800	3
8	Valarie	Female	5500	1
9	James	Male	6500	NULL
10	Russell	Male	8800	NULL

Id	DepartmentName	Location	DepartmentHead
1	IT	London	Rick
2	Payroll	Delhi	Ron
3	HR	New York	Christie
4	Other Department	Sydney	Cindrella

FULL OUTER JOIN or FULL JOIN

Matching Rows + Non matching rows from both the tables

Employees - Departments

Name	Gender	Salary	DepartmentName
Tom	Male	4000	IT
Pam	Female	3000	HR
John	Male	3500	IT
Sam	Male	4500	Payroll
Todd	Male	2800	Payroll
Ben	Male	7000	IT
Sara	Female	4800	HR
Valarie	Female	5500	IT
James	Male	6500	NULL
Russell	Male	8800	NULL
NULL	NULL	NULL	Other Department

FULL JOIN returns all rows from both the left and right tables, including the non matching rows.

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
FULL OUTER JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```

OR

```
SELECT Name, Gender, Salary, DepartmentName
FROM tblEmployee
FULL JOIN tblDepartment
ON tblEmployee.DepartmentId = tblDepartment.Id
```

PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

Cross Join

CROSS JOIN, produces the Cartesian product of the 2 tables involved in the join. For example, in the Employees table we have 10 rows and in the Departments table we have 4 rows. So, a cross join between these 2 tables produces 40 rows.

NOTE: Cross Join shouldn't have ON clause.

General Formula for Joins:

```
SELECT      COLUMN_LIST
FROM        LEFT_TABLE_NAME
JOIN_TYPE   RIGHT_TABLE_NAME
ON          JOIN_CONDITION
```

Cross Join:

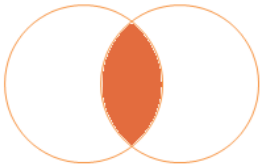
```
SELECT      Name, Gender, Salary, DepartmentName
FROM        tblEmployee
CROSS JOIN  tblDepartment
```

Summary

Join Type	Purpose
Cross Join	Returns Cartesian product of the tables involved in the join
Inner Join	Returns only the matching rows. Non matching rows are eliminated.
Left Join	Returns all the matching rows + non matching rows from the left table
Right Join	Returns all the matching rows + non matching rows from the right table
Full Join	Returns all rows from both tables, including the non-matching rows.

INNER JOIN or JOIN

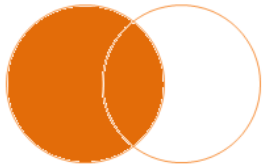
Matching Rows only – Non matching rows eliminated



Employees - Departments

LEFT OUTER JOIN or LEFT JOIN

Matching Rows + Non matching rows from the left table



Employees - Departments

RIGHT OUTER JOIN or RIGHT JOIN

Matching Rows + Non matching rows from the right table

Employees - Departments

FULL OUTER JOIN or FULL JOIN

Matching Rows + Non matching rows from both the tables

Employees - Departments

PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com

Additional Resources

- PRAGIM Home Page:
  - http://www.PragimTech.com
- Resources:
  - ASP.NET Interview Questions
  - http://www.VenkatASPInterview.Blogspot.com
  - C# Interview Questions
  - http://www.VenkatCSharpInterview.Blogspot.com

PRAGIM Technologies | www.pragimtech.com | 9900113931

http://csharp-video-tutorials.blogspot.com