Lecture 12: Course summary, exam preparation

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Today's lecture

- Course goals, and non-goals
- The exam – practical info
- Advice on how to prepare
- Stand-up exam, with grading
- DataBuse: Solving Sudoku with a relational database.

Course goal

After the course the students should be able to:

- write SQL queries, involving multiple relations, compound conditions, grouping, aggregation, and subqueries.

Course goal

After the course the students should be able to:

- suggest a database design according to the relational model, and present it as an SQL schema, using the concepts key, type, and constraint.

Course goal

After the course the students should be able to:

- find functional dependencies in a relation and perform decomposition to eliminate unwanted dependencies.

Course goal

After the course the students should be able to:

- define a database design by E-R modeling, using the concepts entity, attribute, key, cardinality, and relationship

Course goal

After the course the students should be able to:

- express simple relational expressions using the relational algebra operators select, project, join, intersection, union, set difference, and cartesian product.

Course goal

After the course the students should be able to:

- decide if a given index is likely to improve performance for a given query.

Course goals

After the course the students should be able to:

- identify possible problems in transaction handling, related to consistency,
  atomicity, and isolation.
- apply a simple technique for avoiding deadlocks

Course goal

After the course the students should be able to:

- use SQL in applications (Java).

Course goals

- write simple XML Schemas and simple XQuery.
- explain the meaning of a DTD, and the effect of simple XSLT transformations.

Course non-goals

- The book wants to teach many things.
  - We have chosen to emphasize some.
  - It is **not** a goal of the course that you learn the curriculum by heart.
- Many relevant aspects of using databases are not covered by course goals.
  - The course is not making you an expert.
- Your MySQL specific skills will not be tested at the exam.

Focusing your effort

- The exam curriculum will be available via my.itu.
  - Reading it all is recommended.
  - However, to be successful at the exam it is a good idea to focus your effort.
- Main components:
  - Study the ”practice exams” that will be made available.
  - Do the exercises that you missed during the semester.
  - Use the slides to help focus on the essentials.

How to ask questions

- We will use the course newsgroup for this.
  - No physical Q&A session due to exam date.
  - Please ask concrete questions that can be answered succinctly
    - Not: please tell about 3NF again
    - Not: please tell me the solution to problem X
    - Instead: I want to know if the following solution for problem X is ok; I have a doubt about what is written on page 123, namely…
  - I will answer questions until December 17, and again on January 2, but not during my christmas holiday.

The exam

- Written, 4 hours.
- Designed to measure to what extent you fulfil course goals.
- All written aids allowed, but no computer, cell phone, …
- About 75% of the exam will be similar to exams in previous database courses.
- About 25% will be different, mainly covering XML related skills.

Grading

- Point scale 0-100, with explicit percentages stated for each problem.
- Points are summed up, and converted into a grade.
  - Passing level is 50 points.
  - Double-digit grades from 80 points.

Stand-up exam

- Based on exam in Databasesystemer, june 2005.
- I will simulate a mediocre exam performance, making a lot of typical mistakes.
- Good answers available on course home page.

DataBuse

- Yes, your DBMS will solve your Sudoku puzzle.
- Here are the easy steps:
  - Define the AllDifferent relation
  - Make the SQL query with 27 AllDifferent constraints in the WHERE clause.
- But be patient…

PhD defenses

- This week, Monday and Tuesday 1-2 PM you have a chance to hear about systems that are **meant** for storing logical information, in two **PhD defenses.**
- Monday: Peter Tiedmann (Aud. 3)
- Tuesday: Esben Rune Hansen (Aud. 4)