

# MSDS 7330

## File Organization and Database Management

### Homework MySQL

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This is a homework assignment for MSDS 7330, File Organization and Database Management. For this assignment, turn in a single pdf file containing all of your answers. The file should be named ;yourLastName;HW-MySQL.pdf. For example, the file name for my homework assignment would be 'EngelsHW-MySQL.pdf'. Insert your answer pages into this file with the answer for Question 1 inserted immediately after Question 1 and before Question 2, the answer for Question 2 inserted immediately after Question 2, and the answer for Question 3 inserted immediately after Question 3. You may insert a front page containing your name and date if you do not wish to or cannot electronically add that information to the first page of this homework sheet.

Collaboration is expected and encouraged; however, each student must hand in their own homework assignment. To the greatest extent possible, answers should not be copied but, instead, should be written in your own words. Copying answers from anywhere is plagiarism, this includes copying text directly from the textbook. Do not copy answers. Always use your own words and your own code. Directly under each question list all persons with whom you collaborated and list all resources used in arriving at your answer. Resources include but are not limited to the textbook used for this course, papers read on the topic, and Google search results. Don't forget to place your name on the first page of the pdf document.

#### MySQL Database

Question 1 : Download and install the MySQL Community Server database program on your computer. MySQL Community Server is a free download from <https://www.mysql.com>. If you are running a Microsoft operating system, you may download and install MySQL Workbench as well. If you are using a Mac, you may download the free app Sequel Pro from <http://www.sequelpro.com>. Both MySQL Workbench and Sequel Pro are visualization applications for accessing MySQL databases.

Once you have installed MySQL, be sure to set the password for your user account on the MySQL database. And, be sure to give your account the privileges needed to create and modify databases. The MySQL reference manual, available from <https://www.mysql.com>, provides in-depth instructions on how to install and configure your MySQL software.

Once you have installed and configured MySQL, select the mysql database by executing the "USE mysql" command. Then, run the query "SELECT User, Host, Password FROM mysql.user;" from the command line.

Capture the resulting output as a screen capture or grab and turn in the resulting pdf showing both the query and the results.

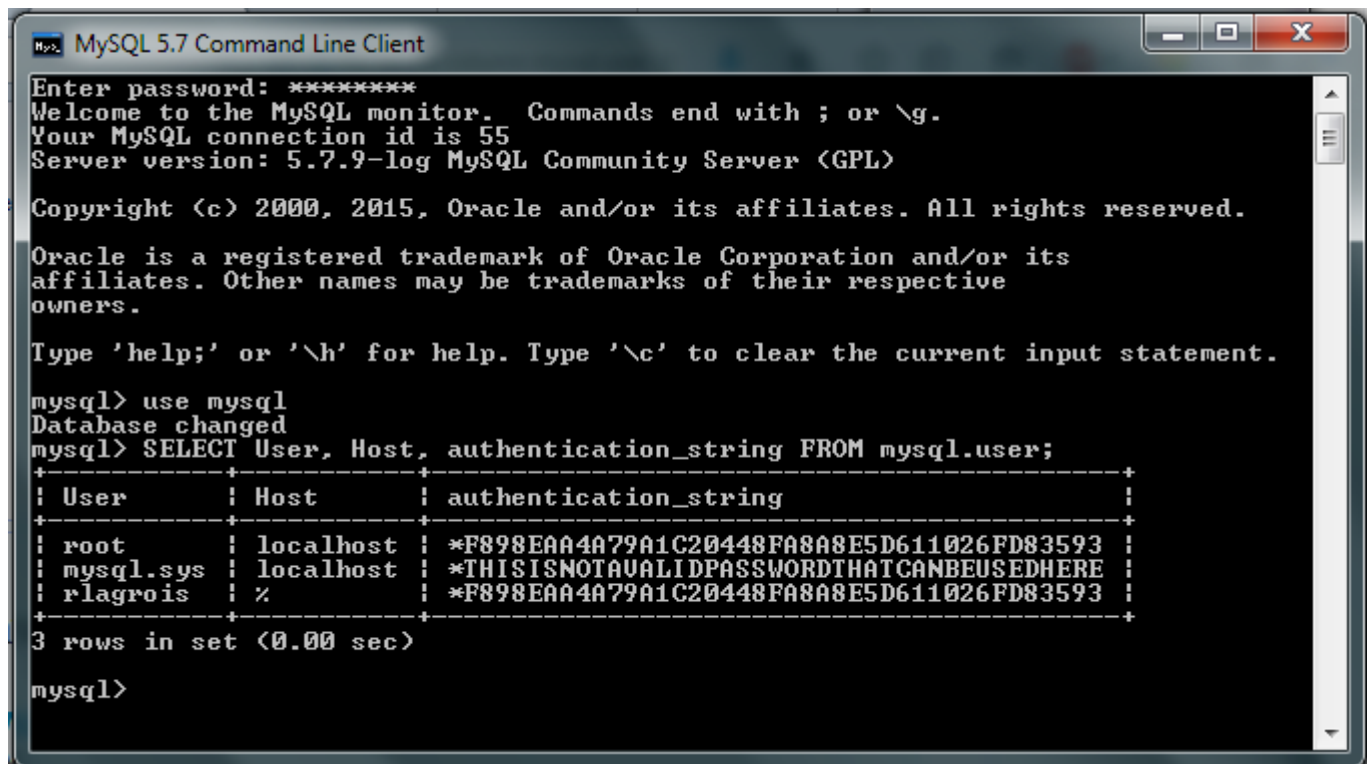
Collaborators:

