Abstract

Indexing is a data structure to improve searching and minimize effort to read the actual data. There are various objects in indexing, such as point, regular polygon, and irregular polygon. Irregular polygon is the shape of Voronoi Diagram. Voronoi Diagram used to divide a region into smaller regions based on its nearest neighbor. Voronoi Diagram that has not been implemented in indexing will be check by each polygon, which will take a long time. Voronoi Diagram has three orders, namely: (1) First Order Voronoi Diagram, (2) Higher Order Voronoi Diagram (HOVD), (3) Highest Order Voronoi Diagram (HSVD). Indexing use Minimum Bounding Rectangle (MBR) in HSVD can cause high level of overlapping. The highest level of overlapping found in the HSVD, while the lowest is found in the First Order. VoR-tree (Voronoi R-Tree) is use to minimize overlapping. Previous studies used VoR-tree only to observed First Order. This final project presents an index of VoR-tree structure to reveal that VoR-tree can be effectively used in Highest Order Voronoi Diagram.

Keywords: Indexing, Voronoi Diagram, HSVD, VoR-Tree.