

CS444

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September 11, 2013

Minimax!

```
1: procedure MINIMAX(N)
2:   Inputs
3:     N a node in a game tree
4:   Output
5:     The value for node N
6:   if N is a leaf node then
7:     return value of N
8:   else if N is a MAX node then
9:     Set  $v \leftarrow -\infty$ 
10:    for all children C of N do
11:      Set  $v \leftarrow \max(v, \text{Minimax}(C))$ 
12:    return  $v$ 
13:   else
14:     Set  $v \leftarrow \infty$ 
15:    for all children C of N do
16:      Set  $v \leftarrow \min(v, \text{Minimax}(C))$ 
17:    return  $v$ 
```

Status of Games

Three main categories:

- “Solved”
 - tic-tac-toe
 - Checkers
- Best computer player is better than the best human player
 - Chess
 - Othello
- Best human players are better than the best computer players
 - Go (UCT- upper confidence bounds on trees)
 - Poker (?)