

In this project, I have implemented 3 heuristics. The reasons of choosing these three heuristics are shown below:

1. Number of my moves - 2*number of my opponent's' moves
 - Returns the difference between the number of available moves of computer player and twice the number of available moves to opponent. The multiplier of 2 is to add a penalty for having more moves of opponents.
 - Align with the goal of this game, which is to maximize the number of moves of computer player while minimize the number of moves of opponents.
2. Number of my moves - number of my opponent's' moves
 - Is the difference between the number of available moves of computer player and the number of available moves to opponent.
 - The penalty to number of moves of opponent is less than the first one, but it captures the goal of the game as well
3. Number of my moves
 - Only measure the number of moves of computer player without any penalty of moves of opponent.
 - Have consistent performance of this game even though it seems not as good as previous two heuristics.

The output of running tournament.py is as follows:

Playing Matches

Match #	Opponent	AB_Improved	AB_Custom	AB_Custom_2	AB_Custom_3
		Won Lost	Won Lost	Won Lost	Won Lost
1	Random	10 0	10 0	10 0	10 0
2	MM_Open	6 4	5 5	7 3	7 3
3	MM_Center	8 2	8 2	6 4	6 4
4	MM_Improved	4 6	7 3	5 5	4 6
5	AB_Open	4 6	7 3	5 5	4 6
6	AB_Center	9 1	7 3	7 3	8 2
7	AB_Improved	2 8	5 5	6 4	4 6
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Win Rate:		61.4%	70.0%	65.7%	61.4%

Finally, I chose AB_Custom because its performance is the best among all evaluation functions.