```
1 /Users/elean/Documents/GitHub/projektSKI/venv/bin/
   python /Users/elean/Documents/GitHub/projektSKI/src
   /qameserver.py
 2 pygame 2.5.2 (SDL 2.28.3, Python 3.12.3)
 3 Hello from the pygame community. https://www.pygame
   .org/contribute.html
 4 Board init:
 5 internal board [137438953472
                                               0
   68719476736
                            0]
 6 current Board
    [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
 9
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
    [0. 0. 1. 4. 0. 0. 0. 0.]
10
11
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
12
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
13
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]]
14
15 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
16 index 0
17 depth_left 2
18 Scorelist:
19 ('D5-E5', 'movescore=', 30, 'totalscore=', 34, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
20 ('D5-D6', 'movescore=', 40, 'totalscore=', 44, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
21
22 scoreList [(68719476736, 34359738368, 30, 34, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>]), (
   68719476736, 17592186044416, 40, 44, [<BoardCommand
   .Move_Blue_Pawn_no_Change: 10>])]
23 Move: (68719476736, 17592186044416, 40, 44, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
24 internal board [ 137438953472
                                                    0
   17592186044416
                                  0]
25 current Board
26 [[0. 0. 0. 0. 0. 0. 0. 0.]
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
27
28
    [0. \ 0. \ 0. \ 4. \ 0. \ 0. \ 0. \ 0.]
29
    [0. \ 0. \ 1. \ 0. \ 0. \ 0. \ 0. \ 0.]
30
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
```

File - gameserver

```
[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
32 [0. 0. 0. 0. 0. 0. 0. 0.]
33 [0. 0. 0. 0. 0. 0. 0. 0.]]
34 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
35 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
36 stop=depth_left 1
37 Scorelist:
38 ('C5-B5', 'movescore=', 20, 'totalscore=', 26, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
39 ('C5-D5', 'movescore=', 20, 'totalscore=', 26, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
40 ('C5-C4', 'movescore=', 30, 'totalscore=', 36, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
41
42 Move: (137438953472, 536870912, 30, 36, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
43 internal board [
                         536870912
                                                  0
   17592186044416
                                 0]
44 current Board
45 [[0. 0. 0. 0. 0. 0. 0. 0.]
46
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
47
   [0. \ 0. \ 0. \ 4. \ 0. \ 0. \ 0. \ 0.]
48
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
    [0. 0. 1. 0. 0. 0. 0. 0.]
49
50
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
51
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
52
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]]
53 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
54 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
55 depth_left 0
56 Scorelist:
57 ('D6-C6', 'movescore=', 40, 'totalscore=', 46, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
58 ('D6-E6', 'movescore=', 40, 'totalscore=', 46, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
59 ('D6-D7', 'movescore=', 50, 'totalscore=', 56, [<
   BoardCommand.Move_Blue_Pawn_no_Change: 10>])
60
61 MOVE GEFUNDEN, totalscore= 56
62 updated Board:
63 internal board [ 137438953472
                                                  0
```

```
63 17592186044416
                                   0]
64 current Board
    [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
65
66
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
67
    [0. \ 0. \ 0. \ 4. \ 0. \ 0. \ 0. \ 0.]
    [0. 0. 1. 0. 0. 0. 0. 0.]
68
69
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
70
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
71
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
72
   [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]]
73 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
74 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
75 Move: (137438953472, 68719476736, 20, 26, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
76 internal board [ 68719476736
                                                     0
   17592186044416
                                   0]
77 current Board
    [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
78
79
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
80
    [0. 0. 0. 4. 0. 0. 0. 0.]
81
    [0. \ 0. \ 0. \ 1. \ 0. \ 0. \ 0. \ 0.]
82
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
83
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
84
85
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
86 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
87 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
88 depth_left 0
89 Scorelist:
90 ('D5-C5', 'movescore=', 20, 'totalscore=', 26, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
91 ('D5-E5', 'movescore=', 20, 'totalscore=', 26, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
92 ('D5-D4', 'movescore=', 30, 'totalscore=', 36, [<
   BoardCommand.Move_Red_Pawn_no_Change: 11>])
93
94 MOVE GEFUNDEN, totalscore= 36
95 updated Board:
96 internal board [
                       137438953472
                                                     0
                                   0]
   17592186044416
97 current Board
```

