CS206 Intro to Data Structures

Fall 2020

Course Goals

1. Become a better computer scientist
2. Learn about common data structures
    1. Implementation
    2. How and when to use each
3. Understand Object Oriented program design and its implementation in Java
4. Develop an understanding of UNIX
5. Become a better Java programmer

Things to Know

- Course website
  - www.cs.brynmawr.edu/cs206
    - usually updated after each class
- Syllabus
  - www.cs.brynmawr.edu/cs206/syllabus.html
    - usually updated on weekend for next week's material
- Homeworks
  - Approximately weekly, assigned Friday.
  - Typically due on Thursday before midnight
  - Help in lab (Park 231) Sunday-Thursday evening
    - starting next week
  - Homeworks should trail lectures so you should be able to start immediately.

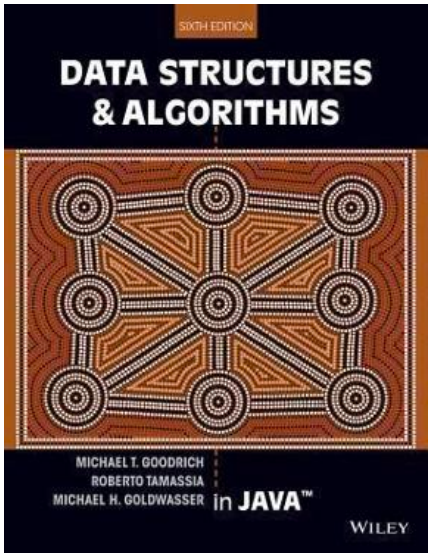
More Things to Know

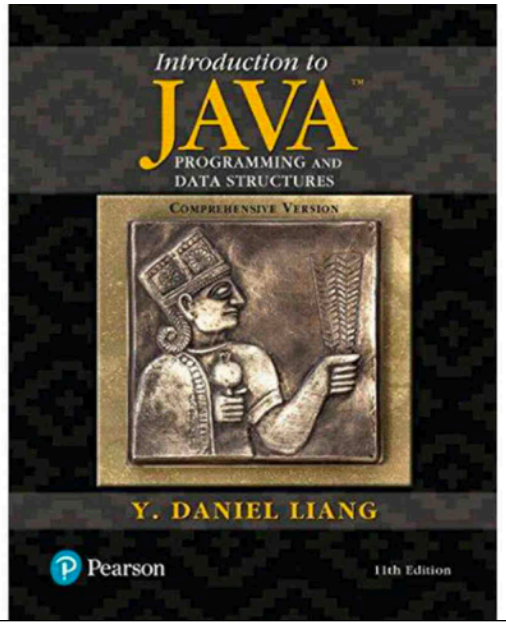
- CS account
  - If you do not have a cs account, you will
- Lab:
  - F 2:40pm-4:00pm
  - Attendance in lab not required.
    - I will ask for something handed in with each lab
    - Must be submitted by 11:59pm Saturday
- Software: Java, Visual Studio Code, Unix

Textbooks

Neither is required.

Both are good references





Grading

- Homework 45%
  - Almost all of you time outside of class will be on homework.
- Lab 5%
- Midterms (2) 32%
  - Oct 6
  - Nov 3
- Final exam 18%

Data Structure?

- Wikipedia: a **data structure** is a **data** organization, management, and storage format that enables efficient access and modification
- We will talk about approximately 8 data structures
  - How to use
  - Why to choose this one
  - How to implement

Data Structures

- Array
- ArrayList
  - it grows and shrinks
- Maps / Hashtables
  - going beyond numeric indexes
- Stacks and Queues
- Linked Lists
- Trees
- Graphs

Programming techniques and concepts

- Object oriented programming
  - inheritance, generics, …
- Searching
- Sorting
- Recursion
- Analysis