#### /\* 1a ROLLUP \*/

|  |
| --- |
| SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY year, quarter, month WITH ROLLUP |

This rollup query returns rows summarizing the earnings by year, quarter and month. It assumes a hierarchy among the dimension columns and only generates grouping sets based on this hierarchy.

#### /\* 1a CUBE \*/

|  |
| --- |
| SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY year, quarter, month WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY year, quarter WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY year, month WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY year WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY quarter, month WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY quarter WITH ROLLUP union SELECT year, quarter, month, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) GROUP BY month WITH ROLLUP |

This cube query gives every possible rollup scenario for the earnings by year, quarter, and month. We group by each possibility: year, quarter, month; year, quarter; year, month; year; quarter, month; quarter; and month.

#### /\* 1b ROLLUP \*/

|  |
| --- |
| SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName, districtName, state WITH ROLLUP |

This rollup query returns rows summarizing the earnings by region, district and state for 2010 earnings only. It assumes a hierarchy among the dimension columns and only generates grouping sets based on this hierarchy.

#### /\* 1b CUBE \*/

|  |
| --- |
| SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName, districtName, state WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName, districtName WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName, state WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY districtName, state WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY districtName WITH ROLLUP union SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY state WITH ROLLUP |

This cube query gives every possible rollup scenario for the earnings by region name, district name, and state. We group by each possibility: regionName, districtName, state; regionName, districtName; regionName, state; regionName; districtName, state; districtName; and state.

#### Differences between ROLLUP and CUBE

The results returned by the cube SQL queries had more rows returned than the results from the rollup SQL queries. This is because the cube will contain every possible rollup scenario while using rollup will maintain the hierarchy among the dimension columns. For example, in question 1a the rollup results will have the following output:

YEAR, QUARTER, MONTH

YEAR, QUARTER

YEAR

(NULL)

However, the cube results for the same question will have the following output:

YEAR, QUARTER, MONTH

YEAR, QUARTER

YEAR

QUARTER, MONTH

QUARTER

MONTH

(NULL)

As you can see, the cube results will return more rows because it combines all possible combinations features in GROUP BY.

#### /\* 2 ROLLUP \*/

|  |
| --- |
| SELECT regionName, districtName, state, SUM(earnings) FROM customerdim  JOIN earningsfact USING (customerkey) JOIN datedim USING (datekey) WHERE year > 2010 GROUP BY regionName, districtName, state WITH ROLLUP HAVING SUM(earnings) > 1000 |