CS122B: Projects in Databases and Web Applications
Spring 2018

Professor Chen Li

Department of Computer Science

UC Irvine

Notes 01: Introduction

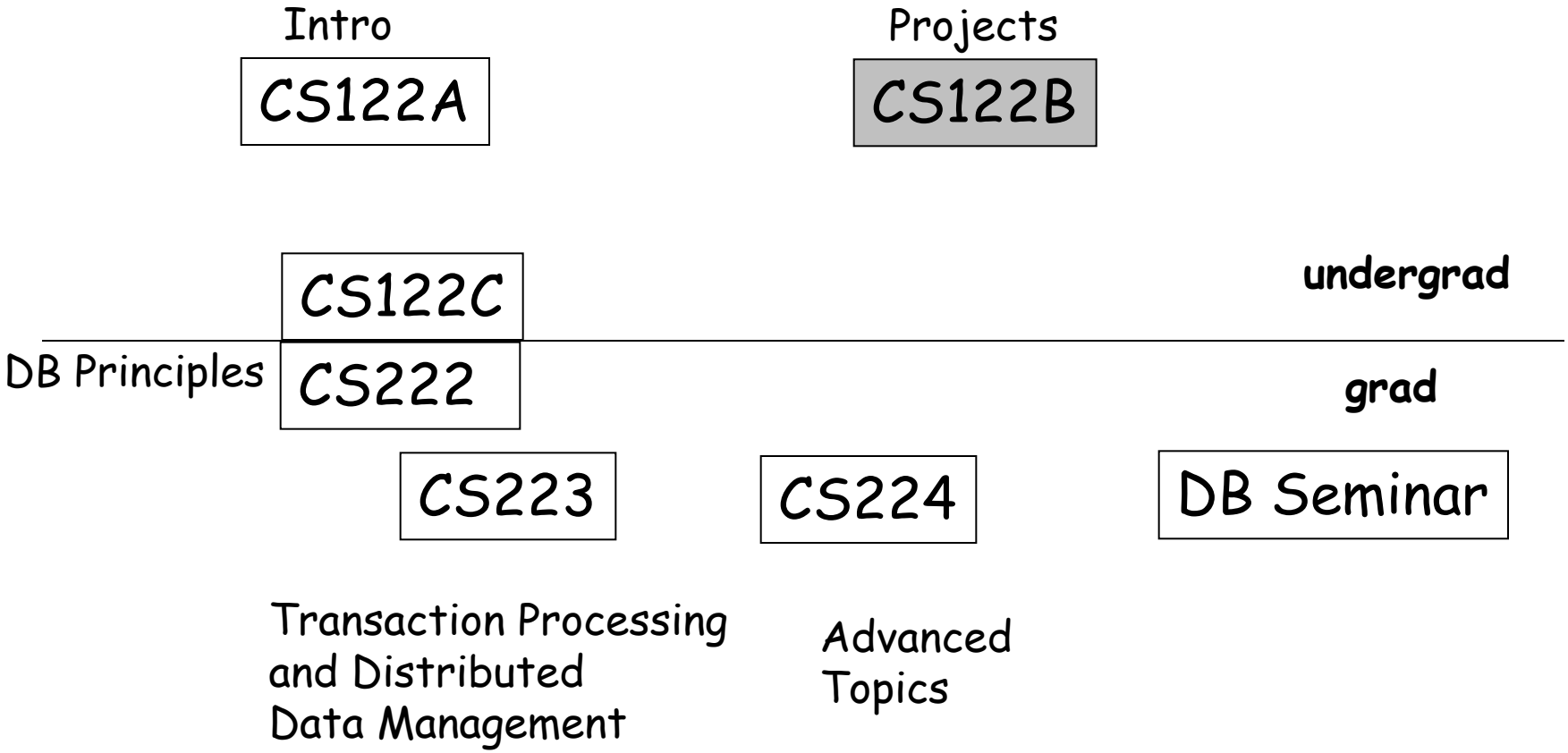
Overview

- Course introduction
- Project Overview

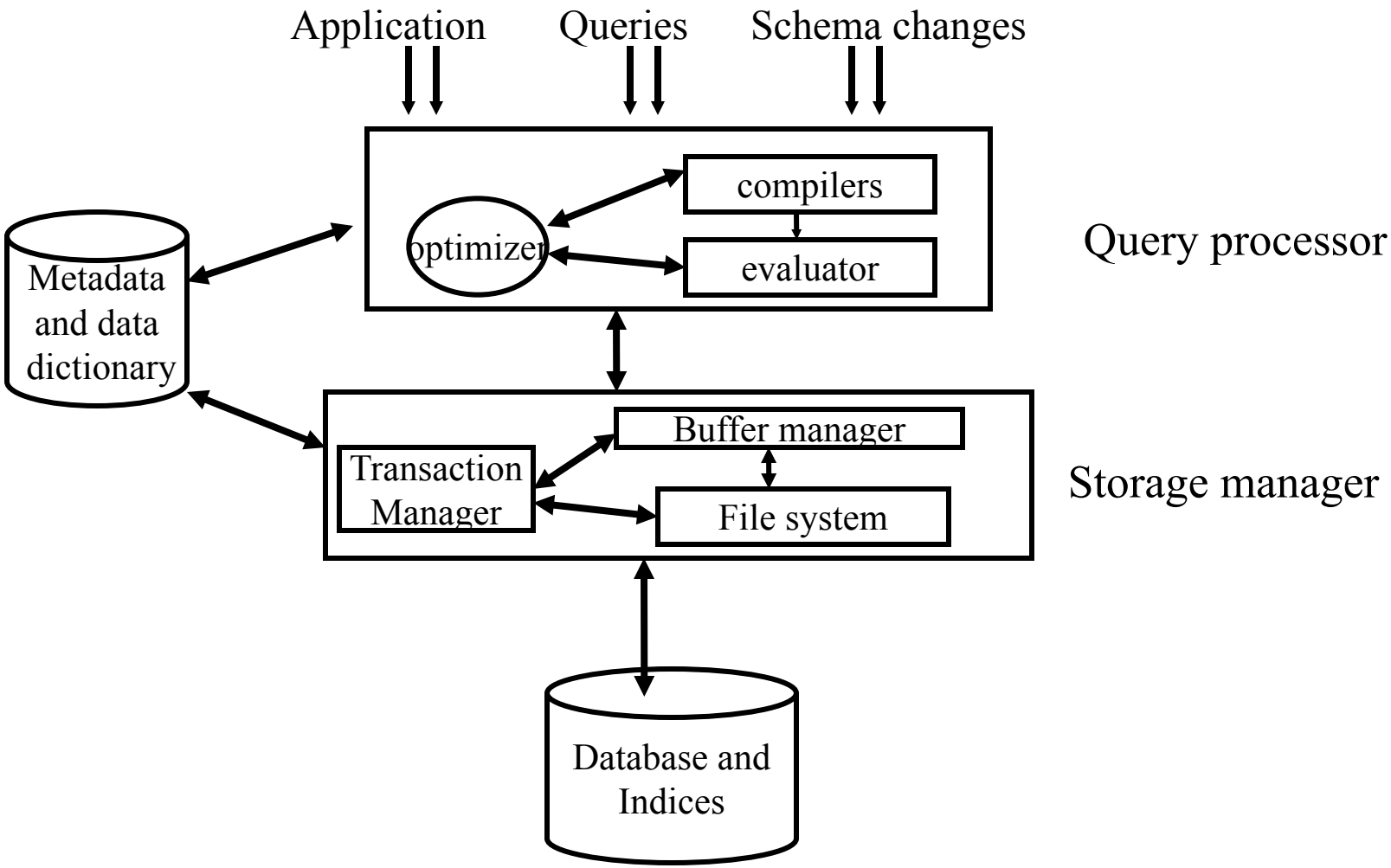
Course General Info

- URL: http://www.ics.uci.edu/~cs122b/
  - All course info will be posted online

DB courses @ UCI



Simplified DBMS Architecture



DBMS Goals

- Efficient data management (faster than files)
- Large amount of data
- High reliability
- Atomicity, Consistency, Isolation, and Durability.
- Information sharing (multiple users)
- DBMS Users:
  - E-commerce companies, banks, airlines, transportation companies, corporate databases, government agencies, …
  - Anyone you can think of!

CS122A Topics

- Database modeling:
  - E/R model, Relational model, ER to Relational Model
- Relational Algebra
- Subqueries, Joins, Modifications, Nulls, Constraints and Triggers, Stored Procedures
- Embedded SQL
- Views
- Relational Design
  - BCNF, 3NF, 4NF

CS122B Topics

- Programming Projects: 88%
- In-class quizzes: 11%
- Participation of EEE class evaluation: 1%
- For all the graded projects and quizzes, if you disagree with the grading, you can discuss with the grader within two weeks after they are returned. After that, all the grades will be finalized.

Project overview

- Develop a real, web-based commercial web site to sell movies
- Interfaces for customers:
  - Browse/search for movie information
  - Buy movies
- DBA
