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Testing correctness of FastCollinearPoints

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Running 21 total tests.

The inputs satisfy the following conditions:

- no duplicate points

- all x- and y-coordinates between 0 and 32,767

Test 1: Points from a file

\* filename = input8.txt

- segments() contains the same segment more than once

- segment 4: (3000, 4000) -> (14000, 15000)

- segment 7: (3000, 4000) -> (14000, 15000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (3000, 7000) -> (0, 10000)

- reference segment 0: (10000, 0) -> (7000, 3000) -> (3000, 7000) -> (0, 10000)

- student solution has 8 non-null entries

- reference solution has 2 non-null entries

- 7 extra entries in student solution, including: (6000, 7000) -> (20000, 21000)

- 1 missing entry in student solution: (3000, 4000) -> (6000, 7000) -> (14000, 15000) -> (20000, 21000)

\* filename = equidistant.txt

- segments() contains the same segment more than once

- segment 0: (2000, 8000) -> (0, 10000)

- segment 2: (2000, 8000) -> (0, 10000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (2000, 8000) -> (0, 10000)

- reference segment 1: (10000, 0) -> (8000, 2000) -> (2000, 8000) -> (0, 10000)

- student solution has 16 non-null entries

- reference solution has 4 non-null entries

- 15 extra entries in student solution, including: (20000, 10000) -> (0, 30000)

- 3 missing entries in student solution, including: (30000, 0) -> (20000, 10000) -> (10000, 20000) -> (0, 30000)

\* filename = input40.txt

- segments() contains the same segment more than once

- segment 2: (2000, 24000) -> (9000, 24000)

- segment 5: (2000, 24000) -> (9000, 24000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (17000, 17000) -> (29000, 17000)

- reference segment 0: (1000, 17000) -> (13000, 17000) -> (17000, 17000) -> (29000, 17000)

- student solution has 16 non-null entries

- reference solution has 4 non-null entries

- 14 extra entries in student solution, including: (22000, 29000) -> (28000, 29000)

- 2 missing entries in student solution, including: (2000, 24000) -> (9000, 24000) -> (14000, 24000) -> (25000, 24000)

\* filename = input48.txt

- segments() contains the same segment more than once

- segment 6: (18000, 13000) -> (18000, 23000)

- segment 11: (18000, 13000) -> (18000, 23000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (3000, 23000) -> (18000, 23000)

- reference segment 0: (1000, 23000) -> (3000, 23000) -> (18000, 23000) -> (24000, 23000)

- student solution has 24 non-null entries

- reference solution has 6 non-null entries

- 21 extra entries in student solution, including: (18000, 26000) -> (18000, 27000)

- 3 missing entries in student solution, including: (1000, 23000) -> (3000, 23000) -> (18000, 23000) -> (24000, 23000)

\* filename = input299.txt

- segments() contains the same segment more than once

- segment 0: (17350, 9900) -> (28350, 15400)

- segment 11: (17350, 9900) -> (28350, 15400)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (17350, 9900) -> (28350, 15400)

- reference segment 3: (1650, 2050) -> (11750, 7100) -> (17350, 9900) -> (28350, 15400)

- student solution has 24 non-null entries

- reference solution has 6 non-null entries

- 22 extra entries in student solution, including: (7300, 25700) -> (7300, 31650)

- 4 missing entries in student solution, including: (3250, 17450) -> (8500, 17450) -> (13400, 17450) -> (17250, 17450)

==> FAILED

Test 2a: Points from a file with horizontal line segments

\* filename = horizontal5.txt

- segments() contains the same segment more than once

- segment 0: (5067, 14118) -> (7821, 14118)

- segment 1: (5067, 14118) -> (7821, 14118)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (5067, 14118) -> (7821, 14118)

- reference segment 4: (2682, 14118) -> (5067, 14118) -> (7453, 14118) -> (7821, 14118)

- student solution has 20 non-null entries

- reference solution has 5 non-null entries

- 18 extra entries in student solution, including: (5067, 14118) -> (7821, 14118)

- 3 missing entries in student solution, including: (2682, 14118) -> (5067, 14118) -> (7453, 14118) -> (7821, 14118)

\* filename = horizontal25.txt

- segments() contains the same segment more than once

- segment 0: (10653, 13870) -> (18005, 13870)

- segment 1: (10653, 13870) -> (18005, 13870)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (10653, 13870) -> (18005, 13870)

- reference segment 13: (2566, 13870) -> (10653, 13870) -> (18005, 13870) -> (19459, 13870)

