

CSC 300 Data Structures in Java I
2019-2020 Fall
Tue & Thur 1:30PM – 3:00PM
CDM 216
<http://d2l.depaul.edu/>

Prof. Will Marrero
CDM 737
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Tue 2:00PM-3:00PM & 4:45-5:15PM

Supplemental Instruction

This course receives support through the Supplemental Instruction program. The supplemental instruction leader for this class is David Anderson. Please see the following webpage for the supplemental instruction schedule

<https://resources.depaul.edu/supplemental-instruction/session-schedule/Pages/default.aspx>

Course Summary

This is the first course in a two-course sequence on data structures using Java. The course introduces basic Java programming, reviews recursion, introduces asymptotic notation, and focuses mainly on linear data structures including arrays, linked lists and their variants, stacks and queues, and data structures supporting disjoint-set operations. The implementation of the basic operations on each data structure are discussed and analyzed in terms of their efficiency. The applications covered highlight and exploit the unique characteristics of the data structures.

Prerequisites

CSC242 or CSC243

Learning Outcomes

After successful completion of this class, students should be able to:

- design and implement simple classes in Java
- draw a “boxes and arrows” memory model diagram for variables and objects in a program
- use arrays, lists, stacks, queues, and union-find to solve problems
- implement stack and queue data structures using arrays and using linked lists
- use a debugger to step through a program and to uncover the current state of its variables
- analyze the performance characteristics of programs

The Java programming language and development environment

We will be using the Java programming language as well as the Eclipse IDE. See D2L for links you can use to download these tools onto your computer.

Grading Policy

Your overall grade for the course will be computed as follows:

Homework	40%
Quizzes	10%
Midterm exam	25%
Final exam	25%

Letter grades will be assigned according to the table below; however, the instructor reserves the right to adjust the scale in the student's favor. In other words, the table indicates the minimum letter grade you will receive for the given overall percentage. You may receive a slightly higher grade if the instructor feels an adjustment is necessary.

93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
60-66	D
0-59	F

Textbooks and Printed Resources

Algorithms 4e by Robert Sedgewick and Kevin Wayne (Addison-Wesley, 2011). ISBN: 9780321573513

Core Java SE9 for the Impatient, 2nd edition by Cay Horstmann (Addison-Wesley, 2015). ISBN: 9780134694726

Exams

The midterm exam is on Tuesday, October 22 during the first half of class. The final exam is on Tuesday, November 26, 5:45PM – 7:45PM. Block these times out now as I am not available to administer the exam on a different day. Exams are closed book and closed notes except for a single 8.5" by 11" sheet of notes (both sides) that must be turned in with the exam. The sheet of notes will be collected with the exam and not returned so make a copy for yourself before coming to the exam.

Homework

Students should expect a homework assignment due every week. Homework will typically be due by 11:59PM the day before a class meeting. All assignments will be posted in the dropbox section of D2L and students must submit their assignments in the dropbox section of D2L before the deadline posted for the assignment. All deadlines are enforced using the clock on D2L. Students are responsible for checking the Dropbox section of D2L for assignments. Late assignments will not be accepted so please make sure to submit early to ensure you meet the posted deadline. You may resubmit as often as you like before the deadline. I will grade only the last submission you make.

Circumstances come up where a student may be unable to complete an assignment on time. Since I do not accept late homework, I will drop the single lowest homework grade before computing the homework average. This means you can miss a single assignment without hurting your grade.

Also, on some assignments, you will be allowed to resubmit for a better grade. The names of the D2L dropboxes for these resubmissions will end in 'R'. The deadline for the resubmission is one week after the original deadline and there is a 15 point penalty on resubmissions. If the grade on your resubmission is higher, it will replace the grade of your original submission for that assignment. Note that you are allowed to make use of the resubmit option even if you failed to submit anything originally.

Quizzes

Students should also expect a quiz every week. Quizzes are also due by 11:59PM the night before a class meeting. Quizzes can be retaken once to try to improve your grade so it really pays to start these early. They are meant to insure that you are keeping up with the material, so please make sure you take advantage of them and ask questions in class if you don't understand the quiz solutions. Quizzes are individual work and may **not** be completed in groups.

Collaboration

Students may work in groups of at most 3 students on the homework assignments under the following conditions:

- All students in the group must contribute to all parts of the assignment. You may not divide up the assignment and have different students working on different parts. Relying too much on other members of your group on homework will make passing the exams very difficult.
- Each student must submit a solution to the assignment; however, if you collaborated with other students, you must list their names in the comment box when submitting. Failure to do so is considered plagiarism.
- If you worked in a group and indicated the names of all group members in the submission, it is permissible to submit an identical file as another member of your group or to submit a simple note saying who you worked with and which member of the group submitted the actual assignment.

Tentative Schedule

Below is the planned schedule for the class so that students can prepare ahead of time for each class. The schedule is tentative and subject to change, although the most likely deviation would be due to the amount of time required to cover the topics rather than the choice of topics or the order in which we cover them.

Class	Topics	Algorithms	Core Java
1	Using arrays and iteration & eclipse	Section 1.1	Chapter 1
2	Intro to classes and objects		Section 2.1-2.6
3	Data Abstraction & debugger	Section 1.2	Sections 3.1-3.3
4	Interfaces & JUnit		Sections 4.1-4.4
5	Stacks and Queues	Section 1.3	Sections 5.1-5.2
6	Midterm Exam		
7	Linked List structures	Sections 1.3	Section 6.1-6.3
8	Recursion and Linked Structures		
9	Bag, Iterator, Runtime Analysis	Sections 1.3, 1.4	
10	Union Find	Section 1.5	

Email and Discussion Forum

Email and the D2L Discussion forum is the primary way I communicate with students outside of class. To make communication as smooth as possible, please make sure to do the following:

- Students should be sure their email listed under "demographic information" at <http://campusconnect.depaul.edu> is correct. All my private emails to you will go to that address.
- If you send me an email, send it from an email account that makes it obvious to me that you are a student in my class. Also, include the course number (CSC300) in the subject. You have the best chance of getting through the email spam filter and of getting a reply from me if you use your DePaul email address. You have the greatest chance of the email being filtered or of me ignoring it if you send it from an address that I cannot recognize immediately as a student in my class. (I once had a student send me email from way2sexy@hotmail.com and complain 2 weeks later that I wasn't answering his email.)
- Post any questions that do not include code for homework assignments on the D2L discussion forum. This makes it possible for other students to answer your question which means you may get an answer quicker this way than if you sent it to me via email. If you do send it to me via email, I will just copy and paste it to the discussion forum anyway (as long as it is not of a personal

nature, like your grade in the class) so give your classmates a chance to answer your question and post it on the discussion forum yourself.

- All students must subscribe to the D2L discussion forum. I will make announcements to this forum and all students are responsible for announcements posted there. By subscribing, you will receive all discussion forum posts by email.
- If your question was answered in the lecture or on the discussion forum, I will simply refer to the lecture or the discussion forum. So if you did not understand something I said in class or in the discussion forum, be specific. Point out exactly what you didn't understand in my prior communication so that you don't get the generic reply of watch the video/read the discussion forum.

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted on D2L and notice sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in Campus Connect.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor. Also, you must fill out the Academic Integrity form posted on D2L.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at:

<http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.

Lewis Center 1420, 25 East Jackson Blvd.

Phone number: (312)362-8002

Fax: (312)362-6544

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