

# Problem 3278: Find Candidates for Data Scientist Position II

## Problem Information

Difficulty: **Medium**

Acceptance Rate: 0.00%

Paid Only: No

## Problem Description

Table:

Candidates

+-----+-----+ | Column Name | Type | +-----+-----+ | candidate\_id | int | | skill | varchar | | proficiency | int | +-----+-----+ (candidate\_id, skill) is the unique key for this table. Each row includes candidate\_id, skill, and proficiency level (1-5).

Table:

Projects

+-----+-----+ | Column Name | Type | +-----+-----+ | project\_id | int | | skill | varchar | | importance | int | +-----+-----+ (project\_id, skill) is the primary key for this table. Each row includes project\_id, required skill, and its importance (1-5) for the project.

Leetcode is staffing for multiple data science projects. Write a solution to find the

best candidate

for

each project

based on the following criteria:

Candidates must have

all

the skills required for a project.

Calculate a

score

for each candidate-project pair as follows:

Start

with

100

points

Add

10

points for each skill where

$\text{proficiency} > \text{importance}$

Subtract

5

points for each skill where

$\text{proficiency} < \text{importance}$

If the candidate's skill proficiency

equal

to the project's skill importance, the score remains unchanged

Include only the top candidate (highest score) for each project. If there's a

tie

, choose the candidate with the

lower

candidate\_id

. If there is

no suitable candidate

for a project,

do not return

that project.

Return a result table ordered by

project\_id

in ascending order.

The result format is in the following example.

Example:

Input:

Candidates

table:

```

+-----+-----+-----+ | candidate_id | skill | proficiency |
+-----+-----+-----+ | 101 | Python | 5 | | 101 | Tableau | 3 | | 101 | PostgreSQL |
4 | | 101 | TensorFlow | 2 | | 102 | Python | 4 | | 102 | Tableau | 5 | | 102 | PostgreSQL | 4 | | 102 |
R | 4 | | 103 | Python | 3 | | 103 | Tableau | 5 | | 103 | PostgreSQL | 5 | | 103 | Spark | 4 |
+-----+-----+-----+

```

Projects

table:

```

+-----+-----+-----+ | project_id | skill | importance |
+-----+-----+-----+ | 501 | Python | 4 | | 501 | Tableau | 3 | | 501 | PostgreSQL | 5
| | 502 | Python | 3 | | 502 | Tableau | 4 | | 502 | R | 2 | +-----+-----+-----+

```

Output:

```

+-----+-----+-----+ | project_id | candidate_id | score |
+-----+-----+-----+ | 501 | 101 | 105 | | 502 | 102 | 130 |
+-----+-----+-----+

```

Explanation:

For Project 501, Candidate 101 has the highest score of 105. All other candidates have the same score but Candidate 101 has the lowest candidate\_id among them.

For Project 502, Candidate 102 has the highest score of 130.

The output table is ordered by project\_id in ascending order.

## Code Snippets

**MySQL:**

```
# Write your MySQL query statement below
```

**MS SQL Server:**

```
/* Write your T-SQL query statement below */
```

### PostgreSQL:

```
-- Write your PostgreSQL query statement below
```

### Oracle:

```
/* Write your PL/SQL query statement below */
```

### Pandas:

```
import pandas as pd

def find_best_candidates(candidates: pd.DataFrame, projects: pd.DataFrame) ->
pd.DataFrame:
```

## Solutions

### MySQL Solution:

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