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SQL Server Tutorial

Part 98 - Difference between WHERE and HAVING in SQL Server

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In this session we will learn

Difference between WHERE and HAVING clauses 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 95 - Audit table changes in SQL Server Part 96 - Logon triggers in SQL Server Part 97 - SELECT INTO in SQL Server

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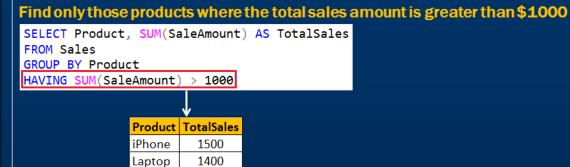
Sales	
Product	SaleAmount
iPhone	500
Laptop	800
iPhone	1000
Speakers	400
Laptop	600

Calculate total sales by product

SELECT Product, SUM(SaleAmount) AS TotalSales FROM Sales GROUP BY Product

Product	TotalSales
iPhone	1500
Laptop	1400
Speakers	400

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If we use WHERE clause instead of HAVING clause, we will get a syntax error. This is because the WHERE clause doesn't work with aggregate functions like sum, min, max, avg, etc.

SELECT Product, SUM(SaleAmount) AS TotalSales FROM Sales
GROUP BY Product
WHERE SUM(SaleAmount) > 1000

So in short, the difference is WHERE clause cannot be used with aggregates where as HAVING can

Msg 156, Level 15, State 1, Line 4
Incorrect syntax near the keyword 'WHERE'.

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WHERE clause filters rows before aggregate calculations are performed where as HAVING clause filters rows after aggregate calculations are performed

Total sales of iPhone and Speakers can be calculated by using either WHERE or HAVING clause

```
SELECT Product, SUM(SaleAmount) AS TotalSales
FROM Sales
WHERE Product in ('iPhone', 'Speakers')
GROUP BY Product

Product TotalSales
iPhone 1500
Speakers 400

SELECT Product, SUM(SaleAmount) AS TotalSales
FROM Sales
GROUP BY Product
HAVING Product in ('iPhone', 'Speakers')
```

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WHERE clause filters rows before aggregate calculations are performed where as HAVING clause filters rows after aggregate calculations are performed. So from a performance standpoint, HAVING is slower than WHERE and should be avoided when possible.

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WHERE clause cannot be used with aggregates where as HAVING can. This means WHERE clause is used for filtering individual rows where as HAVING clause is used to filter groups.

WHERE comes before GROUP BY. This means WHERE clause filters rows before aggregate calculations are performed. HAVING comes after GROUP BY. This means HAVING clause filters rows after aggregate calculations are performed. So from a performance standpoint, HAVING is slower than WHERE and should be avoided when possible.

WHERE and HAVING can be used together in a SELECT query. In this case WHERE clause is applied first to filter individual rows. The rows are then grouped and aggregate calculations are performed, and then the HAVING clause filter the groups.

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