

War Game Report

Team

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Below are the details for each board and match up combination.
We list the winner, each player's scores, average nodes expanded per move and average time taken to make a move along with the final board state at the end of the game.

The matchups were run with depth 3 for all the boards. We observed that we could go depths greater than 3 for few boards (MiniMax Agent) and upto depth 6 with AlphaBeta Agent for few boards. The details are listed in the report in section 2 under Bonus Work.

Section 1

Playing at depth 3 for all the agents:

BOARD : Keren.txt

```
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
```

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 63.0

P2 Average Move Time : 27.0

END GAME BOARD STATE :

```
B G B G B G
G B G B G B
B G G G G G
G G B G G G
G B G G G B
B G B B B B
```

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 10483

P2 Average Nodes Expanded per Move : 9527

P1 Average Move Time : 13.0

P2 Average Move Time : 2.0

END GAME BOARD STATE :

B G B G B G

G B G B G B

B G G G G G

G G B G G G

G B G G G B

B G B B B B

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 9527

P1 Average Move Time : 33.0

P2 Average Move Time : 1.0

END GAME BOARD STATE :

B G B G B G

G B G B G B

B G G G G G

G G B G G G

G B G G G B

B G B B B B

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 10483

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 14.0

P2 Average Move Time : 26.0

END GAME BOARD STATE :

B G B G B G

G B G B G B

B G G G G G

G G B G G G

G B G G G B

B G B B B B

BOARD : Narvik.txt

99 1 99 1 99 1
1 99 1 99 1 99
99 1 99 1 99 1
1 99 1 99 1 99
99 1 99 1 99 1
1 99 1 99 1 99

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN
P1 SCORE : 704
P2 SCORE : 1096
P1 Average Nodes Expanded per Move : 217740
P2 Average Nodes Expanded per Move : 194736
P1 Average Move Time : 13.0
P2 Average Move Time : 46.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
B B G G G B
B B G G G G
B B G G G B
G B B G B G

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN
P1 SCORE : 704
P2 SCORE : 1096
P1 Average Nodes Expanded per Move : 18012
P2 Average Nodes Expanded per Move : 18893
P1 Average Move Time : 23.0
P2 Average Move Time : 1.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
B B G G G B
B B G G G G
B B G G G B
G B B G B G

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 704
P2 SCORE : 1096
P1 Average Nodes Expanded per Move : 217740
P2 Average Nodes Expanded per Move : 18893
P1 Average Move Time : 29.0
P2 Average Move Time : 1.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
B B G G G B
B B G G G G
B B G G G B
G B B G B G

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN
P1 SCORE : 704
P2 SCORE : 1096
P1 Average Nodes Expanded per Move : 18012
P2 Average Nodes Expanded per Move : 194736
P1 Average Move Time : 1.0
P2 Average Move Time : 38.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
B B G G G B
B B G G G G
B B G G G B
G B B G B G

BOARD : Sevastopol.txt

1 1 1 1 1 1
2 2 2 2 2 2
4 4 4 4 4 4
8 8 8 8 8 8
16 16 16 16 16 16
32 32 32 32 32 32

MATCH TYPE : Minimax Vs Minimax **

Winner is BLUE
P1 SCORE : 226
P2 SCORE : 152
P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 76.0

P2 Average Move Time : 7.0

END GAME BOARD STATE :

B B B B B B

B B B B B B

B B B B B B

G B B B B B

G G B B G B

G B B G B G

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 226

P2 SCORE : 152

P1 Average Nodes Expanded per Move : 175974

P2 Average Nodes Expanded per Move : 152377

P1 Average Move Time : 38.0

P2 Average Move Time : 24.0

END GAME BOARD STATE :

B B B B B B

B B B B B B

B B B B B B

G B B B B B

G G B B G B

G B B G B G

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 226

P2 SCORE : 152

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 152377

P1 Average Move Time : 70.0

P2 Average Move Time : 21.0

END GAME BOARD STATE :

