If you've made it this far in the course, then you already know the basics of SQL.

In particular, I assume that you know how to group rows by single or multiple columns and how to calculate aggregate functions: sums, averages, maximum values, etc.

It’s time to learn some of its advanced features!

In this section, you’ll learn how to use ROLLUP, CUBE, and GROUPING SETS operations.

ROLLUP is an extension of the GROUP BY clause that allows you to attach additional lines which represent subtotals.

They are often called super-aggregated rows.

They can be presented together with the total sum line.

Thanks to the useful ROLLUP extension, you can generate multiple grouping sets using just one SQL query.

Similar to ROLLUP, the CUBE extension allows you to generate subtotals.

In addition, CUBE generates subtotals for all combinations of grouping columns specified in the GROUP BY clause.

GROUPING SETS is another step further because it allows for computing multiple GROUP BY clauses in a single SQL statement.

GROUP BY GROUPING SETS is equivalent to the UNION of two or more GROUP BY operations in the same result set.