

Abstract

Diabetic retinopathy is an eye disease that attacks the retina. Symptoms of this disease is the vision becomes blurred, however, in the early stages the symptoms will not be felt by the sufferers. The disease is caused by complications of diabetes mellitus, which can eventually lead to blindness. This final project will be made system that capable to know the presence or absence of diabetes through retinal image by detecting whether the retina is suffering from diabetic retinopathy. The method to be used in the construction of this system consists of processes such as digital image processing, *wavelet* transform and neural network learning vector quantization. *Wavelet* made after the image processing is done, the type of *wavelet* to be used is the Haar *wavelet*. *Wavelet* transform will produce an approximation image. Image approximation will be the feature vector as the *input* to LVQ classification method. LVQ network *input* vector will compare with vectors derived from learning. The resulting classification is based on the comparison before, when the two vectors are similar, it will be placed into the same class. Finally, there will be an analysis of the effect of the method that used for the implementation result.

Keywords: retina, diabetic, diabetic retinopathy, *wavelet*, LVQ