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SMART NOTICE BOARD

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ABSTRACT─

The design gives the stylish result to replace the present paper- grounded notice board system with advanced electronic notice board. Wireless electronic notice boards have been designed, which fully eliminates paperwork and reduces the homemade work and time. erecting a IoT grounded systems gives the fast metamorphosis of data and the stoner can pierce the data from anywhere in the world. In this design, we've The main ideal of this design is developing an automatic, tone enabled and largely dependable electronic notice board. A display connected with the pall will continuously staying for the communication from the stoner, if the stoner uploads the data through the garçon, it'll automatically upload to the LED. By using Wi-Fi module HD-W04, the stoner can upload the communication to the LED by penetrating through the website connected to garçon. The stoner can write the data from anywhere in the world to the LED. This will reduce the time to modemize the data as well as it'll efficiently transfers the data to the end stoner.

Keywords:Smart Board, WI-FI, Message Display, LED

I. INTRODUCTION

Wireless noticeboards are modern communication tools widely used in public spaces such as schools, colleges, hospitals, and shopping centers. These digital boards provide a dynamic and efficient way to display important information, which can be updated in real-time. Unlike traditional bulletin boards, wireless noticeboards offer the flexibility to update content remotely, enhancing the overall communication process. By integrating with other systems, they create a more comprehensive solution, improving both the accessibility and effectiveness of information dissemination.Considering the generally used notice board system in our seminaries, sodalities and universities. The advancement in technology, there occurs a gap between the two. In these institutes, we still use homemade way of putting the important notices, class and examination schedules, results, etc. in the notice boards. This homemade system needs further trouble and time to get the written adverts from the faculty and also put it on the notice board**.**

II. LITERATURE REVIEW

Smart Notice Boards have gained significant attention as a modern solution for dynamic and remote information sharing.Early systems primarily relied on GSM modules paired with microcontrollers such as Arduino to receive SMS-based messages, which were then displayed on LED screens. While this enabled remote access, it was limited by the character constraints and network dependency of GSM.[1]

As technology advanced, Wi-Fi-enabled systems using microcontrollers like HD-W04and NodeMCU became more popular. These setups allowed users to update content via web interfaces or Android applications in real time, offering greater flexibility and multimedia support. Some projects integrated cloud platforms such as Firebase to store and sync data seamlessly. [2]

Additionally, voice-controlled notice boards were introduced to improve accessibility, using speech recognition modules, although these systems often faced limitations in noisy environments. More recent developments also include energy-efficient models that use real-time clocks to schedule message display and reduce power consumption. Overall, the literature reflects a clear shift toward IoT-based solutions that prioritize ease of use, accessibility, and real-time communication. [3]

III. METHODOLOGY

The Smart Notice Board system was developed using a modular approach, combining both hardware and software components to enableremote and real-time message updates. The core of the system is a microcontroller, such as NodeMCU (HD-W04), which provides both processing power and Wi-Fi connectivity. This enables the board to connect to the internet and receive content updatesThe retrieved message is then displayed on an output screen, typically an LED matrix or an LCD display, which is interfaced with the microcontroller using standard communication protocols like I2C or SPI. Power supply regulation and basic electronics circuitry are included to ensure stable operation of all components. [4]

IV. WORKING

The Smart Notice Board operates by wirelessly entering dispatches from a stoner and displaying them on a screen in real time. The system consists of three main corridor the stoner interface, the pall/ database, and the tackle(microcontroller and display). First, the stoner accesses a mobile app or web interface to enter the communication they want to display. Once submitted, the communication is transferred to a pall database similar as Firebase.[5] The microcontroller(e.g., NodeMCU or HD-W04), which is continuously connected to the internet via Wi- Fi, regularly checks the pall for new dispatches. When a new communication is detected, the microcontroller fetches the content from the pall and sends it to the display unit, which can be an LED matrix, OLED, or TV screen. The communication is also shown easily to observers in real time. Some systems may include features like scrolling textbook, timestamps, or listed communication updates.[6]

