

Feedback — SQL Social-Network Query Exercises (core set)

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You submitted this quiz on **Thu 19 Mar 2015 12:49 PM PDT**. You got a score of **9.00** out of **9.00**.

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 full credit.

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

Find the names of all students who are friends with someone named Gabriel.

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

You entered:

```
select H1.name
  from Highschooler as H1, Highschooler as H2, Friend as F
 where H1.ID = F.ID1
       and H2.ID = F.ID2
       and H2.name = 'Gabriel';
```

Run Query

Your Answer	Score	Explanation										
<pre>select H1.name from Highschooler as H1, Highschooler as H2, Friend as F where H1.ID = F.ID1 and H2.ID = F.ID2 and H2.name = 'Gabriel';</pre>	<div>✓</div> 1.00	<div>Correct</div> <div>Your Query Result:</div> <table><tr><td>Alexis</td></tr><tr><td>Andrew</td></tr><tr><td>Cassandra</td></tr><tr><td>Jessica</td></tr><tr><td>Jordan</td></tr></table> <div>Expected Query Result:</div> <table><tr><td>Alexis</td></tr><tr><td>Andrew</td></tr><tr><td>Cassandra</td></tr><tr><td>Jessica</td></tr><tr><td>Jordan</td></tr></table>	Alexis	Andrew	Cassandra	Jessica	Jordan	Alexis	Andrew	Cassandra	Jessica	Jordan
Alexis												
Andrew												
Cassandra												
Jessica												
Jordan												
Alexis												
Andrew												
Cassandra												
Jessica												
Jordan												

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

For every student who likes someone 2 or more grades younger than themselves, return that student's name and grade, and the name and grade of the student they like.

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
  from Highschooler as H1, Highschooler as H2, Likes as L
 where H1.ID = L.ID1
       and H2.ID = L.ID2
       and (H1.grade - H2.grade) >= 2;
```

Run Query

Your Answer	Score	Explanation
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<pre>select H1.name, H1.grade, H2.name, H2.grade from Highschooler as H1, Highschooler as H2, Likes as L where H1.ID = L.ID1 and H2.ID = L.ID2 and (H1.grade - H2.grade) >= 2;</pre>	✓ 1.00	
--	--------	--

Correct

Your Query Result:

John	12	Haley	10
------	----	-------	----

Expected Query Result:

John	12	Haley	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 3

For every pair of students who both like each other, return the name and grade of both students.

Include each pair only once, with the two names in alphabetical order.

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

You entered:

```
select Sub1.name1, Sub1.grade1, Sub1.name2, Sub1.grade2
  from
    (select H1.name as name1, H1.grade as grade1,
           H2.name as name2, H2.grade as grade2
     from Highschooler as H1, Highschooler as H2,
```

Run Query

Your Answer

Score

Explanation

```
select Sub1.name1, Sub1.grade1, Sub1.name2, S
ub1.grade2
  from
    (select H1.name as name1, H1.grade a
s grade1,
           H2.name as name2, H2.grad
e as grade2
     from Highschooler as H1, Highsch
ooler as H2, Likes as L
```

✓ 1.00

Correct

Your Query Result:

Cassandra	9	Gabriel	9
Jessica	11	Kyle	12

Expected Query Result:

```

        where H1.ID = L.ID1
              and H2.ID = L.ID2) as Sub1,
(select H1.name as name1, H1.grade as
grade1,
        H2.name as name2, H2.grade
as grade2
        from Highschooler as H1, Highschooler as H2, Likes as L
        where H1.ID = L.ID1
              and H2.ID = L.ID2) as Sub2

where Sub1.name1 = Sub2.name2
      and Sub1.name2 = Sub2.name1
      and Sub1.name1 < Sub1.name2
      and Sub1.grade1 = Sub2.grade2
      and Sub1.grade2 = Sub2.grade1;

```

Cassandra	9	Gabriel	9
Jessica	11	Kyle	12

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 all students who do not appear in the Likes table (as a student who likes or is liked) and return their names and grades. Sort by grade, then by name within each grade.

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 ID1 from Likes
        union
        select ID2 from Likes)
 order by grade, name
```

Run Query**Your Answer****Score****Explanation**

```
select name, grade
  from Highschooler
 where ID not in
       (select ID1 from Likes
        union
        select ID2 from Likes)
 order by grade, name
```



1.00

Correct

Your Query Result:

Jordan	9
Tiffany	9
Logan	12

Expected Query Result:

Jordan	9
Tiffany	9
Logan	12

(Order matters)

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

For every situation where student A likes student B, but we have no information about whom B likes (that is, B does not appear as an ID1 in the Likes table), return A and B's names and grades.

