

@Backend : Phase1

Task 3

/DBMS-MySQL



/Feedback

\$ Task_2_Feedback

/Resources

\$ Watch this video MySQL-Tutorial from 1:19:49 till 2:41:36:

\$ from Baraa Course, watch these videos also to understand these concepts with visual explanation:

- > SQL Where Conditions (Refresh)
- > SQL Functions (General)
- > String Functions
- > Number Functions
- > SQL Case-When Statement
- > SQL Aggregate Functions

\$ Other Useful resources along this phase:

- > Baraa Course
- > Eng-Ramy ITI Course
- > DR-Amr Internal DBs Course

/TODO

\$ Part A: LeetCode Problems (Functions & Grouping)

Create a file named `Task_3_Solutions.sql` and paste your SQL code for each problem there.

- > [Invalid Tweets](#)
- > [Fix Names in a Table](#)
- > [Calculate Special Bonus](#)
- > [Patients With a Condition](#)
- > [Find Total Time Spent by Each Employee](#)
- > [Find Followers Count](#)
- > [Daily Leads and Partners](#)
- > [Actors and Directors Who Cooperated At Least Three Times](#)
- > [Classes With at Least 5 Students](#)
- > [Game Play Analysis I](#)
- > [Capital Gain/Loss](#)
- > [Second Highest Salary](#)

\$ Part B: Research Questions

Answer the following questions in the file named **research.md**.

- ✓ 1. **WHERE vs HAVING**: Both are used to filter data, but they are used in different places in a query. Explain the difference between them and when to use which. (Give a code example).
- ✓ 2. **DELETE vs TRUNCATE vs DROP**: We learned about deleting data. What is the difference between these three commands? Which one can be rolled back (undone)?
- 3. **Order of Execution**: When you write a query like `SELECT ... FROM ... WHERE ... GROUP BY ... HAVING ... ORDER BY`, the database does not read it in that order. What is the actual "Logical Order of Execution" that the SQL engine performs?
- ✓ 4. **COUNT(*) vs COUNT(Column_Name)**: In aggregation, these two look similar but behave differently regarding `NULL` values. What is the exact difference?
- 5. **CHAR vs VARCHAR**: Both store text, but they manage storage space differently. Explain the difference between `CHAR(10)` and `VARCHAR(10)` if we store the word "Cat" in both.

/Notes

- > Treat your research answers like you are teaching a student who is confused about these topics. Simple English, clear examples.

/Submission Guidelines

> Inside your **IEEE-ZSB-Backend-26** repository, inside the **MySQL** folder, create a new folder named **Task_3** and put your files there:

MySQL\

 Task_3\

Task_3_Solutions.sql

research.md

 HTML\

 . . .

/How-To-Submit

\$ After you finish all of that, push your files to the repo as explained.

\$ Submit the GitHub repository link on the task chat on **Discord**.

/Deadline

\$ Friday, February 20 at 11:59 PM

Wish you the best. ❤

