Pre-university college course
Lab 1 - tour generation methods

Pr. Holger Hoos
Marie Anastacio, Can Wang

February 2018

1 Random tour

Launch the program. You can generate a random tour by hiting "r" on your keyboard. Currently, the tour is wrong. What is the problem ?
Check the file "tour.pde" and find the functions that generates a random tour. A line is missing here, what should this line do ?

2 Nearest neighbour

You can generate a nearest neighbour tour by hiting "n" on your keyboard.

Calculate tour length

The tour length for nearest neighbour is wrong. Check the code, what is missing ?
Write the needed line.

Choice of the starting city

Currently, the nearest neighbour starts always with the same city.
Change the starting location. what is happening ?

Randomize starting city

We want our nearest neighbour to start with a random city each time.
In the random generation tour, which line creates a random integer between 0 and the number of cities ?
Use this line to change the nearest neighbour so it starts with a random city.

Impact of the starting city

Run nearest neighbour 15 times and note the tour length.
What to you notice ?

3 Randomized nearest neighbour

You can generate a randomized nearest neighbour tour by hiting "N" on your keyboard. (It will crash if you do it before answering the next question)
Randomized nearest neighbour is using similar approach as nearest neighbour, but has a probability of going to a random unvisited location instead of the nearest one.
Find the function in the code and fill the lines inside the if statement.