ABSTRACT

Objective: The objective of this final assignment aims to design a system based on android with an object that has been segmented on the destination and using BLOB of color segmentation with K-NN classification that can process periapical radiograph to detect granuloma disease.

Method: This final project to implement digital image processing to design a system based on Android that can detect dental disease granuloma of recording image data of periapical radiographs. The research method in this thesis is a description method, in which the research is based on color segmentation using BLOB (Binary Large Object) and segmentation into input feature extraction. This method is a spatial domain that analyzes the texture is more specific and accurate. While the classification process using the K - Nearest Neighbor (K-NN) aims to measure how close the distance between the test data and training data.

Result and discussion: The results of final assignment is able to detect the disease granuloma achieve 80% accuracy rate on android with average computation time 6.828 seconds using periapical radiographs sample results of 20 testing images and 16 training images.

Conclusion: Based on the results it can be concluded that the system of image processing on the detection of disease granuloma using BLOB color segmentation and classification of K-NN is able to detect the disease granuloma.

Keywords: granuloma, periapical radiographs, Binary Large Object (BLOB), K - Nearest Neighbor (K-NN).