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SQL Aggregation Practice Module

Step 3:-

1) what is the difference between GROUP BY and ORDER BY?

GROUP BY	ORDER BY
1) is used to group rows that have same values.	1) it sort the result, set either in as asending or desending order
2) maybe allowed in CREATE VIEW statment.	2) is not allowed in CREATE VIEW statment.
3) attribute can not be under group by statmat under aggregate function	3) attribute can be under order by statmat under aggregation function.
4) controls the presentation of rows.	4) controls presentation of coloumns.
5) always used before order by statmat	5) always used after group by statmat.

2) Why do we use HAVING instead of WHERE when filtering aggregate result?

we use having instead of where when filtering aggregate result because having filter after group by and can work with aggregate function like [Count(), Sum(), Avg()] while where filter rows before grouping and can not use aggregate function.

3) What are common beginner Mistakes when writing aggregation queries?

1) Expecting aggregate function like Sum() or Count() to automatically Apply conditions without using case or where.

2) Using aggregate function in the where clause instead of having.

3) Forgetting to use Group by when selecting non-aggregated columns.

4) When would you use Count (Distinct), Avg() and Sum() together?

We would use COUNT(DISTINCT ...), AVG(..), and SUM(...) together when you want to analyze data across different dimensions. for example to count unique items, calculate average values, and sum totals in single query. This is useful in reporting and analytics where you need full summary.

5) How does GROUP By affect query Performance, and how can indexes help?

when you use Group By the database had to group the data which takes extra time especially if there are many rows. This can make query slow or because the database needs to looks through all the data and organize it Indexes can help Make it faster. indexits like a shortcut or table of Contents that help the database find and group the right rows quickly.
So, if you group by a Column That has index, The database doesn't have to scan everything it uses the Shortcut instead.