

How to get that quadtree in Z-order (for triangulations of unit square)

Input: file with for each vertex its adjacency list.

Algorithm:

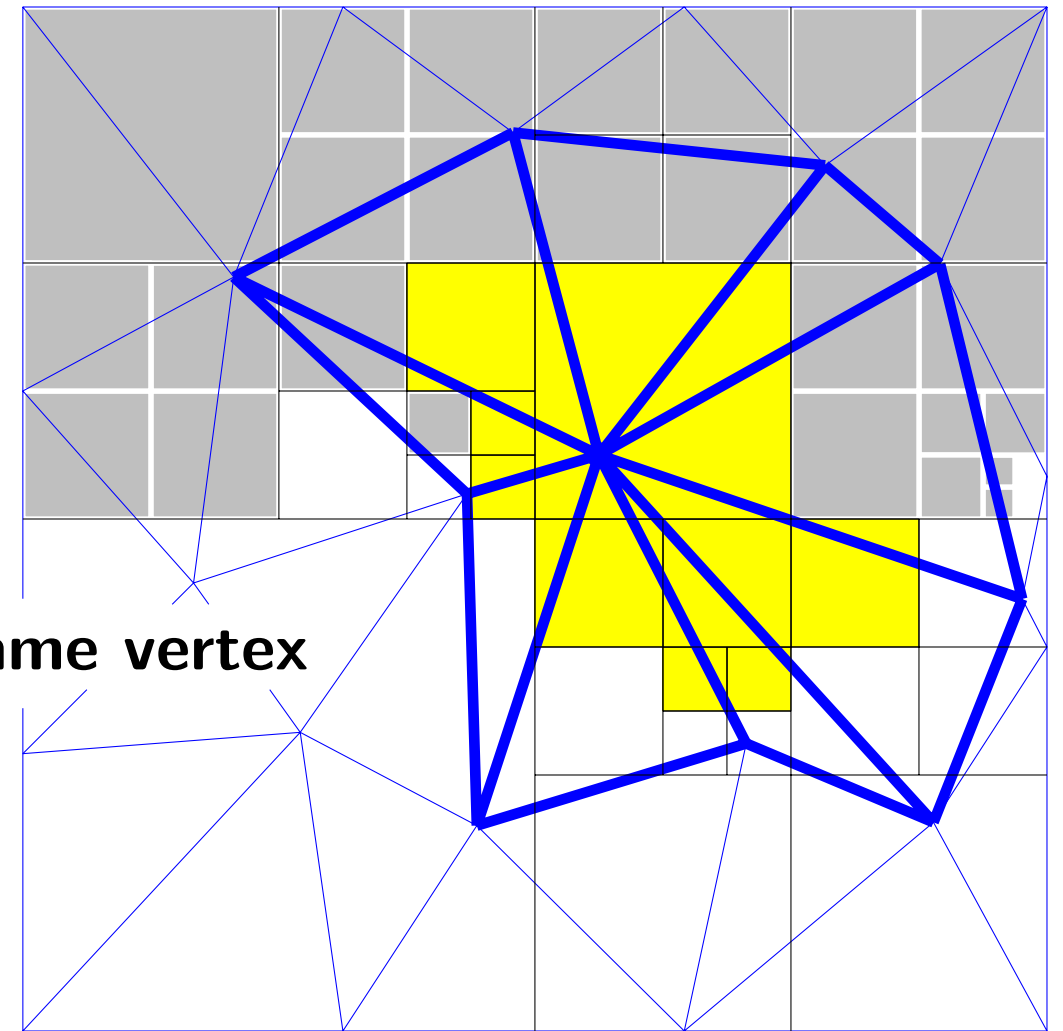
1. For each vertex v :

- load adjacency list in memory;
- build quadtree on $star(v)$ with splitting criterion:

Stop splitting when all edges incident to same vertex

- output each cell that is completely inside $star(v)$

2. Sort cells into Z-order (removing duplicates)



To prove for input of n triangles:

- together cells form subdivision of unit square;
- $O(1)$ triangles per cell;
- $O(n)$ cells in total;
- algorithm runs in $O(sort(n))$ I/O's

Works if triangles are *fat*:
minimum angle $>$
positive constant independent of n