

**ABSTRAK**

Judul : Pemodelan Sistem Monitoring Ketinggian Air Menggunakan Nodemcu Esp 32 Berbasis Internet Of Things  
Nama : Yoga Lembano  
Program Studi : Teknik Informatika

Indonesia terletak pada wilayah yg beriklim tropis. Daerah yg beriklim tropis mempunyai 2 ekspresi dominan, yakni ekspresi dominan hujan & ekspresi dominan kering. Musim hujan terjadi dalam bulan April sampai Oktober, sedangkan ekspresi dominan kering terjadi dalam bulan November sampai Maret. Namun, pola ekspresi dominan dalam bulan-bulan tadi tidak lagi bisa dipakai menjadi acuan. Cibunar adalah desa di kecamatan Parungpanjang, Bogor, Jawa Barat, Indonesia. Tinggi Wilayah di atas Permukaan Laut (DPL) 50,7 Meter. Pada desa Cibunar sangat rawan mengenai banjir. Banjir ini terjadi dikarenakan faktor curah hujan yang tinggi sehingga mengakibatkan, rusaknya rumah-rumah warga, serta kegiatan warga yang terpaksa harus berhenti sementara. Berdasarkan permasalahan tersebut, maka dibuatlah suatu sistem untuk monitoring ketinggian air yang dapat digunakan dalam melakukan pengecekan ketinggian pada suatu bendungan. Dalam membangun sistem monitoring ketinggian air menggunakan mikrokontroler nodemcu esp32 berbasis Internet of Things (IoT) untuk metode analisis menggunakan analisis PIECES, pengembangan menggunakan metode prototype, serta perancangan sistem dengan diagram UML, menggunakan sensor ultrasonik, sensor waterflow, motor servo sebagai action sistem berupa pengendali pintu. ESP32 Wifi Modul yang digunakan sebagai mikrokontroler yang mengolah data sensor dan mengirim data sensor ke database firebase, dan dapat di monitoring melalui aplikasi mobile.

**Kata Kunci:** *ultrasonik, android, flowmeter, ESP32, IoT*

**ABSTRACT**

Title : Modeling of Water Level Monitoring System Using Nodemcu Esp32 Based on Internet of Things  
Name : Yoga Lembano  
Study Program : Informatics Engineering

*Indonesia is located in an area with a tropical climate. Areas with a tropical climate have two dominant seasons, namely the rainy season and the dry season. The rainy season occurs from April to October, while the dry season occurs from November to March. However, the dominant expression pattern in the past months can no longer be used as a reference. Cibunar is a village in Parungpanjang sub-district, Bogor, West Java, Indonesia. Area Height above Sea Level (DPL) 50.7 Meters. Cibunar village is very prone to flooding. This flood occurred due to high rainfall factors, resulting in damage to residents' houses, as well as residents' activities which were forced to stop temporarily. Based on these problems, a system for monitoring water levels was created that can be used to check the height of adam. In building a water level monitoring system using a nodemcu esp32 microcontroller based on the Internet of Things (IoT) for the analysis method using PIECES analysis, development using the prototype method, and designing a system with UML diagrams, using ultrasonic sensors, waterflow sensors, servo motors as system actions in the form of controllers. door. ESP32 Wifi Module used as a microcontroller that processes sensor data and sends sensor data to the firebase database, and can be monitored via a mobile application.*

**Keywords:** ultrasonic, android, flowmeter, ESP32, IoT