Spring 2015

ICS321 Data Storage & Retrieval
Mon & Wed 9-10:15 AM

Assoc. Prof. Lipyeow Lim
Information & Computer Science Department
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Staff

• Instructor: Lipyew Lim
  – Firstname is fine!
  – www2.hawaii.edu/~lipyew/
  – POST 303E, lipyew@hawaii.edu, 808-956-3495
  – Office Hours TTh 1:30-2:30 pm

• Teaching Assistants:
  – Kendyll Doi (kendyll@hawaii.edu)
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Poll

• How many of you have:
  – Taken Discrete Math I (ICS141) at UHM?
  – Programmed in Java in the past 1 year?
  – 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/~lipyeow/ics321/2015spr/

• 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:
  – *A First Course in Database Systems (3nd Edition).*
  – Jeff Ullman, and Jennifer Widom

• Previous:
  – Raghu Ramakrishnan and Johannes Gehrke.
Format

• Class time: Mon & Wed 9-10:15 AM
  – Summary, Q & A
  – Group discussion & problem solving
  – Hands-on Session (TBA) – *Please bring your computer.*

• Quizzes before every class (15%) – *online in laulima*

• 4-5 Homework assignments (45%)

• One mid-term exam (20%)
  – One letter size sheet of notes allowed (2 sided)

• One final Exam (20%)
  – 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 an editor to edit java code
  – 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
• 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

• Week 1
  – Setup Java development environment
  – Start working on Assignment 1
• Week 2
  – IF laptop has less than 4 GB of ram, install natively
  – Install VirtualBox on your laptop
  – Download Ubuntu 14.04 Desktop Edition (64 bits) image to your laptop
  – Create a Virtual Machine and Install Ubuntu on it
  – Download Oracle Express Edition 11g Release 2 to your laptop
  – Install Oracle on the Ubuntu Virtual Machine
• See screencast on the course website for more info.
Picture Roster