

Common Table Expressions (CTEs)

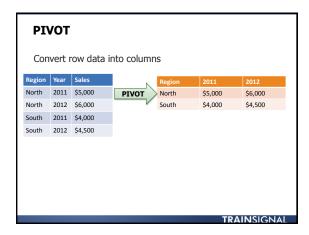
CTE Concepts

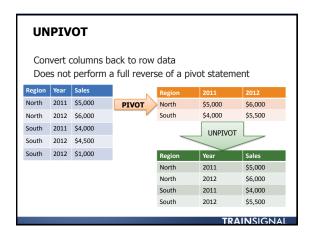
Inline view or temporary table Uses:

- Breakdown complex queries
- Avoid subqueries
- Simplify certain syntax

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PIVOT and UNPIVOT





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UNPIVOT Syntax SELECT <Columns> FROM <PivotedTable> UNPIVOT (<AggregatedColumn> FOR <NewColumn> IN (<ColumnList>)) AS UPVT

EXCEPT and INTERSECT EXCEPT and INTERSECT Behaves like a UNION statement Same number of columns - Data types must be compatible **INTERSECT** returns rows from top query that match bottom $\ensuremath{\mathsf{EXCEPT}}$ returns rows from top query that $\ensuremath{\mathbf{don't}}$ match bottom query TRAINSIGNAL **Sorting Data**

ORDER BY ORDER BY controls which columns will be used to sort output If no ORDER BY is provided, no order is guaranteed Can sort by multiple columns - Uses columns in order • For example: FirstName and then LastName ORDER BY executes last in a SELECT statement - Can use column aliases - Can also use column number Never use this syntax TRAINSIGNAL **TOP** Used to limit number of rows returned Can specify a number of rows or percent TOP is typically used with ORDER BY TRAINSIGNAL

Ranking Functions

ROW_NUMBER

- Returns the row number

RANK

- Returns ranking based on ORDER BY statement
- Ties skip to the next number

DENSE_RANK

- Returns ranking based on ORDER BY statement
- Ties don't advance the rank number

NTILE(x)

- Breaks rows into equal sections
- x is the number of sections

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Paging Used to retrieve portions of data FETCH and OFFSET - FETCH indicates the number of rows to retrieve - OFFSET indicates the number of rows to skip Restrictions - ORDER BY is required - TOP is not allowed SELECT <columns> FROM <tables> ORDER BY <columns> ORDER BY <columns> FROM <tables> ORDER BY <columns> OFFSET x FETCH NEXT 5 ROWS ONLY;

DISTINCT Statement

Removes duplicate values The entire row must be a duplicate Will cause a sort of the data

- Impacts performance

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