Evolutionary Computation Homework 1, Part 1

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For the N-Queen problem, we are primarily concerned with finding a viable solution subject to constraints. We can take two different approaches in this pursuit: we can place a heavy emphasis on mutation or a heavy emphasis on selection. By mutating alleles more aggressively, a larger solution space is searched but the algorithm will converge to a solution less quickly. If alleles are barely mutated, the parent selection will become more important and the algorithm will quickly converge to the first solution it finds. Since we don’t care what solution we find (so long as there are no conflicts between queens), we can let our algorithm converge as quickly as we like by placing higher emphasis on selection than on mutation. The swap mutation will have a smaller effect on the genome than the scramble mutation, so it may be better suited for this problem.