Electronic Notice Board with Enhanced Features

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INTRODUCTION & AIM

Traditional notice boards depend on manual paper notices, making updates slow, costly, and environmentally unfriendly. They often result in outdated information remaining visible for long periods and require staff to physically replace content. With the advancement of wireless communication and renewable energy technologies, digital solutions have become more accessible and efficient. This project presents an Electronic Notice Board with Enhanced Features designed to overcome these limitations through real-time wireless updates and sustainable operation.

The primary aim of this project is to design and implement an electronic notice board that allows users to send and display messages remotely. This system aims to reduce paper usage, minimize manual work, lower electricity consumption, and provide an efficient communication platform suitable for schools, hospitals, offices, and community spaces.

METHOD

The proposed system is developed using an ESP8266 microcontroller to manage wireless communication between user devices and the display unit. An RGB LED panel serves as the primary output interface for presenting messages clearly and visibly. Power is supplied by a solar panel coupled with a charge controller and rechargeable battery, ensuring consistent operation during daylight as well as low-light or night time conditions. Messages are transmitted from a smartphone or computer through a web interface and processed by the microcontroller before being displayed on the LED panel. This configuration enables continuous, automated operation without reliance on grid electricity.
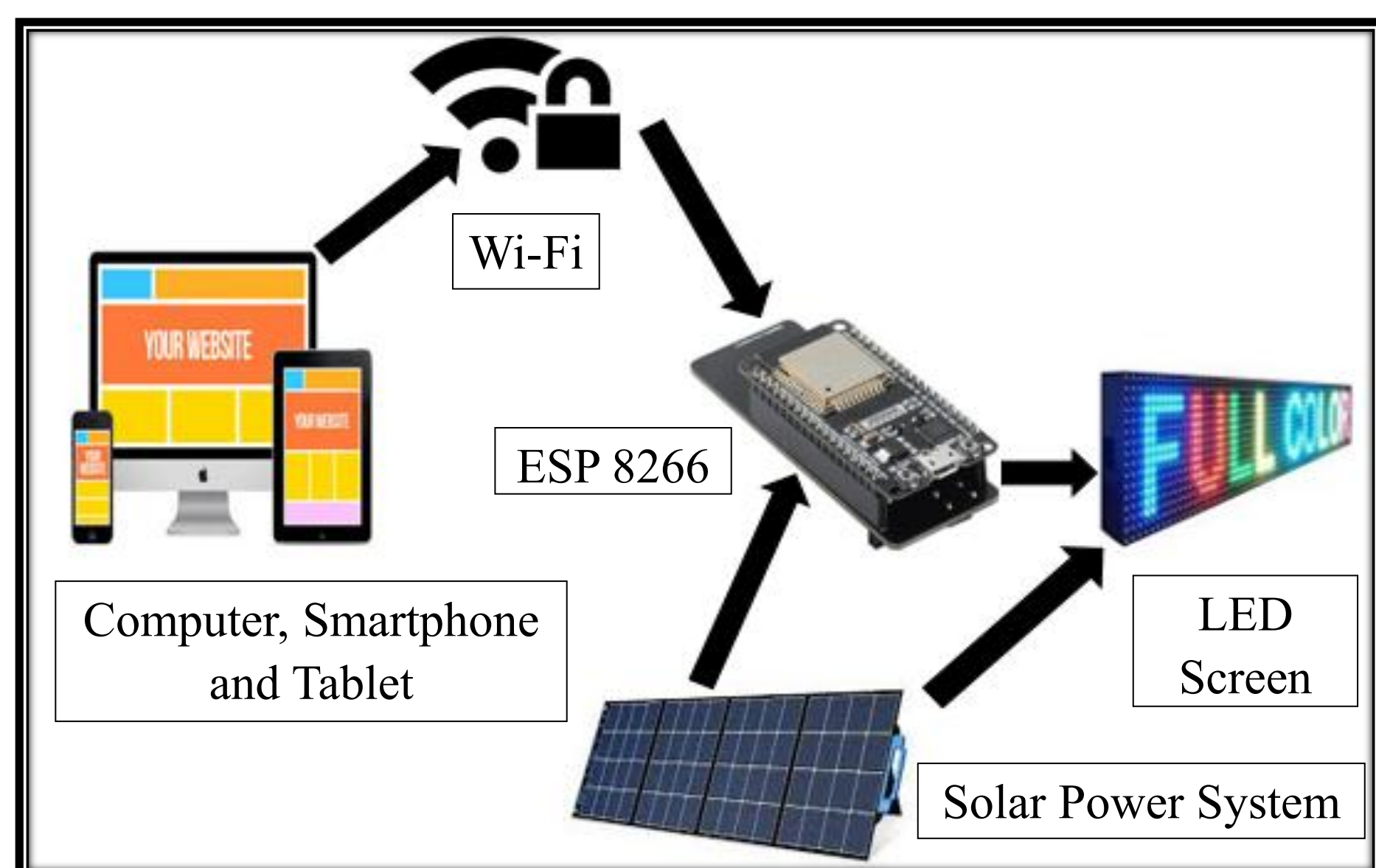

Figure 1: System Design

RESULTS & DISCUSSION

Upon powering up, the ESP8266 activates its Wi-Fi hotspot, allowing users to connect using a secure password and access the control webpage. The webpage enables real-time management of the LED notice board. Messages sent to either the first or second line appear instantly on the display, and longer messages automatically scroll to ensure full visibility.

