1. Performace:

This script evaluates the performance of the custom_score evaluation function against a baseline agent using alpha-beta search and iterative deepening (ID) called `AB_Improved`. The three `AB_Custom` agents use ID and alpha-beta search with the custom_score functions defined in game_agent.py.

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

	Win Rate:	15.7%	17.1%	21.4%	21.4%

Your ID search forfeited 35.0 games while there were still legal moves available to play.

2. Conclusion:

The evaluation function #2 and #3 have higher performance, since the these two heuristics considered not only the player's performance, but also the opponent's performance, which is a "net" score of the current state.