

Tic-Tac-Toe strategy

In this particular game there is no always winning strategy but there is one leading to a tie. Algorithm we implemented is well known and pretty simple - minimax. Basic idea of this approach is that we check all possible scenarios and alternately minimizing and maximizing the score since there are two players and each of them plays the optimal way for themselves (we assume that our opponent plays optimally). minimax function can be divided into 3 parts:

- checking if current state is terminate one => returns 1 if the result is victory, 0 - if tie and -1 if defeat
- code block that handles maximizing case (it is "AI's" turn so it wants maximum score)
- code block that handles minimizing case (it is human's turn so he wants to win so algorithms minimize the score -1 means that human won)

The nature of the algorithms is recursive and it calls itself with toggle boolean flag telling us that we are maximizing the score in this turn or not.

Unfortunately we didn't manage to implement alpha-beta pruning optimization but surely we will do it in the future.

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