ABSTRAK
SISTEM PENGUMUMAN BERBASIS IOT DENGAN KONTROL BERBASIS WEBSITE MENGGUNAKAN RUNNING TEXT DISPLAY

(Duwi Putri 2025: 75 halaman)

Perkembangan teknologi *Internet of Things* (IoT) telah mendorong inovasi dalam sistem pengumuman berbasis jarak jauh. Penelitian ini merancang dan membangun sistem pengumuman otomatis menggunakan mikrokontroler ESP32 yang terintegrasi dengan running text display dan speaker, serta dikendalikan melalui platform web secara real-time. Sistem dirancang untuk menampilkan teks pengumuman, memutar suara melalui speaker saat mendeteksi gerakan menggunakan sensor PIR, dan memungkinkan pengendalian dari jarak jauh melalui jaringan internet. Metode yang digunakan meliputi perancangan perangkat keras dan lunak, integrasi sensor dan aktuator, serta pengujian terhadap fungsi sistem. Hasil pengujian menunjukkan bahwa sistem mampu menampilkan teks dengan baik sesuai instruksi dari web, mendeteksi gerakan secara akurat, serta memutar audio pengumuman sesuai perintah. Koneksi web juga berjalan stabil sehingga memungkinkan pemantauan dan pengendalian dari lokasi manapun. Sistem ini efektif digunakan untuk berbagai kebutuhan pengumuman otomatis di ruang publik seperti perkantoran, sekolah, atau fasilitas umum lainnya. Dengan desain modular dan berbasis IoT, sistem ini memiliki potensi pengembangan lebih lanjut, seperti integrasi dengan sistem keamanan atau fitur notifikasi berbasis lokasi untuk meningkatkan fungsi dan cakupan penggunaan.

Kata kunci: *Internet of Things* (IoT), ESP32, sistem pengumuman, running text display, sensor PIR, speaker, platform web, kontrol jarak jauh, pengumuman otomatis, teknologi IoT.

ABSTRACT
IoT-BASED ANNOUNCEMENT SYSTEM WITH WEBSITE-BASED CONTROL USING RUNNING TEXT DISPLAY

(Duwi Putri 2025: 75 pages)

The development of *Internet of Things* (IoT) technology has driven innovation in remote-based announcement systems. This research designs and builds an automatic announcement system using an ESP32 microcontroller integrated with a running text display and speaker, and is controlled in real time through a web platform. The system is designed to display announcement text, play sound through the speaker when motion is detected using a PIR sensor, and enable remote control over the internet. The methods used include hardware and software design, sensor and actuator integration, and system function testing. Test results show that the system is capable of displaying text correctly according to web instructions, accurately detecting motion, and playing audio announcements as directed. The web connection is also stable, allowing monitoring and control from any location. This system is effective for various automated announcement needs in public spaces such as offices, schools, or other public facilities. With its modular and IoT-based design, this system has the potential for further development, such as integration with security systems or location-based notification features to enhance functionality and expand its use.

Keywords: *Internet of Things* (IoT), ESP32, announcement system, running text display, PIR sensor, speaker, web platform, remote control, automatic announcements, IoT technology.