ABSTRACT

Today, security technology has been growing to date, one of which is the door security system. In its application, the door security system still uses the conventional method of using a PIN and password. However, this method is still considered insufficient to maintain security at the door, because irresponsible parties can still access it. Therefore, the use of biometrics can be implemented on the door security system, one example is using fingerprints. Fingerprint is one example of biometrics that can be used to identify a person's identity. Fingerprints have unique characteristics of each individual and are consistent over time, ensuring greater security.

This final project aims to simulate a door lock system to recognize fingerprint-based image processing. This door lock system is a fingerprint recognition system with a higher level of accuracy and speed. The system will implement two main methods used, namely maximum curvature points and phase correlation. The results show the system developed in this study succeeded in recognizing fingerprints with an accuracy rate of ***88%*** *for thumb and* ***92%*** *for index finger. This system can also accept fingerprints scans with average speed of* ***15.375*** *seconds/subject and fingerprint recognition with average speed of* **0.376 ms***/subject.*

Keywords : *biometric, fingerprint recognition, maximum curvature points, phase correlation.*