B B B B B B

B B B B B B

B B B B B B

G B B B B B

G G B B G B

G B B G B G

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is BLUE

P1 SCORE : 226

P2 SCORE : 152

P1 Average Nodes Expanded per Move : 175974

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 24.0

P2 Average Move Time : 76.0

END GAME BOARD STATE :

B B B B B B

B B B B B B

B B B B B B

G B B B B B

G G B B G B

G B B G B G

BOARD : Smolensk.txt

66 76 28 66 11 9

31 39 50 8 33 14

80 76 39 59 2 48

50 73 43 3 13 3

99 45 72 87 49 4

80 63 92 28 61 53

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN

P1 SCORE : 535

P2 SCORE : 1118

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 61.0

P2 Average Move Time : 80.0

END GAME BOARD STATE :

B G G G G G

G G B G G G

G G B B G G

G G B G B G

G G G G G B

B G B B B G

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 535

P2 SCORE : 1118

P1 Average Nodes Expanded per Move : 100949

P2 Average Nodes Expanded per Move : 76030

P1 Average Move Time : 62.0

P2 Average Move Time : 3.0

END GAME BOARD STATE :

B G G G G G

G G B G G G

G G B B G G

G G B G B G

G G G G G B

B G B B B G

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 535

P2 SCORE : 1118

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 76030

P1 Average Move Time : 75.0

P2 Average Move Time : 3.0

END GAME BOARD STATE :

B G G G G G

G G B G G G

G G B B G G

G G B G B G

G G G G G B

B G B B B G

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 535

P2 SCORE : 1118

P1 Average Nodes Expanded per Move : 100949

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 25.0

P2 Average Move Time : 23.0

END GAME BOARD STATE :

B G G G G G

G G B G G G
G G B B G G
G G B G B G
G G G G G B
B G B B B G

BOARD : Westerplatte.txt

1 1 1 1 1 1
1 3 4 4 3 1
1 4 2 2 4 1
1 4 2 2 4 1
1 3 4 4 3 1
1 1 1 1 1 1

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN
P1 SCORE : 31
P2 SCORE : 41
P1 Average Nodes Expanded per Move : 217740
P2 Average Nodes Expanded per Move : 194736
P1 Average Move Time : 25.0
P2 Average Move Time : 92.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
G B B B G B
G G B B G B
G G B G G G
G G G B G G

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN
P1 SCORE : 31
P2 SCORE : 41
P1 Average Nodes Expanded per Move : 36003
P2 Average Nodes Expanded per Move : 35006
P1 Average Move Time : 3.0
P2 Average Move Time : 19.0
END GAME BOARD STATE :
B B B G G B
B B B G G G
G B B B G B
G G B B G B
G G B G G G

G G G B G G

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 31

P2 SCORE : 41

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 35006

P1 Average Move Time : 26.0

P2 Average Move Time : 56.0

END GAME BOARD STATE :

B B B G G B

B B B G G G

G B B B G B

G G B B G B

G G B G G G

G G G B G G

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 31

P2 SCORE : 41

P1 Average Nodes Expanded per Move : 36003

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 3.0

P2 Average Move Time : 46.0

END GAME BOARD STATE :

B B B G G B

B B B G G G

G B B B G B

G G B B G B

G G B G G G

G G G B G G

Section 2

BONUS WORK

2. Designing own game boards:

We tested with bigger board sizes to check how large we can go. Below are the details.

Board 1: [need to run in i7 !!!!]
Size : 10x10

1	10	1	10	1	10	1	10	1	10
2	9	2	9	2	9	2	9	2	9
3	8	3	8	3	8	3	8	3	8
4	7	4	7	4	7	4	7	4	7
5	6	5	6	5	6	5	6	5	6
6	5	6	5	6	5	6	5	6	5
7	4	7	4	7	4	7	4	7	4
8	3	8	3	8	3	8	3	8	3
9	2	9	2	9	2	9	2	9	2
10	1	10	1	10	1	10	1	10	1

3. Random Blitz

We implemented flipCoin random M1 Blitz Move functionality. Below are the stats for each board against all the match ups.

