

Part 11 – Group By

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In this session we will learn

- Grouping rows using GROUP BY
- Filtering Groups
- Difference between WHERE and HAVING clause in sql server

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GROUP BY

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

Group by clause is used to group a selected set of rows into a set of summary rows by the values of one or more columns or expressions. It is always used in conjunction with one or more aggregate functions.

City	TotalSalary
London	27300
New York	15500
Sydney	7600

```
SELECT City, SUM(Salary) AS TotalSalary
FROM tblEmployee GROUP BY City
```

Note: If you omit, the GROUP BY clause and try to execute the query, you get an error
Column 'tblEmployee.City' is invalid in the select list because it is not contained in either an aggregate function or the GROUP BY clause.

Filtering Groups

GROUPING BY multiple columns

City	Gender	TotalSalary
London	Male	27300
New York	Female	8500
New York	Male	7000
Sydney	Female	4800
Sydney	Male	2800

Using multiple aggregate functions

City	Gender	TotalSalary	TotalEmployees
London	Male	27300	5
New York	Female	8500	2
New York	Male	7000	1
Sydney	Female	4800	1
Sydney	Male	2800	1

Filtering Groups:

WHERE clause is used to filter rows before aggregation, where as HAVING clause is used to filter groups after aggregations. The following 2 queries produce the same result.

```
Select City, SUM(Salary) as TotalSalary
from tblEmployee
Where City = 'London'
group by City
```

```
Select City, SUM(Salary) as TotalSalary
from tblEmployee
group by City
Having City = 'London'
```

Note: From a performance standpoint, you cannot say that one method is less efficient than the other. Sql server optimizer analyses each statement and selects an efficient way of executing it. As a best practice, use the syntax that clearly describes the desired result. Try to eliminate rows that you wouldn't need, as early as possible.

Difference – WHERE and Having

1. WHERE clause can be used with - Select, Insert, and Update statements, where as HAVING clause can only be used with the Select statement.
2. WHERE filters rows before aggregation (GROUPING), where as, HAVING filters groups, after the aggregations are performed.
3. Aggregate functions cannot be used in the WHERE clause, unless it is in a sub query contained in a HAVING clause, whereas, aggregate functions can be used in Having clause.

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>

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