ABSTRACT

Cholesterol is a complex fat compound, which is produced from the body and food substances. Cholesterol is needed by the body for the formation of cell walls and as a raw material for several hormones. But if the cholesterol content in the blood is excessive, it will cause the disease. To find out cholesterol levels in the blood, a laboratory check is usually done by taking blood samples. However, in the world of iridology, a technique for analyzing disease and weakness in the body is based on the shape and structure of the iris. One of the diseases that can be analyzed through the iris is cholesterol.

Cholesterol, through the iris is marked by a change in iris pattern called Arcus Senilis. Senile arcus is caused by deposits of lipids in the lining of the peripheral cornea often associated with high blood cholesterol. To see the cholesterol ring in the eye is not easy, because everyone has a different iris structure so that it becomes a characteristic of identification with someone.

In this final project a system for measuring cholesterol levels through eye images has been designed so that it can facilitate a person in detecting cholesterol levels early. The process to be carried out starts from taking 60 training eye images and 30 test eye images using a mobile camera. Then the results of the photograph will be carried out using the feature extraction using FLBP and obtain the best FLBP operator there is sampling point 8 and radius 4 with $F = 7$. Then the characteristic value was analyzed using linear regression to obtain the measurement modeling. The results of the measurement model will be used to determine cholesterol levels. The value of Standard Error of Estimate in this study are still quite large at 38,28 for 30 images with a computational time of 11 seconds for each test image.

Keywords: Fuzzy Local Binary Pattern (FLBP), Linear Regression, Iris, Cholesterol.