Custom Heuristic Functions

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Heuristic functions

$$score = (my\_moves) - (opponent\_moves) \tag{1}$$

Match	Student vs	Result
1	Random	17 to 3
2	MM_Null	18 to 2
3	MM_Open	12 to 8
4	MM_Improved	15 to 5
5	AB_Null	17 to 3
6	AB_Open	14 to 6
7	AB_Improved	16 to 4
Evaluating Student using equation 1: 77.86%		

Equation 1 calculate different between available moves between player 1 (student) and player 2. Positive number ($score > 0$) tells the student has more moves than the opponent. This give more condfident score for the student to win the game.

$$score = (my\_moves) - (2.0 \times opponent\_moves) \tag{2}$$

Match	Student vs	Result
1	Random	18 to 2
2	MM_Null	20 to 0
3	MM_Open	15 to 5
4	MM_Improved	13 to 7
5	AB_Null	19 to 1
6	AB_Open	13 to 7
7	AB_Improved	14 to 6
Evaluating Student using equation 2: 80.00%		

Equation 2 calcualte the different between player 1 and player 2 available moves by doubling the available moves for the opponent. This make the score value negative (opponent has more moves) much quicker then the 1. This makes the Player 1 (student) to make more aggresive moves twards wining the game, and lead to 80% success.

$$score = distance(player1, player2) \tag{3}$$

Match	Student vs	Result
1	Random	20 to 0
2	MM_Null	18 to 2
3	MM_Open	14 to 6
4	MM_Improved	14 to 6
5	AB_Null	15 to 5
6	AB_Open	13 to 7
7	AB_Improved	10 to 10
Evaluating Student using equation 3: 74.29%		

Equation 3 calculate the distance between the two player locations. I am trying to make the player positions close to each other by calculating the distance between the player's position, and when then distance is greater than 2.0, the make the distance value negative and use as the score value. This allows players to go after each other more aggressively when the distance getter bigger.