Exam 2 Study Guide – Thursday, Dec 14th

The exam is on the following chapters:

Chapter 15, 16.1-16.3, 22, 23,24

It is very similar to the homework assignments, quizzes and material we covered in class. You will be expected to understand all the algorithm’s time efficiency, proving an algorithm’s correctness and writing pseudo code.

Here is a list of topics:

Dynamic Programming – what is dynamic programming and how do we use it to solve problems. Here are a few problems we looked at (in class and/or in text) solving using dynamic programming solutions:

Fibonacci Numbers

Coin-row

Change Making

Knapsack

Longest Common Sequence

Robot Coin Collection

Edit Distance

Triangle of Numbers

Greedy Algorithms – what are greedy algorithms and how do we solve problems with them. We looked at:

Knapsack

Change Making

Huffman Codes and Trees

And the graph greedy algorithms below

Elementary Graphs

BFS

DFS

Topological Sorting

Minimum Spanning Trees

General

Prims

Kruskal

Shortest Path Problems

Warshalls/Floyd

Dijkstra’s

DAG Shortest Paths procedure \*Maybe

Bellman-Ford \* Maybe