Mangrove forests have a lot of benefits for life, such as beach abrasion protector, building material and fuel, as well as meal supplier for plankton. Therefore, mangrove forest should be protected and developed. Mangrove forests are located along tropical and subtropical beach that are influenced by tide water. East Kalimantan is one of provinces in Kalimantan that has potential coast territory for mangrove’s growth. In one region there are some districts which have larger mangrove potency than neighbor districts. For that, it is required a spatial analysis for mangrove area identification in order to be able to know description of potential region for mangrove’s growth. One of techniques in extracting knowledge in spatial database is spatial data mining. This research uses a spatial data mining method, especially spatial decision tree using C4.5 algorithm to develop a classifier to predict new data of mangrove area. This research applies the Spatial Join Index (SJI) and the complete operator to apply conventional classification technique in spatial database. The SJI is created using topological relation to find relation between two spatial objects, then the result is simplified using complete operator. The result of this research shows that classes of mangrove area are described by some attributes: slope, topography, substrat, and landuse. The classifier contains 23 rules with 60,66% accuracy.

Keywords: spatial decision tree, C4.5 algorithm, spatial join index, complete operator