**REPORT PROJECT 3: Adversarial Search**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Playing Matches (round = 20, depth = 3, fair\_match = True) | | | | | |
| **Times (ms)** | **Match** | **Opponent** | **My\_custom\_player** | | **Win rate(%)** |
| **Won** | **Lost** |
| 150 | 1 | RANDOM | 36 | 4 | 90 |
| 2 | GREEDY | 34 | 6 | 85 |
| 3 | MINIMAX | 26 | 14 | 65 |
| 4 | SELF | 20 | 20 | 55 |
| 200 | 1 | RANDOM | 38 | 2 | 95 |
| 2 | GREEDY | 35 | 5 | 87.5 |
| 3 | MINIMAX | 28 | 12 | 70 |
| 4 | SELF | 20 | 20 | 50 |
| 300 | 1 | RANDOM | 37 | 3 | 92.5 |
| 2 | GREEDY | 35 | 2 | 87.5 |
| 3 | MINIMAX | 29 | 11 | 72.5 |
| 4 | SELF | 20 | 20 | 50 |
| 1000 | 1 | RANDOM | 37 | 3 | 92.5 |
| 2 | GREEDY | 36 | 4 | 90 |
| 3 | MINIMAX | 27 | 13 | 67.5 |
| 4 | SELF | 50 | 50 | 50 |
| Table analysis based on time limit | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Playing Matches(round = 20, time = 150ms, fair\_match = True) | | | | | |
| **Depth** | **Match** | **Opponent** | **My\_custom\_player** | | **Win rate(%)** |
| **Won** | **Lost** |
| 1 | 1 | RANDOM | 26 | 14 | 65 |
| 2 | GREEDY | 20 | 20 | 50 |
| 3 | MINIMAX | 11 | 29 | 27 |
| 4 | SELF | 20 | 20 | 50 |
| 2 | 1 | RANDOM | 31 | 9 | 77.5 |
| 2 | GREEDY | 24 | 16 | 60 |
| 3 | MINIMAX | 18 | 22 | 45 |
| 4 | SELF | 20 | 20 | 50 |
| 3 | 1 | RANDOM | 36 | 4 | 90 |
| 2 | GREEDY | 34 | 6 | 85 |
| 3 | MINIMAX | 26 | 14 | 65 |
| 4 | SELF | 20 | 20 | 55 |
| 7 | 1 | RANDOM | 9 | 31 | 22.5 |
| 2 | GREEDY | 6 | 34 | 15 |
| 3 | MINIMAX | 7 | 33 | 17.5 |
| 4 | SELF | 16 | 24 | 40 |
| Table analysis based on depth | | | | | |

**Question & answer:**

|  |
| --- |
| * **What features of the game does your heuristic incorporate?** *=> The features incorporate: depth and time* * **Why do you think those features matter in evaluating states during search?** *=> It helps find fast best move, has the highest win ratio* |
| * **Analyze the search depth your agent achieves using your custom heuristic?**  *=> Depth affects the results of the best move. Search algorithm to select the appropriate depth. If the depth is too small or the depth is too large then the result is not good* * **Does search speed matter more or less than accuracy to the performance of your heuristic?** *=> Search speed and accuracy are equally important.* |