ABSTRACT

Many people have a possibility to suffer from anemia or even already anemic but not realize it. This may be due to the effects of early symptoms of anemia are taken for granted or perhaps because they have no time to go to the doctor. Anemia should be prevented or overcome in order not getting worse and make a fatal impact. Nowadays the detection of anemia is mostly done through invasive lab tests. This is certainly hurts when taking a blood sample. There is another way to detect anemia which is non-invasive, it's to look at the reddish color of the inside-lower eyelid. If the reddish less and look pale then it means anemia. This is already done by many health practitioners in general, but in reality the assessment by looking would be subjective because the assessment capability by looking of each person is different.

In this final project the author will analyze the corelation between the reddish color of the inside-lower eyelid with the amount of hemoglobin in a person's blood. Based on the analysis, and then the author will create a system of measuring blood hemoglobin levels through the inside-lower eyelid image based on digital image processing.

From the testing results, it can be concluded that the system can calculate the amount of hemoglobin in the blood through the inside-lower eyelid image with an average accuracy of 46,75%, and can determine whether normal or not the levels of hemoglobin that contained in the person's blood with an average accuracy of 83,75%.

Keywords: hemoglobin, correlation, non-invasive.