

Introduction to Databases



Data Base and Data Mining Group of Politecnico di Torino

Tania Cerquitelli

AA. 2020-2021



Professors

- Professor: Tania Cerquitelli
Department of Control and Computer Engineering
Tel: 011 090-7178
e-mail: tania.cerquitelli@polito.it
- Assistant lecturer: Jacopo Fior
e-mail: jacopo.fior@polito.it
- Office hours through remote connection: by appointment



Organization of the course

- Lesson start date: March 1st 2021
- Lesson end date: June 10th 2021
- Room and schedule time for lessons and practices

Weekly timetable

Type	Day of the week	Time	Classroom
Lecture	Monday	11:30-13:00	Virtual Classroom
Lecture	Tuesday	14:30-17:30	Virtual Classroom
Lecture	Wednesday	14:30-16:00	Virtual Classroom / In person
Lab	Tuesday	17:30-19:00	Virtual Classroom
Lab	Thursday	08:30-10:00	Virtual Classroom



Objectives of the course

- The study of the relational data model
- The study of query languages for relational databases
 - Relational algebra, a procedural language
 - SQL language, with declarative and procedural features, for queries and updates
- The study of database design methodologies
- The study of active database systems and SQL statements for trigger definition
- The development of web-based applications for database querying and management



Course topics

- Characteristics of a database management system
- Characteristics of the relational model
- Relational algebra: main operators and query definition
- SQL language: statements for data definition and processing
- Conceptual data model (Entity-Relationship) and methodology for the conceptual and logical design of a relational database



Course topics

- SQL language: statements for view management, data access control, and transaction management
- Active database systems and SQL statements for trigger definition
- SQL for applications: client-server architectures, integration of SQL statements into a programming language, stored procedures, design of a client-server web-based architecture accessing a database



Exam policy

- The exam policy will be announced by the end of this week



Homework

- 4 homeworks to be delivered during the course
 - The first three homework exercise, delivered by the deadline, gives 0.5/30
 - The last homework exercise, delivered by the deadline, gives 1/30
- The points on the homework exercises will be valid until the exam session of January 2022 (included)



Homework discussion

- Students who have delivered the homework exercises could be contacted to discuss the uploaded documentation
- The homework exercises will be checked with a few students (selected randomly) during the two weeks after the deadline
- More details about how to perform the discussion will be given soon



Materials

- Course web site

- <http://dbdmg.polito.it/wordpress/teaching/databases/>
- Set of slides used in class
- Texts and solutions of the exercises presented in class
- Texts and materials useful for laboratory exercises/practices



Database book

- Database Systems - Concepts, Languages and Architectures Paolo Atzeni, Stefano Ceri, Stefano Paraboschi and Riccardo Torlone McGraw-Hill, ISBN 0-07-709500-6
- A free PDF file is available here <http://dbbook.dia.uniroma3.it/>