Resources:

<http://stackoverflow.com/questions/30692812/mysql-user-db-does-not-have-password-columns-installing-mysql-on-osx>

On new version of MySQL 'password' has been replaced by

'authentication\_string'



```
MySQL 5.7 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 55
Server version: 5.7.9-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use mysql
Database changed
mysql> SELECT User, Host, authentication_string FROM mysql.user;
+-----+-----+-----+
| User      | Host      | authentication_string |
+-----+-----+-----+
| root      | localhost | *F898EAA4A79A1C20448FA8A8E5D611026FD83593 |
| mysql.sys | localhost | *THISISNOTAVALIDPASSWORDTHATCANBEUSEDHERE |
| rlagrois  | %         | *F898EAA4A79A1C20448FA8A8E5D611026FD83593 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

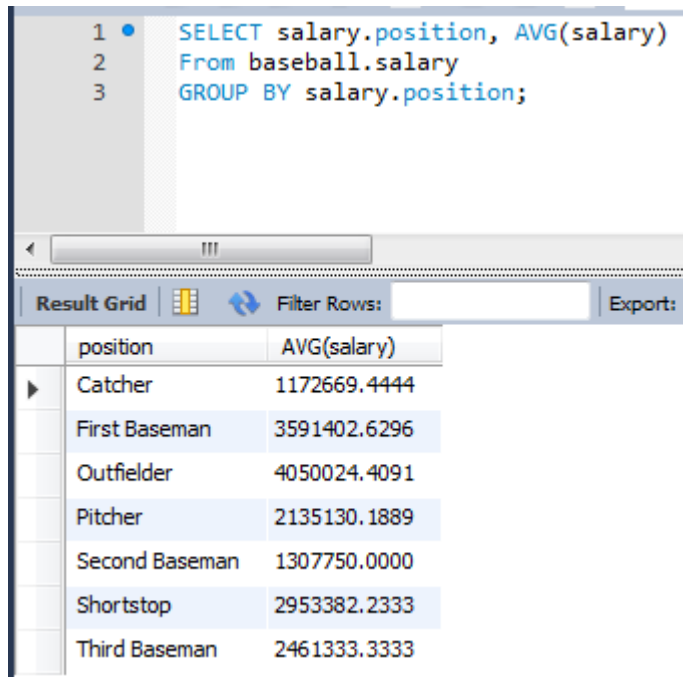
Question 2 : The file `baseball_salaries_2003.txt` contains salary information for certain professional baseball players from the year 2003. Write a SQL script that processes this file to determine, for each position, the average salary of the players in that position. Note that the seven player positions that can occur in the input file are “Catcher”, “First Baseman”, “Outfielder”, “Pitcher”, “Second Baseman”, “Shortstop” and “Third Baseman”.

Your script should create an appropriate table in your database (you may want to create a new database just for this problem) and populate it using the data in the input file. It should then execute a single SQL query whose output has the schema (position, avgSal). The output should appear sorted in descending order of average salary.

Capture the resulting output as a screen capture or grab. Turn in a pdf of your script and the results.

Collaborators: I was unable to get my code to read my file, kept getting an error saying `secure-file-priv` was in use. Putting it in the listed folder didn't work nor did changing the options. James Tsai helped me try to fix it. I ended up just converting it to a CSV and importing it.

Resources: Textbook Ch3



