COMP322003: **DATABASE** (데이터베이스)

Data & Knowledge Engineering (**DKE**) Lab.
Prof. Suh, Young-Kyoon (서영균) (Rm. #520 in IT-5, x6372)
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Course Introduction

- Twin class on **COMP322004**
- The website of this course available at: http://lms.knu.ac.kr/
  - Will be used a lot for many different purposes for which
    (1) Lecture notes will be posted
    (2) Your homework will be submitted
    (3) Discussions & Q&A will be conducted
    (4) Your attendance will be administered.
      - If absent **4** times, then "F" will be guaranteed. NO hassle.
      - That said, you will be deducted by 1 pt if late twice
  - So, check the LMS site every twice a day.
- Language
  - Korean/English (for spoken language) + (mainly) English (for notes)

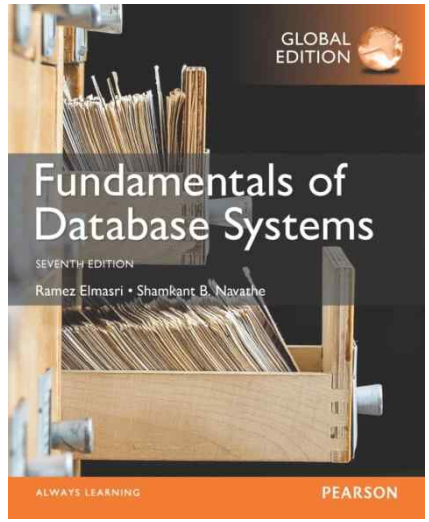
Course Introduction (Cont'd)

- Date & time: Thu at 9am (Sorry!) ~ 1pm
- Location: Rm. #355 in IT-5 (융복합공학관)
- Style: theory lecture (2 hrs) followed by labs (2 hrs)
  - For some topics, we might not have labs but extend the lecture.
  - For labs, we'll use workstation computers in this lecture room.
    - But I strongly recommend to bring your laptop, just in case.
- Teaching Staff
  - TA: Kim, Sunghyun (kshy9598@naver.com) (MS student @ DKE Lab)
  - Tutors: Chulhoon Heo & Taehyun lee (Seniors)
- Office Hours (면담 시간):
  - Tuesdays at 10:30am-12pm (other times by appointment)
    - Come and visit my brand new office with questions!

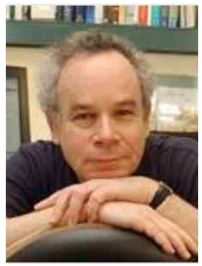
[My office]

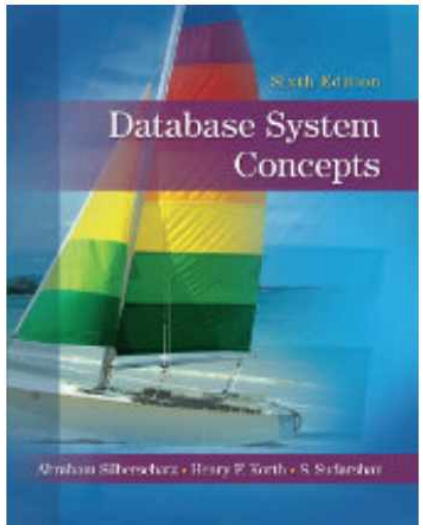
Course Introduction (Cont'd)

- Textbook for lecture
  - Main: **Fundamentals of Database Systems** (7th Ed.)
    - Ramez Elmasri (U of Texas at Arlington)
    - Shamkant B. Navathe (Georgia Tech.)



