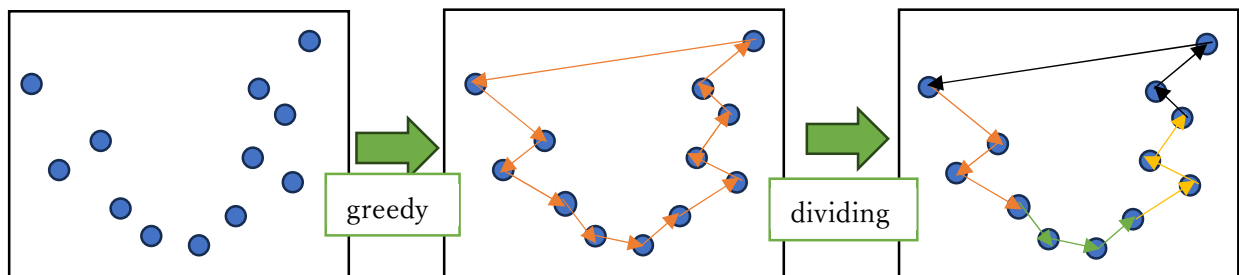


### Overview

This is a program that solves the TSP. One big difference from the week 5's program is that since I have to deal with inputs with large size, I modified the program so that it divides the list of cities into four sections to do methods like 2-opt. Moreover, I wrote week5's program in python but this time, I rewrite this all in c++ to improve execution time.

### How I divide cities into sections

Firstly, I cannot just separate the list of cities because I want to divide so that points in each sector are closed together. Therefore, I first tried greedy methods to come up with the path connecting closest points and divide the sections according to the order of the path from the greedy method. The reason why I chose to divide this into four is that the length of the largest input was 8192 while the second largest was 2048, which is four times difference. Since the execution time of week5's program for the second largest input was reasonable, I thought if I can divide the largest input data to four, the size will be roughly the same as the second largest input and hence will have reasonable execution time.



### Result

Before I implemented dividing, the length of the execution for the input\_7.csv file was very long so that I cannot wait enough for it to finish processing. However, after the implementation, I was able to reduce the execution time for about several minutes. The total length was 92860.54, which is not the best answer, but still I believe this is a reasonable value.