**Problem 4.3**

**For A\* and Hill climbing:**

***Run Program:***

python “Problem\_4.3(a)\_PythonCode\_HillClimbing\_AStar\_TSP.py”

***Input.txt:***

The format in “Input\_Pro4.3.txt” is :

“Number of cities, Start city name”.

For example, “10, 0” means there are totally 10 cities in our domain. We start from city 0. After we input the total number of cities, the program will randomly generate the coordination for each city, and then create the distance relation table between each city.

***Output.txt:***

“Output\_Pro4.3(a).txt” contains 2 part:

1. **Path for Hillclimbing:** The path from start city to goal city using Hill climbing algorithm. It’s a list contains all the cities we go through.
2. **Path for Astar:** The path from start city to goal city using A star algorithm. It’s a list contains all the cities we go through.

**For A\* and Genetic:**

***Run Program:***

python “Problem\_4.3(b)\_PythonCode\_Genetic\_AStar\_TSP.py”

***Input.txt:***

The format in “Input\_Pro4.3.txt” is :

“Number of cities, Start city name”.

For example, “10, 0” means there are totally 10 cities in our domain. We start from city 0. After we input the total number of cities, the program will randomly generate the coordination for each city, and then create the distance relation table between each city.

***Output.txt:***

“Output\_Pro4.3(b).txt” contains 2 part:

1. **Path for Genetic:** The path from start city to goal city using Genetic algorithm. It’s a list contains all the cities we go through.
2. **Path for Astar:** The path from start city to goal city using A star algorithm. It’s a list contains all the cities we go through.