Closest Pair Report

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April 1, 2016

Results

Our implementation produces the expected results on all input–output file pairs.

The following table shows the closest pair in the input file `ch130.tsp`. Here n denotes the number of points in the input, and (u, v) denotes a closest pair of points at distance δ.

n	u	v	δ
130	87	12	0.660181

Implementation details

We keep a list of points sorted by y-values.

For the comparison of points close to s in S_y we inspect 12 points, as explained (5.4) of Kleinberg and Tardos, *Algorithm Design*, Addison–Wesley 2008.

For an explanation on why you can compare only 7 points: http://math.stackexchange.com/questions/45776/closest-pair-of-points-algorithm.

Our running time is $O(n \log n)$ for n points.