CSE 473 QUIZ 1 REVIEW LIST
OPEN BOOK, OPEN NOTES, IN-CLASS EXAM
NO COMPUTERS OR PORTABLE WEB DEVICES

1. Search

   - Be able to give a formal state-space model for a problem expressed in English. Formal means to specify S, s, A, g and (possibly) c as sets or functions as appropriate.
   - Be able to specify what would be the illegal states for a given problem.
   - Be able to generate part of a search tree for a given model, either depth-first or breadth-first.
   - Be able to answer questions about the general tree-search and general graph-search algorithms given in Chapter 3 and how they differ.
   - Be able to explain the use of a heuristic function in a search or to give an example of one for a stated problem.
   - Be able to motivate the use of heuristic-search vs. blind search.
   - Be able to apply the following search methods to a well-stated problem and show a portion of the search.
     - greedy best-first search
     - A* algorithm
   - Be able to answer questions about admissibility and consistency with respect to heuristic functions for A*.
   - Be able to answer questions about the complexity, completeness and optimality of the various search variants given in Chapter 3.

2. Local Search

   - Be able to apply steepest-ascent hill climbing to a given problem and show a portion of the search.
   - Be able to answer questions about the simulated annealing approach and and its variants: local beame search and genetic algorithms.
   - Be able to answer concept questions about searching with nondeterministic actions and searching with partial (no) observations.
   - Be able to answer questions about complexity, completeness, and optimality for the above algorithms.

3. Game Playing

- Be able to develop a utility function for a given game or show how a given one works.
- Be able to show how a basic minimax search works for some given example.
- Be able to show how the alpha-beta procedure works for some given example.
- Be able to show how shallow search might be used to improve the alpha-beta procedure.
- Be able to answer questions about how Samuel's checker player works.
- Be able to show how minimax generalizes to games of chance and to evaluate a tree with min, max, and chance nodes.