

3188. Find Top Scoring Students II Premium

Hard Topics

SQL Schema > Pandas Schema >

Table: students

Column Name	Type
student_id	int
name	varchar
major	varchar

student_id is the primary key for this table.
Each row contains the student ID, student name, and their major.

Table: courses

Column Name	Type
course_id	int
name	varchar
credits	int
major	varchar
mandatory	enum

course_id is the primary key for this table.
mandatory is an enum type of ('Yes', 'No').
Each row contains the course ID, course name, credits, major it belongs to, and whether the course is mandatory.

Table: enrollments

Column Name	Type
student_id	int
course_id	int
semester	varchar
grade	varchar
GPA	decimal

(student_id, course_id, semester) is the primary key (combination of columns with unique values) for this table.
Each row contains the student ID, course ID, semester, and grade received.

Write a solution to find the students who meet the following criteria:

- Have **taken all mandatory courses** and **at least two** elective courses offered in **their major**.
- Achieved a grade of **A** in **all mandatory courses** and at least **B** in **elective courses**.
- Maintained an average `GPA` of at least `2.5` across all their courses (including those outside their major).

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

Example:

Input:

students table:

student_id	name	major
1	Alice	Computer Science
2	Bob	Computer Science
3	Charlie	Mathematics
4	David	Mathematics

courses table:

course_id	name	credits	major	mandatory
101	Algorithms	3	Computer Science	yes
102	Data Structures	3	Computer Science	yes
103	Calculus	4	Mathematics	yes
104	Linear Algebra	4	Mathematics	yes
105	Machine Learning	3	Computer Science	no
106	Probability	3	Mathematics	no
107	Operating Systems	3	Computer Science	no
108	Statistics	3	Mathematics	no

enrollments table:

student_id	course_id	semester	grade	GPA
1	101	Fall 2023	A	4.0
1	102	Spring 2023	A	4.0
1	105	Spring 2023	A	4.0
1	107	Fall 2023	B	3.5
2	101	Fall 2023	A	4.0
2	102	Spring 2023	B	3.0
3	103	Fall 2023	A	4.0
3	104	Spring 2023	A	4.0
3	106	Spring 2023	A	4.0
3	108	Fall 2023	B	3.5
4	103	Fall 2023	B	3.0
4	104	Spring 2023	B	3.0

Output:

student_id
1
3

- Explanation:
- Alice (student_id 1) is a Computer Science major and has taken both Algorithms and Data Structures, receiving an A in both. She has also taken Machine Learning and Operating Systems as electives, receiving an A and B respectively.
 - Bob (student_id 2) is a Computer Science major but did not receive an A in all required courses.
 - Charlie (student_id 3) is a Mathematics major and has taken both Calculus and Linear Algebra, receiving an A in both. He has also taken Probability and Statistics as electives, receiving an A and B respectively.
 - David (student_id 4) is a Mathematics major but did not receive an A in all required courses.

Note: Output table is ordered by student_id in ascending order.

Seen this question in a real interview before? 1/5

Yes No

Accepted 1K | Submissions 2.6K | Acceptance Rate 38.5%

Topics

Database

Discussion (7)