- student solution has 100 non-null entries

- reference solution has 25 non-null entries

- 84 extra entries in student solution, including: (9880, 20913) -> (16352, 20913)

- 9 missing entries in student solution, including: (6268, 18593) -> (11710, 18593) -> (12984, 18593) -> (19710, 18593)

\* filename = horizontal50.txt

- segments() contains the same segment more than once

- segment 4: (11218, 14194) -> (13957, 14194)

- segment 5: (11218, 14194) -> (13957, 14194)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (15233, 7218) -> (17289, 7218)

- reference segment 17: (6300, 7218) -> (6518, 7218) -> (15233, 7218) -> (17289, 7218)

- student solution has 200 non-null entries

- reference solution has 50 non-null entries

- 175 extra entries in student solution, including: (14800, 20754) -> (17428, 20754)

- 25 missing entries in student solution, including: (5249, 20754) -> (5559, 20754) -> (14800, 20754) -> (17428, 20754)

\* filename = horizontal75.txt

- segments() contains the same segment more than once

- segment 8: (1503, 4944) -> (19165, 4944)

- segment 9: (1503, 4944) -> (19165, 4944)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (3822, 19103) -> (8086, 19103)

- reference segment 69: (1255, 19103) -> (3822, 19103) -> (8086, 19103) -> (20410, 19103)

- student solution has 300 non-null entries

- reference solution has 75 non-null entries

- 265 extra entries in student solution, including: (14178, 20976) -> (14591, 20976)

- 40 missing entries in student solution, including: (10027, 20618) -> (13055, 20618) -> (15225, 20618) -> (20029, 20618)

\* filename = horizontal100.txt

- segments() contains the same segment more than once

- segment 4: (3908, 10339) -> (4905, 10339)

- segment 5: (3908, 10339) -> (4905, 10339)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (1773, 6140) -> (11759, 6140)

- reference segment 30: (1238, 6140) -> (1773, 6140) -> (11219, 6140) -> (11759, 6140)

- student solution has 400 non-null entries

- reference solution has 100 non-null entries

- 339 extra entries in student solution, including: (16154, 20698) -> (19642, 20698)

- 39 missing entries in student solution, including: (5835, 20698) -> (7673, 20698) -> (16154, 20698) -> (19642, 20698)

==> FAILED

Test 2b: Random horizontal line segments

\* 1 random horizontal line segment

- segments() contains the same segment more than once

- segment 0: (1303, 2173) -> (3723, 2173)

- segment 3: (1303, 2173) -> (3723, 2173)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (1303, 2173) -> (3723, 2173)

- reference segment 0: (1303, 2173) -> (3723, 2173) -> (5356, 2173) -> (10156, 2173)

- student solution has 4 non-null entries

- reference solution has 1 non-null entries

- 3 extra entries in student solution, including: (3723, 2173) -> (10156, 2173)

- failed on trial 1 of 500

4

10156 2173

3723 2173

1303 2173

5356 2173

\* 5 random horizontal line segments

- segments() contains the same segment more than once

- segment 2: (1025, 17788) -> (4204, 17788)

- segment 3: (1025, 17788) -> (4204, 17788)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (20373, 1974) -> (20762, 1974)

- reference segment 0: (7956, 1974) -> (12049, 1974) -> (20373, 1974) -> (20762, 1974)

- student solution has 20 non-null entries

- reference solution has 5 non-null entries

- 16 extra entries in student solution, including: (16667, 19869) -> (18681, 19869)

- 1 missing entry in student solution: (1025, 17788) -> (4204, 17788) -> (7767, 17788) -> (8831, 17788)

- failed on trial 1 of 250

20

12049 1974

20762 1974

8831 17788

7767 17788

2880 17116

4446 2038

7956 1974

1949 2038

12923 19869

20373 1974

15816 17116

4784 17116

1025 17788

19042 19869

4204 17788

9236 17116

18681 19869

16667 19869

18864 2038

5760 2038

\* 10 random horizontal line segments

- segments() contains the same segment more than once

- segment 1: (14588, 11767) -> (19098, 11767)

- segment 8: (14588, 11767) -> (19098, 11767)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (16728, 3327) -> (18674, 3327)

- reference segment 3: (14464, 3327) -> (15737, 3327) -> (16728, 3327) -> (18674, 3327)

- student solution has 40 non-null entries

- reference solution has 10 non-null entries

- 34 extra entries in student solution, including: (9927, 19977) -> (20529, 19977)

- 4 missing entries in student solution, including: (6725, 17037) -> (8287, 17037) -> (19031, 17037) -> (19915, 17037)