```
1 • SELECT salary.position, AVG(salary)
2   From baseball.salary
3   GROUP BY salary.position;
```

position	AVG(salary)
Catcher	1172669.4444
First Baseman	3591402.6296
Outfielder	4050024.4091
Pitcher	2135130.1889
Second Baseman	1307750.0000
Shortstop	2953382.2333
Third Baseman	2461333.3333

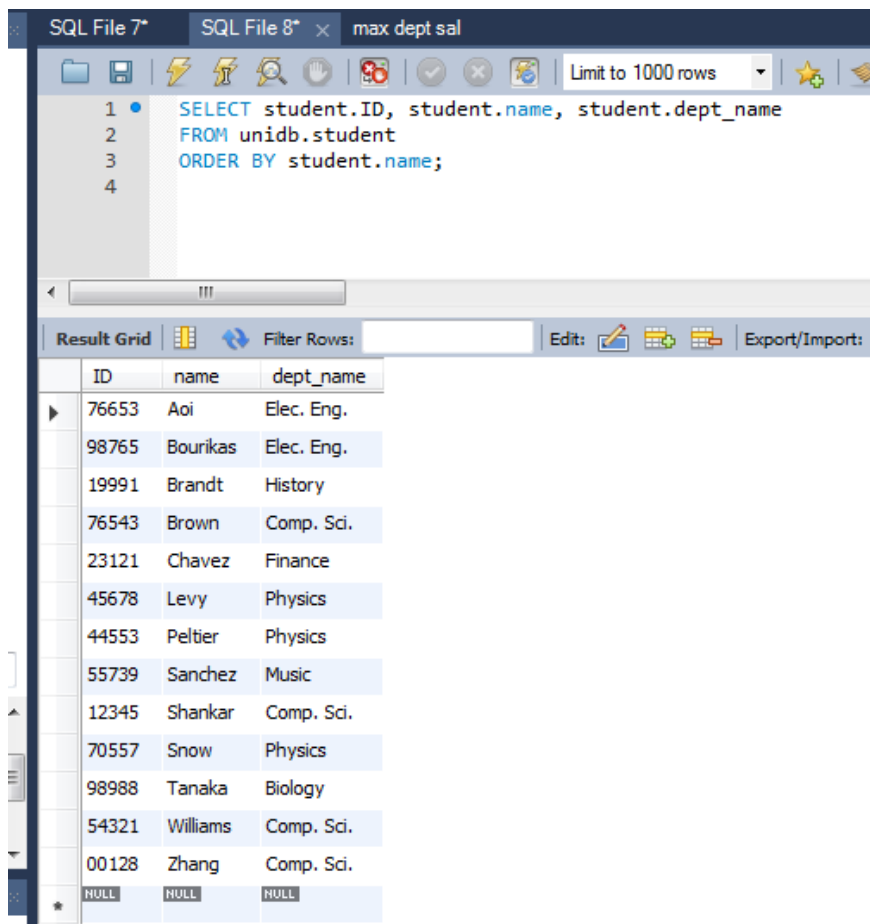
Question 3 : Create a database called “University”. Load the textbook relations into your University database.

Access these relations and obtain answers for the following queries:

- 1) Produce a list of all the students in the student relation, including their ID, name and department name, sorted into ascending order by their name.
- 2) Produce a list of the names and salaries of professors in the Comp. Sci. and Elec. Eng. departments ordered by decreasing salary.

Capture the sequence of queries and resulting output thereby demonstrating your database in operation. Turn in a pdf of your database in operation.

Collaborators: Resources: Textbook and <https://dev.mysql.com/doc/refman/5.0/en/sorting-rows.html>

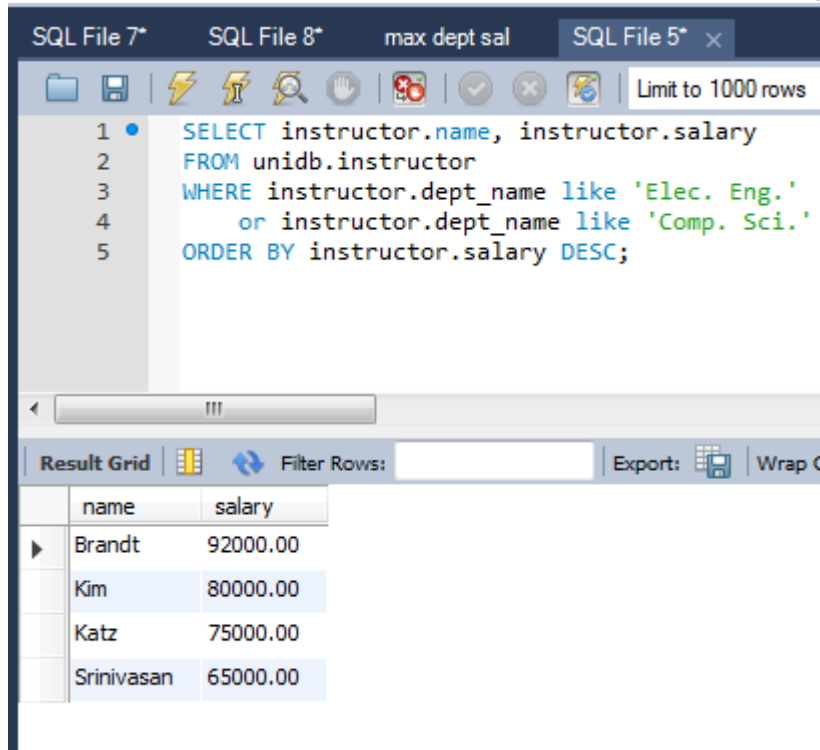


The screenshot shows a MySQL IDE window with two tabs: "SQL File 7\*" and "SQL File 8\* x max dept sal". The active tab "SQL File 8\*" contains the following SQL query:

