[CSIE 1212]

Data Structure and Algorithms
資料結構與演算法

- Course Information

Short introduction of my part

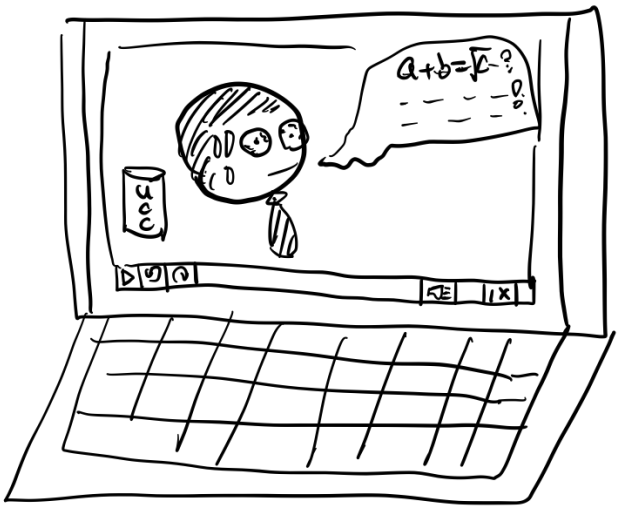
Prof. Michael Tsai 蔡欣穆
(co-teach with Prof. Hsuan-Tien Lin)
Spring 2024

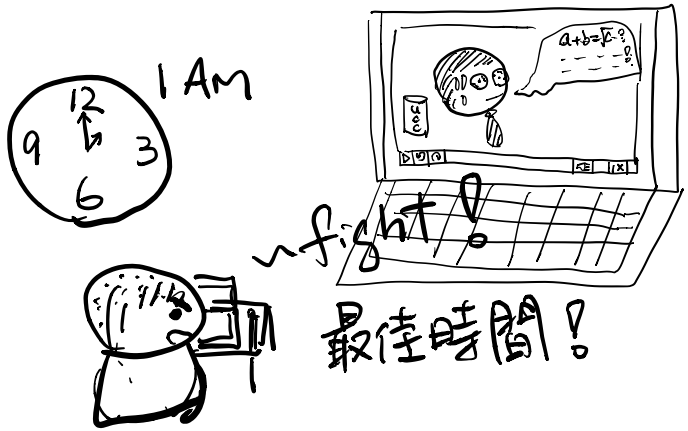
Agenda

- String Matching (2 hr)
  - Overview
  - Rabin-Karp String Matching Algorithm
  - (after class) KMP String Matching Algorithm
  - W9 With-Lecture Quiz
  - mini HW H
- Course overview of second half (1 hr)
  - Overview of the second half
  - Overview of the software development team game (4/23, next Tuesday)

Why Learn with Video?

- **Tailored for personal preferences —> better learning efficiency!**
  - Choose the best time & place to learn
  - Learn at your preferred pace
    - Faster playback rate when you can
    - Skip the easy part or what you already know
    - Repeat the difficult part or pause to think & take note
  - Ask questions with video! (on NTU COOL)





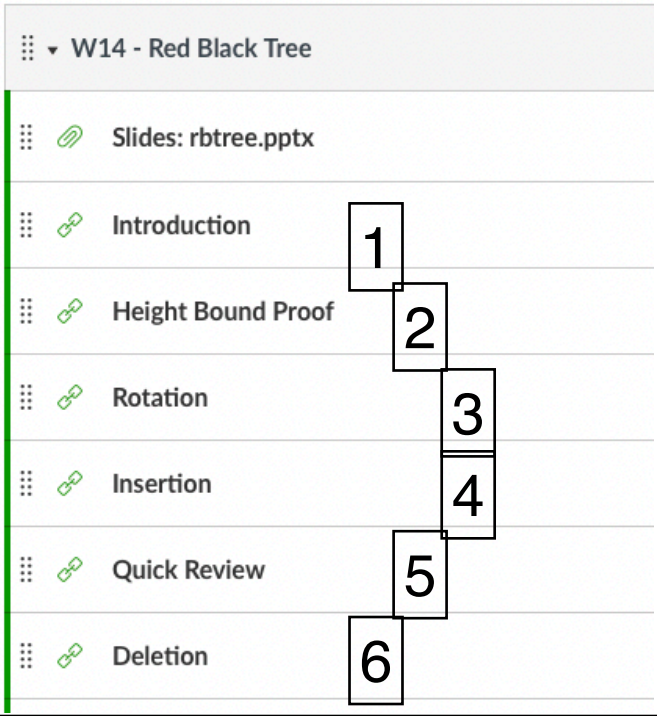
Learning with Video (Before Class)

Weekly “Menu”

Video clip by subject (10-30 min / clip) + Online quiz problems (easy) (5-10 min / prob.) + Mini homework (programming)

only 1 prob is graded; part of activity grade

Part of programming grade



Assigned on Tuesdays for each week

Suggestion: Finish before next class

Syllabus, W9-16

Week	Date	Video Topic	Activity / Class
9	4/16	String matching [new]	
10	4/23	Graph [old]	**Software development team game**
11	4/30	Disjoint set [old]	
12	5/7	Red-black tree [new]	
13	5/14	B-tree [new]	**Earth game**
14	5/21	Hash table [new]	Hsin-Mu is out of town; online class
15	5/28	Linear-time sorting [old]	**Kahoot!**
16	6/4	Final exam	

Video

- English-subtitled video are already available on NTU COOL (99% the same)
- You can pace yourself according to your own schedule
- Four lectures are planned to be re-recorded this semester
- You are encouraged to ask questions on NTU COOL.
  - We will answer them ASAP (< 24 hr)
  - We will pick good questions and explain them in detail in some lectures
- **Expect spending 3 more hours every week** (for video)

In-Class Logistics

- SLIDO:
  - During the class, I will only answer questions related to the lecture
  - At the end of the class, if time permits I will answer questions unrelated to the lecture
- Q: Do I need to come to the class?
  - You don’t have to if you know the implications / consequences
    - You have to submit the quizzes on time
    - You have to participate in the activities (4/23, 5/14, 5/28) to receive the corresponding grade
    - If you come to the lecture, you can interact with me in real time

Misc Messages from HsinMu

- It will take some time for me to warm up and get up to speed with the large class
- You do not have to learn everything “in a single pass”
- Please try to be polite (even when in negative mood), and I will do the same~
- I can often make mistakes!
- Consider come and talk to me physically if you have trouble understanding the course material
- Good luck!!

Activity Grade (10%)

- 3% Software development team game
- 4% Earth game
- 3% Kahoot! (Review before final exam)
- 3% 7 With-Video Quizzes (W9-W15)

- Total is capped at 10%

SLIIIIIIIIIIDO TIME