Assignment 3

Christina Lam

Write SQL code to get a list of Student IDs

Enter SQL commands here

```
1 select ID
2 from student
```

Execute	Save the db	Load an SQLite database file: Choose File No file chosen

ID
00128
12345
19991
23121
44553
45678
54321
55739
70557
76543
76653
98765
98988

Enter SQL commands here

```
1 select distinct ID
2 from student
```

Execute	Save the db	Load an SQLite database file: Choose File No file chosen

ID
00128
12345
19991
23121
44553
45678
54321
55739
70557
76543
76653
98765
98988

Write SQL code to get a list of Instructors

Enter SQL commands here

```sql
1  select name, ID
2  from instructor
```

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name	ID
Srinivasan	10101
Wu	12121
Mozart	15151
Einstein	22222
El Said	32343
Gold	33456
Katz	45565
Califieri	58583
Singh	76543
Crick	76766
Brandt	83821
Kim	98345

Write SQL code to get a list of Departments

Enter SQL commands here

```
1  select dept_name, building
2  from department
```

| Execute | Save the db | Load an SQLite database file: Choose File No file chosen |

dept_name	building
Biology	Watson
Comp. Sci.	Taylor
Elec. Eng.	Taylor
Finance	Painter
History	Painter
Music	Packard
Physics	Watson

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.

ii.   Add grades to the list

Enter SQL commands here

```
1 SELECT distinct name, ID
2 from (select name, ID, course.course_id
3        from course, student
4        where course.dept_name="Comp. Sci.")
```

| Execute | Save the db | Load an SQLite database file: | Choose File | No file chosen |

name	ID
Zhang	00128
Shankar	12345
Brandt	19991
Chavez	23121
Peltier	44553
Levy	45678
Williams	54321
Sanchez	55739

Enter SQL commands here

```
1 select distinct student.ID, student.name, takes.grade
2 from student
3 join takes on student.ID=takes.ID
4 join course on takes.course_id=course.course_id
5 where course.dept_name= 'Comp. Sci.'
```

| Execute | Save the db | Load an SQLite database file: | Choose File | No file chosen |

ID	name	grade
00128	Zhang	A
00128	Zhang	A-
12345	Shankar	C
12345	Shankar	A
45678	Levy	F
45678	Levy	B+
45678	Levy	B
54321	Williams	A-
54321	Williams	B+
76543	Brown	A
98765	Bourikas	C-
98765	Bourikas	B

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

Enter SQL commands here

```
1  select ID, name
2  from student
3  where ID not in (
4     select distinct takes.ID
5     from takes, section
6     where section.year<2017)
```

Execute   Save the db   Load an SQLite database file:

Choose File   No file chosen

ID	name
00128	Zhang
12345	Shankar
19991	Brandt
23121	Chavez
44553	Peltier
45678	Levy
54321	Williams
55739	Sanchez
70557	Snow
76543	Brown
76653	Aoi
98765	Bourikas
98988	Tanaka

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

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

vi.   Add names to the list

Enter SQL commands here

```
1 SELECT dept_name, max(salary) as max_salary, name
2 from instructor
3 group by dept_name
```

[Execute] [Save the db] Load an SQLite database file: [Choose File] No file chosen

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

Click here for tips on using SQLite including SQL syntax variations.

Original work by kripken (sql.js). C to Javascript compiler by kripk

Enter SQL commands here

```
1 select min(max_instructor_salary) as lowest_max_salary,name, dept_name
2 from(select dept_name, MAX(salary) as max_instructor_salary,name,dept_name
3 from instructor
4 group by dept_name)
```

[Execute] [Save the db] Load an SQLite database file: [Choose File] No file chosen

lowest_max_salary	name	dept_name
40000	Mozart	Music

Find instructor who has never given an A grade in any course taught

Enter SQL commands here

```
1  select i.ID, i.name
2  from instructor i
3  where not exists(select *
4                   from teaches t
5                   JOIN takes tk ON t.course_id=tk.course_id
6                   and t.id=i.id
7                   where tk.grade='A')
```

| Execute | Save the db | Load an SQLite database file: | Choose File | No file chosen |

ID	name
12121	Wu
15151	Mozart
22222	Einstein
32343	El Said
33456	Gold
58583	Califieri
76543	Singh
98345	Kim

Write SQL query to find number of students in each section

Enter SQL commands here

```sql
 1 SELECT section.course_id,
 2        section.sec_id,
 3        section.year,
 4        section.semester,
 5        COUNT(takes.ID) AS num
 6 FROM section
 7 Join takes on section.course_id = takes.course_id
 8             AND section.sec_id = takes.sec_id
 9             AND section.semester = takes.semester
10             AND section.year = takes.year
11 GROUP BY section.course_id, section.sec_id, section.year, section.semester
12 HAVING num > 0;
```

| Execute | Save the db | Load an SQLite database file: | Choose File | No file chosen |

course_id	sec_id	year	semester	num
BIO-101	1	2017	Summer	1
BIO-301	1	2018	Summer	1
CS-101	1	2017	Fall	6
CS-101	1	2018	Spring	1
CS-190	2	2017	Spring	2
CS-315	1	2018	Spring	2
CS-319	1	2018	Spring	1
CS-319	2	2018	Spring	1
CS-347	1	2017	Fall	2
EE-181	1	2017	Spring	1
FIN-201	1	2018	Spring	1
HIS-351	1	2018	Spring	1
MU-199	1	2018	Spring	1
PHY-101	1	2017	Fall	1