

## ABSTRACT

*Abnormalities in the heart can be detected by utilizing the sound produced by the heart itself because in it there are features that contain information to then be processed to get the final result in the form of an accuracy value that can determine the condition of the heart.*

*Feature extraction is carried out to obtain data that will be used in the classification process. Some of the extracted features include mean frequency, total power, maximum peak frequency, 1st spectral moment, and 2nd spectral moment. All data will be collected into one dataset. By utilizing the K-Nearest Neighbors (KNN) method, the dataset is divided into test data and training data, where the proportion of test data is 20% of the dataset and random state is set to 10, the goal is that the test data does not change when the program is restarted. The test is carried out under two conditions, namely when the dataset is not normalized and when the dataset is normalized.*

*The extraction process produces good features because no value is lost. At the beginning of the test with a k value of 3 (three), the accuracy results are only 62.96%. To improve the accuracy, several tests were carried out on several parameters such as the amount of test data, the value of k, and the distance search method. From these settings, the accuracy reaches 100% with k worth 9, the amount of test data is 5% of the total input data, and the distance search method used is Manhattan.*

**Keywords:** *heart sound, spectral method, feature extraction, KNN, python*