Play with random M1 Blitz Move incorporated.

```
BOARD : game_boards/Keren.txt *****
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
1 1 1 1 1 1
MATCH TYPE : Minimax Vs Minimax **
Game Tied
P1 SCORE : 18
P2 SCORE : 18
P1 Average Nodes Expanded per Move : 217740
P2 Average Nodes Expanded per Move : 194736
P1 Average Move Time : 140.0
P2 Average Move Time : 46.0
END GAME BOARD STATE :
B G B G B G
B B G B B G
B G B B G G
B B B G G B
B G G G B G
B B G G G G
```

Game Over

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 10771

P2 Average Nodes Expanded per Move : 9956

P1 Average Move Time : 21.0

P2 Average Move Time : 2.0

END GAME BOARD STATE :

B G B G B G

B G B B G G

G G B G G B

G G B B G G

G B B G G G

B B B G G G

Game Over

MATCH TYPE : Minimax Vs AlphaBeta **

Game Tied

P1 SCORE : 18

P2 SCORE : 18

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 9705

P1 Average Move Time : 58.0

P2 Average Move Time : 1.0

END GAME BOARD STATE :

B G B G G G

G B B G G B

B B B G B G

B B B B G G

B G B G B G

G G B B G G

Game Over

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 15

P2 SCORE : 21

P1 Average Nodes Expanded per Move : 11261

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 1.0

P2 Average Move Time : 33.0

END GAME BOARD STATE :

B G B G B G

G B G B G G
B G B G G G
G B B G G B
B G B G B G
G B G G B G

Game Over

BOARD : game_boards/Narvik.txt *****

99 1 99 1 99 1

1 99 1 99 1 99

99 1 99 1 99 1

1 99 1 99 1 99

99 1 99 1 99 1

1 99 1 99 1 99

MATCH TYPE : Minimax Vs Minimax **

Winner is BLUE

P1 SCORE : 1098

P2 SCORE : 702

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 36.0

P2 Average Move Time : 134.0

END GAME BOARD STATE :

B B G G B B

B B B G B G

G B B G B G

G B G B G B

G B G B B B

G G G B G B

Game Over

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 1200

P2 SCORE : 600

P1 Average Nodes Expanded per Move : 16431

P2 Average Nodes Expanded per Move : 18096

P1 Average Move Time : 2.0

P2 Average Move Time : 109.0

END GAME BOARD STATE :

B B G B B G

B B G G B B

B B G G B B

B G G G B B

B G G B B G
B B B B B B

Game Over

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 1594

P2 SCORE : 206

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 15931

P1 Average Move Time : 51.0

P2 Average Move Time : 2.0

END GAME BOARD STATE :

B B B G G G
G B B B G B
B G B B B B
G B B B B G
B B B G B B
B B B B G B

Game Over

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 797

P2 SCORE : 1003

P1 Average Nodes Expanded per Move : 16838

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 21.0

P2 Average Move Time : 31.0

END GAME BOARD STATE :

G G G G G G
G B B B G G
G B B G G G
G B B B G G
G G G B B G
G G G B B B

Game Over

BOARD : game_boards/Sevastopol.txt *****

1 1 1 1 1 1
2 2 2 2 2 2
4 4 4 4 4 4
8 8 8 8 8 8
16 16 16 16 16 16

32 32 32 32 32 32

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN

P1 SCORE : 183

P2 SCORE : 195

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 31.0

P2 Average Move Time : 157.0

END GAME BOARD STATE :

