ABSTRACT

Blood is an important indicator to determine some health problems. There are some component in blood (erythrocytes, leukocytes and trombocytes). There are five types of leukocytes (*Basophil, Eosinophil, Neutrophil, Monocytes dan Lymphocytes*) are useing in determination of some health problems. So, an program is needed to classify each type of leukocytes, where the development of digital image processing technology can used to solve the problems. In this final project, a program is made to clssification each type of leukocytes in an image using digital image processing, so a fast and cheap tool will produced to classify them. The determination of type of leukocytes is based on characteristic each cells there are nucleus type's and difference between cells and nucleus.

The image processing process are start from get color image data of leukocyes, after it the next stage is pre-processing consists of noise removal by filtering, enhancement by *histogram equalization* and *contrast stretching,* and the next stage is segmentation based on size will classify the erythrocytes and leukocytes, the end stage is classification the leukocyets so the name of lukocytes type's is a result. The analysis is in characteristic of each type of leukocytes and the test of program is used by change the median filter orde. The test result that fourth median filter orde is the best with error presentation, 10%. From the result that useing 70 image sample, we can conclude that the system is reliable enough for classify white blood cell automatically.

Keyword : Image processing, Characteristic, Classification, White blood cells,