- XML and AJAX
- Programming on Mobile phones (Android)
- Performance tuning
- AWS

Prerequisites

- CS122A or equivalent

- Programming skills:
  - Java
  - Skills to learn other programming languages

Using Cloud Services

- We will heavily use Amazon AWS services
- You are expected to launch instances on AWS to deploy some of your projects you are developing.
- AWS provides free-tier 64-bit Ubuntu instances!
- Welcome to participate in the AWS Educate program (https://aws.amazon.com/education/awseducate/), which can provide $100 AWS credits per student.
- Time permitting, we will also use Google Cloud Platform (GCP) to run the projects.

Policy on Working Together

- Working together the projects (only) is strongly encouraged. (The problem sets should be done individually). You can form groups of no more than 2 students.
- Students may leave their existing group in the quarter. BUT they cannot join any new group after the end of the second week.
- In addition, for each group splitting, the group members should tell the reader at least two weeks before the corresponding project/homework deadline.

Github

- You are required to use github to manage your source code.
- We will provide instructions on how to use it and do submissions.

Database

- MySQL
- Be sure to follow online instructions to do the installations

Web Server

- TomCat

http://jakarta.apache.org/tomcat/

About class attendance

- A lot of topics will be covered in the lectures
- Please DON' T:
  - Show up late
  - Talk in the lecture
  - Leave early