ABSTRACT

Diabetes Melitus (DM) is situation of hard hyperglikema (high blood sugar rate) by various disparity of metabolic effect of trouble hormonal. This effect patient have risk of complication to destroy body organ, one of them is eye retinal. Specificly, diabetes can be destroy blood vessels at retinal. This condition recognized with diabetic retinopathy. Damage of this blood vessels can detection manually by perceiving and analysing image of retinal from an fundus camera by opthalmologist or doctor.

Detection early to this disease, like appearance of exudate, microaneurysms, haemoraghes, of vital importance. This disease can cause blindness if have hard condition.

This final project will implementation image processing to detection early disease of diabetic retinopathy based on exudate detection. That way it expected can result of more accurate, objective and efisian diagnosa. So that with detection of diabetik retinopati more early, must be doing preventive step.

At the final project be made algorithm to detect optic disc and exudate, determine coordinate and radius of optic disc and the sum of exudate in piksel set. Method in used for example thesholding, matching template, edge detection, morphology processing, and labeling.

Based on the result of simulation, this system show result of promising with mean accuracy is 77%, sensitivity is 88 % and mean error is 28 %.