Assignment 7 – Database Queries

Due Date: Friday November 8th, 2014

Overview

In this assignment you will write a series of queries for a database:

Specifications

Submit a file with 10 database queries.

- Create a file called Hw7Queries.sql.   Include your name in the comments section at the top.

- Each query should output its results to a text file called Hw7-X.txt where the X stands for the question number. You should have the following files

Hw7-1.txt,	Hw7-6.txt
Hw7-2.txt	Hw7-7.txt
Hw7-3.txt	Hw7-8.txt
Hw7-4.txt	Hw7-9.txt
Hw7-5.txt	Hw7-10.txt

- If one of your queries causes an error, remove it from the file.
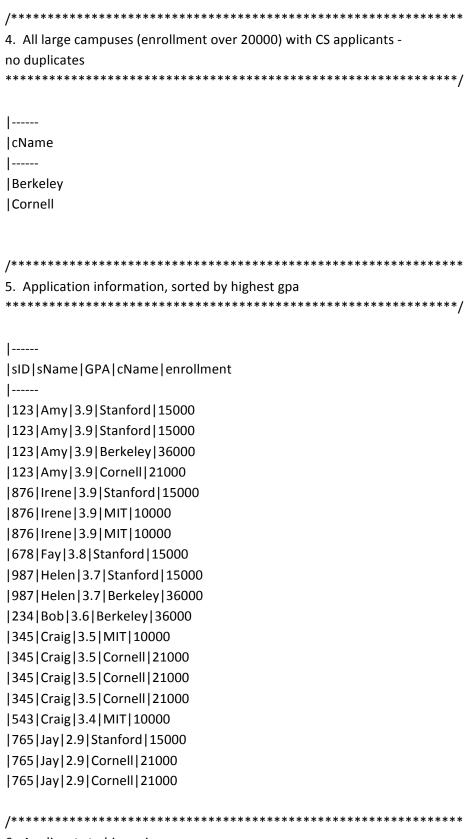
The questions (10pts each) are:
1. IDs, names, and GPAs of students with GPA > 3.6
2. Student names and majors for which they've applied - no duplicates
3. Names and GPAs of students with sizeHS < 1000 applying to CS at Stanford, and the application decision
4. All large campuses (enrollment over 20000) with CS applicants -no duplicates
5. Application information, sorted by highest gpa
6. Applicants to bio majors
7. Select * cross-product of Students and Colleges
8. Add scaled GPA based on sizeHS GPA*(sizeHS/1000.0)
9. Rename result attribute as scaledGPA and return the first 5
10. Show all students and the number of colleges they applied to. Make sure to use the column names Name and Applications

A sample of correct output is included in each question. Remember, unless you were specifically asked to order the data, the results may vary slightly.

Sample Answers

```
/*************************************************************
1.  IDs, names, and GPAs of students with GPA > 3.6
*************************************************************/
------
|sID|sName|GPA
|-------------
|123|Amy|3.9
|456|Doris|3.9
|678|Fay|3.8
|987|Helen|3.7
|876|Irene|3.9
|654|Amy|3.9
```

```
/*************************************************************
2.  Student names and majors for which they've applied - no duplicates
*************************************************************/
|------
|sName|major
|------
|Amy|CS
|Amy|EE
|Bob|biology
|Craig|bioengineering
|Craig|CS
|Craig|EE
|Fay|history
|Helen|CS
|Irene|CS
|Irene|biology
|Irene|marine biology
|Jay|history
|Jay|psychology
```

```
/*************************************************************
3.  Names and GPAs of students with sizeHS < 1000 applying to
  CS at Stanford, and the application decision
*************************************************************/
|------
|sname|GPA|decision
|------
```

|Helen|3.7|Y
|Irene|3.9|N

/***
4. All large campuses (enrollment over 20000) with CS applicants -
no duplicates
***/

|------
|cName
|------
|Berkeley
|Cornell

/***
5. Application information, sorted by highest gpa
***/

|------
|sID|sName|GPA|cName|enrollment
|------
|123|Amy|3.9|Stanford|15000
|123|Amy|3.9|Stanford|15000
|123|Amy|3.9|Berkeley|36000
|123|Amy|3.9|Cornell|21000
|876|Irene|3.9|Stanford|15000
|876|Irene|3.9|MIT|10000
|876|Irene|3.9|MIT|10000
|678|Fay|3.8|Stanford|15000
|987|Helen|3.7|Stanford|15000
|987|Helen|3.7|Berkeley|36000
|234|Bob|3.6|Berkeley|36000
|345|Craig|3.5|MIT|10000
|345|Craig|3.5|Cornell|21000
|345|Craig|3.5|Cornell|21000
|345|Craig|3.5|Cornell|21000
|543|Craig|3.4|MIT|10000
|765|Jay|2.9|Stanford|15000
|765|Jay|2.9|Cornell|21000
|765|Jay|2.9|Cornell|21000

