

INTERVIEW QUESTIONS FROM THE TASK 4

Here are the answers to the **interview questions** from your **Task 4 – Aggregate Functions and Grouping**:

1. What is GROUP BY?

GROUP BY is used to group rows that have the same values in specified columns, allowing you to perform aggregate functions (like SUM, COUNT, AVG) on each group.

Example:

```
SELECT gender, COUNT(*)  
FROM student  
GROUP BY gender;
```

2. Difference between WHERE and HAVING?

| Feature | WHERE | HAVING |
|------------|--------------------------------|-----------------------------|
| Used on | Individual rows | Groups (after GROUP BY) |
| Filters | Before grouping | After grouping |
| Aggregates | Cannot be used with aggregates | Can be used with aggregates |

Example:

-- WHERE: Before grouping

```
SELECT * FROM student WHERE gender = 'Male';
```

-- HAVING: After grouping

```
SELECT gender, COUNT(*)  
FROM student  
GROUP BY gender  
HAVING COUNT(*) > 2;
```

3. How does COUNT(*) differ from COUNT(column)?

- COUNT(*): Counts **all rows**, including those with NULL
 - COUNT(column): Counts **non-NULL** values in that column
-

4. Can you group by multiple columns?

Yes. You can use GROUP BY on two or more columns.

Example:

```
SELECT gender, age, COUNT(*)  
FROM student  
GROUP BY gender, age;
```

5. What is ROUND() used for?

ROUND() is used to limit the number of decimal places of numeric results like AVG, SUM.

Example:

```
SELECT ROUND(AVG(fees), 2) AS average_fee  
FROM student;
```

6. How do you find the highest salary by department?

```
SELECT department, MAX(salary) AS highest_salary  
FROM employee  
GROUP BY department;
```

(Note: Replace employee and salary with your table/column names.)

7. What is the default behavior of GROUP BY?

- Groups rows in **ascending order** by default
 - It collapses multiple rows into one row per group
-

8. Explain AVG and SUM.

- AVG(column): Returns the average (mean) of a numeric column.
- SUM(column): Returns the total sum of values in a numeric column.

Example:

```
SELECT AVG(fees), SUM(fees)
FROM student;
```

9. How to count distinct values?

Use COUNT(DISTINCT column)

Example:

```
SELECT COUNT(DISTINCT age) AS unique_ages
FROM student;
```

10. What is an aggregate function?

Aggregate functions perform a **calculation on a set of values** and return a single summary result.

Examples:

- SUM()
 - AVG()
 - COUNT()
 - MAX()
 - MIN()
-

Let me know if you want these formatted for a .md file or if you'd like practice questions based on these too!