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
  from Highschooler as H1,
       Highschooler as H2,
       Likes as L
 where L.ID2 not in (select ID1 from Likes)
```

Run Query

Your Answer

Score

Explanation

```
select H1.name, H1.grade, H2.name, H2.grade
  from Highschooler as H1,
       Highschooler as H2,
       Likes as L
 where L.ID2 not in (select ID1 from Likes)
        and H1.ID = L.ID1
        and H2.ID = L.ID2;
```

✓ 1.00

Correct

Your Query Result:

Alexis	11	Kris	10
Austin	11	Jordan	12
Brittany	10	Kris	10
John	12	Haley	10

Expected Query Result:

Alexis	11	Kris	10
Austin	11	Jordan	12
Brittany	10	Kris	10
John	12	Haley	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 6

Find names and grades of students who only have friends in the same grade. Return the result sorted by grade, then by name within each grade.

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

You entered:

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

Run Query

Your Answer

Score

Explanation

```
select H.name, H.grade
  from Highschooler as H,
      Friend as F
 where H.ID not in
      (select H1.ID
        from Highschooler as H1, Highschooler
      as H2, Friend as F
       where H1.ID = F.ID1
         and H2.ID = F.ID2
         and H1.grade <> H2.grade
      group by H1.ID)
 group by H.name
 order by H.grade, H.name;
```

✓ 1.00

Correct

Your Query Result:

Jordan	9
Brittany	10
Haley	10
Kris	10
Gabriel	11
John	12
Logan	12

Expected Query Result:

Jordan	9
Brittany	10
Haley	10
Kris	10

Gabriel	11
John	12
Logan	12

(Order matters)

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 7

For each student A who likes a student B where the two are not friends, find if they have a friend C in common (who can introduce them!). For all such trios, return the name and grade 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,
```

Your Answer	Score	Explanation
select H1.name, H1.grade, H2.name, H2.grade, H3.name, H3.grade from Highschooler as H1,	✓ 1.00	Correct

```

Highschooler as H2,
Highschooler as H3,
Likes as L,
Friend as F1,
Friend as F2
where H1.ID = L.ID1
      and H2.ID = L.ID2
      and H2.ID not in (select ID2
                        from
m Highschooler, Friend
                        wh
ere ID = ID1 and ID = H1.ID)
      and H1.ID = F1.ID1
      and H2.ID = F2.ID1
      and H3.ID = F1.ID2
      and H3.ID = F2.ID2

```

Your Query Result:

Andrew	10	Cassandra	9	Gabriel	9
Austin	11	Jordan	12	Andrew	10
Austin	11	Jordan	12	Kyle	12

Expected Query Result:

Andrew	10	Cassandra	9	Gabriel	9
Austin	11	Jordan	12	Andrew	10
Austin	11	Jordan	12	Kyle	12

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 8

Find the difference between the number of students in the school and the number of different first names.

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

You entered:

```
select count(distinct ID)-count(distinct name)
from Highschooler
```

Run Query

Your Answer	Score	Explanation
<pre>select count(distinct ID)-count(distinct name) from Highschooler</pre>	✓ 1.00	Correct Your Query Result: <div>2</div> Expected Query Result: <div>2</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 9

Find the name and grade of all students who are liked by more than one other student.

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,
       (select ID2, count(*) as likedNum
        from Likes
       group by ID2) as Sub
```

Run Query**Your Answer****Score****Explanation**

```
select name, grade
  from Highschooler,
       (select ID2, count(*) as likedNum
        from Likes
       group by ID2) as Sub
 where ID = Sub.ID2
       and Sub.likedNum > 1;
```

✓ 1.00

Correct

Your Query Result:

Cassandra	9
Kris	10

Expected Query Result:

Cassandra	9
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.