ABSTRAK

Ruangan server sangatlah penting bagi sebuah perusahaan, berperan sebagai penyimpanan data, pengelolaan, dan distribusi data. Aktif dalam waktu yang lama, melakukan proses yang berat dan komponen yang cepat rusak akibat *fluktuasi* kondisi suhu dan kelembaban yang tidak kondusif. Agar suhu dan kelembaban tetap terjaga, di perlukan pengecekan langsung secara *real-time* dengan adanya notifikasi. Untuk memudahkan dalam monitoring dan notifikasi di buat Inferensi *Fuzzy Logic* dengan menerapkan aturan aturan untuk membuat keputusan dengan output konstanta berupa PWMled untuk mengendalikan LED dan PWM*buzzer* untuk mengendalikan *buzzer*. dalam pembuatan alat ini di perlukan beberapa komponen elektronika seperti mikrokontroler ESP32, Sensor DHT11, Buzzer dan LED. Selain itu, *Software* seperti Arduino IDE, *Visual studio code*, Xampp dan Platform Telkom IoT Platform juga di gunakan. Pengujian sistem dilakukan dengan menyimpan alat di server selama 5 hari dengan adanya anomali pada 1 agustus jam 14.49 di dapat nilai PWMled dan PWM*Buzzer* melebihi 30 dengan *output* led dan buzzer sedang. kemudian di tampilan di Web monitoring. Pemantauan suhu dan kelembaban dilakukan dengan menggunakan sensor DHT11 dengan di bandingkan dengan HTC-1 dengan kesalahan pada nilai suhu 0.93% dan kesalahan nilai kelembaban 2.50% kesalahan tersebut dapat di toleransi karena nilai akurasi nya 99.07%. Hasil monitoring di tampilkan di web, dengan mengambil data dari database Xampp.

Kata kunci: *Fuzzy Logic*, Ruangan server, Suhu kelembaban, ESP32.   .

ABSTRACT

The server room is very important for a company, acting as data storage, management, and distribution. data storage, management, and distribution. Active for a long time, performing heavy processes and components that are quickly damaged due to unfavorable temperature and humidity conditions. that are not conducive. In order to maintain the temperature and humidity, it is necessary to check the with real-time notification. To facilitate the notification Fuzzy Logic Inference is made by applying rules to make a decision with a constant output in the form of PWM. with constant output in the form of PWMled to control the LED and PWMbuzzer to control the buzzer. to control the buzzer. in making this tool several electronic components are needed such as a microcontroller electronic components such as ESP32 microcontroller, DHT11 Sensor, Buzzer and LED. In addition, Software such as Arduino IDE, Visual studio code, Xampp and Telkom IoT Platform.Platform are also used. System testing is done by storing the device on the server for 5 days then displayed on the Web monitoring. Temperature and humidity monitoring is carried out using the DHT11 sensor by comparing it with HTC- 1 with an error in the temperature value of 0. 1 with an error in the temperature value of 0.93% and an error in the humidity value of 2.50%. This error can be tolerated. Monitoring results are displayed on the web, by retrieving data from the Xampp database and notifications. from the Xampp database and notifications in the form of LEDs and buzzers turn on if the temperature and humidity are not as instructed. humidity does not match the instruction.

Keywords: Fuzzy Logic, Server room, Temperature humidity, ESP32.   .