B B B G G G

B B G G G G

B B B B G G

B B G B B G

B G G B B B

G B G B G G

Game Over

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 175

P2 SCORE : 203

P1 Average Nodes Expanded per Move : 170358

P2 Average Nodes Expanded per Move : 153898

P1 Average Move Time : 30.0

P2 Average Move Time : 50.0

END GAME BOARD STATE :

B B B B B G

B B B B B G

B B B G B G

G B B G G G

G G G B B G

B B G G B G

Game Over

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 137

P2 SCORE : 241

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 157221

P1 Average Move Time : 55.0

P2 Average Move Time : 9.0

END GAME BOARD STATE :

G G G G G B

G G B G B G

G G G B B B
G G G B B B
B B G G G G
B B G G G G

Game Over

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is GREEN

P1 SCORE : 185

P2 SCORE : 193

P1 Average Nodes Expanded per Move : 176940

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 175.0

P2 Average Move Time : 36.0

END GAME BOARD STATE :

G G G G G B
G B G G G B
B G B G G B
B B B B G B
G B B G G G
B B G G B G

Game Over

BOARD : game_boards/Smolensk.txt *****

66 76 28 66 11 9

31 39 50 8 33 14

80 76 39 59 2 48

50 73 43 3 13 3

99 45 72 87 49 4

80 63 92 28 61 53

MATCH TYPE : Minimax Vs Minimax **

Winner is BLUE

P1 SCORE : 1090

P2 SCORE : 563

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 12.0

P2 Average Move Time : 74.0

END GAME BOARD STATE :

B G G B B B
B G G B B B
B G G B G G
B B B G G G
B B B B G G

G B B B B G

Game Over

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 653

P2 SCORE : 1000

P1 Average Nodes Expanded per Move : 39181

P2 Average Nodes Expanded per Move : 34189

P1 Average Move Time : 26.0

P2 Average Move Time : 5.0

END GAME BOARD STATE :

G G G G B B

G G G G B B

G G G B B G

B B G B G G

B B B G G G

G B B B G G

Game Over

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 1104

P2 SCORE : 549

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 41631

P1 Average Move Time : 199.0

P2 Average Move Time : 4.0

END GAME BOARD STATE :

G B B B G B

B B B G B G

B G B B B B

G B G B B B

B B B G B B

G B B B G G

Game Over

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is BLUE

P1 SCORE : 956

P2 SCORE : 697

P1 Average Nodes Expanded per Move : 33063

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 5.0

P2 Average Move Time : 60.0

END GAME BOARD STATE :

B B B B G G
G B G G G G
B G B G G G
B B G G G G
B G B B G G
G G B B B G

Game Over

BOARD : game_boards/Westerplatte.txt *****

1 1 1 1 1 1
1 3 4 4 3 1
1 4 2 2 4 1
1 4 2 2 4 1
1 3 4 4 3 1
1 1 1 1 1 1

MATCH TYPE : Minimax Vs Minimax **

Winner is GREEN

P1 SCORE : 24

P2 SCORE : 48

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 17.0

P2 Average Move Time : 111.0

END GAME BOARD STATE :

B G G B B B
B B G G B G
B B G G G G
G G B G B G
G G G G G B
G G G G B G

Game Over

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 55

P2 SCORE : 17

P1 Average Nodes Expanded per Move : 32959

P2 Average Nodes Expanded per Move : 36755

P1 Average Move Time : 32.0

P2 Average Move Time : 7.0

END GAME BOARD STATE :

G B B G B B
B B B G G B
B B B B G B

B B G B B B
B B B B B B
B G B G B B

Game Over

MATCH TYPE : Minimax Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 37

P2 SCORE : 35

P1 Average Nodes Expanded per Move : 217740

P2 Average Nodes Expanded per Move : 30801

P1 Average Move Time : 17.0

P2 Average Move Time : 27.0

END GAME BOARD STATE :

B B G B B G
B B B G B G
B G G G G B
B B G B G G
G G B B B G
B G B G G G

Game Over

MATCH TYPE : AlphaBeta Vs Minimax **

Winner is BLUE

P1 SCORE : 42

P2 SCORE : 30

P1 Average Nodes Expanded per Move : 35078

P2 Average Nodes Expanded per Move : 194736

P1 Average Move Time : 35.0

P2 Average Move Time : 486.0

END GAME BOARD STATE :

G B B B G G
B B B B G B
B B G G B B
G B G G B B
G G G G B B
B G G B B G

4. Player agents at different depths

We also implemented different DEPTH play for match up such that one agent can play at certain depth while other can play at some depth.

