COMP1927 16x1 Computing 2

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- Website:
- http://www.cse.unsw.edu.au/~cs1927/16x1

Course Goals

- get you thinking like a computer scientist not just a programmer
- know a set of fundamental techniques/structures
- able to reason about their applicability/effectiveness

Assumed Knowledge

- At the start of this course you should be able to:
  - produce a correct C program from a specification
  - understand the state-based model of computation (variables, assignment, addresses, parameters, scope)
  - use fundamental C data structures (char, int, float, array, struct, pointers)
  - use fundamental control structures (sequence, selection (**if**), iteration (**while**))
  - use abstraction via function declarations
  - use linked links

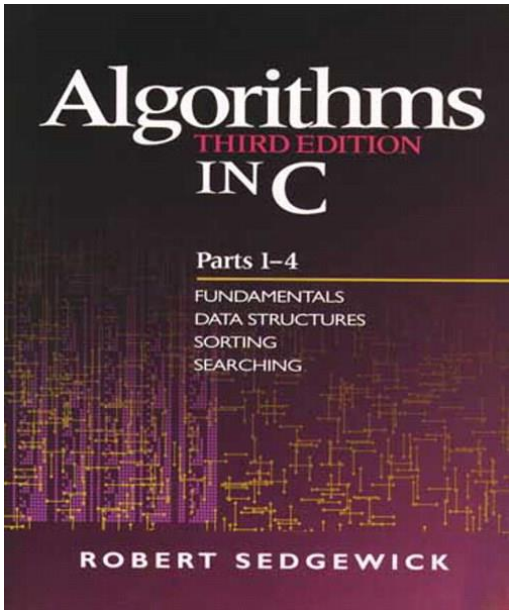
Learning Outcomes

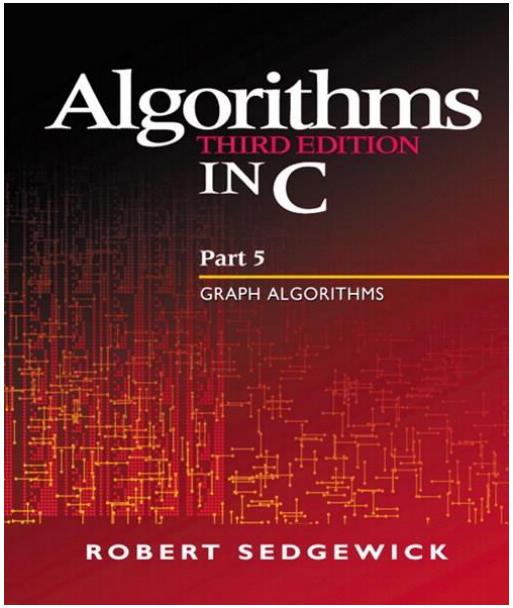
- By the end of the course you should be able to:
  - analyse performance characteristics of algorithms
  - measure performance behaviour of programs
  - choose/develop effective data structures
  - choose/develop algorithms on these data structures
  - reason about effectiveness of data structures + algorithms
  - create a set of DS+A as an abstract data type

Syllabus Overview

- Abstract data types
- computational complexity, performance analysis
- Solving problems such as
  - sorting,
  - searching
- Graphs and graph algorithms

Textbook





Algorithms in C, Parts 1-4, Robert Sedgewick
Algorithms in C, Part 5, Robert Sedgewick

Lectures

- present a brief overview of theory
- demonstrate problem-solving methods
- give practical demonstrations
- Lectures are based heavily on text-book.
- Slides are available in PDF formats.
- Feel free to ask questions, but No Idle Chatting.

Tutorials

- clarify any problems with lecture material
- work through problems related to lecture topics
- give practice with design skills (think before coding)
- Tutorial exercises available on web the week before. Please read and attempt them before your class.
- Marks for attendance/participation

Labs

- Lab exercises aim to build skills that will help you to
  - complete the assignment work
  - pass the final exam
- Lab classes give you experience applying tools/techniques. Each lab exercise is a small implementation/analysis task.
- Some tasks will be done in pairs
- Don’t copy, don't fall behind and start them before your lab class if you need to.
- Due by tuesday midnight the next week

Assignments

- give you experience applying tools/techniques to larger problems than the lab exercises
- Both assignments are individual assignments
- Late penalties apply to the maximum mark:
- 10% for each day late.
- They always take longer than you expect.
- Organise your time and don't leave them to the last minute.

Plagiarism

- You attempt Labs and Assignments unsupervised ...
- Plagiarism= submitting someone else's work as your own.
- Plagiarism will be checked for and punished. We run a plagiarism detection program against submissions this session, any previous sessions etc
- You will struggle in the final exam if you do not practice on your own.
- Try to get help before you reach the stage where you are too far behind to complete the work.

Extra Help

- Consultations
- Weekly consultations for extra help with labs and lecture material
- More time slots will be scheduled near assignment due dates
- Email me for additional consultations if needed.
- Forum on website

Assessment

- Tutorial Mark 5% of total
  - Attendance and participation
- Lab Mark 10% of total
  - Lab marks out of 3 for each lab
  - Some weeks opportunities for a bonus mark to make up for any missed labs
- Class Prac Exam 10% of total
  - 5% for each
- Assignments
  - assn 1 10%
  - assn 2 10%
- Final exam
  - Worth 55%of overall assessment

Supplementary Exams

- Supplementary exams are only available to students who
  - do not attend the exam AND
  - have a serious documented reason for not attending
- If you attend an exam
  - you are making a statement that you are "fit and healthy enough"
  - it is your only chance to pass (i.e. no second chances)

Advice

- Do the Lab exercises and Assignments yourself (or with your pair partner when appropriate)
- Programming is a skill that improves with practice. The more you practice the easier labs/assignments/exams will be.
- Don't restrict practice to lab times and two days before assignments due.
- Make use of tutorials by attempting questions before the class and participating.
- Go to consults if you need help or fall behind.
- We want you to do the best you can ☺