CptS 451- Introduction to Database Systems

Course Overview

Instructor: Sakire Arslan Ay

WASHINGTON STATE UNIVERSITY

World Class. Face to Face.

Who: Course Staff

Instructor:

Name: Sakire Arslan Ay (pronounced Shakira)

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Office Hours: Mon, Wed, Fri: 3:30pm - 4:30pm

Thu : 1:30pm - 2:30pm

- Please drop by my office.
  - Ideally not just for assignment questions (but that's good too)

Teaching Assistants:

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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,
    - transaction management.

Other WSU database and data science courses

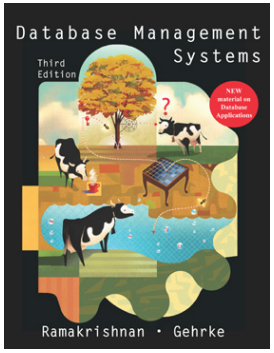
- CptS415 – Big Data
- CptS475 – Introduction to Data Science
- CptS580 – Advanced Databases

Course Information

- The course syllabus and schedule are available on Blackboard
- The lecture notes and homework/sample exam solutions will be posted on Blackboard (learn.wsu.edu).
  - Lecture notes will be available after class.

Text Books

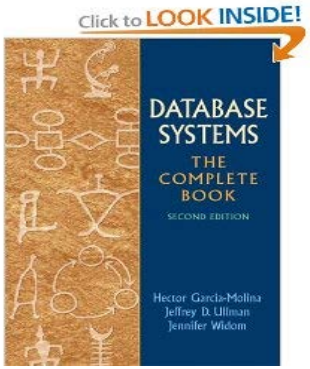
- Required Textbook:
  - **[DMS]** Database Management Systems (3rd Edition), Raghu Ramakrishnan, Johannes Gehrke, ISBN-10: 0072465638 McGraw-Hill , 2003
    - Also known as the “Cow Book”



- 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/.

Homework Assignments

- There will be approximately 6 homework assignments throughout the semester.
- Homework prompts will be posted on Blackboard.
- The submission instructions for the homeworks will be provided along with the homework descriptions.
- Late penalty is 10% point deduction per day.
- You will be given total 6 HW assignments. Your lowest HW score will be dropped;
  - i.e., the top 5 HW scores will be included in grade calculation.
- All homework and exams must be solved and written independently, or you will be penalized for plagiarism.

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 soon be available on Blackboard.

Project (cont.)

- You will work on the project in teams of 3.
  - You need instructor's permission if you need to work alone.
- 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 Blackboard.
  - Late penalty is 10% point deduction per day.

Exams

- Midterms
  - You will be given 2 short midterms
  - Midterms will cover all material until the midterm dates.
  - The tentative midterm dates are: **February 19** and **March 13** (see the schedule).
- Final
  - Exam will be comprehensive and cover all of the course material. The majority (70%+) of this exam will focus on the material presented after the mid-term exam.
  - The final exam date is on **May 4**, from 8:10am to 10:00am

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.

Academic Integrity

- You are not allowed to:
  - Share solutions during exams or using any additional material in addition to the allowed notes sheet.
  - Share solutions or code with your classmates or copying code from solutions/programs of prior semesters' students.
  - Having your friend mark you as present in class or signing in as present in class when you are actually elsewhere.

- We will process all programming assignment submissions using Stanford's free plagiarism detection software called MOSS.

Grading

- **Overall Grading**:
  - Midterm-1 12%
  - Midterm-2 12%
  - Final 20%
  - Project 30%
  - Homeworks 22%
  - In class exercises 4%
- The above percentages are subject to change as circumstances dictate.

- **Letter Grades:**

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, DB Design) 5%
  - Milestone 2 (Relations, Constraints, SQL DDL, Populate DB, Assertions, Triggers) 10%
  - Milestone 3 (Application to search businesses) 15%

  (TOTAL 30%)

- Each HW assignment is worth 22/5 = 4.4%

Attendance

- Attendance is not required in CptS451.
  - However, attendance may be taken on same random days.

- Attendance and assignment/project submissions on time is a strong indication that you care about this class and you put effort to learn and succeed.

In Class Exercises

- Occasionally, you will be given class exercises in some lectures.
- You will submit your answers to these exercises on Blackboard during the lecture.
- You need to be present in class in order get credit for those exercises.
- 4% of your total course score will be based on the class exercises.

Questions?

- Anything I have missed?
- Questions?