

Feedback — SQL Social-Network Query Exercises

(extras)

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You submitted this quiz on **Fri 20 Mar 2015 8:34 PM PDT**. You got a score of **5.00** out of **5.00**.

Students at your hometown high school have decided to organize their social network using databases. So far, they have collected information about sixteen students in four grades, 9-12. Here's the schema:

Highschooler (ID, name, grade)

English: There is a high school student with unique *ID* and a given *first name* in a certain *grade*.

Friend (ID1, ID2)

English: The student with *ID1* is friends with the student with *ID2*. Friendship is mutual, so if (123, 456) is in the Friend table, so is (456, 123).

Likes (ID1, ID2)

English: The student with *ID1* likes the student with *ID2*. Liking someone is not necessarily mutual, so if (123, 456) is in the Likes table, there is no guarantee that (456, 123) is also present.

Your queries will run over a small data set conforming to the schema. [View the database](#). (You can also [download the schema and data](#).)

For your convenience, here is a graph showing the various connections between the students in our database. 9th graders are blue, 10th graders are green, 11th graders are yellow, and 12th graders are purple. Undirected black edges indicate friendships, and directed red edges indicate that one student likes another student.



Social graph

Instructions: You are to write each of the following queries using SQL. The "Run Query" command will help you develop and debug your queries by running them using SQLite over the sample database.

Important Notes:

- Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.
- Unless a specific result ordering is asked for, you can return the result rows in any order.
- *You are to translate the English into a SQL query that computes the desired result over all possible databases.* All we actually check is that your query gets the right answer on the small sample database. Thus, even if your solution is marked as correct, it is possible that your query does not correctly reflect the problem at hand. (For example, if we ask for a complex condition that requires accessing all of the tables, but over our small data set in the end the condition is satisfied only by Star Wars, then the query "select title from Movie where title = 'Star Wars'" will be marked correct even though it doesn't reflect the actual question.) Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.

You may perform these exercises as many times as you like, so we strongly encourage you to keep working with them until you complete the exercises with a full score.

NOTE: REMEMBER TO CLICK "Submit" WHEN YOU ARE DONE!

Please be patient as it does take time to check all of the exercises.

Question 1

For every situation where student A likes student B, but student B likes a different student C, return the names and grades of A, B, and C.

Note: Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.

You entered:

```
select H1.name, H1.grade, H2.name, H2.grade, H3.name,
H3.grade
  from Highschooler as H1, Highschooler as H2,
Highschooler as H3, Likes as L1, Likes as L2
 where H1.ID = L1.ID1
```

Run Query

Your Answer

Score

Explanation

```
select H1.name, H1.grade, H2.name, H
2.grade, H3.name, H3.grade
  from Highschooler as H1, Highsch
ooler as H2, Highschooler as H3, Likes
as L1, Likes as L2
 where H1.ID = L1.ID1
       and H2.ID = L1.ID2
       and H2.ID = L2.ID1
       and H3.ID = L2.ID2
       and H1.ID <> H3.ID
```

✓ 1.00

Correct

Your Query Result:

Andrew	10	Cassandra	9	Gabriel	9
Gabriel	11	Alexis	11	Kris	10

Expected Query Result:

Andrew	10	Cassandra	9	Gabriel	9
Gabriel	11	Alexis	11	Kris	10

Total

1.00 /
1.00

Question Explanation

Note

Even if your solution is marked as correct, it is possible that your query does not correctly reflect the problem at hand. All we check is that your query gets the right answer on the small sample database. For example, if we asked for a complex condition that requires accessing all of the

tables, but over our small data set in the end the condition is satisfied only by Kris, then the query "select name from Highschooler where name = 'Kris'" will be marked correct even though it doesn't reflect the actual question. Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.

Question 2

Find those students for whom all of their friends are in different grades from themselves. Return the students' names and grades.

Note: Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.

You entered:

```
select name, grade
  from Highschooler
 where ID not in (select F.ID1
                  from Friend as F, Highschooler
                 as H1, Highschooler as H2
```

Run Query

Your Answer	Score	Explanation				
<pre>select name, grade from Highschooler where ID not in (select F.ID1 from Friend as F, Highsch ooler as H1, Highschooler as H2 where H1.ID = F.ID1 and H2.ID = F.ID2 and H1.grade = H2.g rade)</pre>	<div>✓</div> 1.00	<div>Correct</div> <div>Your Query Result:</div> <table><tr><td>Austin</td><td>11</td></tr></table> <div>Expected Query Result:</div> <table><tr><td>Austin</td><td>11</td></tr></table>	Austin	11	Austin	11
Austin	11					
Austin	11					
Total	1.00 / 1.00					

Question Explanation

Note

Even if your solution is marked as correct, it is possible that your query does not correctly reflect

the problem at hand. All we check is that your query gets the right answer on the small sample database. For example, if we asked for a complex condition that requires accessing all of the tables, but over our small data set in the end the condition is satisfied only by Kris, then the query "select name from Highschooler where name = 'Kris'" will be marked correct even though it doesn't reflect the actual question. Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.

