

ABSTRACT

The face is one of the most important part of human limbs. Usually a person's health is also reflected in facial skin health. But sometimes people do not know even less aware of their own facial skin type, so an error occurs in the case of facial skin care.

This project has built a system that can classify the facial skin type. Initial preprocessing step is performed on the facial skin by changing the RGB image into grayscale image and using median filter. In the grayscale image will be taken of feature extraction of facial skin using the first-order characteristic and second order characteristic. The Parameters of first-order characteristic and second order characteristic were collected and included in the classification method using the K - Nearest Neighbor so the system can classify the facial skin type.

At the end of this project has been designed and simulated the application of the classification of facial skin type. This application can be used as biomedical applications to classify the facial skin type and concluded proper way of treatment for these facial skin type. The best accuracy results of this application based on feature extraction using KNN classification method is equal to 92,85% using the first-order characteristic and second order characteristic, value of $k = 1$, and cosine distance.

Key words: image processing, facial skin, first order characteristic, second order characteristic, K - Nearest Neighbor.