

Day 01

1. Finding Updated Records (Microsoft)

We have a table with employees and their salaries, however, some of the records are old and contain outdated salary information. Find the current salary of each employee assuming that salaries increase each year. Output their id, first name, last name, department ID, and current salary. Order your list by employee ID in ascending order.

```
-- the assumption is that employees' salaries increase each year so the current salary is
-- the highest salary found in the table.
-- use max() in the SELECT clause to find the highest salary of the employee
-- output id, first name, last name, department ID, max(salary) in SELECT clause

SELECT
    id,
    first_name,
    last_name,
    department_id,
    max(salary) AS current_salary
FROM ms_employee_salary
GROUP BY
    id, first_name, last_name, department_id
ORDER BY
    id ASC;
```

StrataScratch

https://platform.stratascratch.com/coding/10299-finding-updated-records?code_type=3

2. Data Science Skills (LinkedIn)

Given a table of candidates and their skills, you're tasked with finding the candidates best suited for an open Data Science job. You want to find candidates who are proficient in Python, Tableau, and PostgreSQL.

Write a query to list the candidates who possess all of the required skills for the job. Sort the the output by candidate ID in ascending order.

Assumption:

- There are no duplicates in the candidates table.

```
SELECT
    candidate_id
FROM candidates
WHERE skill IN ('Python', 'Tableau', 'PostgreSQL')
GROUP BY candidate_id
HAVING COUNT(skill) = 3
ORDER BY candidate_id;
```

Explanation:

Candidates with a variety of skillsets have applied for this role, but we need candidates who know Python, Tableau, and PostgreSQL.

We'll start by using the `IN` operator to find candidates which have some of the required skills:

```
SELECT candidate_id
FROM candidates
WHERE skill IN ('Python', 'Tableau', 'PostgreSQL');
```

The output should look something like this: (Showing random 5 records)

candidate_id	skill
123	Python
123	Tableau
123	PostgreSQL
345	Python
345	Tableau

We can see from the output that these candidates possess at least one of the necessary skills, but keep in mind, the problem is asking for candidates who have ALL THREE of these skills, so we aren't done quite yet!

It's important to keep in mind that the `candidates` table does not contain any duplicates, so each combination of candidate and skill is a unique row. Therefore, a candidate should have exactly 3 rows for each of the necessary skills in order to be qualified for the job.

Now, we group the candidates table by candidate ID using the `GROUP BY` clause and count the number of skills for each group using the `COUNT` function.

Let's look at the total number of required skills for each candidate:

```
SELECT
  candidate_id,
  COUNT(skill) AS skill_count
FROM candidates
WHERE skill IN ('Python', 'Tableau', 'PostgreSQL')
GROUP BY candidate_id;
```

Candidate **123** possesses all three of the required skills in this instance, but Candidate **345** possesses only two of the required skills.

In the last step, we'll use `HAVING` to select only candidates with three skills and `ORDER BY` the candidate ID, as per the task.

Note that the full solution below counts skills inside the `HAVING`, not in the `SELECT` as shown above.

```
SELECT candidate_id
FROM candidates
WHERE skill IN ('Python', 'Tableau', 'PostgreSQL')
GROUP BY candidate_id
HAVING COUNT(skill) = 3
ORDER BY candidate_id;
```

LinkedIn SQL Interview Question | DataLemur

Candidates with a variety of skillsets have applied for this role, but we need candidates who know Python, Tableau, and PostgreSQL.



<https://datalemur.com/questions/matching-skills>



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