

ABSTRACT

Granuloma is a disease that occurs in dental tissues. Granuloma can be detected on radiographs taken of the patient's teeth. Periapical radiograph is an x-ray image that displays the entire tooth, including dental crowns, root, and bone. Dental x-ray images of patients to be treated and the doctor will diagnose the disease in the tooth.

In this research was carried out by stages such as pre-processing, feature extraction and classification. In this experiment, DCT transformation method as the method of feature extraction texture and color. Discrete Cosine Transform (DCT) is a Fourier transform that converts the image from the spatial domain to the frequency domain, and arrange them in the critical frequency (DC) to the frequency is less important (AC). Linear Discriminant Analysis methods aimed at maximizing the variation between each class (across users) and minimize variations in class (within the user). For classification quality using K-Nearest Neighbor (K-NN).

The results of this thesis is able to granuloma, identified a disease with an accuracy of up to 85% at the android with the average computation time 0.014626 sec and using samples of periapical radiograph image granuloma as 16 trained and 20 test images.

Keywords: granuloma, periapical radiographs, Discrete Cosine Transform (DCT), Linear Discriminant Analysis.