COMP9315
Database Systems Implementation
Course Introduction

Aims

This course aims to examine the data structures and algorithms that go to make up a database management system such as Oracle. An alternative title for the course could be "Database Management Systems".

At the end of this course, students should

- have some insight into how DBMSs function internally
- understand how to analyse the performance of data-intensive systems
- be familiar with a variety of programming techniques for large-scale data manipulation
- appreciate advanced transaction processing issues in database systems

This course will examine techniques from both research literature and commercial systems.

Prerequisites

This course assumes that you have a reasonable understanding of the following topics:

- the Java language and programming in Java (e.g. completed COMP9024)
- developing applications on RDBMSs (SQL, relational algebra e.g. COMP9311 or COMP3311)
- file organisation/manipulation (Unix `open,close,lseek,flock` e.g. COMP9024 or COMP2011)
- sorting/searching techniques (quick/merge sorts, binary trees, hash tables e.g. COMP9024 or COMP2011)

If you do not have the above prerequisite knowledge, you should reconsider your enrolment in this course.

Staff Members

Name	Office	Phone	E-mail	Role
Xuemin Lin	K17-503	56493*	lxue@cse*	lectuer in charge
Bin Jiang & Chuan Xiao	K17-501	57224*	bjiang@cse*	teaching assistants

* You are invited to meet us **in person** during consultation time slots and during the lab periods. You are also welcome to contact us via e-mail if some thing is urgent.

Lectures

This course has a 3-hour lecture per week, held on each Monday from 3-6pm at Law Theatre G23 (K-F8-G23) .

The lecture notes of each week will be available on the course web site by 4pm, Sunday.

Assessments

There will be 2 projects, 3 assignments, and a final exam. The assessment components contribute to the overall course mark as follows:

Project 1*	35%
Project 2*	35%
Assignment 1**	10%
Assignment 2**	10%
Assignment 3**	10%
Final Exam	100%

The final mark will be obtain by harmonic mean as below:

```
Class = ass1 + ass2 + ass3 + proj1 + proj2

Exam = mark for final exam

Final mark   = 2 * Class * Exam / (Class + Exam)
```

* Later penalties: 10% reduction of your marks for the 1st day, 30% reduction/day for the following days.

** Later submissions: Zero marks.

Warning: Your current job commitment won't be taken as an acceptable excuse for later submissions without penalties. Do not do the final exam if you do not feel well on the exam day.

Textbooks

The lecture notes for the course are more than 40% from the first textbook.

1. Ramakrishan, *Database Management Systems*, McGraw-Hill, 2000 (2nd Edition) or 2002 (3rd Edition).
2. Garcia-Molina, Jeffrey Ullman, and Widom, *Database System Implementation*, Prentice Hall, 2000.
3. Silberschatz, Korth & Sudarshan, *Database System Concepts* (3r d ed), McGraw-Hill, 1998.
4. Elmasri & Navathe, *Fundamentals of Database Systems* (3rd ed), Benjamin/Cummings, 1999.

Warning: some inconsistency in notation exists among different textbooks. The notation used in my lecture notes will be used in the final exam.

More Information

For further information on this course, and to keep up to date with any changes, please consult the course web site (frequently):

http://www.cse.unsw.edu.au/~cs9315/

Xuemin Lin, 17th July 2007