

CSCI3170 Short Assignment #1 (Solution)

Name:

Pass / Fail

Student ID:

Consider the following relation schema and SQL statement:

Course(course_id, course_name, stream)

Enrollment(course_id, student_id)

```
SELECT student_id
FROM Enrollment E
WHERE E.course_id IN (
    SELECT C.course_id
    FROM Course C
    WHERE C.stream = A
)
GROUP BY student_id
HAVING COUNT(*) = (
    SELECT COUNT (*)
    FROM Course C2
    WHERE C2.stream = A
);
```

1. Suppose we have the following relation instance. What is the output of the query?

course_id	course_name	stream
CSCI3170	Database	A
CSCI1234	Information	A
CSCI4430	Network	B

course_id	student_id
CSCI3170	1
CSCI1234	1
CSCI3170	2
CSCI4430	2
CSCI3170	3
CSCI4430	3
CSCI1234	3

Ans:

student_id
1
3

2. Use ONE sentence to describe the purpose of the SQL statement.

Ans:

Get the student_id of students who enrolled all the courses in stream A

3. Rewrite the SQL statement in Relational Algebra

(Hint: Use division)

Ans:

$Enrollment \div \pi_{course_id}(\sigma_{stream=A} Course)$