Closest Pair Report

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Results

Our implementation produces the expected results on all input–output file pairs, except `slotermeier-23-tsp.txt`, where our code reports distance 2.531 as the shortest distance. This may be because of rounding errors, or differences between `float` and `double` on various machines. [1]

The following table shows the closest pairs in the input files `wc-instance-*.txt`. 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
2	0	1	1
[...]			

[1] Complete the report by filling in your correct names, filling in the parts marked [...], and changing other parts wherever necessary. For instance, if your implementation passes all tests, then write that. Remove the sidenotes in your final hand-in.

Implementation details

We resort by y-coordinates in each recursive step.

For the comparison of points close to s in S_y we inspect 15 points, as explained (5.10) of Kleinberg and Tardos, *Algorithm Design*, Addison–Wesley 2008. Here is the corresponding part of our code:

```
min = [...]
for (s [...]
  for [...]
    if (s.distance(...) < min) [...]
```

Our running time is $O(n \log n)$ for n points. [2]

[2] Change or delete as necessary, add anything else you find interesting about your implemenation.