CONTENT

Goals:
This course aims at introducing the world of databases to students without any background in this area. The interest is twofold: first, the SQL paradigms and second, the NoSQL paradigms. MySQL and mongoDB will be employed for applications.

Course outline:
• MDSN: SQL101 o Relational Database principles o Vocabulary o Queries o Normalization
• MDSN: NoSQL101 o Introduction o Definition and principles o NoSQL vs. SQL o NoSQL types o Examples
• MDSN: NoSQL 2 o Choices, synthesis o TurnKey mongoDB o Ubuntu and mongoDB o First steps o mongoDB console o Example: Restaurants (PyMongo) o Exercises
• MDSN: MapReduce o MapReduce principles

PROFESSIONAL SKILLS
• Knowledge about databases
• Understand the SQL paradigms
• Understand the NoSQL paradigms
• SQL applications
• NoSQL applications
• Learn to self-improve on the discussed topics

BIBLIOGRAPHY
• "SQL Cookbook" (2005) by Anthony Molinaro
• "SQL the Ultimate Beginners Guide: Learn SQL Today" (2016) by Steve Tale
• “Getting Started with NoSQL” (2013) by Gaurav Vaish
• “Seven Databases in Seven Weeks: A Guide to Modern Databases and the NoSQL Movement” (2012) by Eric Redmond and Jim R. Wilson

ORGANISATION
• Interactive lectures with broad discussions on examples
• Exercises
• Evaluation: group project (4-5 students) with report

RECOMMENDED PREREQUISITES
• Basic knowledge of databases
• Basic skills in Python
• Basic knowledge of operating systems (Windows, Linux)
• Basic knowledge of database servers

VOLUME OF TEACHINGS
• Lectures: 24 hours

TRAINING
Licence: Économie et gestion
Parcours type: Economie-Finance (EF)