KNOWLEDGE INSTITUTE OF TECHNOLOGY, SALEM
DEPARTMENT OF ECE

DIGITAL ANNOUNCEMENT BOARD USING IOT

SUB CODE/TITLE: ET3491 / EMBEDDED SYSTEM AND IOT DESIGN
Year/Class : III - ECE - B

Date: 06.05.2024

ABSTRACT:

We have developed an IoT-based digital announcement board that communicates through four LCD I2C (16x2) displays connected to an ESP8266 NodeMCU module. Data from the user is sent via a web server, controlled by switches, and each display has a unique IP address for precise updates. But the devices are connected with same network the data transmission. The system allows real-time, remote content management for public information dissemination.

INTRODUCTION:

Embarking on a journey to redefine communication in communal environments, we proudly present our project on digital announcement board.

This project is the epitome of modern technology, integrating the robust ESP8266 NodeMCU module with the dynamic capabilities of IoT. It's designed to facilitate instantaneous message delivery across four different LCD I2C (16x2) displays, each one accessible through a dedicated web server. With the simplicity of switch-based inputs and the convenience of unique IP addresses for each unit and also these devices should be connected with same network, our system stands as a beacon of innovation.

APPLICATION:

- **Educational Institutions:** Displaying class schedules, exam notices, and event announcements.
- **Corporate Offices:** Sharing meeting updates, visitor information, and company news.
- **Hospitals**: Providing patient queue numbers, health tips, and emergency alerts.
- **Restaurants:** Updating menu items, daily specials, and wait times.

CONCLUSION:

The digital announcement board project is a significant advancement in public communication, utilizing IoT for dynamic, eco-friendly announcements. Its successful implementation showcases the efficiency of real-time, remote information dissemination.

FUTURE IDEAS:

Voice Control: Adding voice recognition capabilities to enable hands-free operation and accessibility.

Interactive Touch Screens: Upgrading LCD displays to touch screens for interactive public engagement.

BLOCK DIAGRAM:
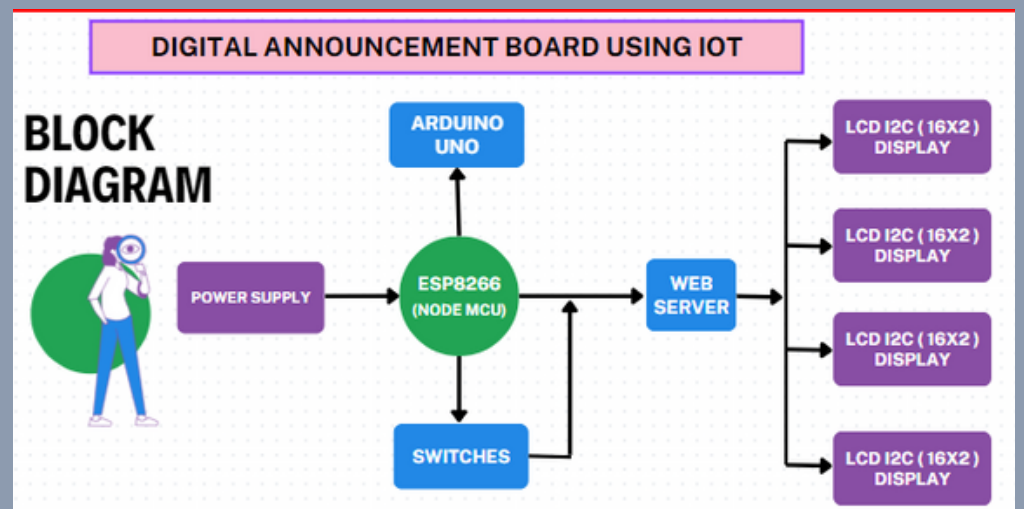
METHODOLOGY / DESCRIPTION

The system is centered around the ESP8266 NodeMCU module, a powerful microcontroller with Wi-Fi capabilities, which serves as the brain of the operation. It connects to four LCD I2C (16x2) displays, which act as the output interfaces for the announcements.

Data Transmission: Data is sent from the NodeMCU to each LCD display via the I2C communication protocol, known for its simplicity and efficiency in connecting multiple devices using just two wires.

Control Mechanism: The system is controlled through a web server, which provides a user-friendly interface for inputting and updating announcements. This server can be accessed remotely, allowing for real-time updates from any locations.

User Interaction:
Each LCD screen is given a distinct IP address to ensure targeted announcements. NodeMCU links switches for manual control alongside the web interface. This setup guarantees that data reaches the intended display. The interactive design enhances user engagement. Switches correspond to specific displays for ease of understanding.

SNAP SHOT:
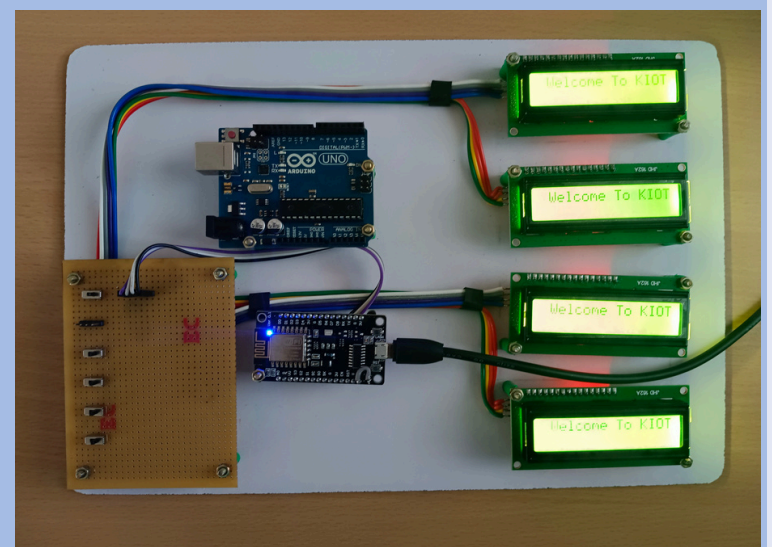
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