BLOCKDIAGRAM–

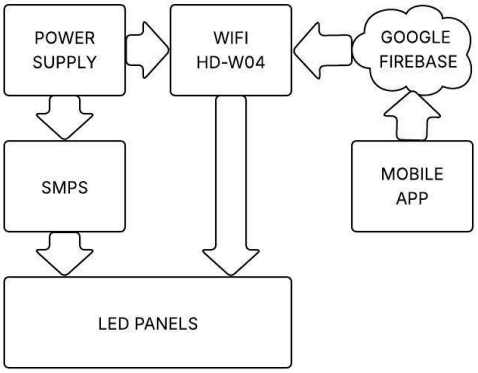


Fig1. Block Diagram Of Smart Board

SCHEMATIC DIAGRAM –

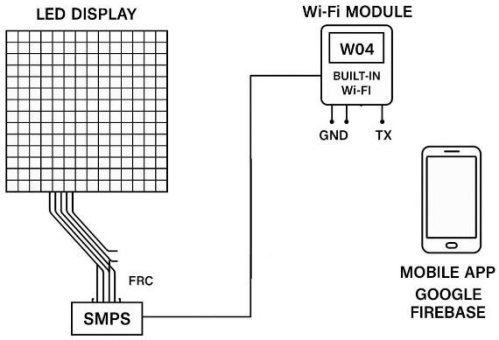
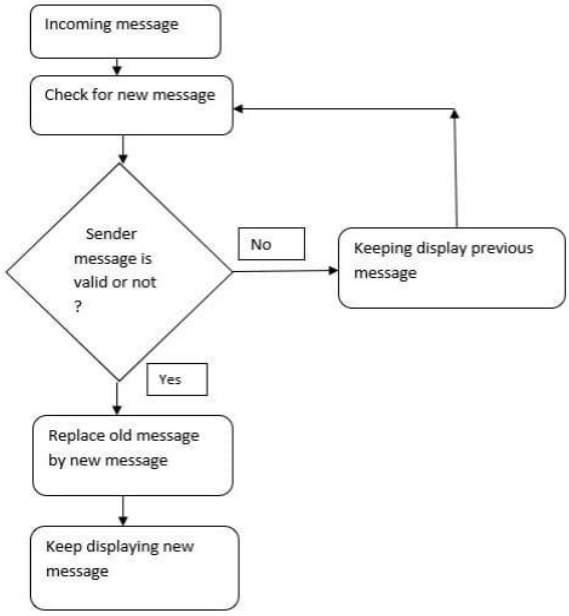


Fig 2. Schematic Diagram of Smart Board

Algorithm —

• Step 1: Collect Required Components
• Step 2: Set Up HD-W04 and Wi-Fi Connectivity
• Step 3: Develop the Web / Mobile Interface
• Step 4: Write and Upload Code to HD-W04 Step 5: Connect and Test the Display
• Step 6: Implement Message Handling
• Step 7: Secure the System
• Step 8: Final Testing and Deployment

FLOW CHART:



V. COMPONENTS USED

Following components are used for designing Smart Notice Board:

(i)**Digital Display:**

The core component of the smart notice board, typically an LED or LCD screen, is used to display information like text, images, videos, and real-time updates.

(ii)**IoT Connectivity Module:**

This includes components like Wi-Fi, Bluetooth, or Ethernet modules that enable the notice board to connect to the internet or local networks for remote management and updates.

(iii)**HD-W04 WI-FI**:

It is a Single Color Wi-Fi Control Card. The mobile phone and laptop can be connected to the Wi-Fi hotspot of the control card to update the program.

(iv)**Power Supply:**

A stable power source is required for the board's display and connected components. It may also include backup power (like a UPS) to ensure continuous operation.

(v)**SMPS:**

An SMPS is employed to efficiently convert AC mains power to a stable DC supply required by the smart notice board components.It ensures regulated voltage levels for the microcontroller, Wi-Fi module, and display unit, offering compact size, higher efficiency.

(vi)**Cloud Platform**:

A cloud-based service allows the content to be managed and updated remotely. Information can be stored and synced in real time across multiple boards. Platforms like Google Cloud, AWS, or custom cloud solutions may be used.

(vii)**Security Features:**

Features like password protection, encryption, and firewall security ensure that only authorized users can manage and control the content displayed.

(viii) **FRC Cabels**:

FRC cables are used to establish reliable parallel connections between modules such as the microcontroller, display, and peripheral components. Their compact, flat structure enables organized wiring, reduces electromagnetic interference.

(ix) **Aluminium Body:**

The smart notice board is enclosed in an aluminium body that provides a lightweight yet durable structure. Aluminium offers excellent heat dissipation, corrosion resistance, andmechanical protection for internal components.

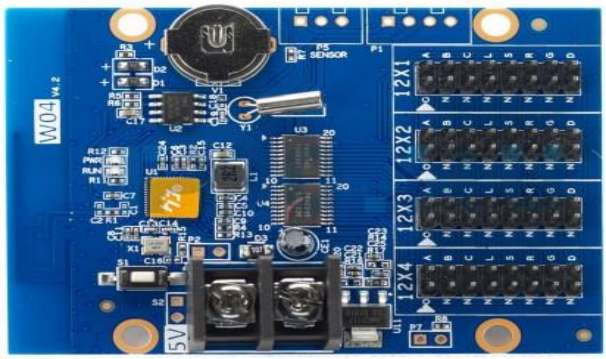


Fig 3. HD-W04 WIFI

VI. CONCLUSION

The Smart Notice Board is an efficient and modern solution for real-time information dissemination in institutions, offices, and public spaces. By utilizing IoT technologies such as Wi-Fi-enabled microcontrollers and cloud integration, the system enables users to update messages remotely and instantly. This not only reduces manual effort and the need for physical presence but also enhances communication speed and accessibility. The project demonstrates how automation and wireless communication can be effectively combined to replace traditional notice boards with a more interactive and user-friendly alternative. With additional features like message scheduling, user authentication, and energy-efficient operation, the Smart Notice Board stands out as a practical and scalable solution for smart communication.

VII. REFERENCES

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