ABSTRACT

Fingerprint is one example of biometrics used in everyday life such as to recognize people's identities and as a security for personal belongings. Fingerprints have characteristics that are unique to each individual and have a consistent nature over time. With fingerprints, a person's identity can be identified through the patterns in the fingerprint. However, fingerprint patterns are very complicated, making fingerprints very difficult to be matched manually. A classification system is needed that can detect the suitability of fingerprint patterns accurately.

This system was created to obtain information in the form of identity. In this fingerprint classification system there are several stages in system design, namely the stage of image acquisition, preprocessing, feature extraction, then matching. In this system a process is carried out to obtain information in the form of a person's identity, where in the extraction of features there are four stages namely Enhancement, making mask, finding minutiae, and filtering false minutiae. This stage is very important for the feature extraction process in order to obtain an appropriate identity. Enhancement is done to improve the input image, masking mask itself functions to make lines more detailed than before, then includes finding minutiae to find small things in the pattern, and finally filtering to filter out errors.

This system is tested with several parameters, including ink color, distance, and light intensity. The ink colors used are green, red and purple. The distance used when shooting is at a distance of 5 cm and 7 cm. as for the intensity of the light is at 545 lux and 10300 lux.

Keywords: *Digital Image processing, fingerprint, image processing*