Database Systems

Lecture 1: Course Overview

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Course Instructor

Aziz Nasridinov

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Affiliation
- Professor, Dept. of Computer Science, Chungbuk National University (CBNU), Korea
- Director of Data Analytics Lab, CBNU
- Vice-Dean, College of Electrical and Computer Engineering, CBNU

Research Area
- Database/Query Processing
- Big Data Processing and Analysis
- Artificial Intelligence

Professional Experience
- Program Chair of IEEE BIG DATA Congress 2020
- Program Committee of BIGDAS2021, BIGDAS2021
- Reviewer for WWW Journal, Journal of Machine Learning and Cybernetics, IEEE TKDE, AAAI, etc.

Homepage
- *https://dalab.cbnu.ac.kr*

Course Objectives

Objective 1

Database Fundamentals

Key concepts and theories related to the database systems

Objective 2

Database Management

How to create, insert, update and delete data using open source DBMS (MySQL)

Objective 3

Database Design

How to design database using E-R Diagram and map it into relational schema

Objective 4

Database Tuning

Database indexing, view, catalog, normalization

Objective 5

Database Practice

Develop DB-driven applications using various programming languages (PHP and Python)

Course Features

424 systems in ranking, September 2025

Rank			DBMS	Database Model	Score		
Sep 2025	Aug 2025	Sep 2024			Sep 2025	Aug 2025	Sep 2024
1.	1.	1.	Oracle	Relational, Multi-model	1170.62	-50.08	-115.97
2.	2.	2.	MySQL	Relational, Multi-model	891.77	-23.69	-137.72
3.	3.	3.	Microsoft SQL Server	Relational, Multi-model	717.32	-36.84	-90.45
4.	4.	4.	PostgreSQL	Relational, Multi-model	657.17	-14.08	+12.81
5.	5.	5.	MongoDB	Document, Multi-model	380.50	-15.08	-29.74
6.	6.	↑ 7.	Snowflake	Relational	190.19	+11.29	+56.47
7.	7.	↓ 6.	Redis	Key-value, Multi-model	145.17	-2.02	-4.25
8.	8.	↑ 9.	IBM Db2	Relational, Multi-model	124.19	-3.12	+1.14
9.	9.	↑ 14.	Databricks	Multi-model	124.06	+8.25	+39.82
10.	10.	↓ 8.	Elasticsearch	Multi-model	118.26	+3.99	-10.53

Source: https://db-engines.com/en/ranking

Course Benefits

English Lectures

Lecture materials, exams and grading are all in English

Practice

Practice developing database applications using real-life examples

Special Lectures

Lectures from industry experts (Kookmin Bank, Samsung)

Certificate Support

Organize lectures for SQL Developer, SQL Professional

Certificate Support

SQL Developer Certification

National certification supported by all major companies.
Price: 50,000 Korean Won

