Evolutionary Computing - Fall 2019

Assignment #1: EC Grid Problem

Shiraz University

Due Date: 30/Oct

The word EC is written inside a 7*7 grid with digits from 1 to 20 as follows:

3	2	1		14	13	12
4				15		
5	6	7		16		
8				17		
9	10	11		18	19	20

Your task is to apply GA on the initial population which is created by putting numbers at random position inside the grid and try to get to this grid.

In order to calculate the fitness for each chromosome use Hamming or Euclidean distance (feel free for choosing each of them) between each gene of the chromosome and its corresponding gene in the target chromosome (above grid). The total distance of all genes defines the fitness of that chromosome.

Apply GA with the following properties to this problem:

Recombination prob.	90%
Mutation prob.	0.1%

Notes:

- Your implementation should be functional.
- Allowed programming languages: MATLAB, PYTHON, JAVA.
- Feel free to change the model parameters.
- Any sign of cheating would be result in the zero grade for the assignment.
- Your codes should be self-commented.