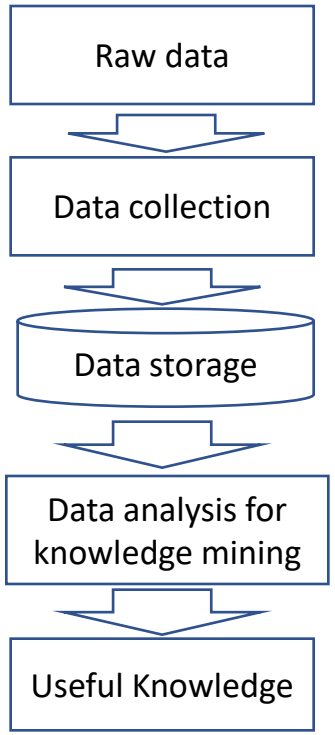
Politecnico
di Torino

DBMG

Database systems

This course



- How can data be stored and managed?
- How can data can modeled?
- How can data be analysed to extract useful knowledge?

Database systems

- Methodologies for the design, querying, and management of databases
- Introduction to business intelligence and the creation of interactive dashboards for data reporting.

Course contents at a glance

- Characteristics of a database management system
- Relational data model
- SQL language: statements to query, modify and define the database
- Design of a relational database
  - Conceptual data model (Entity-Relationship), methodology for the conceptual and logical design
- Introduction to development of web-based applications for database querying and management
- Introduction to Business intelligence: data modelling, data preparation, data analyses with an interactive dashboards

Course structure

- The course includes
  - lessons
  - classroom exercises
  - laboratories
- Laboratory sessions propose experimental activities on the most widespread commercial and open-source products

Reading material, Announcements

- Reading material
  - Slides used in classes
  - Texts and solutions of the proposed exercises
  - Texts and materials useful for laboratory exercises/practices
  - Available on the course website (course website)
- Announcements
  - Course website on the Didactic Portal

Assessment and grading criteria

- Exam
  - Written test (mandatory) using POLITO platform
    - A set of design exercises
    - A set of theory questions and exercises
  - Homework (project) on the main topics of the lectures (optional)
  - Exam policy on the didactic portal (link)
- Further details about exam structure and grading criteria are available on the didactic portal

Homework

- Homework exercises to be delivered during the course
- Points from Homework exercises are added to the grade on the written test (if grade on the written test is >= 18)
- Delivery of Homework exercises is optional
- Maximum 3 points
- Points obtained from homework will be valid until next year's February examination session (included)

Reference books

- 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/
- Matteo Golfarelli, Stefano Rizzi. Data Warehouse Design: Modern Principles and Methodologies, McGraw-Hill Education, 2009