

# Welcome to TDDD12 Database Technology



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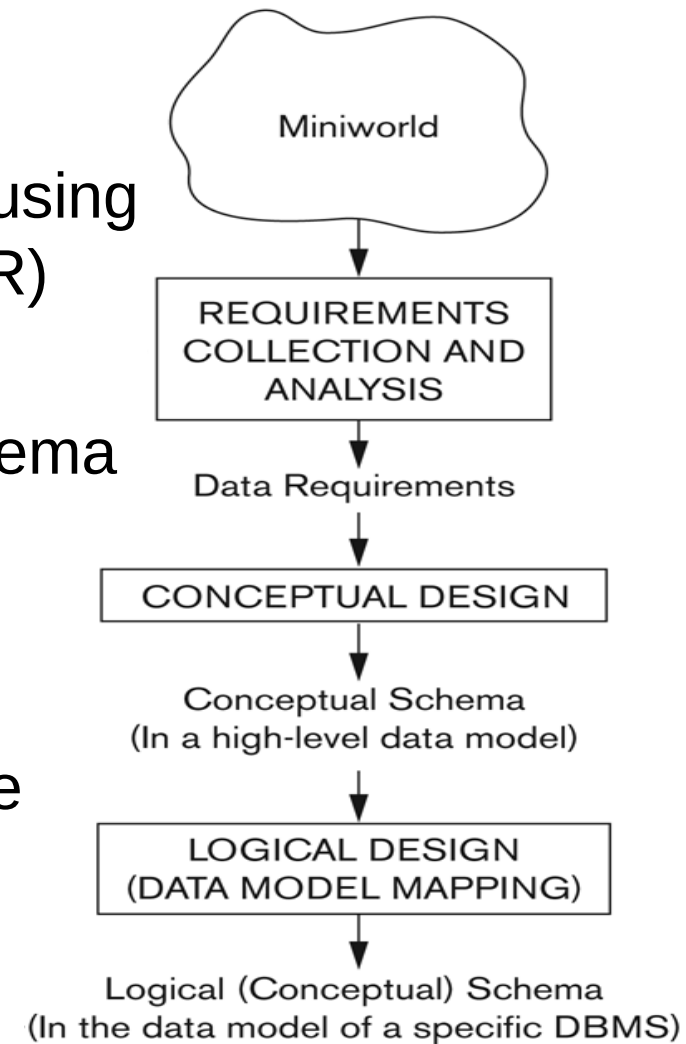


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# Intended Learning Outcomes

# After the course you should be able to ...

- *Design relational databases* for different types of example domains
  - by first creating a conceptual schema using the Enhanced Entity-Relationship (EER) model and ...
  - ... then translating this conceptual schema into a corresponding logical schema captured in the relational data model.
- Analyze and improve the quality of given relational database schemas based on the formal measure of *normal forms*.



# After the course you should be able to ...

- *Employ the SQL language* to query and to modify several example relational databases, as well as to create such a database with a given relational database schema.
- Explain and apply basic concepts techniques that database management systems (DBMSs) use internally to provide their main functionalities, which are
  - the persistent storage and efficient retrieval of data,
  - the efficient processing of queries, and
  - the handling of concurrent access to a database.

# Examination

# Final Exam

- During the exam period after the course
- Dates: see pointer on the course Website



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# Four Assignments

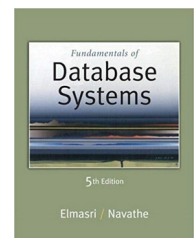
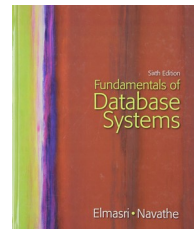
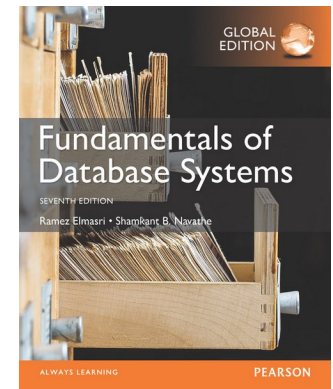
1. Database design and EER modeling
  2. SQL
  3. Functional dependencies and normalization
  4. BrianAir project, *4a*: initial design, *4b*: improved design  
*4c*: implementation, *4d*: Urkund analysis
- Deadlines on the course Website
    - *hard deadlines* for assignments 4a and 4b (before assignment 3!)
  - To be solved in pairs
    - register with lab partners in Webreg no later than April 3
  - Use MariaDB database server for assignments 2 and 4c
    - need access to the server provided by LiU IT
    - instructions on the course Website

