

Module 2 Assignment

The Module 2 Assignment provides experience writing SELECT statements using the subtotal operators (CUBE, ROLLUP, and GROUPING SETS). For the subtotal operator problems, you should follow the examples given in the notes.

Your SELECT statements will reference the tables of the Inventory Data Warehouse, described in another document. The INSERT statements are provided in another document. The Inventory Data Warehouse design and rows are identical from module 5 in course 2. If you added rows through the data integration assignment in module 5 of course 2, you should remove those rows or just recreate and repopulate the tables.

Query 1: Sales Order Shipments by Month and Category Code1

Write an SQL statement to display the sum of the extended cost and the sum of the quantity. The results should include data for shipments (transaction type 5) in calendar year 2011. Summarize the result by calendar month and Address Category Code 1. The result should include the grouped columns and the full totals for every combination of grouped columns. Do not use the GROUPING SETS and UNION operators.

Query 2: Sales Order Shipments by Name, Zip, and Quarter

Write an SQL statement to display the sum of the extended cost and the number of inventory transactions. The results should include data for shipments (transaction type 5) in calendar years 2011 and 2012. Summarize the result by calendar quarter, customer zip code, and customer name. The result should include the grouped columns and full set of subtotals for every combination of grouped columns. Do not use the CUBE and UNION operators.

Query 3: Transfers by Company and Branch Plant

Write an SQL statement to display the sum of the extended cost and the sum of the quantity. The results should include data for transfers (transaction type 2). Summarize the result by company name and branch plant name. The result should include the grouped columns and a partial set of subtotals in order of the grouped columns (company name and branch plant name). Transfer quantities by design should sum to zero across all companies so that the grand total should be 0 for the sum of quantity and extended cost. Do not use the GROUPING SETS and UNION operators.

Query 4: Inventory Transactions by Transaction Description, Company, and Branch Plant

Write an SQL statement to display the sum of the extended cost and the number of inventory transactions. The results should include data for all transaction types. Summarize the result by transaction description, company name, and branch plant name. The result should include the grouped columns and partial totals in order of the grouped columns (transaction description, company name, and branch plant name). Do not use the ROLLUP and UNION operators.

Query 5: Adjustments by Part Number

Write an SQL statement to display the sum of the extended cost and the number of inventory transactions. The results should include data for shipments (transaction type 5) in calendar years 2011 and 2012. Summarize the result by calendar year, calendar quarter, and customer name. The result should show the grouped columns and the normal set of group by results plus partial subtotals for year and quarter concatenated with customer name. Do not use the GROUPING SETS and UNION operators. (Hint: see the partial ROLLUP example in lesson 5).

Query 6: Rewrite Query 1 without CUBE, ROLLUP, or GROUPING SETS

Rewrite query 1 without the usage of the CUBE ROLLUP, or GROUPING SETS operators. In rewriting the query, you should use NULL as the default value for each column.

Query 7: Rewrite Query 3 without CUBE, ROLLUP, or GROUPING SETS

Rewrite query 3 without the usage of the CUBE, ROLLUP, or GROUPING SETS operators. In rewriting the query, you should use NULL as the default value for each column.

Query 8: Sales Order Shipments by Name and Combination of Year and Quarter

Write an SQL statement to display the sum of the extended cost and the number of inventory transactions. The results should include data for shipments (transaction type 5) in calendar years 2011 and 2012. Summarize the result by calendar year, calendar quarter, and customer name. The result should include the grouped columns and the full set of subtotals for customer name and the combination of year and quarter. Do not use the GROUPING SETS and UNION operators. (Hint: see the composite column example in lesson 5).

Query 9: Sales Order Shipments by Month and Category Code1 with Group Number

Write an SQL statement to display the sum of the extended cost and the sum of the quantity. The results should include data for shipments (transaction type 5) in calendar year 2011. Summarize the result by calendar month and Address Category Code 1. The result should include the grouped columns and the full set of subtotals for every combination of grouped columns along with the hierarchical group number for both grouping columns. Do not use the GROUPING SETS and UNION operators. (Hint: see the group functions slide in lesson 5. In PostgreSQL, the grouping identifier keyword is GROUPING, not GROUPING_ID as in Oracle).

Query 10: Sales Order Shipments with Subtotals by Name and Partial Subtotals by Year and Quarter

Write an SQL statement to display the sum of the extended cost and the number of inventory transactions. The results should include data for shipments (transaction type 5) in calendar years 2011 and 2012. Summarize the result by calendar year, calendar quarter, and customer name. The result should include the grouped columns and subtotals for customer name along with partial subtotals for year and quarter. Do not include the normal GROUP BY totals in the result. Do not use the UNION operator. (Hint: see the nested rollup example in lesson 5).

Grading

Your performance will be assessed by a quiz designed to test your understanding of each problem and by evidence of query executions. Since some quiz questions involve execution results, you should execute your statements using the original inventory data warehouse tables.

- You will receive 50% if your documentation contains a SELECT statement and partial results for each problem. Execution of your SQL statements demonstrates correct syntax.
- The quiz score will provide the other 50% of your grade. The quiz contains questions about the important elements of each problem such as the usage of the correct tables, function, partitioning, and sorting.

Completion

You should upload a file containing your Oracle or PostgreSQL statements and execution results to the graded item in module 2. For the execution results, you should take a snapshot of the script output window in SQL Developer (Oracle) or pgAdmin (PostgreSQL) showing the execution results. You only need to show the first 10 rows or so of the result. You should paste the execution results after the associated SELECT statement.