**SISTEM KONTROL DAN MONITORING GERBANG OTOMATIS**

**BERBASIS SMARTPHONE**

**PROYEK AKHIR**

Diajukan Untuk Memenuhi Sebagian dari Syarat Memperoleh Gelar Ahli Madya Departemen Pendidikan Teknik Elektro



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**ABSTRAK**

Perkembangan zaman sekarang semakin meningkat, manusia mengharapkan sebuah alat atau teknologi yang dapat membantu pekerjaan manusia, sehingga teknologi menjadi kebutuhan bagi manusia. Tugas akhir ini membuat sebuah hasil penelitian tentang sistem kontrol dan monitoring gerbang otomatis berbasis NodeMCU dan sistem *smartphone*. Pembuatan alat dilakukan sebagai salah satu usaha dalam kemajuan teknologi untuk memberikan kemudahan dan kenyamanan melalui sistem otomasi pada rumah berupa gerbang otomatis. Komponen yang digunakan untuk perancangan sistem adalah mikrokontroler NodeMCU V3, sensor *proximity*, motor servo, *limit switch*, *power supply* dan *smartphone*, sedangkan padaperancangan *software* menggunakan Arduino IDE dan Blynk. Berdasarkan hasil pengukuran dan pengujian, sistem pada alat yang dibuat mampu membuka dan menutup pintu gerbang secara otomatis pada jarak maksimum 44 meter dengan waktu respon maksimum 1 detik dalam keadaan ruang terbuka.

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**ABSTRACT**

*Today's development is increasing, humans expect a tool or technology that can help human work, so technology becomes a necessity for humans. This final project creates a result of research on NodeMCU-based automatic gate control and monitoring systems and smartphone systems. The making of tools is done as one of the efforts in advancing technology to provide convenience and comfort through an automated system in the home in the form of automatic gates. The components used for system design are the NodeMCU V3 microcontroller, proximity sensors, servo motors, limit switches, power supply and smartphones, while the software design uses Arduino IDE and Blynk. Based on the results of measurements and testing, the system on the device made is able to open and close the gate automatically at a maximum distance of 44 meters with a maximum response time of 1 second in the state of open space.*

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