

ABSTRACT

Cataract is a condition experienced eye lens opacities and therefore can't describe the object clearly on the retina. In addition to glaucoma, accidents traumatic, and retinal damage caused by diabetes mellitus, cataract is the one of the leading causes of blindness in the eye. Based on data from the World Health Organization (WHO) in 2001, approximately 20 million people in the world are blind due to cataract. Indonesia are among the countries with the highest rates of blindness in the world with the addition of new cases reached 210.000 people each year. Aging is a cause of cataracts is often experienced by sufferers. Cataracts are caused by age called senile cataract. To prevent an increase in patients with cataracts, we need an application that can detect early cataracts.

In this thesis, designed an android application used of binary image pixel comparison. This method analyzed the calculation of the conversion pixel RGB image to grayscale and threshold. Then the classification method used is K-Nearest Neighbor.

Application called Catagram has been able to detect cataract disease in non-real time and real time. Level of accuracy in non-real time applications is 80,95%, while the level of accuracy in real-time applications is 79,05%. So that system produces average accuracy rate-average of 80%.

Key words : Cataract, senile cataract, binary image, grayscale, thresholding, K-Nearest Neighbor, Android.