ABSTRACT

Biometrics is biological authentication that allows the system to recognize the user. Several biometric recognitions include retinal, face recognition, fingerprint recognition and voice recognition. Voice has developed so that it can be combined with the Hidden Markov Model (HMM) so that its functions synergize with each other. The hope is that they can support each other and help humans in the future so that they can help in everyday life.

Voice Recognition is generally used for the identification and verification process using voice. Voice identification is a process to identify a person's identity, while voice verification is a process to ensure that the voice data provided matches the library database that was previously initialized. Voice Recognition with certain configurations combined with HMM is expected to be a solution to support the identification and initiation. This final project uses a Raspberry Pi 4B combined with an HMM in the form of Google Voice to process the sound of the Raspberry Pi in order to open the Solenoid Door Lock.

The results obtained from this Final Project are using a USB Microphone to convert sound into electromagnetic waves so that it can be processed by Raspbery pi. From the test results, each voice command was carried out 10 times with a distance of 1 cm, 5 cm, 10 cm, 15 cm, 20 cm, 30 cm, 40 cm, 50 cm, 60 cm, and 70 cm, it can be concluded that the ideal distance from the sound source to the microphone is 50 cm with a success rate of 83%.

Keyword : *Raspberry Pi*, *Voice Recognition*, *Biometrik*, HMM