

# **HEART RATE MONITORING APPLICATION USING MAX30102 SENSOR AND ANDROID BASED NAIVE BAYES GAUSSIAN ALGORITHM**

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## **ABSTRACT**

*Heart health is a crucial aspect to pay attention to considering that heart disease is the main cause of death in Indonesia, especially among the elderly. One effort that can be made to maintain heart health is to check your heart rate regularly. However, this often experiences obstacles because it requires direct visits to health facilities. Therefore, this research was carried out with the aim of designing an Android application using the Max30102 sensor and the Gaussian Naive Bayes algorithm which is expected to be able to monitor heart rate, notify when the heart rate is abnormal, view the history of heart rate measurements and determine the condition of the heart rate so that it can help check the heart rate. elderly heart regularly. The research methods used include literature study and application of the Gaussian Naive Bayes algorithm to calculate the average heart beats per minute. This research has produced a heart rate monitoring application using the Max30102 sensor and the Android-based Gaussian Naive Bayes algorithm and was tested in three stages, namely testing the application functionality, calibrating the Max30102 sensor and testing the resulting Gaussian Naive Bayes algorithm model. The results of application functionality testing using the black box testing method show that the application runs well. The calibration of the Max30102 sensor used produced an accuracy rate of 95.8%, while testing the Gaussian Naive Bayes algorithm using the K-fold cross-validation method showed an accuracy of 91%.*

*Keywords: Android, Gaussian Naive Bayes, Heart Rate, Monitoring, Max30102 Sensor*