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

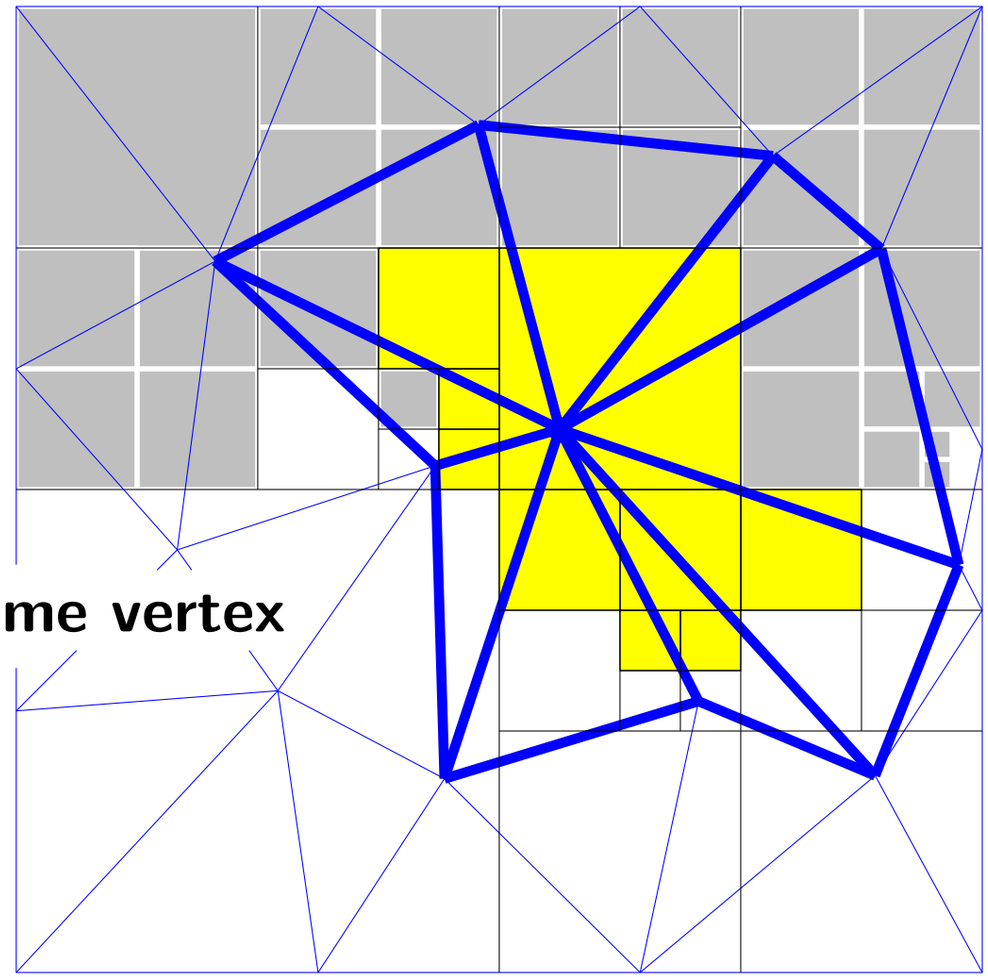
Input: file with for each vertex its adjacency list.

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