

Abstract

The increasing development of Internet of Things (IoT) technology is very helpful in the health sector. Various things in the health sector are greatly helped in the development of IoT devices, such as respiratory monitoring. In respiratory monitoring, measurements take advantage of abdominal movements during the breathing process. To be able to facilitate user access, a tool is needed that can be obtained and installed easily on the user. For this reason, an Android smartphone is used as a measurement device. To be able to process patient movements and become respiratory rate data, an Android-based system was created that can process data received by the internal accelerometer of an Android smartphone. In using the accelerometer, noise or fluctuations in data that are less accurate can be generated because the accelerometer can receive movements caused by the user other than movements in the abdomen. For this reason, a Low Pass Filter (LPF) is used to reduce data fluctuations and increase the accuracy of the resulting respiratory calculation data. By comparing the accelerometer value on the z-axis with the filtered z-axis value, the use of Low pass filter (LPF) causes the graphic value on the z-axis with the low pass filter to be steeper than the z-axis value in the raw data