

Problem 3421: Find Students Who Improved

Problem Information

Difficulty: **Medium**

Acceptance Rate: 47.37%

Paid Only: No

Tags: Database

Problem Description

Table: `Scores`

+-----+-----+ | Column Name | Type | +-----+-----+ | student_id | int | | subject | varchar | | score | int | | exam_date | varchar | +-----+-----+ (student_id, subject, exam_date) is the primary key for this table. Each row contains information about a student's score in a specific subject on a particular exam date. score is between 0 and 100 (inclusive).

Write a solution to find the ****students who have shown improvement****. A student is considered to have shown improvement if they meet ****both**** of these conditions:

* Have taken exams in the ****same subject**** on at least two different dates * Their ****latest score**** in that subject is ****higher**** than their ****first score****

Return the result table ordered by ``student_id`,`subject`` in****ascending**** order.

The result format is in the following example.

****Example:****

****Input:****

Scores table:

student_id	subject	score	exam_date
101	Math	70	2023-01-15
101	Math	85	2023-02-15
101	Physics	65	2023-01-15
101	Physics	60	2023-02-15
102	Math		

```
| 80 | 2023-01-15 | | 102 | Math | 85 | 2023-02-15 | | 103 | Math | 90 | 2023-01-15 | | 104 |
Physics | 75 | 2023-01-15 | | 104 | Physics | 85 | 2023-02-15 |
+-----+-----+-----+-----+
```

****Output:****

```
+-----+-----+-----+-----+ | student_id | subject | first_score | latest_score |
+-----+-----+-----+-----+ | 101 | Math | 70 | 85 | | 102 | Math | 80 | 85 | | 104
| Physics | 75 | 85 | +-----+-----+-----+-----+
```

****Explanation:****

* Student 101 in Math: Improved from 70 to 85 * Student 101 in Physics: No improvement (dropped from 65 to 60) * Student 102 in Math: Improved from 80 to 85 * Student 103 in Math: Only one exam, not eligible * Student 104 in Physics: Improved from 75 to 85

Result table is ordered by student_id, subject.

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
```