Issue Date: 25 Feb, 2020 Due date: 04 March, 2020

Instructions:

- Plagiarism is defined as "taking and using the thoughts, writings, and inventions of another person as one's own". IBA has no compromise policy on Plagiarism – in case, plagiarism proved student will be given **F grade**.
- Your assignment should represent your own effort this will be check in viva. However, you are not expected to work alone. It is fine to discuss the exercises and try to find solutions together, but each student shall write down and submit his/her solutions separately. It is good academic standard to acknowledge collaborators, so if you worked together with other students, please list their names.
- Electronic Submission on LMS is compulsory.
- Assignment will be graded on the basis of **timely submission on LMS** and **individual viva**.

1. Implement a program to solve the 8 Queens Problem using genetic algorithm. The aim of N-Queens Problem is to place N queens on an N x N board, in a way so that no queen is in conflict with the others.

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Consider the following steps for the genetic algorithm to solves the n-queen problem?

Step 1: A random chromosome is generated
Step 2: Fitness value of the chromosome is calculated
Step 3: Parent selection using Roulette Wheel Selection
Step 4: Reproduce (using one-point crossover method) new chromosome from parents
Step 5: Mutation (using bit-flip method) take place on new chromosome
Step 6: Compute fitness of new chromosome and then added to population.
Step 7: Survival selection using Roulette Wheel Selection to maintain the population size.
Repeat Step 3 to 7 until a chromosome (solution) with Fitness value = Fmax is found