Fall 2013
ICS321 Data Storage & Retrieval
Mon & Wed 12-1:15 PM

Asst. Prof. Lipyeow Lim
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University of Hawaii at Manoa
Staff

• Instructor: Lipyeow Lim
  – Firstname is fine!
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  – Office Hours MW 1:30-2:30 PM or by appointment

• Teaching Assistant:
  – Dylan Kobayashi dylank@hawaii.edu
Please Introduce Yourself Briefly

• Name
• Year of study (or how long have you been at UH)
• One “distinguishing” fact about yourself to help me learn your name
  – Eg. Hobby, place of origin, job, travels, what you did last summer ...
Poll

• How many of you have:
  – Taken Discrete Math I (ICS141) at UHM?
  – Programmed in Java ?
  – Programmed in C ?
  – Used unix shell commands ?
  – Used a database before ?
  – Used linux ?
  – Used virtualization technology like Vmware, Xen, KVM, virtualBox ?
Communications

• Webpage:
  – www2.hawaii.edu/~lipyew/ics321/2012fall/

• Laulima
  – laulima.hawaii.edu
  – Grades of quizzes, homework, exams will be posted there
  – Discussions

• Emails
Textbook

• Required:
  – Hector Garcia-Molina, Jeff Ullman, and Jennifer Widom.

• Alternate:
  – Jeff Ullman, and Jennifer Widom

• Previous:
  – Raghu Ramakrishnan and Johannes Gehrke.
Format

• Class time: Mon & Wed 12-1:15 PM
  – Summary lecture (Mon & Wed)
  – Group discussion & problem solving (Mon)
  – Hands-on Session (TBA) – *Please bring your computer.*
• Quizzes every Monday (15%) – *online in laulima*
• 3 Homework assignments (15%)
• One course project (40%) – *group work*
  – Includes a live or recorded 8 minute presentation
  – Peer evaluation
• One mid-term exam (15%)
  – One letter size sheet of notes allowed (2 sided)
• One final Exam (15%)
  – One letter size sheet of notes allowed (2 sided)
Pre-requisites

• Understand set theory (ICS 141 Discrete Math)
• Understand propositional logic (ICS 141 Discrete Math & ICS 111 Intro to CS)
• Be able to write a program in Java (ICS 111+211)
  – Use a text editor
  – Command shell
  – Compile and run programs
• Have access to a computer (preferably a laptop)
• Have internet access
To do well in this class ...

• Read the assigned reading BEFORE class!
• Keep up with the readings
• Attend class and participate
• Review the material for the quizzes, mid-term, and final
• Do the homework assignments
• Start on the project early
• Take charge of the learning process
  – Try out the commands on the DBMS
  – Make use of the exercises in the textbook

Focus on understanding the material to the point that you can apply it in different contexts!
Why take this course?

- Database-related jobs eg. DBA

- You’ll likely deal with data management in your (future) jobs

- Database technology is behind almost all internet technology

- ...
Assignment 1: Querying Large Files

• Input
  – A CSV data file, eg order.csv
    1 | 3691 | O | 194029.55 | 1996-01-02 | 5-LOW | Clerk#000000951 | 0 |
    2 | 7801 | O | 60951.63  | 1996-12-01 | 1-URGENT | Clerk#000000880 | 0 |
    3 | 12332| F | 247296.05 | 1993-10-14 | 5-LOW | Clerk#000000955 | 0 |
    4 | 13678| O | 53829.87  | 1995-10-11 | 5-LOW | Clerk#000000124 | 0 |
  – A list of queries:
    Load order.csv
    SearchEq 3 F
    SearchGtr 4 200000

• Output: Prints the rows that matches the queries
• Constraint: Data is too big to fit into memory
Homework

• BEFORE coming to class on Wed
  – Setup Java development environment
  – Start working on Assignment 1

• BEFORE next week
  – Install VirtualBox on your laptop
  – Download Ubuntu 13.04 Desktop Edition image to your laptop
  – Create a Virtual Machine and Install Ubuntu on it
  – Download DB2 Express-C 10.5 to your laptop
  – Install DB2 on the Ubuntu Virtual Machine

• See screencast on the course website for more info.