Homework #3
due Thursday, October 14, 2010 at 2 pm

Database Systems, CSCI-4380-01

Each student must work on this homework alone.

1 Homework Description

In this homework, you will be querying the database from Homework #2, i.e. Kip's political campaign. Recall that the database allows users to specify their interest in issues, create and participate in polls, events and pose questions to the candidate. Write the following queries using SQL. The bonus queries are worth 10% more than the regular queries. Answer only one of a query or its bonus version (Qi or Qi.1).

Write the following queries using SQL:

Q1 Find users who are interested in issues about "war" (where the description contains the word "war"). Return the user id and email.

Q1.1 (Bonus) Order the users from the above query by the total number of times the issues they are interested in mentiones the word "war" in its description. To accomplish this, you will need to use string functions. The documentation for these is at:

`www.postgresql.org/docs/8.2/interactive/functions-string.html`.

Q2 For each user, find the number of events, polls they have created within the last year. Return the id, status, type, email of the user together with the number of events and polls.

Q3 Find people who are friends of a friend of user with id 10. Return their id, username and email. Do not include people who are friends of 10 in your list.

Q3.1 (Bonus) For each person, find the total number of people that they have as friends of a friend. Return the id, username and email of the person together with the number. (Note that if you write this query wrong, you can bring down the database server, check all your joins before executing it.)

Q4 Find people who vote on each other's polls and questions. Return the id of people, id1 and id2 such that either:

- id1 created a poll that id2 has voted on, and id2 created a poll that id1 voted on, or
- id1 created a candidated question that id2 has voted on, and id2 created a candidate question that id1 has voted on.

Return both pairs, (id1, id2) and (id2, id1) for simplicity, order by the first item of the pair.

Q5 For poll with id 10, find the option with the highest number of votes. Return the text of the option and the total number of votes that option.

Q6 Find events taking place in the month of October 2010 that no one has rsvp'ed. For each event, return the id, title, date of the event and the email of its creator.

2 Deliverables

Turn in a single text file (.sql) containing all your queries. It must be possible to execute the whole file using the

```
\i filename
```

command. To achieve this, make sure all queries execute and end with ;. If you have a query that does not run, you will loose all points for that query. It is better for you to turn in a query that is not fully correct than one that does not run. Also, note that you can write commands in a .sql file by preceding it with `--` . So, comment each query by preceding it with a line that describes the query you are answering. You should also use the psql command

```
\echo 'text'
```

to identify your name at the top and then the id of each query before the SQL for it. This will allow your TA to quickly run and test your homework. A template for answers is provided with this homework. You must use this template and fill in your personal inforamtion and the SQL queries.

To test your queries, connect to the postgresql server at CS. First ssh to remote.cs.rpi.edu.

```
ssh remote.cs.rpi.edu -l username
```

using your CS username and start postgresql using the username and password mailed to you and the database csc4380.

```
psql -h csc4380.cs.rpi.edu csc4380 -U csc4380_username
```

again using your CS username. You can get help on how to use postgresql using the online documentation:

```
http://www.postgresql.org/docs/8.2/interactive/index.html
```