# Organization of the Course



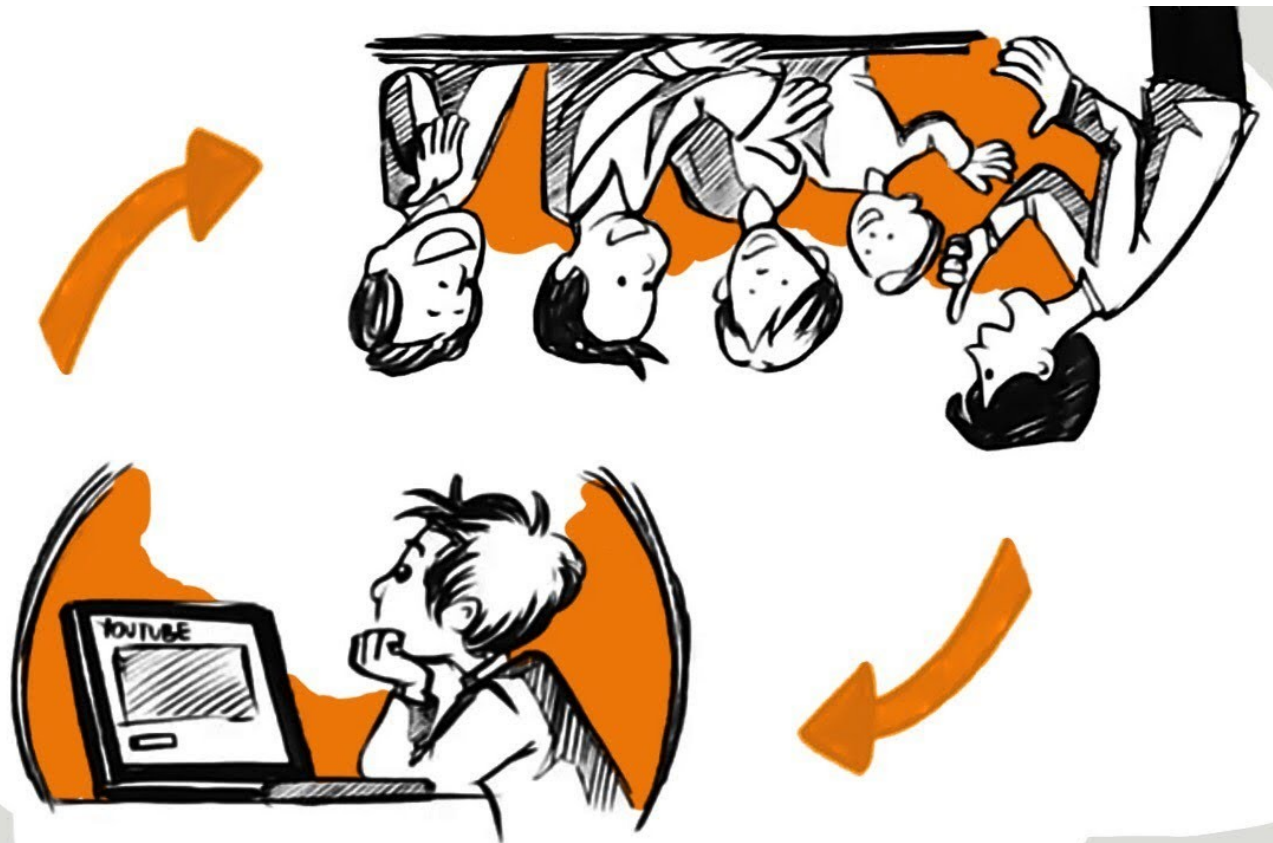
# Structure of the Course

- Schedule on the course Website
- 12 lecture sessions
  - Flipped-classroom style
- 9 lab sessions
  - First three: focus on assignment #2 (SQL)
  - Remaining six: focus on assignment #4c  
(not all of these six lab sessions will be supervised)
- 1 teaching session
  - Discussion of #4a hand-ins (mandatory!)
- Text book: Elmasri and Navathe. *Fundamentals of Database Systems*, Addison Wesley, 7th edition