An emergency mode overrides all normal content and displays a full-screen scrolling alert for maximum attention. Normal operation resumes once the emergency is cleared, and previous messages can be reviewed using the View Current Message option. A scheduling feature also allows users to set messages to appear at a selected time, enabling automated message updates.
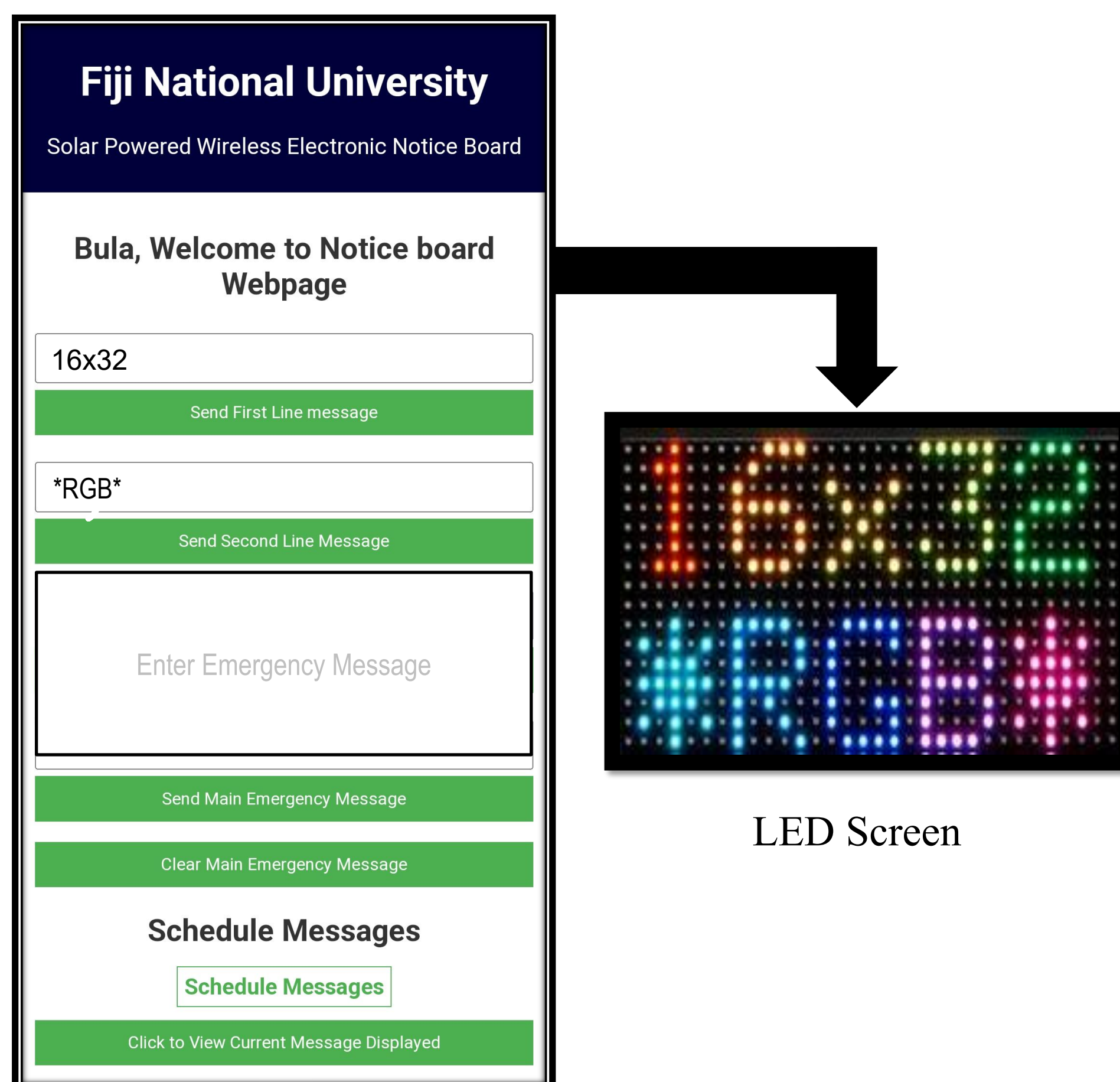

Figure 2: Webpage to LED Display

CONCLUSION

This project successfully delivers an Electronic Notice Board with Enhanced Features with real-time wireless updates, providing a reliable, cost-effective, and environmentally responsible solution for information display.

FUTURE WORK / REFERENCES

Future development will include voice-alert notifications for emergencies and large high-resolution LED panels to improve visibility and message clarity in busy or outdoor areas.