Algorithm Design and Analysis (H) LAB Introduction

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(SLIDES EDITED FROM THE SLIDES BY YAO ZHAO)

Learning Objectives for Labs

- Design efficient algorithms for the given problems.
- Analyze their correctness, time and space complexity.
- Implement your algorithms.

About Lab Assignments

- One lab assignment per week (roughly), totally **12 ~ 14 mandatory labs**. Each lab assignment consists of 2 problems: Problem A and Problem B, so totally **24 ~ 28 lab problems**, and Problem B is usually more difficult.
- All lab assignments are posted on our online judge: **http://10.16.63.78/**, which requires you to strictly comply with the requirements of the problems. We will supply a complete and clear description for each problem, as well as the format of input and output.

- **One strict deadline. No late submission is allowed. All submissions after the deadline will be graded as 0.**

How Lab Assignments are Graded

- All lab assignments are auto-graded by our online judge system and rechecked by TAs.
- In order to encourage you to **do the right thing right the first time**, the **problem B** will be **penalized** if you submit your code **more than twice**. If your first two submissions pass all the test cases, you will get the full score; otherwise, according to the number of submissions, the score will **be deducted 5 points per submission**. The final grade is the best grade you have achieved.
  - Example: If you pass 60% test cases at first submit or the second submit, you can get 60. At the third submit, you pass 95% cases, you will get 95-5 = 90. At the fourth submit, you pass 90% cases, you will get 90-10 = 80. Finally, you will get 90.
- If there are critical bugs in our own code or system, we will fix these problems as soon as possible, the number of submissions of all participants will be reset to 0 accordingly.

Why do the right thing right the first time

- In practice, when you have ability to write out code , it is very important that you have the ability to ensure your code is correct.
- This means you need to write **test cases** for your own code independently.
- Also, there are only two problems per week. It should be quite clear what knowledge you would need to solve them, and you have sufficient time.

Additional Policy

- We do not have bonus labs this time. Instead, you can have 2 problems with lowest grades excluded from your lab grade calculation. That is, if there are n problems in total, your lab grade only counts the **highest-graded n – 2 problems**.
- We will invite students and TAs to discuss the lab solutions (**ideas rather than exact code**) the next week after the lab is released:
  - The **last student who got 100** for a lab problem will be invited to explain their solution ideas.
    - To encourage your participation, each time you can get **one problem free from penalty**.
  - The TAs (or me) may provide additional explanations afterwards.

No excuse will be accepted once plagiarism is discovered!