Assignment 2
CSCI-4963/6962: Geometric Algorithms

Due: Tuesday, February 8, 2000

This is a programming assignment. You are to implement the $O((n+k)\log n)$ plane sweep algorithm to compute the intersection of a set of line segments in the plane. The implementation can be done in the language and platform of your choice.

- The input to the program is a set of line segments. The output should be the set of intersection points, along with the set of intersecting segments for each intersection point.
- Test the algorithm by randomly generating sets of line segments in the plane as input, and by constructing special cases.
- Explain how you deal with degenerate cases (horizontal lines, multiple lines intersecting at the same point, etc.).
- Display the results in a graphics window, and write the results into a postscript file (or any other printable format).
- You will have to hand in a printed copy of your code, running times, and three or four computed results. Code should be commented.
- Your code should be capable of running on test inputs provided to you.

Assignments are due at the beginning of class on February 8, and are to be done individually. Late assignments incur a 10% penalty.