Course Materials for CIS 300, Spring 2015

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GTAs

The GTAs will be responsible for grading homework assignments.

Ying Chen

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Lab Assistants

- Wyatt Watson
- Jonathan Kress
- Josh Reed
- Adam Nickle

Required Textbook

*Data Structures in C#,* Rod Howell.

Recommended Textbook

If you would like to refer to a textbook on programming in C#, I can recommend:

- *Programming in the Key of C#: A Primer for Aspiring Programmers*, Charles Petzold.

Prerequisite

The prerequisite for this course is CIS 200 with a C or better. If you do not meet the prerequisite requirement for this course, you should see me immediately. It is your responsibility to drop this course if you do not meet the prerequisite requirement. The department and the College of Engineering reserve the right to drop you from this course if you do not meet the listed prerequisites.

Learning Outcomes
Students should attain competence in:

- Using interfaces to (partially) define a data structure
- Implementing and using standard versions of classic data structures: lists, stacks, queues, trees, and hash tables
- Implementing and using elementary algorithms for searching and manipulating a data structure
- Using recursion, including recursive definitions of data structures like lists and trees
- Using and implementing algorithms for sorting
- Understanding performance differences between various algorithms and data structures

Programming Environment

One of the following two development environments must be used for the programming assignments:

- Microsoft Visual Studio 2013. If you are enrolled in this class, you can download this product for free from Microsoft DreamSpark (see below) for your own personal use. However, these are very large downloads. This software is also available on the Windows machines in the public labs in Nichols 21, 22, 122, and 126, as well as certain other public labs on campus. Please note that some of these labs are reserved for classroom use at certain times of the day - be sure to check the schedules posted at the doors.
- Microsoft Visual Studio Express 2013. This is a free version of Visual Studio 2013. It is missing a few features, but it contains all of the features that you will need for this course. It is also a much smaller download. It can be downloaded directly from Microsoft. While it is completely free, registration is required within 30 days of installation.

Both of these software packages require a Microsoft operating system. If you do not have a Microsoft operating system, you can download one for free from Microsoft DreamSpark (see below) for your own personal use. You will need to install it either on a separate bootable partition of your hard drive or on an emulator.

Microsoft DreamSpark

All students enrolled in CIS classes at KSU have access to certain Microsoft software packages for free through Microsoft DreamSpark. Early in the semester, you should receive an email giving you a user name and password for accessing Microsoft DreamSpark. You will need to use Internet Explorer for any downloads. Please note that any software obtained in this way is licensed for your own personal use, and may not be distributed to anyone else.

Topics

Time permitting, I would like to cover the following topics (not necessarily in this order):

- Using Visual C# to construct GUIs
- Using the Visual C# debugger
- Event-driven programming in C#
- Strings and related structures
- File I/O
- Stacks
- Queues
• Lists
• Trees
• Binary search trees
• Priority queues
• Tries
• Hashing
• Sorting
• Graphs

Grading

• Lab assignments: 20%
• Homework assignments: 20%
• Exam 1, Feb. 18: 12%
• Exam 2, Mar. 13: 12%
• Exam 3, Apr. 17: 12%
• Final Exam, 24%:
  o 9:30 section: Thur., May 14, 11:50am-1:40pm
  o 1:30 section: Wed., May 13, 11:50am-1:40pm

Lab Assignments

During each lab session, unless an exam is scheduled, a lab assignment will be given. Lab assignments must be completed in the lab during the time allotted for the lab. Full credit (2 points) will be awarded for successful completion of the assignment. Half credit (1 point) will be awarded for a legitimate but unsuccessful attempt to complete the assignment. The lowest five scores will not be counted toward your final grade. No absences will be excused - if you fail to attend a lab, you will get no credit for the assignment.

Homework Assignment

Six programming assignments will be given as homework during the course of the semester. All solutions must be submitted electronically by the given due date. Late submissions will be accepted with a penalty of 1 point (out of 100) per hour, or any portion of an hour, late; thus, if a submission is 1 minute late, the penalty is 1 point. If multiple solutions are submitted for the same assignment, only the last one will be graded. No submissions will be accepted after three days (i.e., 72 hours) past the due date. The lowest score you receive on these assignments will not be counted toward your final grade.

Exams

Each of the first three exams will be a 50-minute exam covering roughly 25% of the course material. The Final Exam will be comprehensive. Except under extreme circumstances (as judged by me), no make-up exams will be given.

Grading Scale

Final grades will be assigned according to the following scale:

• 90%-100%: A
• 80%-89%: B
• 70%-79%: C
• 60%-69%: D  
• Below 60%: F

Course Sections

This semester, there are two sections of this course. You must attend the section in which you are enrolled. Lab assignments and exams may be different in the two sections, and the material covered may be different.

Academic Honesty and Classroom Conduct

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one’s work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

In this class, you may discuss homework assignments with others, and you may help each other to find errors in your code; however, you must write up your own solutions yourself, without using either complete or partial solutions from your classmates, the Internet, or other sources. Unless you are instructed otherwise, you must complete your lab assignments without the help of your classmates, the Internet, or other sources outside the classroom (the instructor, a GTA, and lab assistants will be available to help you if you need it). You must do the exams with no assistance from others. If you are in doubt about what is permissible, please ask me.

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

K-State Online

All assignments and other course materials will be distributed via K-State Online (classic). Grade information may be accessed there, and announcements will be posted from time to time. Important class messages will be emailed to your KSU email addresses and posted as announcements. You must be enrolled in the course to access K-State Online.

Disabilities

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student
enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

How to Succeed in This Course

- **Prepare for labs.** Preparatory readings and the slides to be used will be available on K-State Online in advance (usually two days). Taking some time to familiarize yourself with the material will help you to do well on the lab assignments, as well as to learn more from the lab experience.

- **Come to lab.** Simply by coming to at least 35 of the 40 labs and trying to complete them will get you half of the total points allotted to lab assignments, or 10% of the total points for the course. Furthermore, by trying, you will undoubtedly complete many of them, which will earn you even more points. (Note that attempting 35 and completing just 21 will still get you 80% of the lab points). Finally, what you learn from this experience will help you to do well on the homework and the exams.

- **Don't be afraid to ask for help on labs.** While there is value in figuring things out on your own, there is limited time to complete the lab assignment. If you seem to be stuck on something, or if something in the instructions doesn't make sense to you, ask for help from me or one of the lab assistants - that's what we're there for. A little help can often make a big difference.

- **Complete any unfinished labs on your own.** Even if you don't get credit for completing a lab assignment, you will learn from completing it on your own. This will help you to do well on the homework and exams.

- **Start homework assignments early.** Programming often takes longer than you expect. Starting early will help you to complete the assignments on time.

- **Review model solutions.** Even if you completed the assignment, seeing how I did it can help you to learn more.

- **Take advantage of exam materials.** Well before each exam, I will post a study guide and some exams I have given in the past. Using these resources to guide your study will help you to be better prepared for the exams.

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