

# **PENGEMBANGAN ALAT PENGHITUNG *PUSH UP* (*PUSH UP COUNTER*) BERBASIS NODEMCU ESP8266 DAN ANDROID**

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## **ABSTRAK**

Penelitian ini bertujuan Mengembangkan Alat Penghitung *Push Up* (*Push Up Counter*) Berbasis NodeMCU ESP8266 dan Android. Alat ini membantu pengguna melakukan latihan *Push Up*, melacak jumlah repetisi, dan memantau waktu latihan. Komponen yang digunakan seperti NodeMCU ESP8266, Sensor Ultrasonik HC-SR04, Buzzer, LCD OLED 0.96 Inch, *Touch Sensor*, dan Aplikasi Blynk di Android. Alat yang dikembangkan berhasil mengintegrasikan Sensor Ultrasonik HC-SR04 dengan NodeMCU ESP8266 untuk melacak dan merekam latihan *Push Up*. Sensor Ultrasonik membantu mengukur jarak saat posisi *Push Up* naik 40cm dan turun 60cm dari tiang sensor sebagai satu repetisi *Push Up*. Selain itu, alat ini menghitung total jumlah *Push Up* dan membatasi hingga 100 kali per sesi latihan. Informasi ditampilkan pada LCD OLED dan bisa dipantau melalui Aplikasi Blynk di Android, termasuk data latensi dengan keterlambatan 1 detik. Alat ini juga dapat dioperasikan dengan Adaptor 5V DC untuk memberikan solusi praktis untuk berbagai pengaturan latihan *Push Up*.

Kata Kunci: Pengembangan, Alat Penghitung *Push Up*, *Internet of Things*, Blynk, NodeMCU ESP8266

**DEVELOPMENT OF A PUSH UP COUNTER BASED ON NODEMCU  
ESP8266 AND ANDROID**

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**ABSTRACT**

*This research aims to develop a Push Up Counter based on NodeMCU ESP8266 and Android. This tool helps users do Push Up exercises, track the number of reps, and monitor exercise time. Components used such as NodeMCU ESP8266, HC-SR04 Ultrasonic Sensor, Buzzer, 0.96 Inch OLED LCD, Touch Sensor, and Blynk Application on Android. The developed tool successfully integrates HC-SR04 Ultrasonic Sensor with NodeMCU ESP8266 to track and record Push Up exercises. The Ultrasonic Sensor helps to measure the distance when the Push Up position goes up 40cm and down 60cm from the sensor pole as one Push Up repetition. In addition, it counts the total number of Push Ups and limits it to 100 times per training session. Information is displayed on the OLED LCD and can be monitored via the Blynk App on Android, including latency data with a delay of 1 second. It can also be operated with a 5V DC Adapter to provide a practical solution for various Push Up training settings.*

**Keywords:** *Development, Push Up Counter Tool, Internet of Things, Blynk,  
NodeMCU ESP8266*