Final Exam: Notes

The final exam will be Wednesday, August 10 from 6:00-8:20, WWH 101. It will be closed book and closed notes. No electronic devices permitted.

Topics:

• Order of magnitude comparison
• Worst case asymptotic running time analysis.
• Sorting algorithms: Insertion sort, selection sort, heapsort, mergesort, quicksort, bucket sort.
• Lower bound on comparison sort.
• Set implementations: hash tables (chaining), heaps, 2-3 trees.
• Depth-first search, topological sort.
• Shortest path algorithms: Dijkstra’s and Floyd-Warshall
• Minimum spanning tree algorithms: Prim’s and Kruskal’s
• Union-find. Union-find trees with rank-based merging and path-compression.
• Algorithm design techniques: Greedy algorithms, dynamic programming.

Not on the exam: NP-completeness, exhaustive state-space search, branch and bound, whatever is new in the lecture on August 3.