# Course Admin

**CS1020E:** Data Structures and Algorithms I
(AY2016/17 Semester 1)

# Lecturer


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# Outline

- Module Overview
- Objectives
- Resources
- Assessments

# Module Overview

- This module is:
  - The second part of the "3 courses" introductory programming
    - CS1010E → **CS1020E** → (CS2010 – not core module)
  - Emphasizes on *algorithms* and *linear data structures*

- The "Three Pillars" of CS1020E
  1. Object Oriented Programming (OOP) Model
  2. Data Structures
  3. Algorithms

# The Three Pillars in CS1020E

**Object Oriented Model**

- Ways to organize a software program
- Uses **C++** as instructional language

**Data Structure**

- Ways to organize large collection of data
- Covers **Lists**, **Stack**, and **Queue**

**Algorithm**

- Well known steps to solve certain problems
- Covers **Sorting**, **Hashing**
- Related topics: **Algorithm Analysis**, **Recursion**

# Objectives

- With this course, you should be able to:
  - Use object oriented modeling to formulate solution
  - Utilize appropriate simple data structures in problem solving
  - Understand recursion and data abstraction
  - Understand program efficiency through algorithm analysis

# Resources : **Steven's Private IVLE**

- http://www.comp.nus.edu.sg/~stevenha/cs1020e.html

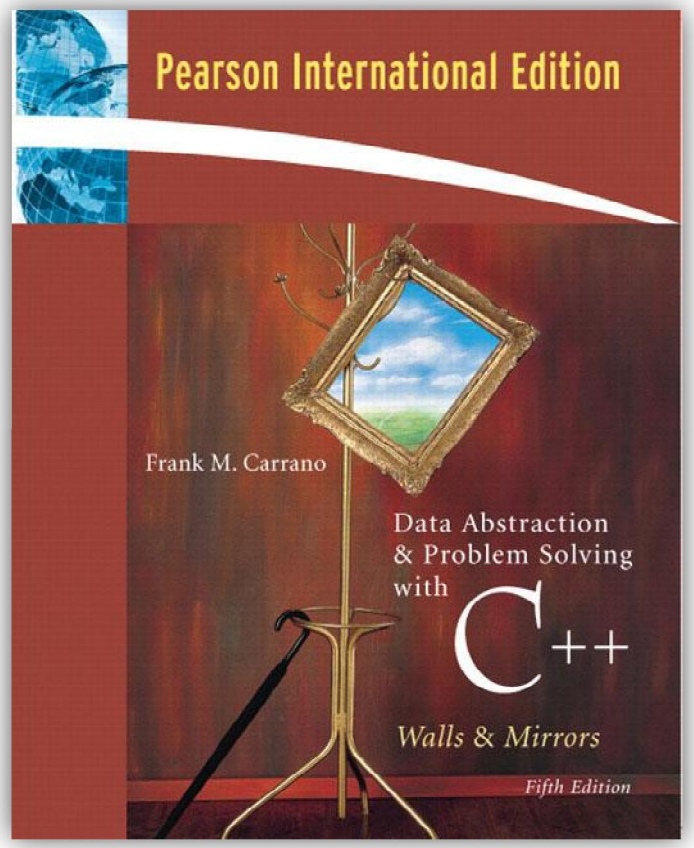
- **Lesson plan with integrated workbin:**
  - Lecture notes + files, tutorial questions, solutions, and timing info
  - Weightage of course components are also displayed there

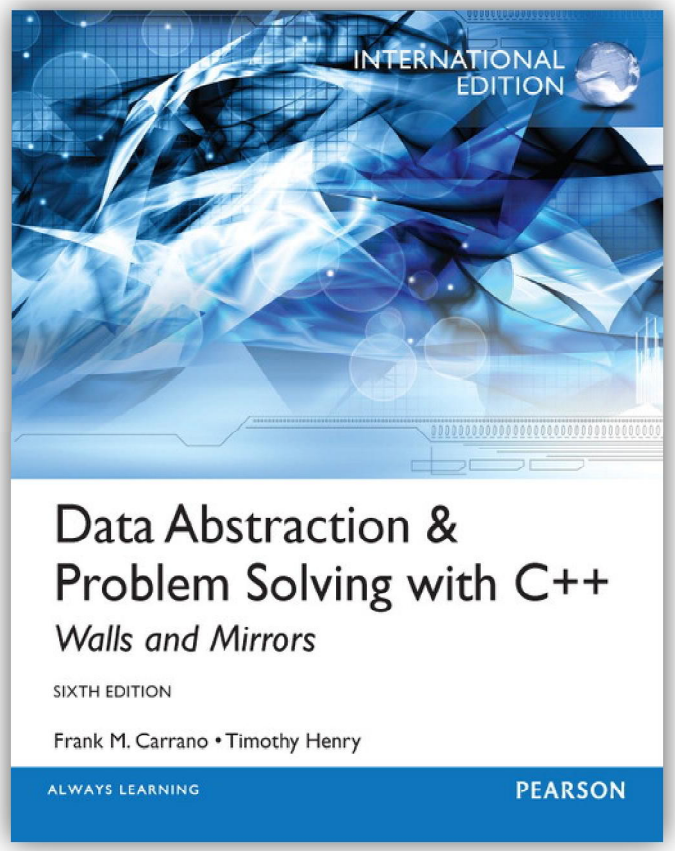
- **Discussion Forums / Social Media:**
  - https://www.facebook.com/groups/1122464611160544/
  - **Steven and TAs will monitor this Facebook group**

- **Announcement:**
  - Not so important/casual ones → at Facebook Group
  - Important/official ones → at Steven's private IVLE

# Resources: **Textbook**

**Data Abstraction and Problem Solving with C++**
by Frank M. Carrano, published by Pearson



# Assessment: **Overview**

- **CA 60%**
  - 2 x Practical Exam **30%**
    1. Week 6 **10%**
    2. Week 13 **20%**
  - Midterm test (Closed book) **20%**
    - 1 piece of A4 **HANDWRITTEN** reference sheet
    - **Current plan: Saturday of Week 08**
  - "Lab" exercises **10%**

- **Final Exam (Closed book) 40%**
  - 1 piece of A4 **HANDWRITTEN** reference sheet

# Assessment: **Tutorial + Lab Hybrid**

- Weekly 2 hours tutorial + lab session:
  - Discuss tutorial questions
  - Discuss / hands-on for lab questions
  - Your TA == Tutorial + Lab TA
  - Submit 1 take home exercise to an online judge (details during first lab)
    - 9 weeks (1% each), but take the best 7 = **7%**
    - Last **3%** for in-class attendance+participation

# Summary and advice

- The labs exercise and PE concentrates more on your programming skill:
  - Ability to translate idea into actual program
- Midterm and final exam focus more on your problem solving skill:
  - Ability to understand and reason about the problem
  - Ability to apply your knowledge to formulate solution
- You need to spend time on:
  - Actually coding to improve your skill
  - Thinking hard about the content of the lectures as memorization does not help