CS223 Module 2 Week 5 Programming Assignment

1. After completing the reading assignment, start to design (flow chard, structure diagram, … i.e., start using your favorite software development process) a GA solution to the traveling salesperson problem. Use the information in the slides to help you formulate your start.
2. Decide on what your population will consist of. What individuals in the population will represent. How to represent individuals.
3. Decide on a fitness metric/fuction, a selection criteria, crossover, mutation method and termination condition to initially use. In future iterations you might want to change one or more of these depending on the performance of your GA.
4. Implement each stage of the GA and test as appropriate.
5. Pull all stages together into a working algorithm.

6. Name your main GA module "<your name>_GA_TS.py"

7. Use the same number of cities as used in the example TS problem presented on the Module 1 Week 4 presentation 1 or 2 slides.

8. The output of your GA TA solution should look like the following.

    1. City #/City Name of the first city visited
    2. City #/City Name of the second city visited
    3. City #/City Name of the third city visited
    :
    :
    n. City #/City Name of the n^{th} city visited

    The output should be printed to a file named "<your name>_GA_TS_Result.txt" In a separate file named "<your name>_GA_TS_Info.txt" print the following information

1. Population Size: <# individuals> for iteration 1
   Average fitness score
   Median fitness score
   STD of fitness scores
   Size of the selected subset of the population

2. Population Size: <# individuals> for iteration 2
   Average fitness score
   Median fitness score
   STD of fitness scores
   Size of the selected subset of the population

   :
   :

n. Population Size: <# individuals> for iteration n
   Average fitness score
   Median fitness score
   STD of fitness scores
   Size of the selected subset of the population

9. Upload all of the .py files needed to run your solution. Do not upload .txt files or other files crated by your program. Just the code.