COURSE: Data Management for Big Data Analysis

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COURSE DESCRIPTION
Models for big data management and analysis.

LEARNING OUTCOMES
- ✓ Understand the main issues and approaches to data modeling and management.
- ✓ Able to identify the most suitable data management approach in a given .
- ✓ Able to deal with data modeling issues, both in the relational and in the NoSQL frameworks.
- ✓ Able to use, at least at an elementary level, both SQL and NoSQL systems to manage a given set of data

METHODOLOGY
The module will be laboratory-centered. Specific data management problems will be proposed to students, organized in groups and suitably tutored, asking them to organize data and to access them programmatically.

ASSESSMENT
Small project with oral examination

OUTLINE
- Relational modeling of data and relational databases
  1. Managing our data with a relational DBMS
- The NoSQL approach to data management
  1. Types of NoSQL systems and their characteristics
  2. Managing our data with a NoSQL system
- Introduction to Geo and Spatial Database

TEXTBOOKS
Elmasri R., Navathe S., *Fundamentals of Database System,* 7nd ed., Pearson.
Mysql Reference manual.
Mongodb manual

ADDITIONAL SUGGESTED READING
Atzeni,Ceri,Fraternali,Paraboschi,Torlone *Basi di dati* - ed. McGraw-Hill 4nd edition.
Elmasri R., Navathe S., *Sistemi di basi di dati – Fondamenti e Complementi,* 7nd ed., Pearson.