

You Can Still Analyze Data with T-SQL, No Really

**Optimize your
data *lifecycle*.**



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Steve Hughes

Principal Consultant Lead

shughes@pragmaticworks.com

www.dataonwheels.com

@dataonwheels



Agenda

SQL Rollup, Cube, GroupingSets

SQL Window Functions

Wrap Up

GROUP BY with CUBE, ROLLUP, GROUPING SETS

ROLLUP results are similar to OLAP Queries

- Aggregations are created at each level of the grouping
- NULL is returned for columns that are “children”

CUBE results are often used in cross tabulation reports

- Results are returned in a hierarchical fashion
- Hierarchy order determined by grouping order

GROUPING SETS return values grouped more directly based on what is in the clause

GROUP BY Demos

ROLLUP

CUBE

GROUPING SETS

What Are SQL Window Functions & Why Should We Care?

Introduced in 2005, expanded in 2012

Used for grouping data for use at the row level

Allow for solving complex business questions

- % of customer's total sales

- Running total

- Next and previous row values

Does not require GROUP BY or subselect queries

Structure of the OVER Clause

OVER – used to define the window over which the function will be applied. The default window is the entire set.

PARTITION BY – groups the data by one or more columns

ORDER BY – sorts the data in the partition

ROWS or RANGE – further reduces the size of the window based on proximity from the current row

```
OVER ( [PARTITION BY <<field list>>]  
[ORDER BY <<field list>>]  
[ROWS/RANGE <<set of rows>> ] )
```

Window Function Demos

Ranking Windows

Aggregate Windows

New SQL 2012 Window
Functionality

- Aggregate with Order

- Aggregate with ROW

- Aggregate with RANGE

- Analytic Functions

Wrap Up

More Information

MSDN

- OVER Clause: [http://msdn.microsoft.com/en-us/library/ms189461\(v=SQL.110\).aspx](http://msdn.microsoft.com/en-us/library/ms189461(v=SQL.110).aspx)
- Analytic Functions: [http://msdn.microsoft.com/en-us/library/aa213234\(v=sql.110\).aspx](http://msdn.microsoft.com/en-us/library/aa213234(v=sql.110).aspx)
- Cube and Rollup: [https://technet.microsoft.com/en-us/library/bb522495\(v=sql.105\).aspx](https://technet.microsoft.com/en-us/library/bb522495(v=sql.105).aspx)

Supporting Series on DataOnWheels

- <http://dataonwheels.wordpress.com/category/t-sql/>

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