IT3090E Database

HomePage

Class Information

Class: DS-AI (131677)
Time: 12:30-14:50, Monday
Location: GĐ-B1

Instructor: Vũ Tuyết Trinh
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Descrip

This course provides students with concepts related to database, database systems and its principles; data models with a focus on relational data model, database query languages; practical skills in using relational database management systems; database design methods; database technologies such as storage organization, indexing, query optimization and data integrity.
The course also provides teamwork, problem-solving and practice skills through group discussion and presentation (during the class) and experimentation works.

Grading

- Progress (50%)
  - Practical work: 15%
  - Assignment: 10%
  - Test: 25% (2 test)
- Final exam: 50%

Text and Reading

1. Raghu Ramakrishnan, Johannes Gehrke. Database Management Systems (3rd edition). 2003. McGraw-Hill
2. C. J. Date. An introduction to database systems (8th edition). 2004. Pearson/Addison-Wesley
3. Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer Widom. Database systems : the complete book (2nd edition). 2008. Prentice Hall
4. R. Elmasri and S. Navathe. Fundamentals of Database Systems. 2004 (4th edition). Addison-Wesley.
5. Nguyễn Kim Anh. Nguyên lý của các hệ cơ sở dữ liệu. 2004. Nhà xuất bản Đại học Quốc Gia Hà Nội.

Useful website/resources

- Online course by Jennifer Widom (Stanford University) : Databases: Introduction to Relational Databases at

https://www.edx.org/course/databases-5-sql, especially the following parts

- Databases: Relational Databases and SQL
- Databases: Advanced Topics in SQL (prerequisite: Relational Databases and SQL)
- Databases: Modeling and Theory
- others parts may be skipped until end of this class

- others will be provided during the class

Tentative Plan

Week	Topics	Materials
1 28/3	Introduction to Database Relational DB	slides1_Introduction.pdf
2 4/4	Relational Database Language SQL Exercises	slides2_SQL(part1).pdf
3 11/4	NO CLASS (Hung Kings Commemoration Day)	
4 18/4	SQL (cont.) Exercises	slides3_SQL(part2).pdf
5 25/4	Relational Algebraic Exercise	
6 2/5	NO CLASS (30/4 – 1/5 Holiday)	
7 9/5	Test 1 Conceptual Design with ER Model Exercises	
8 16/5	Database Design: bottom-up approach Functional Dependency	
9 23/5	Normal Forms & Normalization Exercises	
10 30/5	Exercises	
11 6/6	Index Management	
12 13/6	Query Processing (relational algebra) Exercises	
13 20/6	Contraints & triggers Security	
14 27/6	Test 2 Exercises	
15 4/7	Transaction	
16 11/7	Advanced topics, Recent Trends	
17 18/7	Review	