CS 440 Spring 2015
Homework 8
Due Monday, April 6

This is a (sort of) follow-on to HW 5. For this assignment, you will use the same script to create tables and populate the database (reprinted below). Please study the script to get a complete understanding of the tables and their relationships. Please note that the database includes a number of WVU students, their CRN, and their current grade in school. There are also Friend and Likes tables. Friends are mutual, so that if (123, 456) is in the Friend table, so is (456, 123). Likes is not necessarily mutual, as the penalty of love is that it may not be reciprocated.

1. Create a PLSQL function called Likers that, receiving a CRN as a parameter, will return a varying array of the student names of all students that like the student represented by the parameter. Note that you will be responsible for creating an appropriate varying array for this purpose. If no one likes the student, the function should return null.
2. Create a PLSQL procedure called Hermitify received a CRN as a parameter and removes all Friend/Likes references to that individual.
3. Create a trigger so that new students like all students in their grade.
4. Create a trigger so that new students who either have a null grade or no grade specified are automatically listed as Freshmen.
5. Create a trigger so that symmetry is maintained in the Friend table (so if A is a friend of B, B must also be a friend of A).
6. Create a trigger so that if a student is advanced one year (say from Freshman to Sophomore) then so are all of his friends.
7. Create a trigger so that if a student is advanced to graduate student, the student is automatically deleted from the database.
8. Write a trigger to enforce the following behavior: If A liked B but is updated to A liking C instead, and B and C were friends, make B and C no longer friends.

Submission should include your myID and all queries along with evidence that they compiled. All functions, procedures, and triggers should be installed in your database and functioning for testing. Be sure that the original data is present in all tables. Also, be sure your triggers all work together!

```
/* Delete the tables if they already exist */
drop table Mountaineer;
drop table Friend;
drop table Likes;
drop table Grade;
```

```
/* Create the schema for our tables */
create table Mountaineer(ID number, name varchar2(30), grade char(2));
create table Friend(ID1 number, ID2 number);
create table Likes(ID1 number, ID2 number);
create table Grade(seq number, grade char(2));

/* Populate the tables with our data */
insert into Mountaineer values (1510, 'Jordan', 'FR');
insert into Mountaineer values (1689, 'Gabriel', 'FR');
insert into Mountaineer values (1381, 'Tiffany', 'FR');
insert into Mountaineer values (1709, 'Cassandra', 'FR');
insert into Mountaineer values (1101, 'Haley', 'SO');
insert into Mountaineer values (1782, 'Andrew', 'SO');
insert into Mountaineer values (1468, 'Kris', 'SO');
insert into Mountaineer values (1641, 'Brittany', 'SO');
insert into Mountaineer values (1247, 'Alexis', 'JR');
insert into Mountaineer values (1316, 'Austin', 'JR');
insert into Mountaineer values (1911, 'Gabriel', 'JR');
insert into Mountaineer values (1501, 'Jessica', 'JR');
insert into Mountaineer values (1304, 'Jordan', 'SR');
insert into Mountaineer values (1025, 'John', 'SR');
insert into Mountaineer values (1934, 'Kyle', 'SR');
insert into Mountaineer values (1661, 'Logan', 'SR');

insert into Friend values (1510, 1381);
insert into Friend values (1510, 1689);
insert into Friend values (1689, 1709);
insert into Friend values (1381, 1247);
insert into Friend values (1709, 1247);
insert into Friend values (1689, 1782);
insert into Friend values (1782, 1468);
insert into Friend values (1782, 1316);
insert into Friend values (1782, 1304);
insert into Friend values (1468, 1101);
insert into Friend values (1468, 1641);
insert into Friend values (1101, 1641);
insert into Friend values (1247, 1911);
insert into Friend values (1247, 1501);
insert into Friend values (1911, 1501);
insert into Friend values (1501, 1934);
insert into Friend values (1316, 1934);
```

```
insert into Friend values (1934, 1304);
insert into Friend values (1304, 1661);
insert into Friend values (1661, 1025);
insert into Friend select ID2, ID1 from Friend;

insert into Likes values(1689, 1709);
insert into Likes values(1709, 1689);
insert into Likes values(1782, 1709);
insert into Likes values(1911, 1247);
insert into Likes values(1247, 1468);
insert into Likes values(1641, 1468);
insert into Likes values(1316, 1304);
insert into Likes values(1501, 1934);
insert into Likes values(1934, 1501);
insert into Likes values(1025, 1101);

insert into Grade values (1, 'FR');
insert into Grade values (2, 'SO');
insert into Grade values (3, 'JR');
insert into Grade values (4, 'SR');
insert into Grade values (5, 'GR');
```