Data Structures and Algorithms in Java

Course Mechanics

Outline

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2 Goal

3 Prerequisites

4 Course Staff

5 Sessions

6 Recommended Texts

7 Grading Scheme

8 Software

9 Policies

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Topics Covered

Website

Website

https://www.swamiiyer.net/cs210

What's on the site?

- Announcements (landing page)
- Course Info
- Calendar
- Lecture Material
- Assignments
- Resources

Goal

Goal

Survey some of the most important algorithms and data structures that are in use today

Prerequisites

Prerequisites

CS110 (Introduction to Computing) with a grade of C- or better or

Permission of the instructor

Course Staff

Course Staff

Instructor

- Name: Swami Iyer (Senior Lecturer I, Computer Science Department)
- Academic Interests: evolutionary dynamics on complex networks, coding, pedagogy
- Contact Information
 - Office: M-3-201-14
 - Email: siyer@cs.umb.edu (please start subject line with [CS110])
- Office Hours
 - Tue Thu 10:00 AM 12:00 PM (in-person)
 - Wed 10:00 AM 12:00 PM (remote)

Teaching Assistants (TAs): Navkar Jain, Paul Maynard, Zhen Lu

Course Assistants (CAs): Gibeom Choi, Giorgi Karazanashvili, Vijay Tummalapalli

Supplemental Instruction (SI) Leader: Sarah Wilkinson

Sessions

Sessions

Class

Section	When	Where
1 4, 7, 8	Tue Thu 2:00 PM 3:15 PM	Y-2-2310

Discussion

Section	When	Where
1	Tue 12:30 PM 1:45 PM	W-1-0031
2	Thu 12:30 PM 1:45 PM	M-3-0730
3	Tue 4:00 PM 5:15 PM	W-1-0045
4	Thu 4:00 PM 5:15 PM	W-1-0044
7	Tue 9:30 AM 10:45 AM	M-1-0420
8	Thu 9:30 AM 10:45 AM	M-1-0420

Supplemental Instruction (SI): details to be determined

Tutoring: available through Subject Tutoring Program





ROBERT SEDGEWICK | KEVIN WAYNE

Grading Scheme

Grading Scheme

Assessment	% of Final Grade
Programming Assignments (6)	30
Examss (2)	60
Participation	10

Programming assignments: biweekly, on interesting computational problems

Exams: programming (Mar 25/27 and May 6/8) and written (Apr 1 and May 13)

Participation: best 10 in-class quizzes (7%) and discussion attendance (3%)

Up to 2% extra points for attending the SI sessions

Up to 0.01x% extra points if x% of the class completes the end-of-semester course evaluation

If overall score is within 0.5% of a higher grade, it will be elevated to that grade

Software

Software

Piazza

Gradescope

Programming environment

Zoom

Policies

Policies

Classroom

Piazza

Makeup Exam

Regrade Request

Collaboration

Accommodations for Students with Disabilities

Campus Closure

Immediate Action Items

Sign up for Piazza

Sign up for Gradescope

Setup the programming environment

Fill out the questionnaire available on Gradescope

Complete the SI poll

Sign up for CS account

Chapter 1: Procedural Programming

- Your First Programs
- Basic Data Types
- Control Flow
- Arrays
- Input and Output
- Defining Functions

Chapter 2: Object-oriented Programming

- Using Data Types
- Defining Data Types
- Design Principles

Chapter 3: Algorithms and Data Structures

- Analysis of Algorithms
- Basic Data Structures
- Union-find

Chapter 4: Sorting

- Elementary (Selection, Insertion, and Shell) Sorts
- Merge Sort
- Quick Sort
- Priority Queues
- Applications

Chapter 5: Searching

- Symbol Tables
- Hash Tables
- Binary Search Trees
- Applications