Cranes Varsity
'Where Technology Meets Excellence'

BVC College of Engineering Rajamundry

ARM Module

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Digital Voting Machine Using LPC1768 with LCD and Keypad Interface

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❖ INTRODUCTION

A voting machine is an electronic device used to record, store, and count votes during an election. It replaces traditional paper-based voting systems, making the process faster, more accurate, and less prone to human error. These machines ensure a secure, tamper-resistant, and transparent voting environment.

In this project, we implement a basic electronic voting machine using the LPC1768 microcontroller. The system allows users to cast their votes for three candidates by pressing buttons, and displays the voting results on an LCD screen. It is an excellent example of how embedded systems can be used to develop real-world applications with user input handling, data storage, and display output.

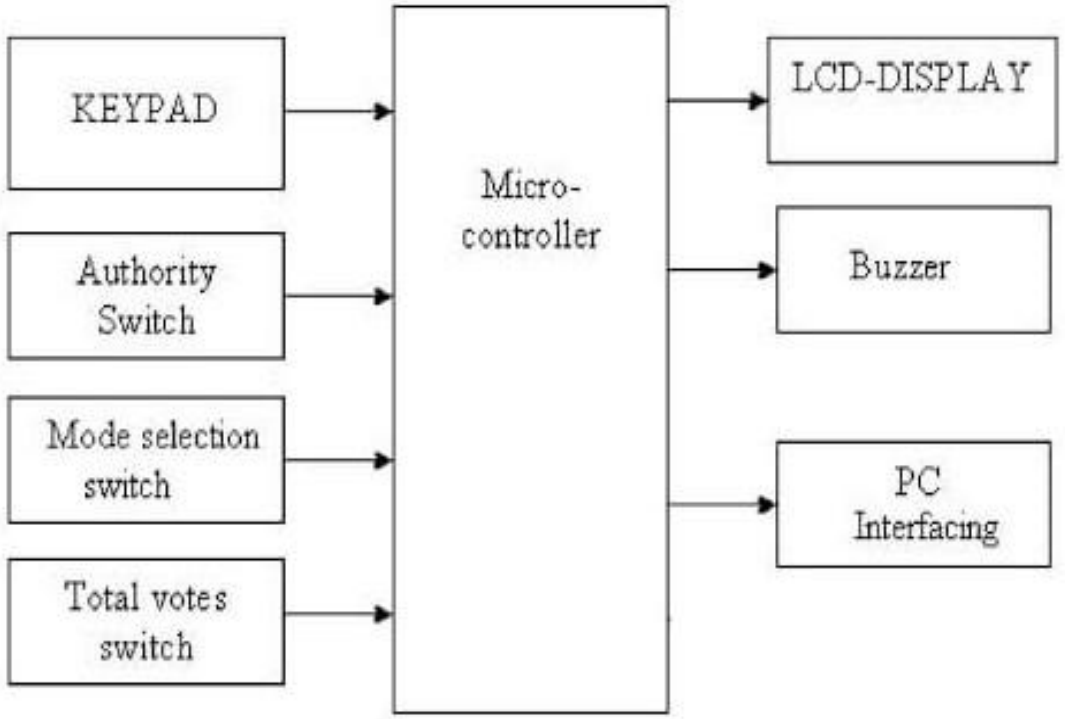
❖ OBJECTIVES

- Design and develop a simple electronic voting system using the LPC1768 microcontroller
- Interface input buttons for three candidates to register votes.

❖ HARDWARE AND SOFTWARE REQUIREMENTS

- **Microcontroller:** LPC1768 Development Board
- **Input Device:** 4x4 Keypad
- **Output Devices:** 16x2 LCD Display, Buzzer
- **Power Supply:** 5V DC Power Supply
- **Connectors and Wires:** Jumper Wires, Header Connectors
- **Cables:** USB Cable
- **Programming Tools:** PC/Laptop, Keil µVision4 followed by flash magic.

