



SYSTÈMES DE BASES DE DONNÉES

DATABASE SYSTEMS

Lecturers: **Mohsen ARDABILIAN, Alexandre SAIDI, Daniel MULLER**

| Lecturers : 16.0 | TC : 0.0 | PW : 0.0 | Autonomy : 0.0 | Study : 12.0 | Project : 0.0 | Language : MI

Objectives

Databases are at the heart of all information systems that are nowadays omnipresent in our everyday life (work, organization, web, etc.). The aim of this course is to study the principles of relational and semi-structured database programming that are the foundation of any application in the various information systems. It also discusses the implementation aspects of database systems such as concurrency control or query optimization.

Keywords : databases, structured data and non structured data modelling, data storage and access, relational languages, concurrency control, query optimization, integrity constraints

Programme

Introduction (relational models, schemas, SQL, semi-structured models, XML)
Data models (entity/relationship, relational, object)
relational languages (relational algebre, SQL, Datalog)
SQL Programming (PL/SQL, Embedded SQL)
Database systems and application Web (JDBC, PHP)
XML-WPath-Wquery-Xslt
transactions and concurrency control
Query optimisation
Integrity constraints

Learning outcomes

- Understand the major components of modern information systems
- Know how to make use of fundamental techniques to develop information systems and applications

Independent study

Objectifs : Three assignments practical work are scheduled to develop a database system, extract data through SQL and develop a Web information system for a particular data management application

Méthodes : use of MySQL

Core texts

H.Garcia-Molina, J.D.Ullman, J.Widom, *DATABASE SYSTEMS: THE COMPLETE BOOK*, Pearson Prentice Hall, 2002
Georges Gardarin *BASES DE DONNÉES*
([HTTP://GEORGES.GARDARIN.FREE.FR/LIVRE_BD_CONTENU/XXTOTALBD.PDF](http://georges.gardarin.free.fr/livre_bd_contenu/xxtotalbd.pdf)), Eyrolles, 2003

Assessment

40% written test, 60% assignments of practical work