Describe conceptually how a SQL retrieval query will be executed by specifying the conceptual order of executing each of the six clauses.

When executing a SQL retrieval query, the database management system (DBMS) follows a conceptual order of operations to retrieve the requested data. The order of execution typically involves six clauses. Here's a conceptual description of the order in which these clauses are executed:

1. **FROM** Clause: The query begins by evaluating the FROM clause. In this clause, you specify the tables or views from which you want to retrieve data. The DBMS identifies the relevant tables and determines how they are related (using join conditions, if necessary).
2. **WHERE** Clause: After the FROM clause, the DBMS evaluates the WHERE clause. In this clause, you specify the conditions that the retrieved data must meet. The DBMS applies these conditions to filter out rows that don't satisfy the specified criteria. This reduces the result set to only the rows that meet the specified conditions.
3. **GROUP BY** Clause: If the query includes a GROUP BY clause, the DBMS proceeds to evaluate it next. The GROUP BY clause allows you to group rows based on specific columns. The DBMS creates groups based on the values in the specified columns and performs aggregate functions (such as SUM, COUNT, AVG, etc.) on each group.
4. **HAVING** Clause: If the query includes a HAVING clause, it is evaluated after the GROUP BY clause. The HAVING clause allows you to specify additional conditions that must be satisfied by the grouped data. The DBMS applies these conditions to the grouped data and filters out groups that don't meet the specified criteria.
5. **SELECT** Clause: Once the previous clauses have been evaluated, the DBMS moves on to the SELECT clause. In this clause, you specify the columns you want to retrieve in the result set. The DBMS retrieves the specified columns from the filtered and grouped data, creating the final result set.
6. **ORDER BY** Clause: Finally, if the query includes an ORDER BY clause, the DBMS evaluates it last. The ORDER BY clause allows you to specify the sorting order for the result set based on one or more columns. The DBMS sorts the result set according to the specified column(s) in ascending or descending order.

It's important to note that this is a conceptual order of execution, and the actual implementation details may vary across different database systems. However, understanding this conceptual order can help in understanding how SQL retrieval queries are processed and optimized by the DBMS.

https://sqlbolt.com/lesson/select\_queries\_order\_of\_execution