COT 4521: Intro. to Computational Geometry (Fall 2020)

Worksheet 14

Ground Rules

This assignment is intended to be solved within your group. However, you must submit your own answers. For all questions we expect you to show yours work!

Submission

Upload your answers and associated work to canvas as a single scanned, typed, or photographed PDF document. Be sure that your submission is legible.

Assignment

- For the following point set in blue, find perform spatial subdivision using a:
  - grid (4×4);
  - quadtree; and
  - kd-tree.
- Show the algorithm using the following pages. Be sure to show all of the steps and the order of steps for the algorithm (show both the division and resulting tree). The trees have a height of 4 (i.e., 3 levels of subdivision).
- For each algorithm, show the search path through the tree searching for the point nearest to the orange one.