Vitaliy Prymak March 13, 2024 Homework 3

Find the ID and name of each student who has taken at least one Comp. Sci. course; make sure there are no duplicate names in the result.

```
SELECT DISTINCT s.ID, s.name

FROM student s

JOIN takes take ON s.ID = take.ID

JOIN course c ON take.course_id = c.course_id AND c.dept_name = 'Comp.

Sci.';
```

Find the ID and name of each student who has not taken any course offered before 2017

```
SELECT DISTINCT stu.ID, stu.name

FROM student stu

WHERE stu.ID NOT IN (

    SELECT take.ID

    FROM takes take

    JOIN section sec ON take.course_id = sec.course_id

    JOIN course cours ON sec.course_id = cours.course_id

    WHERE sec.year < 2017

);
```

For each department, find the maximum salary of instructors in that department. You may assume that every department has at least one instructor.

```
SELECT d.dept_name, MAX(i.salary) AS max_salary

FROM department d

JOIN instructor i ON d.dept_name = i.dept_name

GROUP BY d.dept_name, d.building, d.budget;
```

Find the lowest, across all departments, of the per-department maximum salary computed by the preceding query.

```
SELECT MIN(max_salary) AS min_max_salary

FROM (

    SELECT MAX(i.salary) AS max_salary

    FROM department d

    JOIN instructor i ON d.dept_name = i.dept_name

    GROUP BY d.dept_name, d.building, d.budget

) AS department_max_salaries;
```

Write an SQL query using the university schema to find the ID of each student who has *never* taken a course at the university. Do this using no subqueries and no set operations (use an **outer join**).

```
SELECT DISTINCT stu.ID
FROM student stu
LEFT JOIN takes take ON stu.ID = take.ID
WHERE take.ID IS NULL;
```