ABSTRACT

Skin is the largest organ that covers the entire surface of human body, and it has an important role to protect other organs inside the body. The health of skin is very important to be cared for avoiding various types of skin diseases that caused by weather factor, life habits, and unhealthy eating patterns. In medical field, there needs helpful tools to identify skin diseases. The tools is expected to help medical staff in diagnosing skin diseases and avoiding medical errors.

In this research will be designed a system that can detect types of skin diseases based on digital image processing. The method are Gray Level of Co-occurrence Matrix (GLCM) and K-Nearest Neighbor (K-NN). The output is a system that can classify acne disease, herpes disease, scabies disease, and normal skin.

The tests that have been carried out using 160 images, consists of 25 images training class and 15 images test in each class. The best accuracy system is obtained 85% with the amount of efficient computation time is 0.6389 second that is obtained using GLCM parameter with texture feature Correlation and Homogeneity, quantization level 16, orientation angle 90° on 3 pixels distance. Meanwhile, the K-NN parameter uses Distance Chebychev with the value $k = 1$.

Keywords: Skin, Skin Diseases, Gray Level of Co-occurrence Matrix (GLCM), K-Nearest Neighbor (K-NN).