Spring 2014

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

Asst. 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 MW 3-4 PM or by appointment

• Teaching Assistant:
  – Robert Ward rward@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/ics321/2014spr/

• 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 12-1:15 PM
  – Summary, Q & A (Mon & Wed)
  – Group discussion & problem solving (Mon)
  – 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 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 and view the screencasts **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
- ...

1/13/2014

Lipyeow Lim -- University of Hawaii at Manoa
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#00000124  | 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**
  - Add your picture to laulima->roster
  - 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.**