Introduction to Database Systems

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Why do you need a database system?

To store data,

why not just use a file system?

Advantages of a Database System

- It answers ***queries*** fast

  Q1: among a set of blog pages, find those pages written by Steven Sinofsky after 2011

  Q2: among a set of employers, increase the salary by 20% for those who have worked longer then 4 years

- Queries (from multiple users) can execute ***concurrently*** without affecting each other
- It ***recovers*** from crash
  - No corrupt data after restart

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Goals

- To use a DB system
- To understand how to ***write*** a DB system
  - Architecture
  - Trade-offs

Prerequisites

- Data structure
- Good programming skill
  - OOP (in Java)
  - Multi-threaded programming
  - Project management tools like Git

Syllabus

- Here
  - Subject to change
- Mon 10am-12pm: ***video*** lecture
- Wed 9am-10am: TA time
  - Explain your new assignment
  - Review your pass assignment
- Homework every 2 weeks
  - Not only code
  - But reports

Grading

- Homework (x5): 50%
- Midterm exam: 25%
- Final project: 25%

FAQ (1/2)

- Do I need to write programs in this course?
  - A lot!
  - ***We will give extensive coding assignments***
- Do I need to write code with others?
  - Yes, 1~3 students a team

FAQ (2/2)

- Do we need to come to the class?
  - No, as long as you can pass
- Is this a light-loading class or heavy-loading class?
  - Should be ***heavy*** to most students
  - ***Reserve time, otherwise you will have high chance to fall***

Resources

- Text Book
  - Lecture notes
  - Reference links
- Course page
  - http://www.cs.nthu.edu.tw/~shwu
- TODO
  - Register your team