Heaven's Light is Our Guide

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

Course Number : CSE 4204

Course Title : Sessional Based on CSE 4203

Submitted To:

Course Teacher : Dr. Md. Rabiul Islam
Professor
Department of Computer Science and Engineering
Rajshahi University of Engineering & Technology

Submitted By:

Name : Kazi Mehrab Rashid
Section : A
Roll No : 1703003
Department : Computer Science & Engineering
Institution : Rajshahi University of Engineering & Technology

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Assignment Title :

Find out the minimum number with Genetic Algorithm

Write a program of Genetic Algorithm to find out the bit sets that can optimize the search of minimum number. At first, define the fitness function or objective function to find out the minimum number. Use the basic genetic operators such as reproduction or selection, crossover and mutation to optimize the searching criteria. You have to select the cromozom (string) with minimum 20 genes (bits) and 30 populations. You may use the number of generations for the breaking condition. Your program should report the followings:

- Initial random strings and fitness function
- Output of reproduction, crossover and mutation for each generation
- Calculate the efficiency of each generation

Methodology :

1. dataset generation where row number will be 30 and column will be 20 and values will be only 0 and 1.
2. Send every output to fitness function
3. Sort the dataset in ascending order according to fitness value
4. Print the chromose with lowest fitness value and it's efficiency
5. Divide the dataset into 2 equal parts.
6. If len(first half) != 1 , then continue. If not then go to 10.
7. Take the first row of the first half and Produce child with other rows through corss-over and mutation
8. Make a new dataset with the children produced from reproduction
9. Continue the process from 2 to 8.
10. End

Implementation in Code : The implementation of genetic algorithm is at next page.