Heuristic Analysis - Isolation

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Used feature like number of moves current player has, number of moves opponent player has, number of blank spaces, position of current player, position of opponent player.

Heuristics:
1) This one is similar to lecture heuristic. Used to increase the penalty, when the moves don't have good advantage. Formula: number of player1 moves - 2*number of player 2 moves.

2) Second Heuristic has a slight modification from the first. Here the number of blank spaces is considered. Main idea was to penalize the current player if there are more blank spaces. Formula: number of player 1 moves - (blank_spaces)*number of player 2 moves.

3) The main idea behind 3rd heuristic was to give advantage if current player's position is nearer to the center of the board, because When I was trying out isolation on paper noticed that player nearer to the center has more chances of winning the game. Tried different versions using number of current player moves, current player's distance from center, number of opponent player moves, distance of opponent player from center. But, was not sure on which combination would give the best result. So, finally chose the below mentioned formula as it was giving out slightly better results.

Formula: if current_players distance from center is greater than opponent player's distance from center, then current_players chances of winning are low so, used number of current player moves - distance of current player from center - number of opponent player moves.
if current_players distance from center is less than opponent player's distance from center, the current_players chances of winning are high so,
used number of current player moves+distance from center - number of opponent player moves+opponent player's distance from center.

Heuristic	ID_Improved	Student
Heuristic 1	68.57%	68.57%
Heuristic 2	70.00%	69.29%
Heuristic 3	67.14%	70.00%

For future improvement we can try to use a better position heuristic or maybe have a certain predefined moves stored in a table.