

# **DESIGN AND DEVELOPMENT OF A PHYSICAL FITNESS TRAINING APPLICATION BASED ON THE INTERNET OF THINGS (IOT) FOR MONITORING HEART HEALTH CONDITIONS**

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## **ABSTRACT**

*Physical fitness is a form of ability to adjust the weight of the human body that a person must meet in order to be able to carry out all daily activities or activities without feeling tired. Physical fitness can also be used to determine the condition of heart health from the number of times the user performs movements along with the BPM (Beats per Minute). In general, people forget to count how many times they have done a movement and do not know how many heart rates they get during fitness training. Therefore, a monitoring system was built to track body movements and heart health conditions in physical fitness training using an IoT basis supported by the fuzzy mamdani method for calculating heart rate. The microcontroller used is ESP8266 which is equipped with a WiFi module, PIR sensor and Heart Rate Sensor. The PIR sensor will detect user movement. Heart Rate Sensor will detect the user's heart rate. From these two parameters, the status of heart health conditions will be generated. Then the WiFi module will send data to the Android application for display. Based on the design results and with this fitness training monitoring system, users can adopt a healthy lifestyle and make it easier to train fitness in real time.*

*Keywords: BPM, ESP8266, Internet of Things, Physical Fitness, Tracker, Sensor*