CSE 017– Programming and Data Structures

Summer 2020 Session 2

Instructor

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Textbook

- Introduction to Programming Using Java - Eighth Edition
  David J. Eck, Hobart and William Smith Colleges
  https://open.umn.edu/opentextbooks/textbooks/introduction-to-programming-using-java-seventh-edition
- Think Data Structures: Algorithms and Information Retrieval in Java
  Allen B. Downey
  https://open.umn.edu/opentextbooks/textbooks/think-data-structures-algorithms-and-information-retrieval-in-java

Online Classroom

- Slack
  https://join.slack.com/t/lu-cse017-s20/shared_invite/zt-fg0xz339-aRm0~dih20raJmugt3AYDw
- Piazza
  https://piazza.com/lehigh/summer2020/cse017011
- Repository
  https://github.com/LehighCSE/CSE017-S20

Grading

- Participation: 20%
- Homework: 20%
- Weekly Quizzes: 50%
- Final Exam: 10%

Academic Integrity

The work you submit in CSE 017 must be entirely your own. You should not consult internet resources when working on programming assignments, unless they have been explicitly approved by the professor or TA. While you are not forbidden from discussing basic concepts and strategies with friends and classmates, the copying or sharing of solutions to programming assignments, in whole or in part, is never acceptable. Such cases will be referred to the University Committee on Discipline and, if found guilty, you may be given the failing grade WF in the course. You should keep in mind that computer programs exhibit an individual's "style" just as much as other forms of authorship. Changing variable

names, editing comments, or making other trivial updates in an attempt to hide plagiarism is rarely effective. Programming assignments will be preprocessed into a form amenable to using MOSS for plagiarism checking. You may not submit work you used in a prior iteration of this course. All submissions must be based off what you do during the current semester. If you have questions about this policy at any point throughout the semester, ask. It is not better to ask for forgiveness than to ask for permission when your academic career is at stake.

Accommodations for Students with Disabilities

If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, Williams Hall, Suite 301 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted The Principles of Equitable Community Lehigh University endorses

The Principles of Our Equitable Community

[http://www.lehigh.edu/~inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf]. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

Tentative Schedule

Week 1 – Tools and classroom technologies introduction

- Day 1 – Introduction
- Day 2 – Git and Version Control
- Day 3 – Java and the JVM
- Day 4 – IDEs, repl.it, testing / Quiz 1

Week 2 – Object Oriented Programming

- Day 5 – Classes and objects
- Day 6 – Thinking in Objects
- Day 7 – Polymorphism and Recursion
- Day 8 – Recitation / Quiz 2

Week 3 – Lists, Stacks, Queues, Linked Lists

- Day 9 – Lists and stacks and queues
- Day 10 – Linked Lists and Recursion
- Day 11 – Doubly Linked Lists
- Day 12 – Recitation / Quiz 3

Week 4 – Sorting and Searching

- Day 13 – Insertion, bubble, merge
- Day 14 – quick, binary, heap
- Day 15 – Binary search tree
- Day 16 – Recitation / Quiz 4

Week 5 – Graph Data structures

- Day 17 – Graph theory and implementation
- Day 18 – Breadth first search and Depth first search
- Day 19 – Shortest path algorithms
- Day 20 – Recitation / Quiz 5

Week 6 – Review

- Day 21 – Java and tools
- Day 22 – OOP, lists, stacks, queues
- Day 23 – Sorting and searching
- Day 24 – Graphs / Wrap up