ABSTRACT

Face is an important part of human beings that very unique and difficult to counterfeit or transferable ownership. For this reason, face recognition techniques were developed to help the authentication and identification process. Face recognition system is considered good to overcome the problems posed by the identification system that uses by traditional methods (password or token), such as theft of passwords and users that usually forget their passwords. Face recognition system can be implemented not only in the identification system used by the direct user, as in the presence systems and payment systems, but also can be implemented on a remote security system, such as the CCTV which is then used as a surveillance system.[3]

Face recognition system has several factors that lead to decreased performance, these factors are inter-personal variability (factor of genetics) and intra-personal variability (internal change of people). One of the causes of intra-personal variability is differences in lighting conditions when taking the data in train database and test database [16]. In previous studies Volume Based Local Gabor Binary Pattern on Three Orthogonal Plane (GV-LBP-TOP) has been successfully applied to the FERET database (731 people) and the FRGC (316 people), with a system accuracy of 83% -88%. The resulting system accuracy results better than the PCA method, FLDA, LBP and LGBP. [11]

In this final project, the face recognition system was tested using Yale database B, the databases of 38 individuals who were photographed at 20 lighting conditions. GV-LBP-TOP will be used to describe the texture of the face, and Probabilistic Neural Network (PNN) is used as a method of classification characteristics. The output of this face recognition system is one of the names contained in the training database that has a characteristic proximity with test data. Accuracy generated by the system reaches 74% to 38 individuals.

Keywords: *biometric system, face recognition, Local Binary Pattern, Local Gabor Binary Pattern Volume Based on Three Orthogonal Plane (GV-LBP-TOP), Probabilistic Neural Network*