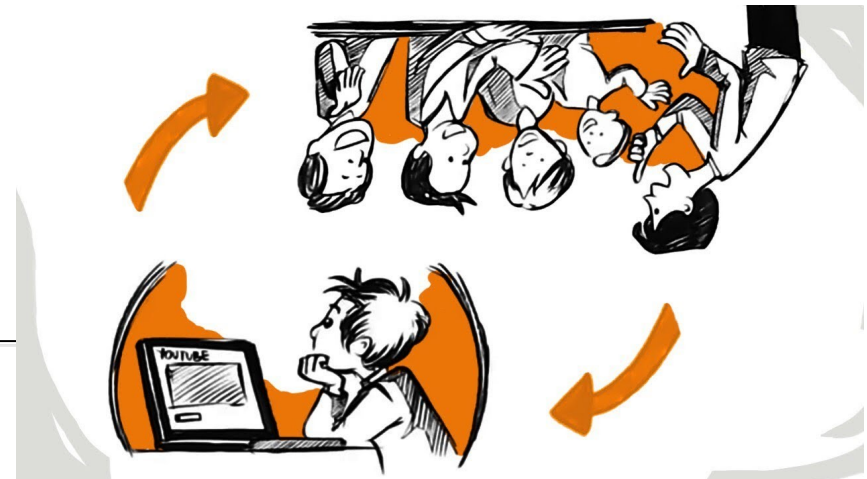
# Flipped Classroom-like Model

- Idea:
  - you watch a video lecture *before* the lecture session
  - we use the lecture session to do some quizzes, go through some additional examples, and discuss questions and things that were unclear to you in these video lectures



# Flipped Classroom-like Model

- Idea:
  - you watch a video lecture *before* the lecture session
  - we use the lecture session to do some quizzes, go through some additional examples, and discuss questions and things that were unclear to you in these video lectures
- In contrast to trying to replicate traditional lectures
  - more flexibility in terms of when you watch the videos (plus, you can pause, repeat, fast-forward, etc.)
  - role of the lecture sessions: give you ample opportunity to ask questions and to reinforce your learning of the concepts



