Hi,

For the benefit of the students that will be taking the midterm on Nov 2nd, I have decided to give you more information on what to expect for the midterm. Since, we did not have a sample midterm posted, we thought that it is only fair to give more information on the midterm.

As stated before, the midterm will contain a set of multiple choice questions and some verbose questions that will involve a bit of writing. Mostly, the verbose questions will be problems that you will be expected to solve, based on the knowledge that you gained from the class.

We expect you to be very thorough in relational model, relational algebra and SQL. With reference algebra, you should be in a position to construct a complex set of relational algebraic expressions to answer queries. For instance, consider the following table \( R \) (Age, Salary)

<table>
<thead>
<tr>
<th>Age</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>100K</td>
</tr>
<tr>
<td>30</td>
<td>25K</td>
</tr>
<tr>
<td>35</td>
<td>80K</td>
</tr>
</tbody>
</table>

Consider the following query:

List all the ages from relation \( R \) where the salary equals to either 100K or 80K.

Such a query can be answered by the following set of relational algebraic expressions.

\[
M \leftarrow \Pi_{\text{Age}} (\delta_{\text{Salary} = 100K}(R))
\]

\[
K \leftarrow \Pi_{\text{Age}} (\delta_{\text{Salary} = 80K}(R))
\]

Required Result \( \leftarrow \) \( M \) \text{ \( \cup \) } \( K \)

We will ask such kind of questions in the midterm, which will test your understanding of the relational algebra. Also, be in a position to write such queries in SQL as well.

Another area to focus is the ER-model. We could provide a real life problem and ask you to generate an ER-Model. Also, we could ask you to map the ER-model to its equivalent relational schema. Also, pay attention to the some of the definitions of the dependencies, keys, Integrity constraints, etc. We could test you on both their definitions and their usage as well.
Now, you could be asked questions from any material covered in the class. The above information will help focus more on topics where are considered “important” to the midterm.

I certainly hope that the above information is helpful and will help in your preparation of the exam. Good Luck.

Ravi Chandra Jammalamadaka