

Pre-university college course

Lab 2 - Tour improvement methods

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1 Initialize the tour

before improving the tour, we want to initialize it by calling the functions we coded before. Find the initialization function and fill the blanks.

2 First or best improvement

You can generate a tour improved with first improvement by hitting “F” on your keyboard, or just improve the current tour once by hitting “f” You can generate a tour improved with best improvement by hitting “B” on your keyboard, or just improve the current tour once by hitting “b”

Difference between first and best

Find the code for first and for best improvement steps. They are currently the same.

What should be the difference ?

Hints :

- . Think about the logic of first improvement, compared to best improvement.
- . You will have to move two lines and add one.
- . To break out of a function, you can use the statement “return;”

What if we have more cities ?

Change for a bigger data set :

In the “pre_university_college_tsp.pde” file, change the used city set from “capitalNL.csv” to “nl.csv”

Run iterative first improvement and iterative best improvement a couple of time.

What do you notice ?

Initialization method

In the “pre_university_college_tsp.pde” file, change the initialization method (random, nearest neighbour) and run First and Best improvement 10 time for each. Note the length of the path and the number of distance check.
Does one of the initialization method look better than the other ?

Improve this method

Even for the same initialization method, there is a difference in the tour length.
Do you have any idea how we could solve this problem ?