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```
98
     [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
 99
     [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
     [0. \ 0. \ 0. \ 4. \ 0. \ 0. \ 0. \ 0.]
100
101
     [0. \ 0. \ 1. \ 0. \ 0. \ 0. \ 0. \ 0.]
102
     [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
     [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
103
     [0. 0. 0. 0. 0. 0. 0. 0. 0.]
104
105
     [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
106 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
107 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
108 Move: (137438953472, 274877906944, 20, 26, [<
    BoardCommand.Move_Red_Pawn_no_Change: 11>])
109 internal board [ 274877906944
                                                      0
    17592186044416
                                    01
110 current Board
     [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
111
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
112
113
    [0. \ 0. \ 0. \ 4. \ 0. \ 0. \ 0. \ 0.]
114
     [0. 1. 0. 0. 0. 0. 0. 0.]
115
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
116
117
    [0. 0. 0. 0. 0. 0. 0. 0.]
118
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 1]
119 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
120 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
121 depth_left 0
122 Scorelist:
123 ('D6-C6', 'movescore=', 40, 'totalscore=', 46, [<
    BoardCommand.Move_Blue_Pawn_no_Change: 10>])
124 ('D6-E6', 'movescore=', 40, 'totalscore=', 46, [<
    BoardCommand.Move_Blue_Pawn_no_Change: 10>])
125 ('D6-D7', 'movescore=', 50, 'totalscore=', 56, [<
    BoardCommand.Move_Blue_Pawn_no_Change: 10>])
126
127 MOVE GEFUNDEN, totalscore= 56
128 updated Board:
129 internal board [ 137438953472
                                                      0
                                    0]
    17592186044416
130 current Board
     [[0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
131
132
     [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
```

```
[0. 0. 0. 4. 0. 0. 0. 0.]
133
    [0. \ 0. \ 1. \ 0. \ 0. \ 0. \ 0. \ 0.]
134
135
    [0. 0. 0. 0. 0. 0. 0. 0.]
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
136
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
137
138 [0. 0. 0. 0. 0. 0. 0. 0.]
139 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
140 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
141 new Beta = [36]
142 updated Board:
143 internal board [137438953472
                                              0
    68719476736
                            0]
144 current Board
    [[0. 0. 0. 0. 0. 0. 0. 0. 0.]
145
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
146
147 [0. 0. 0. 0. 0. 0. 0. 0.]
    [0. \ 0. \ 1. \ 4. \ 0. \ 0. \ 0. \ 0.]
148
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
149
    [0. \ 0. \ 0. \ 0. \ 0. \ 0. \ 0.]
150
151 [0. 0. 0. 0. 0. 0. 0. 0.]
152 [0. 0. 0. 0. 0. 0. 0. 0.]
153 Game status: [<DictMoveEntry.CONTINUE_GAME: 18>]
154 1 = red, 4 = blue, 2 = rr, 3 = br, 5= rb, 8= bb
155 score>=beta: 36 >= [36]
156 score>alpha: 36 > [-inf]
157 depth: 2, time: 0.005741119384765625
158 index 1
159 depth_left 2
160 Traceback (most recent call last):
      File "/Users/elean/Documents/GitHub/projektSKI/
161
    src/gameserver.py", line 28, in <module>
        main()
162
163
      File "/Users/elean/Documents/GitHub/projektSKI/
    src/gameserver.py", line 24, in main
        alpha_beta.search(True)
164
165
      File "/Users/elean/Documents/GitHub/projektSKI/
    src/eric.py", line 42, in search
166
        return self._iterative_deepening_search()
               ^^^^^^
167
168
      File "/Users/elean/Documents/GitHub/projektSKI/
    src/eric.py", line 55, in
```

168	_iterative_deepening_search
169	_, move = selfalpha_beta_max(self.alpha,
	self.beta, depth, self.bitboards)
170	^^^^^^^^
	^^^^^^
171	<pre>File "/Users/elean/Documents/GitHub/projektSKI/</pre>
	<pre>src/eric.py", line 85, in _alpha_beta_max</pre>
172	<pre>scorelist = self.eval.computeOverallScore(self</pre>
	<pre>.moveGen.genMoves(self.player, self.gameOver),</pre>
	board=bitboards)
173	^^^^^^^^
	^^^^^^
	^^^^^^
174	File "/Users/elean/Documents/GitHub/projektSKI/
	<pre>src/evalFunction.py", line 272, in</pre>
	computeOverallScore
175	<pre>tempScore.append(selfpieceSquareTable(index[</pre>
	0],index[1], board,index[2]))
176	^^^^^^^^
	^^^^^^
177	<pre>File "/Users/elean/Documents/GitHub/projektSKI/</pre>
	<pre>src/evalFunction.py", line 160, in</pre>
	_pieceSquareTable
178	raise ValueError("Error in MoveList, please
	<pre>check Zuggenerator, targetmoves=", MoveLib.move(</pre>
	startPos,*targetmoves,3))
179	ValueError: ('Error in MoveList, please check
	Zuggenerator, targetmoves=', 'D5-D6')
180	
181	Process finished with exit code 1
182	