
Algorithm 1: Minimax Algorithm

```
Function Minimax(state, depth, maxPlayer):  
  if depth = 0 or game is over then  
    | return evaluate(state)  
  end  
  if maxPlayer then  
    | bestScore  $\leftarrow -\infty$ ;  
    | foreach possible move move in state do  
    |   | score  $\leftarrow$  Minimax(makeMove(state, move), depth - 1,  
    |   |   | false);  
    |   | bestScore  $\leftarrow$  max(bestScore, score);  
    | end  
    | return bestScore;  
  end  
  else  
    | bestScore  $\leftarrow \infty$ ;  
    | foreach possible move move in state do  
    |   | score  $\leftarrow$  Minimax(makeMove(state, move), depth - 1, true);  
    |   | bestScore  $\leftarrow$  min(bestScore, score);  
    | end  
    | return bestScore;  
  end
```

Algorithm 2: Minimax Algorithm with Alpha-Beta Pruning

```
Function AlphaBetaPruning(state, depth,  $\alpha$ ,  $\beta$ , maxPlayer):  
  if depth = 0 or game is over then  
    | return evaluate(state)  
  end  
  if maxPlayer then  
    | bestScore  $\leftarrow -\infty$ ;  
    | foreach possible move move in state do  
    |   | score  $\leftarrow$  AlphaBetaPruning(makeMove(state, move),  
    |   |   | depth - 1,  $\alpha$ ,  $\beta$ , false);  
    |   | bestScore  $\leftarrow$  max(bestScore, score);  
    |   |  $\alpha \leftarrow$  max( $\alpha$ , score);  
    |   | if  $\beta \leq \alpha$  then  
    |   |   | break;  
    |   | end  
    | end  
    | return bestScore;  
  end  
  else  
    | bestScore  $\leftarrow \infty$ ;  
    | foreach possible move move in state do  
    |   | score  $\leftarrow$  AlphaBetaPruning(makeMove(state, move),  
    |   |   | depth - 1,  $\alpha$ ,  $\beta$ , true);  
    |   | bestScore  $\leftarrow$  min(bestScore, score);  
    |   |  $\beta \leftarrow$  min( $\beta$ , score);  
    |   | if  $\beta \leq \alpha$  then  
    |   |   | break;  
    |   | end  
    | end  
    | return bestScore;  
  end
```
