

In this project, I've used the following three heuristic functions

function 1 :

```
float(len(my_moves) - 2 *len(opp_moves))
```

which get a winning rate of 74.3% in the tournament

function 2:

```
float(len(my_moves)**2 /(1+ len(opp_moves)))
```

This function gives a winning rate of 67.1%

function 3:

```
float(len(my_moves) - 2*len(opp_moves)) / (float(len(my_moves) + len(opp_moves)+1))
```

this function gives a winning rate of 71.4%

the first and the third one both reached a winning rate higher than 70%.

```
#####
      Playing Matches
#####
```

Match #	Opponent	AB_Improved		AB_Custom		AB_Custom_2		AB_Custom_3	
		Won	Lost	Won	Lost	Won	Lost	Won	Lost
1	Random	9	1	10	0	8	2	10	0
2	MM_Open	8	2	6	4	7	3	9	1
3	MM_Center	9	1	9	1	8	2	8	2
4	MM_Improved	7	3	7	3	6	4	8	2
5	AB_Open	5	5	6	4	5	5	5	5
6	AB_Center	5	5	7	3	7	3	5	5
7	AB_Improved	3	7	7	3	6	4	5	5

Win Rate:	65.7%	74.3%	67.1%	71.4%
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Judging from the result above, the first heuristic function is more stable than the third one, hence , the first heuristic function should be the final choice.