

Exercises for Spatial Databases and GIS

Sheet 5 (until 09.12.2011)

Exercise 1 (Approximations)

How can you construct for any given polygon a convex polygon with a given number of edges as conservative approximation?

Exercise 2 (Approximations)

1. Which topological relations may occur between two spatial objects if the given topological relation exists between their conservative/ progressive approximations?
 - a) Disjoint
 - b) Equal
 - c) CoveredBy
 - d) Overlap
2. Why do spatial indexes usually use a conservative approximation?
3. Under which circumstances would a progressive approximation be more suitable than a conservative one?

Exercise 3 (Z-order)

1. Determine the Z-values for the points given on the following page. You may choose any embedding square or coordinate system.
2. What do you have to consider if you want to achieve a “good” Z-order for a given set of points? If “good” means:
 - a. If the distance between the points is small, so is the distance between their Z-values.
 - b. If the distance between the points is big, so is the distance between their Z-values