```
1 SELECT student.ID, student.name, student.dept_name
2 FROM unidb.student
3 ORDER BY student.name;
4
```

Below the query editor, the "Result Grid" tab is active, displaying the results of the query. The results are sorted by name in ascending order. The table has three columns: ID, name, and dept\_name. The data is as follows:

ID	name	dept_name
76653	Aoi	Elec. Eng.
98765	Bourikas	Elec. Eng.
19991	Brandt	History
76543	Brown	Comp. Sci.
23121	Chavez	Finance
45678	Levy	Physics
44553	Peltier	Physics
55739	Sanchez	Music
12345	Shankar	Comp. Sci.
70557	Snow	Physics
98988	Tanaka	Biology
54321	Williams	Comp. Sci.
00128	Zhang	Comp. Sci.
NULL	NULL	NULL



The screenshot shows a MySQL IDE window with multiple tabs. The active tab is 'SQL File 5\*'. The SQL editor contains the following query:

```
1 • SELECT instructor.name, instructor.salary
2 FROM unidb.instructor
3 WHERE instructor.dept_name like 'Elec. Eng.'
4      or instructor.dept_name like 'Comp. Sci.'
5 ORDER BY instructor.salary DESC;
```

Below the editor is a 'Result Grid' showing the results of the query. The grid has two columns: 'name' and 'salary'. The results are sorted by salary in descending order.

name	salary
Brandt	92000.00
Kim	80000.00
Katz	75000.00
Srinivasan	65000.00