**The Most Complete Anatomy of SQL SELECT-Statement**

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| Col | **A** | **B** | **C** | **D** | **E** | **F** | **G** |
|  | Clause | Main Roles | Can Have | CanNOT Have | Sequence | Necessity | Note |
| 1 | SELECT | List the columns (& expressions) to be returned from the query | Fields;  Aggregate functions;  Subqueries | Mixture of fields and aggregate functions, \*IF\* the field is not in GROUP BY | 1  Don’t confuse | MUST have | Other than column “D”, there is no condition for a field to be included in SELECT-clause |
| 2 | FROM | Indicate the table(s) or view(s) from which data will be obtained | Tables;  Views;  Subqueries  [Table alias defined here] | Fields | 2 | MUST have | JOIN performed in this clause (need to state join conditions) |
| 3 | WHERE | Indicate condi-tions under which a row is included in the result | Fields;  Subqueries  [NO aggregate function!!] | Aggregate function;  Alias | 3 | Optional | Multi-condi-tions (*field* OP *val*│*expres’n*  )  can be joined with AND, OR |
| 4 | GROUP BY | Indicate categorization of results **(individual rows \*collapsed\* into groups)** | Fields  [only]  CanNOT use alias! | Alias | 4 (when there’s WHERE); 3 (when there’s no WHERE) | Optional | GROUP BY field does NOT need to be in SELECT: can group by a field w/o displaying that field |
| 5 | HAVING | Indicate the conditions under which a category (group) will be included | Fields;  Subqueries;  Aggregate functions  [compared w WHERE]  No Alias!! | Alias [If alias is intended for the value of an aggregate function, then must use that function] | MUST be AFTER GROUP BY [No GROUP BY, no HAVING] | Option-al, **ON CONDI-TION** of Group By | No GROUP BY, no HAVING!! |
| 6 | ORDER BY | Sorts the result according to specified criteria on named fields | Fields  [Multiple fields:  primary sort, secondary sort, etc] | Alias [If alias is intended for the value of an aggregate function, then must use that function] | ALWAYS the last clause  **GROUP BY collapses rows into groups**  **ORDER BY does not collapse:**  **If no Group By, it sorts individual rows;**  **If there’s Group By then it sorts groups** | Optional | Don’t use “SORT”!!!!!!!!! |