### **Different Uses of Aggregation – Summary Table**

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| **Question** | **Answer (Short and Clear)** |
| **1. What is the difference between GROUP BY and ORDER BY?** | GROUP BY groups rows for aggregation; ORDER BY sorts the result. GROUP BY is for logic, ORDER BY is for display. |
| **2. Why do we use HAVING instead of WHERE when filtering aggregate results?** | WHERE filters before aggregation; HAVING filters after aggregation. HAVING works with aggregate functions like COUNT(), AVG(). |
| **3. What are common beginner mistakes in aggregation queries?** | - Using WHERE instead of HAVING with aggregates - Forgetting GROUP BY when using aggregate functions - Not including non-aggregated columns in GROUP BY - Misunderstanding COUNT(\*) vs COUNT(column) |
| **4. When would you use COUNT(DISTINCT ...), AVG(...), and SUM(...) together?** | When you need detailed summary data, like: - Unique count of items - Average of values - Total sum - Useful in reports or dashboards. |
| **5. How does GROUP BY affect query performance, and how can indexes help?** | GROUP BY can be slow on large data. Indexes improve speed by making grouping/sorting more efficient. Creating an index on GROUP BY columns helps the database work faster. |