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WIRELESS NOTICE BOARD

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ABSTRACT
This paper presents a wireless notice board system designed to enable fast, remote, and efficient dissemination of information. Traditional notice boards require manual updates, leading to delays and inefficiency. The proposed system integrates a wireless communication module, a microcontroller-based display unit, and a user interface for real-time message transmission. The system ensures low power consumption, reliable data transfer, and minimal latency. Testing confirms the system's stability, scalability, and usability for real-world applications.

KEYWORDS
Wireless Notice Board, Wi-Fi, GSM, Bluetooth, ESP8266, Microcontroller, LCD/LED Display

I. INTRODUCTION
Wireless communication plays a key role in modernizing how information is shared within institutions and public environments. Traditional notice boards depend on manual updates, resulting in delays and inefficient message delivery. A wireless notice board system enables remote and instantaneous content updates through mobile or web platforms. It incorporates wireless modules such as Wi-Fi, GSM, or Bluetooth paired with microcontrollers and display units. This system significantly reduces human intervention, supports scalability, and improves communication efficiency. The aim of this project is to design a low-cost, user-friendly wireless notice board system suitable for educational, corporate, and public applications.

II. LITERATURE REVIEW
• Wireless systems reduce manual effort and allow remote updating of digital notice boards.

• IoT-enabled notice boards increase communication efficiency and user accessibility.

• Wi-Fi-based displays provide seamless real-time updates with minimal delay.

• GSM communication allows long-distance message transmission to remote notice boards.

• Bluetooth-based display systems support short-range, low-cost communication.

• Mobile-operated wireless boards improve usability and reduce maintenance.

• Ninawe et al. (2025) developed a web-based digital notice display enabling long-distance message updates.

• Oviya et al. (2024) implemented a Wi-Fi LED scrolling notice board for instantaneous message broadcasting.

• Barge et al. (2024) introduced a cloud-connected IoT notice board with multi-device accessibility.

• Kulkarni et al. (2024) proposed a GSM-based notice board using SMS technology for remote updates.

• Sharma et al. (2024) demonstrated an ESP8266-driven smart display supporting fast, stable wireless communication.

• Danawade et al. (2023) created an IoT-enabled digital board supporting secure multi-user message control.

• Geetha et al. (2023) designed a Wi-Fi digital notice board optimized for low latency and high clarity.

• Atray et al. (2023) built an Arduino-Bluetooth notice board for short-range communication in classrooms.

• Selva Kumar et al. (2021) developed a low-cost IoT display board aimed at affordable deployments.

• Ahil et al. (2024) proposed a wireless message display system with improved noise immunity.

• Ajay et al. (2024) implemented a Raspberry Pi noticeboard capable of multimedia support.

• Pagar et al. (2023) created a mobile-controlled IoT notice board with enhanced connectivity.

• Savitha et al. (2025) introduced an IoT-integrated smart notice board with sensor-based automation.

• Dighe et al. (2025) designed a cloud-linked dynamic notice board supporting scheduled content updates.

III. PROBLEM IDENTIFICATION

• Manual notice boards cause communication delays.

• Lack of remote access results in limited message control.

• High human dependence leads to outdated announcements.

• Traditional systems are unsuitable for large-scale deployments.

• Paper-based notice boards are not eco-friendly.

IV. OBJECTIVES

• To design a real-time wireless notice board system.

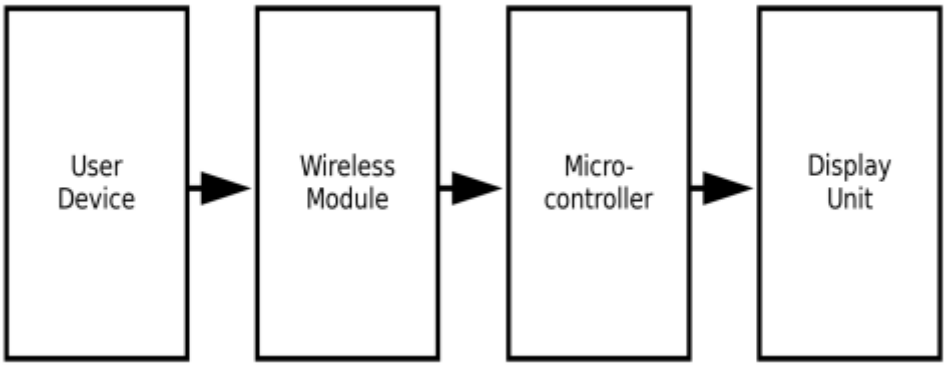
• To enable remote message control using Wi-Fi, GSM, or Bluetooth.

