# Midterm

Part 5 of 5 - Genetic Algorithms

In the 8-Queens problem, there are 8 queens on a board, one per column. The goal of the problem is to find a board position in which no queen is attacking any other queen (no queen can move to the location of any other queen). We can represent the state of a board as a string of 8 integers, with each number representing the row position of the queen in the corresponding column. We can calculate a fitness function for this problem by counting the number of unique pairs of queens that do not have lines of attack on each other, including paths obstructed by other queens (the best fitness function score would be 28). For example, the board state given in (example.png) would be encoded as 3275241 and would have a score of 23 according to our metric.

Attachments
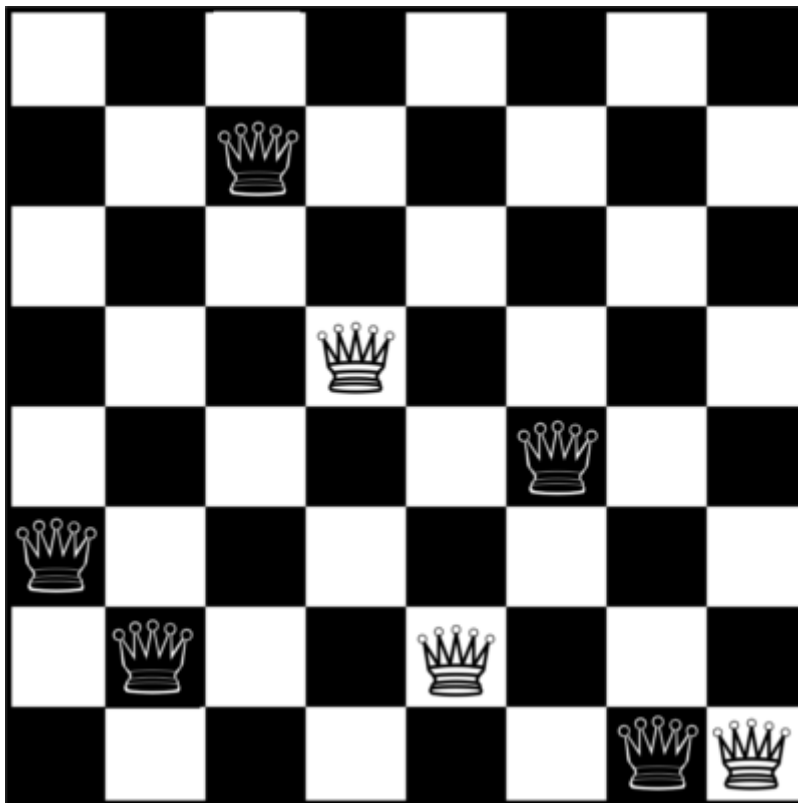
Question 31 of 33

0.0 Points

Out of the following boards, we want to cull the 3 with the lowest fitness scores. Select the three to be culled:

- ☑ A. 32583211
- ☐ B. 58647561
- ☐ C. 35712864
- ☐ D. 38647511
- ☑ E. 53176462
- ☑ F. 77854568

Question 32 of 33

0.0 Points

Which, if any, of the following is not a valid recombination of the most fit of the three boards above assuming no random mutations happen?

- ☐ A. 38647561
- ☑ B. 27176412

☑ C. 77176462

☑ D. 38647211

☑ E. 53172864

☑ F. 58583211

☐ G. None of the above

Question 33 of 33

0.0 Points

Bonus: If there are any solutions that have a fitness score of 28 available from the recombination of any pair of the 3 most fit boards from section 1 of this question, please write its encoding out below:

(Maximum number of characters: 60000)

Show/Hide Rich-Text Editor

No, I don't think there are any solutions that are a recombination of the 3 most fit boards from section 1.

[Previous]   [Save] [Exit]