Question 3

What is the average number of friends per student? (Your result should be just one number.)

Note: Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.

You entered:

```
select avg(numFriend)
  from (select ID1, count(*) as numFriend
        from Friend
       group by ID1) as Sub
```

Run Query

Your Answer	Score	Explanation
<pre>select avg(numFriend) from (select ID1, count(*) as numFriend from Friend group by ID1) as Sub</pre>	<div>✓</div> 1.00	<p>Correct</p> <p>Your Query Result:</p> <div>2.5</div> <p>Expected Query Result:</p> <div>2.5</div>
Total	1.00 / 1.00	

Question Explanation

Note

Even if your solution is marked as correct, it is possible that your query does not correctly reflect the problem at hand. All we check is that your query gets the right answer on the small sample database. For example, if we asked for a complex condition that requires accessing all of the

tables, but over our small data set in the end the condition is satisfied only by Kris, then the query "select name from Highschooler where name = 'Kris'" will be marked correct even though it doesn't reflect the actual question. Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.

Question 4

Find the number of students who are either friends with Cassandra or are friends of friends of Cassandra. Do not count Cassandra, even though technically she is a friend of a friend.

Note: Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.

You entered:

```
select count(distinct SubTable.ID2)
from
  (-- First, find friends of Cassandra
  select ID2
  from Friend, Highschooler
```

Run Query

Your Answer	Score	Explanation
<pre>select count(distinct SubTable.ID2) from (-- First, find friends of Cassandra select ID2 from Friend, Highschooler where ID1 = ID and name = 'Cassandra' union -- Second, find friends of friends of Cassandra, excluding Cassandra select F.ID2 from Friend as F, Highschooler as H, (select ID2 as ID3 from Friend, Highschooler where ID1 = ID and name = 'Cassandra') as Sub where F.ID1 = Sub.ID3 and F.ID2 = H.ID</pre>	<div>✓</div> 1.00	<p>Correct</p> <p>Your Query Result:</p> <div>7</div> <p>Expected Query Result:</p> <div>7</div>

and H.name <> 'Cassandra') as SubTabl

e

Total	1.00 /
	1.00

Question Explanation

Note

Even if your solution is marked as correct, it is possible that your query does not correctly reflect the problem at hand. All we check is that your query gets the right answer on the small sample database. For example, if we asked for a complex condition that requires accessing all of the tables, but over our small data set in the end the condition is satisfied only by Kris, then the query "select name from Highschooler where name = 'Kris'" will be marked correct even though it doesn't reflect the actual question. Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.

Question 5

Find the name and grade of the student(s) with the greatest number of friends.

Note: Your queries are executed using SQLite, so you must conform to the SQL constructs supported by SQLite.

You entered:

```
select name, grade
      from (select ID1, count(*) as numFriend
            from Friend
            group by ID1) as Sub1,
      Highschooler as H
```

Run Query

Your Answer	Score	Explanation
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<pre>select name, grade from (select ID1, count(*) as numFriend from Friend group by ID1) as Sub1, Highschooler as H where H.ID = Sub1.ID1 and Sub1.numFriend = (select max(Sub2.num Friend)</pre>	<div>✓</div> 1.00
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Correct

Your Query Result:

Alexis	11
Andrew	10

1, count(*) as numFriend
Friend
by ID1) as Sub2)

from (select ID
from
group

Expected Query
Result:

Alexis	11
Andrew	10

Total 1.00 / 1.00

Question Explanation

Note

Even if your solution is marked as correct, it is possible that your query does not correctly reflect the problem at hand. All we check is that your query gets the right answer on the small sample database. For example, if we asked for a complex condition that requires accessing all of the tables, but over our small data set in the end the condition is satisfied only by Kris, then the query "select name from Highschooler where name = 'Kris'" will be marked correct even though it doesn't reflect the actual question. Circumventing the system in this fashion will get you a high score on the exercises, but it won't help you learn SQL. On the other hand, an incorrect attempt at a general solution is unlikely to produce the right answer, so you shouldn't be led astray by our checking system.