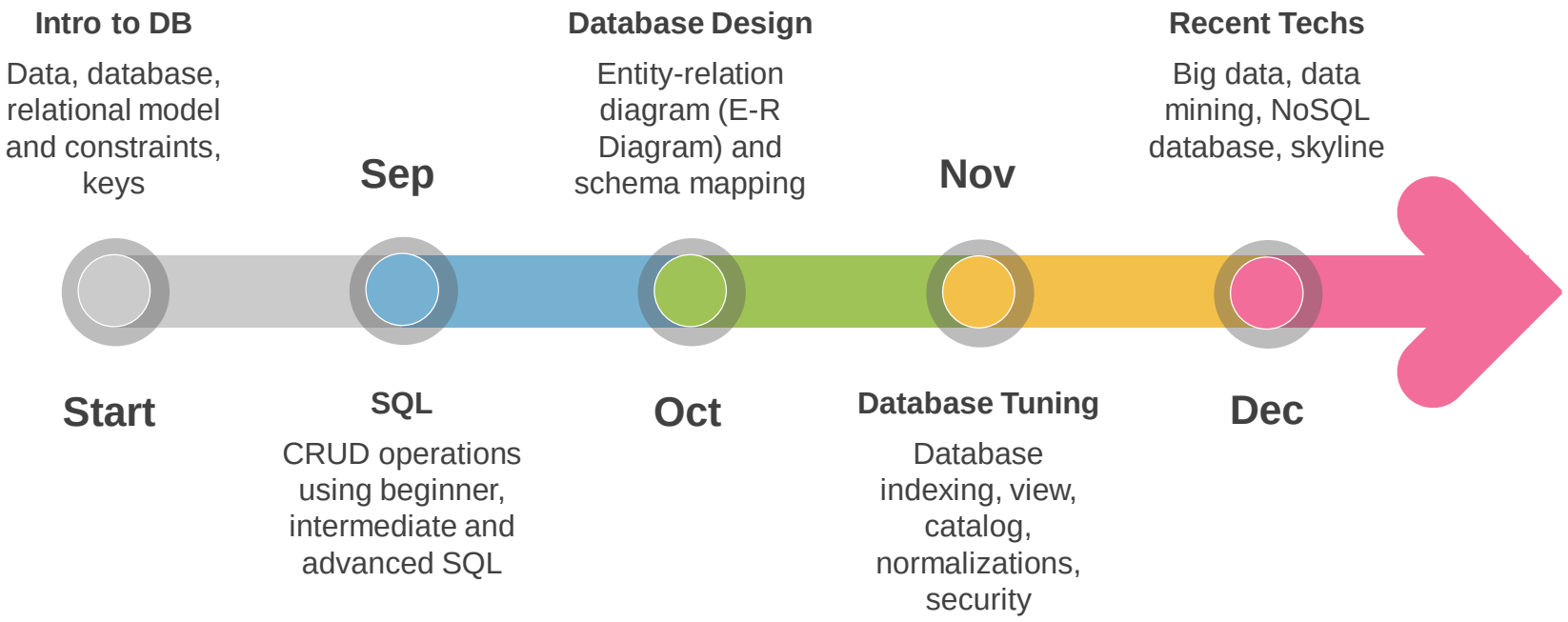
SQL Professional Certification

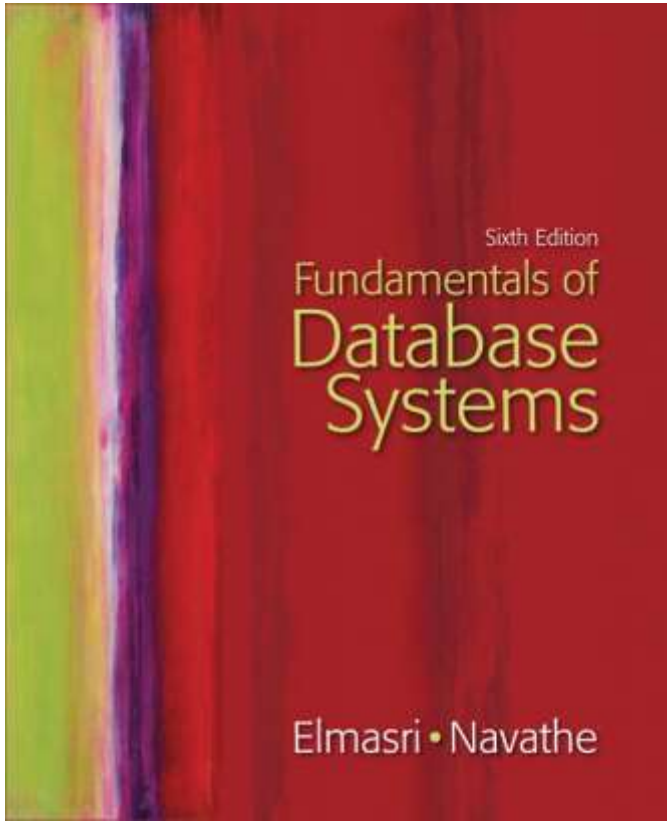
Professional level certification for SQL.
Price: 50,000 Korean Won

https://www.dataq.or.kr/www/main.do

Course Schedule

- Note that the schedule is subject to changes





Textbook and References

MS-SQL Server Based Database Learner 01

홍의경, 생능출판사, 2015

Fundamentals of Database Systems 02

R. Elmasri, B. Navathe
Pearson, 2016

Database System Concepts 03

Avi Silberschatz
McGraw-Hill, 2017

Course Evaluation

30%

Mid-Term Examination

Mid semester and related to relational database and E-R Diagram

30%

Final Examination

Related to database optimization techniques

30%

Homework

Six tasks 5 points each that will be used to check your progress

10%

Attendance and Attitude

Course Policies

Lecture Style

Lecture 50% and practice 50%

Lecture Notes

Lecture notes will be available via CBNU Blackboard 10 minutes before the lecture

Attendance

Missing the class without any reason will result in point reduction (-2), for being late (-1)

AI

You are NOT allowed to use ChatGPT or any other AI generators during the practices

Questions?

See you next time!