Observation:

We observed that the agent playing at greater depth gets more score as expected in most of the cases.

Player 2 is playing at Depth 4 while Player 1 at Depth 3

BOARD : game_boards/Keren.txt *****

1 1 1 1 1 1

1 1 1 1 1 1

1 1 1 1 1 1

1 1 1 1 1 1

1 1 1 1 1 1

1 1 1 1 1 1

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 16

P2 SCORE : 20

P1 Average Nodes Expanded per Move : 10733

P2 Average Nodes Expanded per Move : 28155

P1 Average Move Time : 44.0

P2 Average Move Time : 139.0

END GAME BOARD STATE :

B G B G B G

G B G B G G

B G B G G G

B B G G G G

B B B G G B

G B B G G B

Game Over

BOARD : game_boards/Narvik.txt *****

99 1 99 1 99 1

1 99 1 99 1 99

99 1 99 1 99 1

1 99 1 99 1 99

99 1 99 1 99 1

1 99 1 99 1 99

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Game Tied

P1 SCORE : 900

P2 SCORE : 900

P1 Average Nodes Expanded per Move : 15849

P2 Average Nodes Expanded per Move : 63647

P1 Average Move Time : 3.0

P2 Average Move Time : 88.0

END GAME BOARD STATE :

B G G B G G

B G B B B G

B G G G G G
B G G G G G
B B B B B B
G B B B G B

Game Over

BOARD : game_boards/Sevastopol.txt *****

1 1 1 1 1 1
2 2 2 2 2 2
4 4 4 4 4 4
8 8 8 8 8 8
16 16 16 16 16 16
32 32 32 32 32 32

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is BLUE

P1 SCORE : 230

P2 SCORE : 148

P1 Average Nodes Expanded per Move : 169366

P2 Average Nodes Expanded per Move : 3532388

P1 Average Move Time : 32.0

P2 Average Move Time : 1074.0

END GAME BOARD STATE :

G B G G B G
B B B G G B
G B B G G B
B B G G B B
B B B B B G
B B B G G G

BOARD : game_boards/Smolensk.txt *****

66 76 28 66 11 9
31 39 50 8 33 14
80 76 39 59 2 48
50 73 43 3 13 3
99 45 72 87 49 4
80 63 92 28 61 53

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 635

P2 SCORE : 1018

P1 Average Nodes Expanded per Move : 29955

P2 Average Nodes Expanded per Move : 180857

P1 Average Move Time : 23.0

P2 Average Move Time : 228.0

END GAME BOARD STATE :

G G G G G
G B G G G
G G B G B B
B G B B B B
G B B B B G
G G G B B B

BOARD : game_boards/Westerplatte.txt *****

1 1 1 1 1 1
1 3 4 4 3 1
1 4 2 2 4 1
1 4 2 2 4 1
1 3 4 4 3 1
1 1 1 1 1 1

MATCH TYPE : AlphaBeta Vs AlphaBeta **

Winner is GREEN

P1 SCORE : 34

P2 SCORE : 38

P1 Average Nodes Expanded per Move : 40407

P2 Average Nodes Expanded per Move : 271872

P1 Average Move Time : 4.0

P2 Average Move Time : 186.0

END GAME BOARD STATE :

B B B G G G
B B B G G G
B B G G G G
B B B G G G
G B G B G G
B G B B B G