CptS 451- Introduction to Database Systems

Course Overview

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WASHINGTON STATE UNIVERSITY

World Class. Face to Face.

Who: Course Staff

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Virtual Office Hours: Check the Syllabus on LMS

Course Overview

- This course introduces:
  - the fundamental principles of relational databases:
    - the ER approach to database design,
    - the relational model, relational design theory,
    - abstract query language such as relational algebra,
    - programming in SQL.
  - core database implementation issues
    - storage and indexing,
    - query processing and optimization,
    - transaction management.

Other WSU database and data science courses

- CptS415 – Big Data
- CptS483 – Introduction to Data Science
- CptS580 – Advanced Databases

Course Information

- This course is conducted entirely online.
- You will participate in the course using WSU's learning management system (LMS)
- Lecture notes, lecture videos, assignment/project descriptions will be made available online on Blackboard
  - While the lectures are designed to be clear and self-contained, you are required to read the assigned chapters in the course textbook (Gehrke et al.).

Course Communication

- **Announcements:**
  - Course announcements will be posted on LMS. They will appear on the dashboard when you log in and/or will be sent to you directly through email.
  - Please make certain to check them regularly.

- **Email:**
  - When sending email messages please:
    - Put a subject that mentions the course name (i.e., 451-Online) and describe the email content.
      - For example: 451-Online: Midterm grade
  - Do not send messages asking general information about the class, assignments, or project. Please post those in the DISCUSSION FORUM.
  - Do not submit your assignments by email.

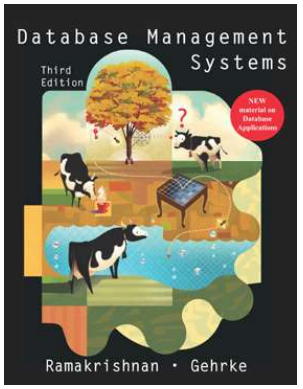
Course Communication (cont.)

- **Question Forum:**
  - You can access the “discussion forum” on LMS
  - Post your question either under pre-created topics or create your own topic.
  - This is an open forum and you are encouraged to give answers and help each other.
    - For each clear and comprehensive answer you give, you can receive 0.1 extra credit point for the course (up to 2 points maximum).
  - I will respond to your questions usually within a day.

- **Virtual Office Hours:**
  - Twice a week I will be available for virtual office hours via Zoom, check the Syllabus on LMS for more info

Text Books

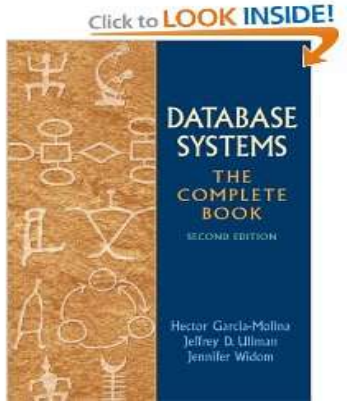
- Required Textbook:
  - **[DMS]** Database Management Systems (3rd Edition), Raghu Ramakrishnan, Johannes Gehrke, ISBN-10: 0072465638 McGraw-Hill , 2003
    - Also known as the "Cow Book"



- Recommended Textbook:
  - **[DS-CB]** Database Systems: The Complete Book (2nd Edition), Hector Garcia-Molina, Jeffrey Ullman, Jennifer Widom,

    ISBN: 0131873253

    Pearson , 2009



Database Access

- You will use PostgreSQL database platform for the course project and HWs.
- You are allowed to use only the standard SQL functionality and features. Please check with the instructor if you are planning to use a PostgreSQL specific feature.

- You can download PostgreSQL for free at the link https://www.postgresql.org/download/.

Weekly Assignments

- Each week you will need to complete the following:
  - Watch the lecture videos and review the lecture notes (available on LMS).
  - Read the corresponding chapters from the textbook.
  - Complete the weekly assignments by the following Thursday (the end of the day).
    - You will submit their solutions on LMS.
    - Please see the schedule for the list of the weekly assignments and their due dates.

Project

- You will develop a target application which runs queries on the Yelp.com data and extracts useful information.
  - You will use a Yelp.com's business review data.
    - http://www.yelp.com/dataset_challenge/
  - The primary users for this application will be potential customers seeking for businesses that match their search criteria.
  - Using this application the user will search for the businesses from various business categories.
- You may design your application either as a standalone or a web-based application.
- Project description will be available on LMS.

Project (cont.)

- You will work on the project in teams of 2.
- Project Submission:
  - The progress of semester-long project will be measured by 3 milestones (see schedule for tentative deadlines).
  - Project deliverables will be submitted electronically on LMS
  - Late penalty is 10% point deduction per day. Late project deliverables may be turned-in up to 5 days after the original due date.

Exams

- All exams will be proctored.
- The instructions for the exams will be available on LMS.

- Midterm
  - Will cover all material until the midterm date.
  - You need to take the midterm during week-9.
- Final
  - Exam will be comprehensive and cover all of the course material. The majority (75%+) of this exam will focus on the material presented after the mid-term exam.
  - You need to take the final exam during week-16 (finals week)

Academic Integrity

- All homework and exams must be solved and written independently, or you will be penalized for plagiarism.
  - Check out the Academic Integrity statement in the course syllabus.

Grading

- **Overall Grading**:
  - Midterm 20%
  - Final 25%
  - Project 30%
  - Homeworks 25%
- The above percentages are subject to change as circumstances dictate.

Extra Credit:

- For each clear and comprehensive answer you give in the question forum, you will receive 0.1 extra credit point (up to 2 points maximum).

Grading (cont.)

- **Letter Grades:**
  - Letter grades will be assigned based on the scale shown below.
  - The assignment and exam scores will be adjusted (curved) according to the class averages. The below scale assumes class average is 80%.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Total Score	93% - 100%	90% - 93%	86% - 90%	83% - 86%	80% - 83%	76% - 80%	73% - 76%	70% - 73%	66% - 70%	60% - 66%	0% - 60%

Grading (cont.)

HW and Project Grading:

- Weights of the project milestones:
  - Milestone 1 (DB application, JSON Parsing) 5%
  - Milestone 2 (Relations, Constraints, SQL DDL, Populate DB, Assertions, Triggers) 10%
  - Milestone 3 (Application to search businesses) 15%

  (TOTAL 30%)

- Homework assignment weights will be announced later.

QUESTIONS?