Lesson 3. Trapezoidal maps via an Incremental Algorithm

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October 13, 2003

1 Introduction

The proof of the expected running time $O(n \log n + k)$ is rather identical in [Mul93, pages 84-90] and [MR95, pages 248-252].

In [MR95, pages 248-252] the point location is done by maintaining bidirectional pointers from the points to the trapezoids containing them. There is no on-line point location explained.

This incremental technique hinges on the fact that one trapezoid is adjacent to a constant number of input segments.

References

[MR95] R. Motwani and P. Raghavan. *Randomized Algorithms.* Cambridge University Press, 1995.

[Mul93] K. Mulmuley. *Computational Geometry, an Introduction through Randomized Algorithms.* Prentice Hall, 1993.

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