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Grouping Sets in SQL

The GROUPING SETS clause is used in conjunction with the GROUP BY clause to allow you to easily summarize data by aggregating a fact over as many dimensions as you like.

SQL GROUP BY clause

Recall that the SQL GROUP BY clause allows you to summarize an aggregation such as SUM or AVG over the distinct members, or groups, of a categorical variable or dimension.

You can extend the functionality of the GROUP BY clause using SQL clauses such as CUBE and ROLLUP to select multiple dimensions and create multi-dimensional summaries. These two clauses also generate grand totals, like a report you might see in a spreadsheet application or an accounting style sheet. Just like CUBE and ROLLUP, the SQL GROUPING SETS clause allows you to aggregate data over multiple dimensions but does not generate grand totals.

Examples

Let's start with an example of a regular GROUP BY aggregation and then compare the result to that of using the GROUPING SETS clause. We'll use data from a fictional company called Shiny Auto Sales. The schema for the company's warehouse is displayed in the entity-relationship diagram in Figure 1.