• To create a scalable and cost-effective digital display system.

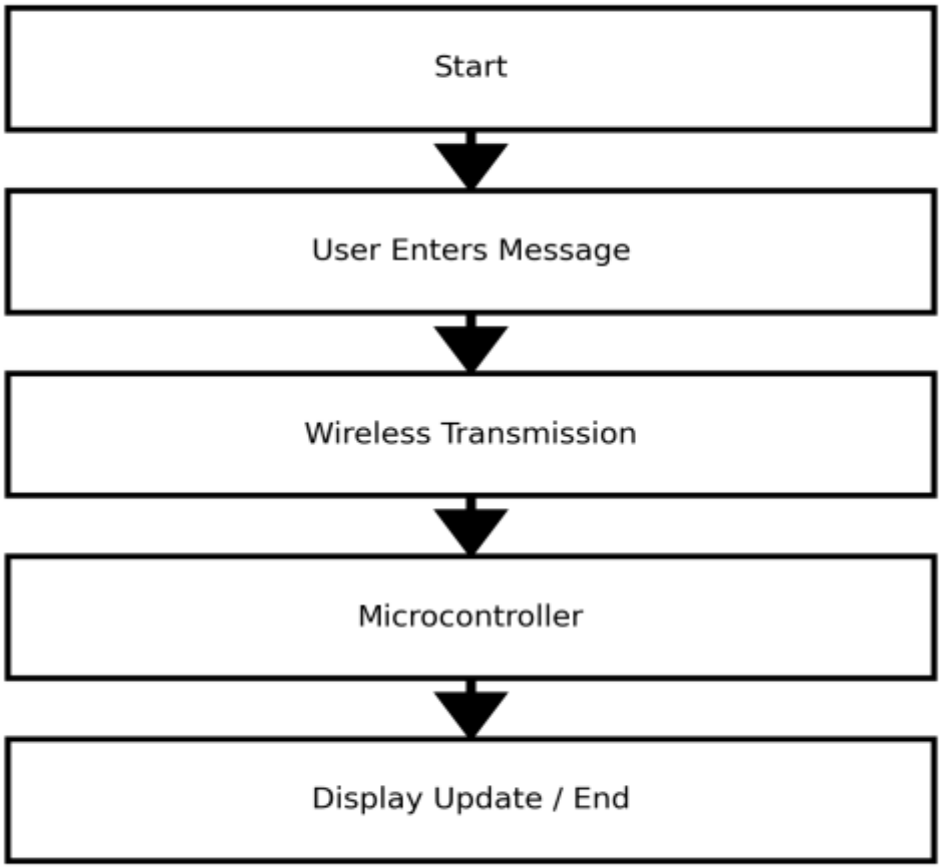
V. METHODOLOGY

The methodology begins with selecting a suitable wireless communication module such as Wi-Fi, GSM, or Bluetooth. A microcontroller like Arduino or ESP8266 is programmed to receive messages through a web or mobile interface. The microcontroller decodes the incoming message and displays it on an LCD/LED screen. A stable power supply is integrated to ensure uninterrupted operation. The complete system is tested for wireless range, message accuracy, latency, and reliability. Final optimization focuses on speed, user experience, and power efficiency.

VI. BLOCK DIAGRAM



VII. FLOW CHART



VIII. COMPONENTS USED

• ESP8266 / ESP32 Wi-Fi Module

• GSM Module (SIM800L)

• Bluetooth Module (HC-05)

• Microcontroller (Arduino / NodeMCU)

• LCD / LED Display

• 5V Power Supply

• Breadboard / PCB and wires

IX. RESULT

The wireless notice board system successfully displayed real-time messages transmitted through wireless communication. The system maintained stable performance during testing, showing clear display output, minimal delay, and user-friendly operation. The wireless modules performed reliably within the tested range, and the overall system met the intended design objectives.

X. CONCLUSION

The wireless notice board system presents an efficient and innovative solution for digital communication in educational institutions, corporate environments, and public areas. It eliminates manual updates by supporting real-time wireless message transmission. The system is reliable, cost-effective, and easy to operate, making it suitable for widespread adoption.

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