How to write algorithmic solutions: An ideal algorithmic solution must show Basic Idea in plain English, the Algorithm in pseudo-code, a sketch or argument of the Proof of Correctness, Time and Space Complexity Analysis, and a Lower Bound for the time and space complexity. The last item is not needed for your solutions in this class!

Reminder: As in the previous homework add a signed statement: I have adhered to the collaboration policy for this class and whenever no explicit citations or sources of help are indicated, what I have presented is my own work.

Problems

16. (Exercise) Solve these exercises (These will not be graded): Exercise 8.2-1, p170; Exercise 8.3-1, p173; Exercise 9.3-3, p192;

17. (Regular) The binary system has base 2, while the decimal system has base 10. If the base of my system is $n$, how many digits do I need to express a number that is at most $n^k$? Now use this information to solve Exercise 8.3-4, p173.

18. (Extra Credit) Solve Exercise 8-5, p180.

19. (Regular) Solve problem 9.3-1, p192.


22. (Extra Credit) Solve 12.2-8, p260.

23. (Exercise) Solve 13.3-2, p287. Handdrawn trees are acceptable.

24. (Exercise) Run all the animation demos recommended in class.