

CS471 Homework 5

Yiting Gan gna29@purdue.edu

November 23, 2021

Problem 1

$$V_{max,min}(s, d) = \begin{cases} Utility(s) & isEnd(s) \\ Eval(s) & d = 0 \\ \max_{a \in Action(s)} V_{max,min}(Succ(s, a), d) & player(s) = player \\ \min_{a \in Action(s)} V_{max,min}(Succ(s, a), d - 1) & player(s) = opponent \end{cases}$$

Problem 2: (it is actually Problem 4)

$$V_{max,exp}(s, agent, d) = \begin{cases} Utility(s) & isEnd(s) \\ Eval(s) & d = 0 \\ \max_{a \in Action(s)} V_{max,exp}(Succ(s, a), nextAgent, d) & player(s) = player \\ \frac{\sum_{a \in Action(s)} V_{max,exp}(Succ(s, a), nextAgent, mod(d))}{|Actions(s)|} & player(s) = opponent \end{cases}$$