Fall 2014
ICS321 Data Storage & Retrieval
Tue & Thu 12-1:15 PM
Assoc. Prof. Lipyeow Lim
Information & Computer Science Department
University of Hawaii at Manoa
Staff

• Instructor: Lipyeow Lim
  – Firstname is fine!
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  – Office Hours TTh 1:30-2:30 pm

• Teaching Assistant:
  – Robert Ward rward@hawaii.edu
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/ics321/2014fall/

• 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: Tue & Thu 12-1:15 PM
  – Summary, Q & A
  – Group discussion & problem solving
  – Hands-on Session (TBA) – *Please bring your computer.*
• Quizzes before every class (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 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
• 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

- **Week 1**
  - Setup Java development environment
  - Start working on Assignment 1
- **Week 2**
  - 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