- failed on trial 1 of 50

\* 15 random horizontal line segments

- segments() contains the same segment more than once

- segment 0: (19495, 7994) -> (20211, 7994)

- segment 3: (19495, 7994) -> (20211, 7994)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (19495, 7994) -> (20211, 7994)

- reference segment 5: (8611, 7994) -> (15279, 7994) -> (19495, 7994) -> (20211, 7994)

- student solution has 60 non-null entries

- reference solution has 15 non-null entries

- 56 extra entries in student solution, including: (19042, 19484) -> (20367, 19484)

- 11 missing entries in student solution, including: (6401, 19484) -> (9446, 19484) -> (19042, 19484) -> (20367, 19484)

- failed on trial 1 of 5

==> FAILED

Test 3a: Points from a file with vertical line segments

\* filename = vertical5.txt

- segments() contains the same segment more than once

- segment 16: (8421, 1829) -> (8421, 11344)

- segment 19: (8421, 1829) -> (8421, 11344)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (14407, 10367) -> (14407, 17188)

- reference segment 3: (14407, 10367) -> (14407, 17188) -> (14407, 17831) -> (14407, 19953)

- student solution has 20 non-null entries

- reference solution has 5 non-null entries

- 16 extra entries in student solution, including: (14407, 17831) -> (14407, 19953)

- 1 missing entry in student solution: (8421, 1829) -> (8421, 11344) -> (8421, 15144) -> (8421, 18715)

\* filename = vertical25.txt

- segments() contains the same segment more than once

- segment 8: (18014, 3105) -> (18014, 4474)

- segment 11: (18014, 3105) -> (18014, 4474)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (11585, 4132) -> (11585, 11220)

- reference segment 12: (11585, 4132) -> (11585, 5103) -> (11585, 11220) -> (11585, 12912)

- student solution has 100 non-null entries

- reference solution has 25 non-null entries

- 91 extra entries in student solution, including: (1825, 19478) -> (1825, 19680)

- 16 missing entries in student solution, including: (7674, 9568) -> (7674, 11299) -> (7674, 17451) -> (7674, 18802)

\* filename = vertical50.txt

- segments() contains the same segment more than once

- segment 24: (15454, 19424) -> (15454, 20467)

- segment 27: (15454, 19424) -> (15454, 20467)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (10695, 1287) -> (10695, 10521)

- reference segment 27: (10695, 1287) -> (10695, 10521) -> (10695, 20756) -> (10695, 20927)

- student solution has 200 non-null entries

- reference solution has 50 non-null entries

- 175 extra entries in student solution, including: (5991, 20340) -> (5991, 20424)

- 25 missing entries in student solution, including: (5991, 15606) -> (5991, 20227) -> (5991, 20340) -> (5991, 20424)

\* filename = vertical75.txt

- segments() contains the same segment more than once

- segment 16: (1636, 15411) -> (1636, 20931)

- segment 19: (1636, 15411) -> (1636, 20931)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (2329, 3548) -> (2329, 5466)

- reference segment 2: (2329, 3548) -> (2329, 5466) -> (2329, 9995) -> (2329, 11424)

- student solution has 300 non-null entries

- reference solution has 75 non-null entries

- 267 extra entries in student solution, including: (6614, 20468) -> (6614, 20700)

- 42 missing entries in student solution, including: (8436, 12756) -> (8436, 14115) -> (8436, 17053) -> (8436, 18861)

\* filename = vertical100.txt

- segments() contains the same segment more than once

- segment 0: (6177, 10008) -> (6177, 15031)

- segment 3: (6177, 10008) -> (6177, 15031)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (6177, 10008) -> (6177, 15031)

- reference segment 26: (6177, 7115) -> (6177, 10008) -> (6177, 15031) -> (6177, 18079)

- student solution has 400 non-null entries

- reference solution has 100 non-null entries

- 346 extra entries in student solution, including: (12714, 19485) -> (12714, 20597)

- 46 missing entries in student solution, including: (15570, 14475) -> (15570, 14654) -> (15570, 16224) -> (15570, 17117)

==> FAILED

Test 3b: Random vertical line segments

\* 1 random vertical line segment

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (10100, 2888) -> (10100, 3003)

- reference segment 0: (10100, 2888) -> (10100, 3003) -> (10100, 9349) -> (10100, 13044)

- student solution has 4 non-null entries

- reference solution has 1 non-null entries

- 4 extra entries in student solution, including: (10100, 3003) -> (10100, 13044)