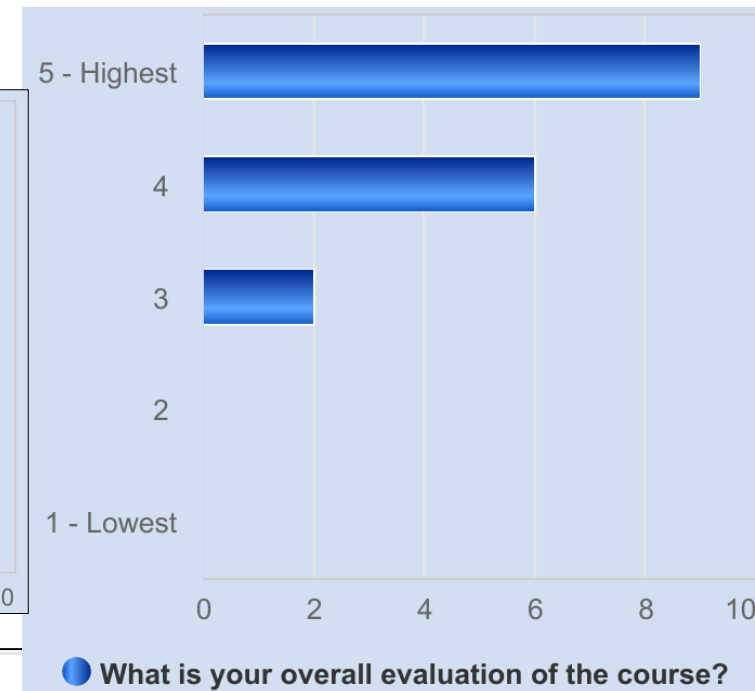
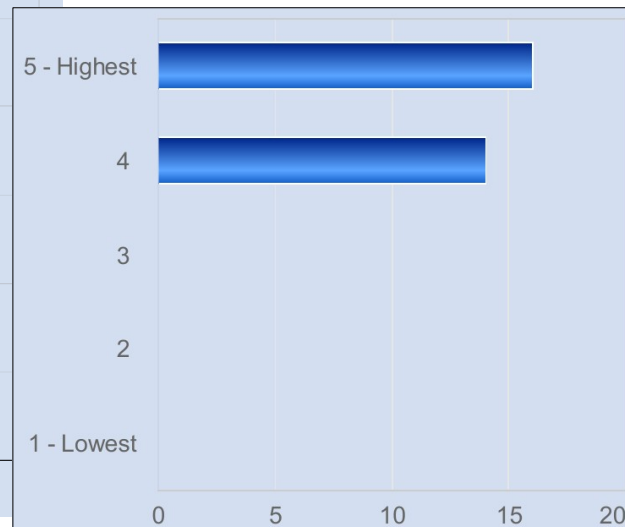
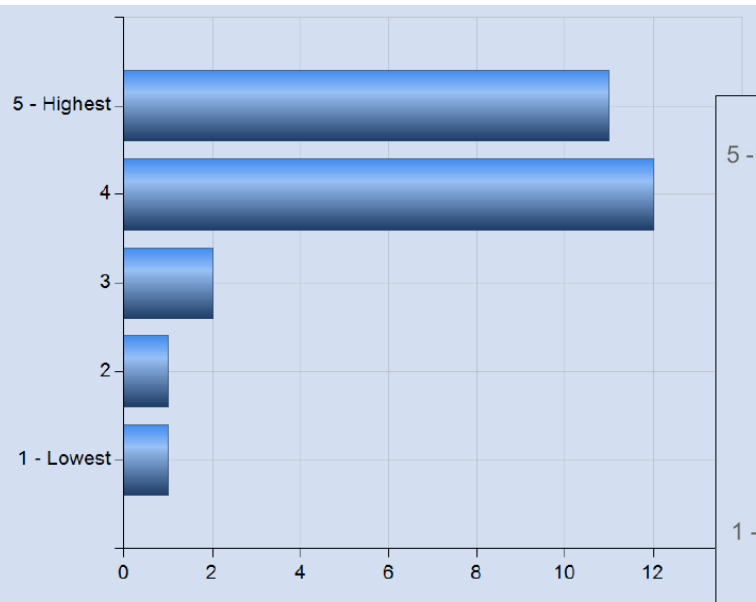
# Did you watch the video lecture?

- 1) Yes, all of it
- 2) Yes, partially
- 3) No, sorry
- 4) Video lecture??

# Earlier Versions of the Course

# EvalLiUate Evaluations

	TDDD12 2021	TDDD12 2022	TDDD12 2023
Overall number of students	116	130	114
Students who answered	27 (23.3%)	30 (23.1%)	17 (14.9%)
Overall evaluation	4.15 ( $\pm 0.99$ )	4.50 ( $\pm 0.51$ )	4.41 ( $\pm 0.71$ )



# Take-Aways from Free-Text Fields

- Most students like the flipped-classroom lectures, but not all
- Several complaints about having to watch videos in the evenings and, generally, about having to put in time for video watching

*“At first I didn't like the flipped classroom concept, since the lectures became roughly twice as long (about two hours of watching videos plus two hours for the "actual" lecture), but then I realized that studying for the exam became a lot easier thanks to all the flipped classroom quizzes and exercises.”*

- Kept the flipped-classroom lectures
  - Lecture sessions are an optional part of the course designed to reinforce your understanding of the relevant concepts
  - Video watching sessions part of the schedule in TimeEdit
  - Attention: no need to watch the videos in exactly these time slots

# Take-Aways from Free-Text Fields (cont'd)

- Lab assignments very much appreciated, including particularly the BrianAir project
- No changes to the assignments
  - Beware and plan ahead:

*“There were sometimes very little time between the lecture of a topic and the deadline for the corresponding assignment. Since the assignments were of a reasonable degree of difficulty (i.e. not too difficult and not too simple), they could often be completed on time anyway. However, [...] it wouldn't hurt with a little more margin between lectures and deadlines.”*
  - For each assignment, parts of it can be worked on already after earlier lectures
- Please let me know if you have issues!



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