

# 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
```