Assignment 3

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EPPS 6354

- **1. Open the Online SQL interpreter (https://www.db-book.com/db7/university-lab-dir/sqljs.html)**

- **2. Write SQL codes to get a list of:**

- i. Students IDs (hint: from the takes relation) - select ID from student

- ii. Instructors - select name from instructor

- iii. Departments - select dept_name from departmen

- 3. **Write in SQL codes to do following queries:**
- **i. 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 takes as t inner join student as s

  on t.ID = s.ID

  inner join course as c on t.course_id = c.course_id

  where c.dept_name = 'Comp. Sci.

ID	name
00128	Zhang
12345	Shankar
45678	Levy
54321	Williams
76543	Brown
98765	Bourikas

- **ii. Add grades to the list**

select distinct s.ID, s.name, c.title, t. semester, t. year, t.grade

from takes as t inner join student as s

on t.ID = s.ID

inner join course as c on t.course_id = c.course_id

where c.dept_name = 'Comp. Sci.' -

- more columns for context

ID	name	title	semester	year	grade
00128	Zhang	Intro. to Computer Science	Fall	2017	A
00128	Zhang	Database System Concepts	Fall	2017	A-
12345	Shankar	Intro. to Computer Science	Fall	2017	C
12345	Shankar	Game Design	Spring	2017	A
12345	Shankar	Robotics	Spring	2018	A
12345	Shankar	Database System Concepts	Fall	2017	A
45678	Levy	Intro. to Computer Science	Fall	2017	F
45678	Levy	Intro. to Computer Science	Spring	2018	B+
45678	Levy	Image Processing	Spring	2018	B
54321	Williams	Intro. to Computer Science	Fall	2017	A-
54321	Williams	Game Design	Spring	2017	B+
76543	Brown	Intro. to Computer Science	Fall	2017	A
76543	Brown	Image Processing	Spring	2018	A
98765	Bourikas	Intro. to Computer Science	Fall	2017	C-
98765	Bourikas	Robotics	Spring	2018	B

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

select distinct s.ID, s.name

from takes as t inner join student as s

on t.ID = s.ID

inner join course as c on t.course_id = c.course_id

where t.year < 2017

No results

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

SELECT dept_name, MAX(Salary) FROM Instructor

GROUP BY dept_name

dept_name	MAX(Salary)
Biology	72000
Comp. Sci.	92000
Elec. Eng.	80000
Finance	90000
History	62000
Music	40000
Physics	95000

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

  SELECT MIN(salary) from Instructor

  WHERE salary IN (SELECT MAX(Salary) FROM Instructor GROUP BY dept_name)

name	dept_name	MAX(Salary)
Crick	Biology	72000
Brandt	Comp. Sci.	92000
Kim	Elec. Eng.	80000
Wu	Finance	90000
Califieri	History	62000
Mozart	Music	40000
Einstein	Physics	95000

- **4. Find instructor (with name and ID) who has never given an A grade in any course she or he has taught. (Instructors who have never taught a course trivially satisfy this condition.)**

SELECT distinct te.ID, Name FROM takes ta, teaches te, instructor i

WHERE te.Course_ID = ta.Course_ID AND i.Id = te.Id and ta.Grade is not NULL

AND te.ID not in

(SELECT distinct te.Id FROM takes ta, teaches te

WHERE te.Course_ID = ta.Course_ID and ta.Grade="A");

ID	name
12121	Wu
15151	Mozart
22222	Einstein
32343	El Said
98345	Kim