/***
6. Applicants to bio majors

```
************************************************************/
|------
|sID|major
|------
|234|biology
|345|bioengineering
|345|bioengineering
|876|biology
|876|marine biology


/************************************************************
7.  Select * cross-product of Students and Colleges
************************************************************/
|------
|sID|sName|GPA|sizeHS|cName|state|enrollment
|------
|123|Amy|3.9|1000|Stanford|CA|15000
|123|Amy|3.9|1000|Berkeley|CA|36000
|123|Amy|3.9|1000|MIT|MA|10000
|123|Amy|3.9|1000|Cornell|NY|21000
|234|Bob|3.6|1500|Stanford|CA|15000
|234|Bob|3.6|1500|Berkeley|CA|36000
|234|Bob|3.6|1500|MIT|MA|10000
|234|Bob|3.6|1500|Cornell|NY|21000
|345|Craig|3.5|500|Stanford|CA|15000
|345|Craig|3.5|500|Berkeley|CA|36000
|345|Craig|3.5|500|MIT|MA|10000
|345|Craig|3.5|500|Cornell|NY|21000
|456|Doris|3.9|1000|Stanford|CA|15000
|456|Doris|3.9|1000|Berkeley|CA|36000
|456|Doris|3.9|1000|MIT|MA|10000
|456|Doris|3.9|1000|Cornell|NY|21000
|567|Edward|2.9|2000|Stanford|CA|15000
|567|Edward|2.9|2000|Berkeley|CA|36000
|567|Edward|2.9|2000|MIT|MA|10000
|567|Edward|2.9|2000|Cornell|NY|21000
|678|Fay|3.8|200|Stanford|CA|15000
|678|Fay|3.8|200|Berkeley|CA|36000
|678|Fay|3.8|200|MIT|MA|10000
|678|Fay|3.8|200|Cornell|NY|21000
|789|Gary|3.4|800|Stanford|CA|15000
|789|Gary|3.4|800|Berkeley|CA|36000
|789|Gary|3.4|800|MIT|MA|10000
|789|Gary|3.4|800|Cornell|NY|21000
```

```
|987|Helen|3.7|800|Stanford|CA|15000
|987|Helen|3.7|800|Berkeley|CA|36000
|987|Helen|3.7|800|MIT|MA|10000
|987|Helen|3.7|800|Cornell|NY|21000
|876|Irene|3.9|400|Stanford|CA|15000
|876|Irene|3.9|400|Berkeley|CA|36000
|876|Irene|3.9|400|MIT|MA|10000
|876|Irene|3.9|400|Cornell|NY|21000
|765|Jay|2.9|1500|Stanford|CA|15000
|765|Jay|2.9|1500|Berkeley|CA|36000
|765|Jay|2.9|1500|MIT|MA|10000
|765|Jay|2.9|1500|Cornell|NY|21000
|654|Amy|3.9|1000|Stanford|CA|15000
|654|Amy|3.9|1000|Berkeley|CA|36000
|654|Amy|3.9|1000|MIT|MA|10000
|654|Amy|3.9|1000|Cornell|NY|21000
|543|Craig|3.4|2000|Stanford|CA|15000
|543|Craig|3.4|2000|Berkeley|CA|36000
|543|Craig|3.4|2000|MIT|MA|10000
|543|Craig|3.4|2000|Cornell|NY|21000


/***********************************************************
8.  Add scaled GPA based on sizeHS GPA*(sizeHS/1000.0)
***********************************************************/
|------
|sID|sName|GPA|sizeHS|GPA*(sizeHS/1000.0)
|------
|123|Amy|3.9|1000|3.9
|234|Bob|3.6|1500|5.4
|345|Craig|3.5|500|1.75
|456|Doris|3.9|1000|3.9
|567|Edward|2.9|2000|5.8
|678|Fay|3.8|200|0.76
|789|Gary|3.4|800|2.72
|987|Helen|3.7|800|2.9600000000000004
|876|Irene|3.9|400|1.56
|765|Jay|2.9|1500|4.35
|654|Amy|3.9|1000|3.9
|543|Craig|3.4|2000|6.8


/***********************************************************
9. Rename result attribute as scaledGPA and return the first 5
***********************************************************/
|------
|sID|sName|GPA|sizeHS|scaledGPA
```

|------
|123|Amy|3.9|1000|3.9
|234|Bob|3.6|1500|5.4
|345|Craig|3.5|500|1.75
|456|Doris|3.9|1000|3.9
|567|Edward|2.9|2000|5.8

```
/************************************************************
10. Show all students and the number of colleges they applied to.  Make sure to match the column
names
*****************/
```

|------
|Name|Applications
|------
|Amy|4
|Bob|1
|Craig|5
|Fay|1
|Helen|2
|Irene|3
|Jay|3