- 1 missing entry in student solution: (10100, 2888) -> (10100, 3003) -> (10100, 9349) -> (10100, 13044)

- failed on trial 1 of 500

4

10100 9349

10100 3003

10100 13044

10100 2888

\* 5 random vertical line segments

- segments() contains the same segment more than once

- segment 5: (17551, 15487) -> (17551, 19584)

- segment 8: (17551, 15487) -> (17551, 19584)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (12842, 7080) -> (12842, 10388)

- reference segment 0: (12842, 7080) -> (12842, 10388) -> (12842, 12880) -> (12842, 15506)

- student solution has 20 non-null entries

- reference solution has 5 non-null entries

- 20 extra entries in student solution, including: (17889, 17231) -> (17889, 17581)

- 5 missing entries in student solution, including: (17889, 13168) -> (17889, 14150) -> (17889, 17231) -> (17889, 17581)

- failed on trial 1 of 250

20

12842 12880

19104 3024

17889 14150

12842 10388

19104 10420

17551 6957

17551 15487

17889 17231

17551 5079

20584 17461

20584 1027

12842 7080

17889 17581

19104 2112

17551 19584

12842 15506

19104 16627

20584 17539

17889 13168

20584 7163

\* 10 random vertical line segments

- segments() contains the same segment more than once

- segment 2: (17418, 4323) -> (17418, 7855)

- segment 9: (17418, 4323) -> (17418, 7855)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (2946, 7202) -> (2946, 11990)

- reference segment 1: (2946, 7202) -> (2946, 11990) -> (2946, 17612) -> (2946, 19231)

- student solution has 40 non-null entries

- reference solution has 10 non-null entries

- 39 extra entries in student solution, including: (2946, 17612) -> (2946, 19231)

- 9 missing entries in student solution, including: (11962, 8059) -> (11962, 10743) -> (11962, 12307) -> (11962, 15605)

- failed on trial 1 of 50

\* 15 random vertical line segments

- segments() contains the same segment more than once

- segment 4: (11050, 11584) -> (11050, 16221)

- segment 16: (11050, 11584) -> (11050, 16221)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (3656, 5569) -> (3656, 12838)

- reference segment 3: (3656, 5569) -> (3656, 10266) -> (3656, 12838) -> (3656, 15711)

- student solution has 60 non-null entries

- reference solution has 15 non-null entries

- 60 extra entries in student solution, including: (7052, 19104) -> (7052, 20596)

- 15 missing entries in student solution, including: (18723, 14289) -> (18723, 16184) -> (18723, 19707) -> (18723, 19959)

- failed on trial 1 of 5

==> FAILED

Test 4a: Points from a file with no line segments

\* filename = random23.txt

\* filename = random38.txt

\* filename = random91.txt

\* filename = random152.txt

==> passed

Test 4b: Random points with no line segments

\* 5 random points

\* 10 random points

\* 20 random points

\* 50 random points

==> passed

Test 5a: Points from a file with 5 or more on some line segments

\* filename = input9.txt

- segments() contains the same segment more than once

- segment 1: (1000, 1000) -> (9000, 9000)

- segment 2: (1000, 1000) -> (9000, 9000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (1000, 1000) -> (7000, 7000)

- reference segment 0: (1000, 1000) -> (2000, 2000) -> (3000, 3000) -> (4000, 4000) -> (5000, 5000) -> (6000, 6000) -> (7000, 7000) -> (8000, 8000) -> (9000, 9000)

- student solution has 9 non-null entries

- reference solution has 1 non-null entries

- 8 extra entries in student solution, including: (3000, 3000) -> (9000, 9000)

\* filename = input10.txt

- segments() contains the same segment more than once

- segment 1: (1000, 18000) -> (4000, 30000)

- segment 3: (1000, 18000) -> (4000, 30000)

- segments() contains a subsegment of a segment in reference solution

- student segment 0: (1000, 18000) -> (3000, 26000)

- reference segment 1: (1000, 18000) -> (2000, 22000) -> (3000, 26000) -> (3500, 28000) -> (4000, 30000)

- student solution has 9 non-null entries

- reference solution has 2 non-null entries

- 7 extra entries in student solution, including: (3000, 26000) -> (4000, 30000)

\* filename = input20.txt

- segments() contains the same segment more than once

- segment 0: (6144, 20992) -> (8128, 20992)

- segment 2: (6144, 20992) -> (8128, 20992)

...

WARNING: the grading output was truncated due to excessive length.

Typically, this is because you have a method that has an unanticipated side effect

(such as printing to standard output or throwing an exception). A large amount of output

can also arise from failing many tests.