Today's class and near future

• Today we have:
  • Video on exam solution
  • Review of topics covered in class but not on exam: would be good to review these slides/videos. Ask questions on Piazza or email.
• Thursday:
  • More on games and intro to pa3: games project
• Next Tuesday:
  • Start on Chap. 5.5 Data Compression, at least through the famous Huffman encoding.

Inheritance

• Basics are presented in class 13 slides
• Used passively in pa2, with AbstractMap helping with HashMap implementation
• Problem on homework 4: Base class Shape, subclasses Circle and Square, gives some useful practice

Games

• Intro in class 14 of March 24: slides, video
• Continued in class 15 of March 26: slides, video
• Will be subject of pa3 and class on this Thursday, Apr. 9

Algorithm Techniques

There are patterns in algorithms worth studying
We’re covering:
• Divide and conquer: we already saw examples, reviewed for exam, so “covered”.
• Greedy algorithms: follow what appears to be best at each step: not on exam
• Dynamic programming: save partial results as you go, then reuse them: not on exam, will be used in pa3

Greedy Algorithms

• Change-making with US coinage: intro in class 12 of Mar 5
• Interval Scheduling (unweighted case): class 14 of Mar 24
Dynamic Programming

- Binomial Coefficients: can build up table and use, much better than recursive computation, in class 12 of Mar. 5
- DP for change-making with non-US-coinage: code in class 12, worked-out example in class 15 of Mar. 26, also in class 15 slides from Prof. Haspel, and problem in homework 4.
- Use in genomics: class 15 slides from Prof. Haspel (but details not covered here).
- Weighted interval scheduling using DP: also in the slides from Prof. Haspel