CSE 402: ARTIFICIAL INTELLIGENCE

SESSIONAL

OFFLINE 3

ON

LOCAL SEARCH

NAME:ISHITA HAQUE

STUDENT ID:1205069

SECTION:A2

n	Average no. of iteration(HC)	Average conflicts (HC)	Minimum Conflicts (HC)	Average no. of iteration(SA)	Average conflicts (SA)	Minimum Conflicts (SA)
4	2.2	0.9	0	335.0	1.7	0
6	3.3	0.8	0	335.0	2.9	0
8	4.6	1.0	0	335.0	4.0	1
10	5.7	1.2	0	335.0	6.2	3
12	5.5	1.8	1	335.0	8.6	7

Our problem was to use local search to find solution of n-queens problem.

Here I have shown two approaches of local search-steepest ascent hill climbing and simulated annealing. Here n indicates the number of queens in the n-queens problem.

In steepest ascent hill climbing I have used max step =15.But in most cases the loop was broken within 4-5 iterations. We can observe that even when the value of n increases, this approach gives minimum conflict=0 in most cases.

In simulated annealing approach I have used linear cooling scheme as scheduling function, where I have used T0=100 and μ=0.3, which gave me best results. I have also used 100000 as the total number of iterations in the loop of simulated annealing. We can observe that when value of n increases, value of minimum conflicts in this approach increases as well.

Number of average conflicts is much higher in simulated annealing than steepest ascent hill climbing. The probable cause behind this is poor choice of parameters like μ and T0. I believe better results can be achieved if these parameters are chosen wisely.