

# SQL Server Tutorial

## Part 116 - Window functions in SQL Server

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

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

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# In this session we will learn

- Window functions in SQL Server

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

## **Suggested Videos**

**Part 113 - NTILE function in SQL Server**

**Part 114 - Lead and Lag functions in SQL Server 2012**

**Part 115 - FIRST\_VALUE function in SQL Server**

# Window functions in SQL Server

If you are in need of the DVD with all the videos and PPT's, please visit  
<http://pragimtech.com/order.aspx>

## Different categories of window functions

- Aggregate functions - AVG, SUM, COUNT, MIN, MAX etc..
- Ranking functions - RANK, DENSE\_RANK, ROW\_NUMBER etc..
- Analytic functions - LEAD, LAG, FIRST\_VALUE, LAST\_VALUE etc..

**OVER Clause defines the partitioning and ordering of rows (i.e a window) for the above functions to operate on. Hence these functions are called window functions. The OVER clause accepts the following three arguments to define a window for these functions to operate on**

- **ORDER BY** : Defines the logical order of the rows
- **PARTITION BY** : Divides the query result set into partitions. The window function is applied to each partition separately.
- **ROWS or RANGE clause** : Further limits the rows within the partition by specifying start and end points within the partition.

## The default for ROWS or RANGE clause is

`RANGE BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW`

# Window functions in SQL Server

Compute average salary and display it against every employee row

```
SELECT Name, Gender, Salary,  
       AVG(Salary) OVER(ORDER BY Salary) AS Average  
FROM Employees
```

Id	Name	Gender	Salary		Name	Gender	Salary	Average
1	Mark	Male	1000		Mark	Male	1000	1000
2	John	Male	2000		John	Male	2000	1500
3	Pam	Female	3000		Pam	Female	3000	2000
4	Sara	Female	4000		Sara	Female	4000	2500
5	Todd	Male	5000	→	Todd	Male	5000	3000
6	Mary	Female	6000		Mary	Female	6000	3500
7	Ben	Male	7000		Ben	Male	7000	4000
8	Jodi	Female	8000		Jodi	Female	8000	4500
9	Tom	Male	9000		Tom	Male	9000	5000
10	Ron	Male	9500		Ron	Male	9500	5450

# Window functions in SQL Server

Compute average salary and display it against every employee row

```
SELECT Name, Gender, Salary,  
       AVG(Salary) OVER(ORDER BY Salary  
                        ROWS BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING) AS Average  
FROM Employees
```

Id	Name	Gender	Salary		Name	Gender	Salary	Average
1	Mark	Male	1000		Mark	Male	1000	5450
2	John	Male	2000		John	Male	2000	5450
3	Pam	Female	3000		Pam	Female	3000	5450
4	Sara	Female	4000		Sara	Female	4000	5450
5	Todd	Male	5000	→	Todd	Male	5000	5450
6	Mary	Female	6000		Mary	Female	6000	5450
7	Ben	Male	7000		Ben	Male	7000	5450
8	Jodi	Female	8000		Jodi	Female	8000	5450
9	Tom	Male	9000		Tom	Male	9000	5450
10	Ron	Male	9500		Ron	Male	9500	5450

# Window functions in SQL Server

Compute the average salary of

1. The current row

2. One row PRECEDING the current row and

3. One row FOLLOWING the current row

```
SELECT Name, Gender, Salary,  
       AVG(Salary) OVER(ORDER BY Salary  
                        ROWS BETWEEN 1 PRECEDING AND 1 FOLLOWING) AS Average  
FROM Employees
```

Id	Name	Gender	Salary		Name	Gender	Salary	Average
1	Mark	Male	1000		Mark	Male	1000	1500
2	John	Male	2000		John	Male	2000	2000
3	Pam	Female	3000		Pam	Female	3000	3000
4	Sara	Female	4000		Sara	Female	4000	4000
5	Todd	Male	5000	→	Todd	Male	5000	5000
6	Mary	Female	6000		Mary	Female	6000	6000
7	Ben	Male	7000		Ben	Male	7000	7000
8	Jodi	Female	8000		Jodi	Female	8000	8000
9	Tom	Male	9000		Tom	Male	9000	8833
10	Ron	Male	9500		Ron	Male	9500	9250

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

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