CS143 Fall 2017
MW Haines 118
Instructor: Carlo Zaniolo

Syllabus
Main Goals

• The goal of CS143 is to introduce students to relational database management systems and teach them how to use them in key applications.

• Students are expected to become proficient in SQL, since this is the standard language used for creating, querying and modifying the relational databases.

• Students are also expected to master the technology supporting Relational Database Systems, including:
  1. relational algebra, disk and file systems, indexes, query optimization, and transactions, for traditional and parallel machines, and
  2. including, relational design principles (functional dependency and normal forms), and the entity-relationship database design.
Infobox

Instructor
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TAs
• Jason Theo, jteoh@cs.ucla.edu
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FINAL: Monday December 11, 8:00 --11:00am
Prerequisites

• CS111 is required and this prerequisite is strictly enforced.

• CS143 is intended for students with a robust CS background. That means proficiency in programming and working knowledge of basic Computer Science theory.

• you should feel comfortable with the basic data structures and algorithms in Computer Science (e.g., hash table, graphs, trees, sorting algorithms, set theory),

• CS180 (Algorithms), and CS131 (Programming Languages) are expected but not absolutely required.
Programming for the two Projects

The First programming project will use
1. MYSQL DBMS
2. Simple Java and in particular JDBC. We will assume students know Java or are able to learn it during the quarter (easy to learn for the students familiar with C++).
3. We assume that students are familiar with the UNIX command line interface.
4. No any prior experience with DBs is required

The second project: extending Apache Spark with External Hashing.
- Apache Spark is a cluster-computing platform with implicit data-parallelism and fault tolerance
- For that you will use SCALA: a general purpose programming language that compiles to Java bytecode, so that runs on a Java virtual machine.
Textbooks

Required for the course:

*The following books are useful for consultation --- however they are not required for the course:*
• A Complete Guide to DB2 Universal Database, by Don D. Chamberlain,
• Morgan Kaufmann Publishers
• A Guide to SQL Standard, by Chris J. Date, with Hugh Darwin, Publisher: Addison-Wesley
Grading

The final grade will be assigned on the curve on the basis of a total score computed as follows:

- Homework: 6%
- Project-1: 19%
- Midterm exam: 24%
- Project-2: 19%
- Final exam: 32%