

ABSTRACT

Epilepsy is a disease of disorders in the nerves of the brain caused by a pattern of electrical activity that comes out of the brain cells. People with epilepsy will experience seizures or seizures characterized by abnormal movements that cannot be controlled. This case of epilepsy requires serious treatment because many cases occur in this disease. One of the processes of diagnosing seizures in epilepsy is by recording brain signals or called Electroencephalogram (EEG) which then the resulting signal is read conventionally by health experts. However, this process has many shortcomings in terms of the time it takes too long, the cost is too expensive, and the level of accuracy is less. Therefore, the development of seizure diagnosis is needed quickly and automatically with a high degree of accuracy.

This final project designed an automatic seizure detection system in normal and ictal conditions. The patient data used is a dataset from the University of Bonn. The Data will be preprocessed with BPF *Butterworth* filtering, the next stage of feature extraction with sample entropy, and the last stage of classification with K-Nearest Neighbors.

Then the results of the system are obtained and look for the value of the accuracy of the system. By using datasets of 100 each under normal and ictal conditions, then get a training data accuracy value of 93.94% and get a test data accuracy value of 100%. With the obtained accuracy value will be the result of the accuracy of this system.

Kata Kunci: *Epilepsy, normal and ictal, KNN, Sample Entropy, KNN, dataset University of Bonn*