
LUT
University
LAND
OF THE
CURIOUS

CT60A7650 – DATABASE SYSTEMS MANAGEMENT

ABOUT THE COURSE

Lecture

Jiri Musto, D.Sc.

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GENERAL INFORMATION

- Lecturer: Jiri Musto
  - Doctoral researcher
  - Data and information quality, information systems, data mining, data analysis, relational databases, NoSQL databases, object-oriented programming, Android development, game development, web-development
- Teaching assistant: Harish Ramesh
- Lectures: 2h each week at campus, streamed online and recorded
- Exercises: 2h each week* at campus, online attendance possible
- *Amount of exercise hours can be increased if required

COURSE OBJECTIVES – FORMAL

- **Learning goals -** At the end of the course the student will be able to:
  1. Create a relational model and a relational database
  2. Use relational algebra and relational calculus
  3. Design a database application, data distribution, and architectures for data storage, retrieval, and administration of a database management system
  4. Apply scalability, performance, security, and authorization
  5. Demonstrate the knowledge of concepts and principles underlying the functioning of database management systems and maintenance.

- **Course content**
  - Relational model and relational database design, Introduction to relational Algebra. Database applications, data distribution and architectures. Data storage and retrieval, data scalability, performance, security, authorization. Modeling and programing for semi-structured data, secondary storage management.

COURSE OBJECTIVES – INFORMAL

- **Learning goals -** At the end of the course the student will be able to:
  - Design database management plan for a database system.
    - Access and authorization, security, backup and recovery, etc.
  - Understand different database management topics and techniques
  - Able to use advanced DBMS features such as triggers, functions and procedures
- **Course content**
  - Managing database systems
  - Managing changes, performance, security, backups, recovery

COURSE MATERIAL

- Lecture material
  - Slides
  - Lectures
- Exercise material
- Tools
  - PostgreSQL: Available for all operating systems
  - Drawing tools: Listed in Moodle
- Additional material

COURSE COMPLETION & EVALUATION

- No compulsory attendance
  - Lectures and exercises are streamed and available online as a recording
- Grading is based on the following:
  - Assignments – 20 to 50 %
  - Project – 20 to 50 %
  - You need minimum of 41 % to pass the course, +88.5 % gets you 5
- There are five assignments in total. Assignments are voluntary, but you need minimum 20 % to be eligible for a grade.
- Project will be a design work. Completion is mandatory.

HOMEWORK / ASSIGNMENTS

- Five sets of practical SQL assignments
  - Each set is worth 10 %
  - Triggers, functions, procedures
- Assignments count to maximum 50 % of your grade
- Assignments are optional but you need minimum 20 % from them to pass the course

PROJECT

- Project description is available in Moodle
- Project is individual and mandatory
- Project is theoretical (a database management plan)
  - You are given an ER model
  - Transform the ER model into a relational model
  - Create a plan to manage the database (you are given questions to answer)
- Project counts to maximum of 50 % of your grade.
  - Minimum of 20 % is required to pass the course

QUESTIONS, ISSUES, PROBLEMS?

Related to	Who to contact	How to contact
Grading, late returns	Jiri Musto, teacher in charge	Email
Grading, wrong grade	Jiri Musto, teacher in charge	Email
Lectures	Jiri Musto, teacher in charge	Email
Tool usage, installation, etc	Harish Ramesh, TA	Ask during exercise or email
Homework, need help, etc	Harish Ramesh, TA	Ask during exercise or email
Exercises	Harish Ramesh, TA	Ask during exercise or email
Project	Harish Ramesh, Jiri Musto if necessary	Ask during exercise or email
Topic not mentioned here	Jiri Musto by default	Email


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