Matric No.: 17069887/1

Name: KOH WEI ZHI

My Heuristic Analysis Function

Code:

```
# Customize heuristic func
def custom_heuristic_robinson(game, player):
    if game.is_loser(player):
        return float("-inf")
    if game.is_winner(player):
        return float("inf")

    my_moves = len(game.get_legal_moves(player))
    opponent_moves = len(game.get_legal_moves(game.get_opponent(player)))

    return my_moves  - (opponent_moves * 2)
```

Explanation:

This customized heuristic function is applied for offensive strategy. This always put opponent is the worst possible position and at the cost of reducing the available moves for the AI player. I shifted the weight over to the opponent move count. So now I am favoring minimizing the number of moves that the opponent can make. This results in the AI playing the game more aggressively.

Result:

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Evaluating: ID_Improved

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Playing Matches:

Match 1: ID_Improved vs Random Result: 82 to 18

Match 2: ID_Improved vs MM_Null Result: 70 to 30

Match 3: ID_Improved vs MM_Open Result: 54 to 46

Match 4: ID_Improved vs MM_Improved Result: 39 to 61

Match 5: ID_Improved vs AB_Null Result: 62 to 38

Match 6: ID_Improved vs AB_Open Result: 62 to 38

Match 7: ID_Improved vs AB_Improved Result: 54 to 46

Results:

ID_Improved 60.43%

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Evaluating: Student Robinson

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Playing Matches:

Match 1: Student Robinson vs Random Result: 84 to 16

Match 2: Student Robinson vs MM_Null Result: 70 to 30

Match 3: Student Robinson vs MM_Open Result: 58 to 42

Match 4: Student Robinson vs MM_Improved Result: 53 to 47

Match 5: Student Robinson vs AB_Null Result: 70 to 30

Match 6: Student Robinson vs AB_Open Result: 66 to 34

Match 7: Student Robinson vs AB_Improved Result: 62 to 38

Results:

Student Robinson 66.14%

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Evaluating: Student Jun Shou

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Playing Matches:

Match 1: Student Jun Shou vs Random Result: 84 to 16

Match 2: Student Jun Shou vs MM_Null Result: 74 to 26

Match 3: Student Jun Shou vs MM_Open Result: 59 to 41

Match 4: Student Jun Shou vs MM_Improved Result: 55 to 45

Match 5: Student Jun Shou vs AB_Null Result: 71 to 29

Match 6: Student Jun Shou vs AB_Open Result: 70 to 30

Match 7: Student Jun Shou vs AB_Improved Result: 60 to 40

Results:

Student Jun Shou 67.57%

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Evaluating: Student Hao Siong

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Playing Matches:

Match 1: Student Hao Siong vs Random Result: 86 to 14

Match 2: Student Hao Siong vs MM_Null Result: 77 to 23

Match 3: Student Hao Siong vs MM_Open Result: 55 to 45

Match 4: Student Hao Siong vs MM_Improved Result: 51 to 49

Match 5: Student Hao Siong vs AB_Null Result: 68 to 32

Match 6: Student Hao Siong vs AB_Open Result: 66 to 34

Match 7: Student Hao Siong vs AB_Improved Result: 59 to 41

Results:

Student Hao Siong 66.00%

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Evaluating: Student Marina

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Playing Matches:

Match 1: Student Marina vs Random Result: 87 to 13

Match 2: Student Marina vs MM_Null Result: 65 to 35

Match 3: Student Marina vs MM_Open Result: 52 to 48

Match 4: Student Marina vs MM_Improved Result: 40 to 60

Match 5: Student Marina vs AB_Null Result: 70 to 30

Match 6: Student Marina vs AB_Open Result: 58 to 42

Match 7: Student Marina vs AB_Improved Result: 57 to 43

Results:

Student Marina 61.29%