

CSCB20 MidtermExam1

February 7, 2020

1 Topics for the exam

There are three major topics for the midterm exam i.e.

1. Relational Algebra
2. SQL queries
3. Web development (HTML, Flask and HTTP protocol)

You are responsible for what ever we covered in lecture, assignments, tutorials, and worksheets and what is mentioned on this study guide.

1.1 Relational Algebra

I strongly recommend looking back at the worksheets that we covered in lecture on relational algebra i.e. (σ, π, ρ , etc) and the different joins (cross, natural, and theta join). You must pay careful attention to some of the questions that have the word ‘atleast two’ or ‘exactly two’.

1.2 SQL queries¹

Here you need to pay attention to a variety of things i.e.

1. What are the different kinds of join that we learned? ²

Cross Join
Natural Join
Left Join
Right Join
Inner Join
Outer Join

Also, it will be a good practice, to think about how you can take a complex SQL query and break it down using Views.

¹Pay careful attention to the SQL syntax

²You will want to revisit what we studied in last lecture, but also nicely summarized here <https://i.stack.imgur.com/yt09K.png>

2 How do I best prepare for this exam?

Practice! and Practice! and Practice! You may have noticed the questions that you are addressing on assignment1 and on the worksheet are purely either relational algebra and SQL queries. Just knowing what the various components (i.e. join, selection, project etc etc) do in isolation is not useful. You must know how to put these together in addressing a query. Again, there is no substitute for practice, and I ask you to review worksheets and assignment 1 for the exam.

3 What kind of questions can I expect for the exam?

- You can expect some short definition questions for example, ‘What is a candidate key?’, ‘What is a primary key and how is it different from a candidate key?’ etc etc.
- Writing Relational Algebra queries
- Writing SQL queries
- Given some tables, I can ask you to perform outer join, inner join etc etc and you may be asked to produce the final output table.
- ...³
- The only components in Flask, HTML and HTTP that you are responsible for is what was covered in lecture on 3rd February. Make sure to watch the videos on Flask, that have been posted on Quercus as part of pre-lecture material for the week of 4th February.
- Make sure you work through the tutorial on SQL here, <https://www.w3schools.com/sql/>. You will find plenty of examples on using the ‘Where’, ‘Group By’, ‘Having’, ‘Distinct’, ‘And’, ‘Or’, ‘Not’, ‘Order By’, ‘Insert Into’, ‘Min’, ‘Max’, ‘Count’, ‘Avg’, ‘Sum’, ‘Like’, ‘In’, ‘Between’, ‘Alias’, ‘Joins’, ‘Union’, ‘Exists’,

³Few surprises!