

@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. ❤️

