ABSTRACT

The biometric system is a biometric authentication system using human physical identities such as finger veins based on the recognition of blood vessel patterns. Previous researchers have proven that these patterns have unique characteristics and their presence under the layers of human skin so that they cannot be faked, therefore the finger veins recognition system is used as information security and privacy of each individual. In this study, there are several stages of the blood vessel recognition process, namely, the image acquisition process using hardware designed with supporting tools such as infrared LEDs because blood molecules have the property to absorb infrared light so that a camera that has a sensor does not block the light, namely CMOS sensor so that the blood vessels under the skin layer can be filled clearly. Before the image results are processed to the feature extraction stage using the LLBP method, a preprocessing process is carried out aimed at improving image quality as an appropriate object recognition. The results of the image preprocessing feature extracted using the LLBP method which has a fairly good ability to recognize pattern textures and is relatively fast in processing data. At the classification stage the K-Nearest Neighbor (K-NN) makes predictions by making comparisons between test data and training data based on the closest neighboring value The implementation of this system can be studied and developed again so as to get accuracy results close to perfect values.

***Keyword** : Biometric system, fingervein,* LLBP, K-NN