CSCI 4350/5350

Homework 3

Due: Thursday, October 4 by 11:00pm

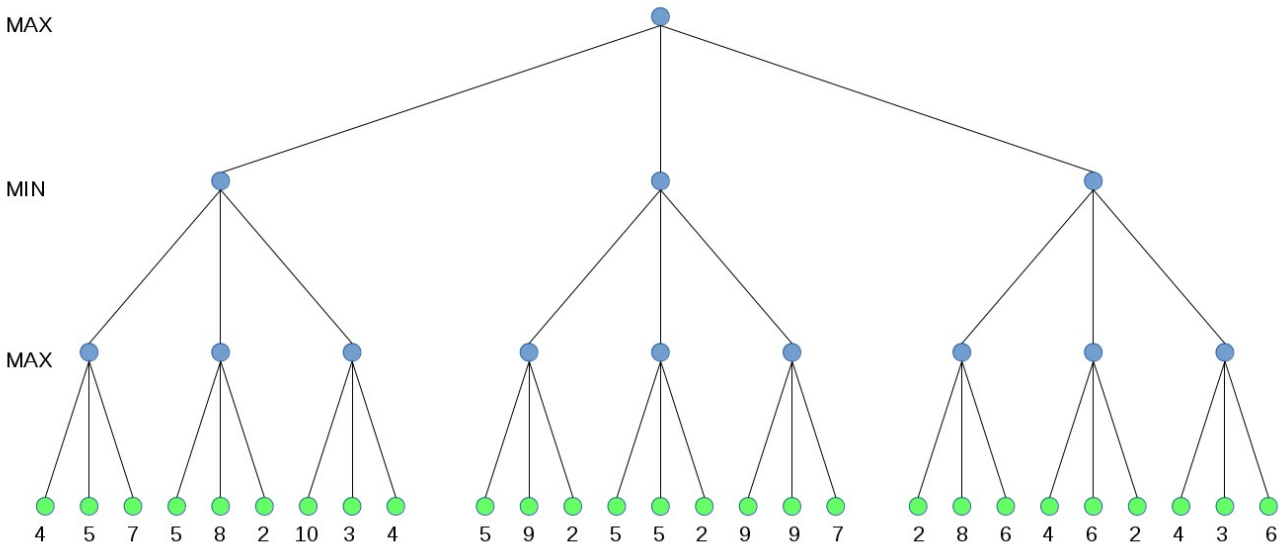
1. (4 points) Give the name of the algorithm that results from these special cases:
   a) Local beam search with k=1

   b) Simulated annealing with T=0 at all times

   c) Simulated annealing with T=infinity at all times

   d) Genetic algorithm with a population size of N=1

2. (8 points) A game tree of depth 4 is shown below, and the root is a MAX node. The utilities of the terminal nodes (green) are provided as well. Use MINIMAX to decide which move should be made from the root. **(1) Write the backed-up MINIMAX value beside each node and (2) mark the selected path.**



3. (8 points) The same game tree is shown below. Conduct an alpha-beta pruning by generating left-most nodes first. **(1) Indicate where and which (α or β) cutoffs occur, (2) circle the nodes which were generated and (3) write the MINIMAX values beside each generated node.**