CS133 Lab 5 – Line Segment Intersection

Objective

- Compute all intersections between two sets of line segments.

Detailed Requirements

Given two sets of line segments R and S, write a function that finds all intersecting pairs of line segments (r, s) where $r \in R$ and $s \in S$. Use the attached C++ file for more implementation details.

For simplicity, you are required to implement only the basic scanline algorithm as described in class. More specifically, you can keep the intersecting line segments to the sweep line as a set of unordered line segments. However, you will need to slightly modify the algorithm so that it finds the intersections between line segments from the two input sets. For example, if a pair of line segments (r_1, r_2) intersect while $\{r_1, r_2\} \subseteq R$ or $\{r_1, r_2\} \subseteq S$, then it should not be reported in the answer.

For further simplification, you do not have to compute the actual intersection points but your function needs only to report the line segments that intersect.