  - Secondary: **Database System Concepts** (6th Ed.)
    - Avi Silberschatz (Yale U), Henry F. Korth (Lehigh U), and S. Sudarshan (IIT Bombay)

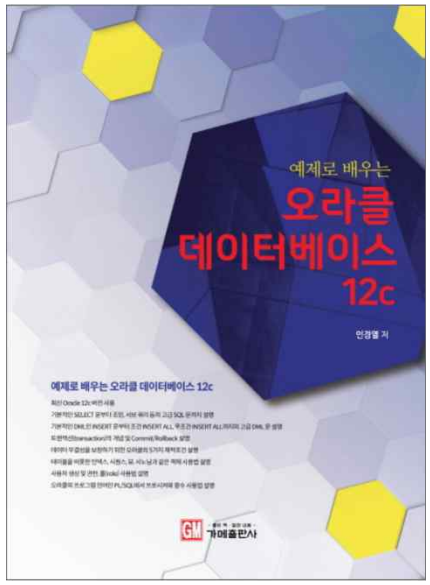




Course Introduction (Cont'd)

- Textbooks for labs
  - 오라클로 배우는 데이터베이스 개론과 실습
    - 박우창 (덕성여대 컴퓨터학과 교수), 남송희, 이현룡 지음

  - 예제로 배우는 오라클 데이터베이스 12c, 인경열 지음 (2018년도 5월 출판)



Course Introduction (Cont'd)

- Grading criteria

Breakdown	Percentage
Midterm	25%
Final	30%
Term project (4 phases)	30% (= 5%+5%+10%+10%)
Lab assignments	10%
Quiz (4 times)	5%
Attendance	-3% ~ 0%

- Extra credits also available
- Project will be team-based. Be ready for a team of two just in case.
- "**NO** upgrade of your final grading" in any circumstance: No hassle!
- Every score will be posted on LMS.

Course Introduction (Cont'd)

- Prerequisite subjects (required)
  - C(++)/Java programming (due to ODBC/JDBC programming)
  - System programming (due to Web server programming)
    - For those who haven't yet taken those, then please come after taking them.
- Features
  - A lot of group activities (in-class pair discussion, term project, etc.)
    - Hope all of you guys to get to know each other and improve your communication and programming skills when leaving this course.
    - [Important] If possible, I ask you to find your spot today and not to move until the class is over. (This makes me easier to remember U.)
  - Substantial programming throughout the entire class
    - Should feel comfortable with database application programming
    - Will get you ready for competent data engineer and/or scientist

Key Topics & Schedule

		Lecture	Lab Contents	Project
W1	2018/09/06	Introduction to Databases	Oracle Installation	Phase 1
W2	2018/09/13	Database System Concepts and Architecture	Oracle + SQL Developer	
W3	2018/09/20	Conceptual Data Modeling and Database Design	ER diagram	
W4	2018/09/27	The Relational (Logical) Data Model Database Constraints/Algebra/Calculus	DDL, DML	
W5	2018/10/04	Basic and Advanced SQL	DML - SELECT (including aggregates)	Phase 2
W6	2018/10/11	Application Design and Development	ODBC	
W7	2018/10/18	Database Design Theory: Functional Dependencies and Normalization	Normalization	
W8	2018/10/25	Midterm		
W9	2018/11/01	File Structures	JDBC	Phase 3
W10	2018/11/08	Indexing Structures and Physical Database Design	View/Index Creation/Deletion	
W11	2018/11/15	Query Processing	JSP Programming	
W12	2018/11/22	Query Optimization	PL/SQL - Trigger	
W13	2018/11/29	Transaction I - Concept & Concurrency Control	Transaction	Phase 4
W14	2018/12/06	Transaction II - Recovery	Security/Authorization or Project final report	
W15	2018/12/13	Final		
W16	2018/12/20	Project final presentation ??		

Subject to change...

What You Will Learn from This Class

- Why Database? Why not Database?
- Concept of Database, DataBase Management System (DBMS), Database Application, etc.
- Learning Data Models, Schemas, Database Languages (Structural Query Language), Client/Server Architecture for DBMSes, etc.
- Relational model/calculus/algebra
- Object/Java DataBase Connectivity Programming
- File Structures
- Indexing/Hashing Structures
- Transaction/Concurrency Control/Recovery
- Lots of stuff!