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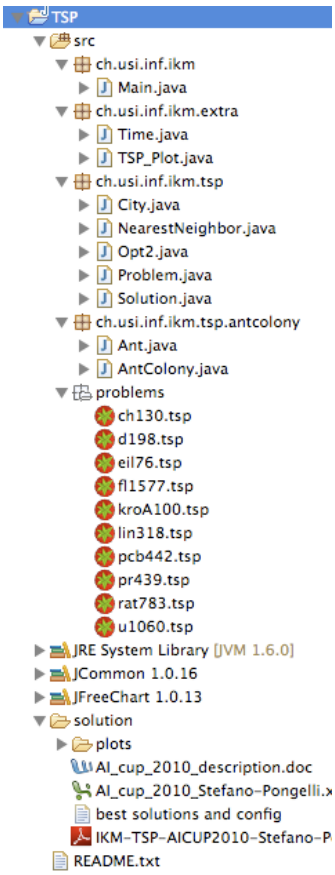
A I C U P - T S P

To solve the TSP problem I started implementing the Nearest Neighbor in C. It all worked well, until I tried to implement the 2-opt. I had some problem with the data structure I was using, therefore instead of refactoring the C code, I switched to JAVA.

In JAVA after implementing the Nearest Neighbor and a (finally) working 2-Opt, I decided to go for the Ant Colony System following the description given in class.

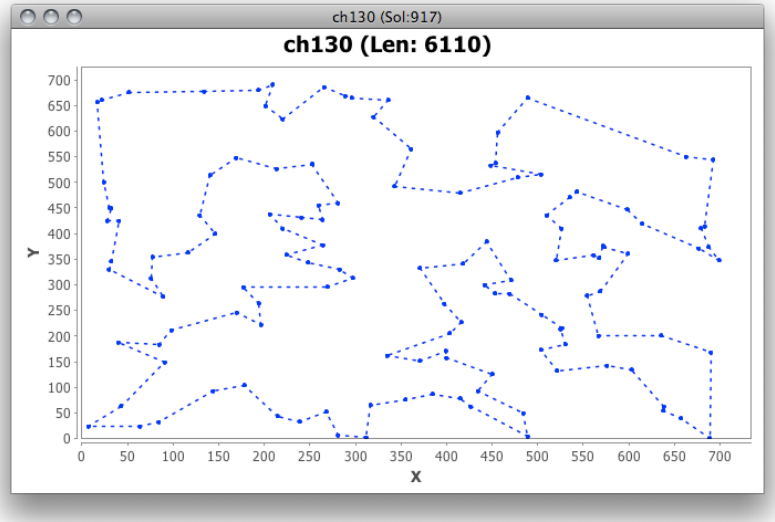


After modeling the problem, the Ant Colony System was working, but gave me bad results. Thus I tried with the Simulated Annealing, but I didn't like it much and returned to the Ants in a short while.

Finally I found and solved all the major bugs in my implementation and at the end I have obtained a 0.42% of global error, which is not bad I think for a java implementation. I kept the default values for my variables (see "best solutions and config.txt") and started the Nearest Neighbor from the first city in each problem.

I also tried a multi-thread implementation of the Ant Colony System, but with results similar or worse than the single thread version, so I kept the single threaded.

For more informations about the project, see comments in the Java files.



Finally, I added a class TSP_Plot which plots the best ant tours in real time. To use it JFreeChart (www.jfree.org) is needed.