ABSTRACT

Fingerprints are images of patterns possessed by fingers in humans. Everyone has a different image of the fingerprint pattern so that fingerprints can be used to identify someone. In addition, fingerprints cannot change for life. Fingerprint patterns are commonly used for information technology such as access to enter rooms accessing data that is limited and confidential. Therefore, the level of accuracy is very important in building a fingerprint pattern image system. There are various methods that can be used in fingerprint recognition systems such as pattern, minutiae, wavelet, correlation and many more.

In research on fingerprints no one uses the LVQ (Learning Vector Quantization) classification method, then in this final project research will be built a fingerprint classification system using the feature extraction method used in the fingerprint recognition process is minutiae extraction, this method directly uses minutiae extraction using two variations of the minutiae, namely the ridge bifurcation and the ridge ending to display the special points of the fingerprint branches. For the classification method used is LVQ (Learning Vector Quantization), the purpose of this method is to classify new objects based on samples from the training data.

With the creation of a fingerprint classification system, the security of a system can be improved by reducing the act of identity errors using the fingerprint feature. on the results of research using the minutiae method and LVQ (Learning Vector Quantization), the results obtained with parameters (HiddenSize = 35, LvqLearningRate = 0,01, and Epoch = 100) on the deviation feature with training data = 10 and test data = 10 with an accuracy of 100 %, while the variant features and the mean with the training data = 10 and test data = 10 have an accuracy of 60% and 90%.

Keywords: Fingerprint, Extraction Minutiae, LVQ (Learning Vector Quantization)