

ABSTRAK

Prototype sistem kendali smart home berbasis esp32 menggunakan mit app inventor dan firebase cloud yang dibuat terdiri dari smart lamp, smart monitoring temperature, dan smart security with motion detector.

Sistem yang dibuat menggunakan komponen-komponen elektrikal meliputi *esp32, dht11, hc-sr501, buzzer, led, power supply, dan breadboard. Prototype rumah berukuran 20cm x 20cm x 20cm dan luas pintu berukuran 15cm x 15cm. Selanjutnya buat dan masukkan program esp32, firebase cloud, serta mit app inventor. Kemudian komponen-komponen elektrikal dihubungkan satu dengan yang lainnya menggunakan kabel listrik sehingga menjadi ke satuan sistem kontrol dan disatukan juga dengan prototype rumah.*

Berdasarkan hasil pengujian *smart lamp* dengan 10 sampel data rata-rata pengujian *on* 2.974 detik dan rata-rata pengujian *off* 2.457 detik. Pengujian *smart monitoring temperature* dengan 10 sampel data rata-rata suhu 32.6 derajat *celcius* dan rata-rata kelembapan 80%. Pengujian *smart security with motion detector* dengan 10 sampel data rata-rata *respons sensor pir hc-sr501* 4.574 detik dan rata-rata pengujian *alarm set off* 4.991 detik. Kecepatan *respons* dari alat dipengaruhi sekali oleh jaringan *internet* yang digunakan.

Kata kunci : *Android, Firebase cloud, MIT app inventor, Prototype smart home*



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ABSTRACT

Prototype control system for a smart home based on esp32 using mit app inventor and firebase cloud created consists of smart lamp, smart monitoring temperature, and smart security with motion detector.

The system made using electrical components includes esp32, dht11, hc-sr501, buzzer, led, power supply, and breadboard. The prototype house measures 20cm x 20cm x 20cm and the door area measures 15cm x 15cm. Next, create and download the esp32 program, firebase cloud, and mit app inventor. Then the electrical components are connected to each other using electric cables so that they become a control system unit and are also integrated with the prototype house.

Based on the results of the smart lamp test with 10 sample data, the average test is on 2,974 seconds and the average test is off, 2,457 seconds. Smart monitoring temperature testing with 10 sample data average temperature of 32.6 degrees celsius and average humidity of 80%. Testing smart security with motion detectors with 10 data samples, the average response of the pir hc-sr501 sensor is 4,574 seconds and the average set-off test is 4,991 seconds. The response speed of the tool is very much affected by the internet network used.

Keywords : *Android, Firebase cloud, MIT app inventor, Prototype smart home*