❖ METHODOLOGY



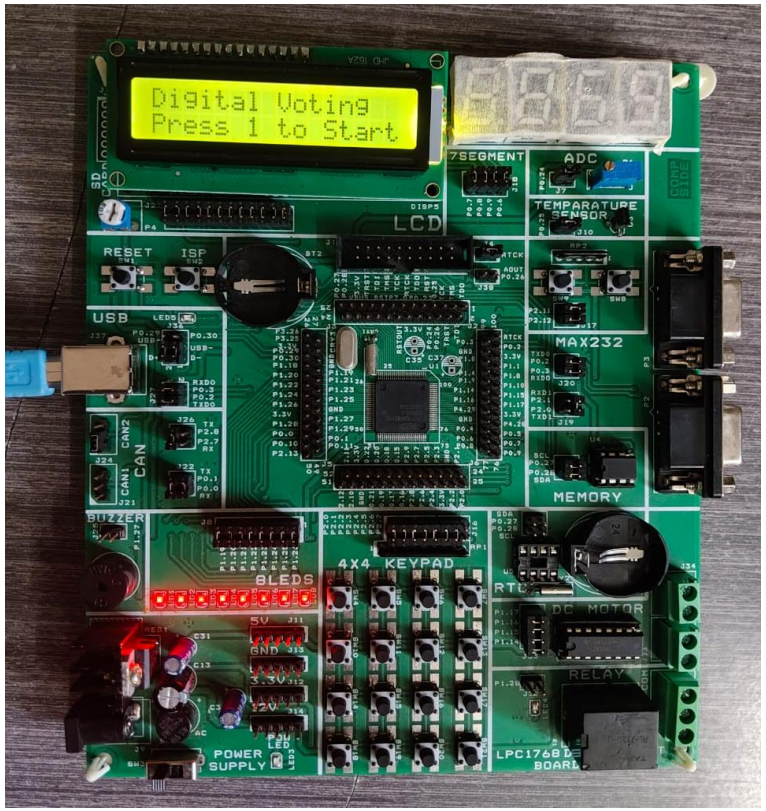
Block Diagram of Digital Voting Machine Using LPC1768

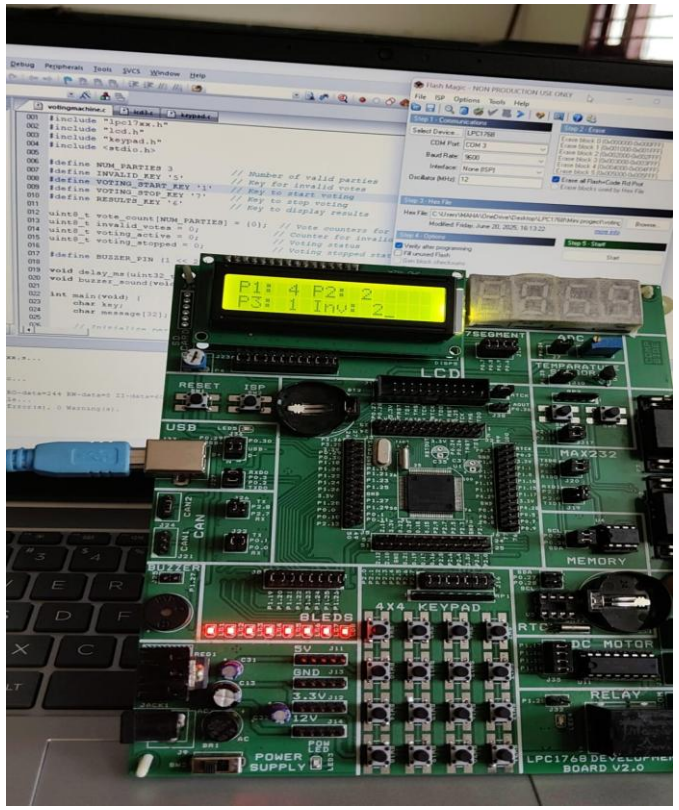
❖ Description of The Project

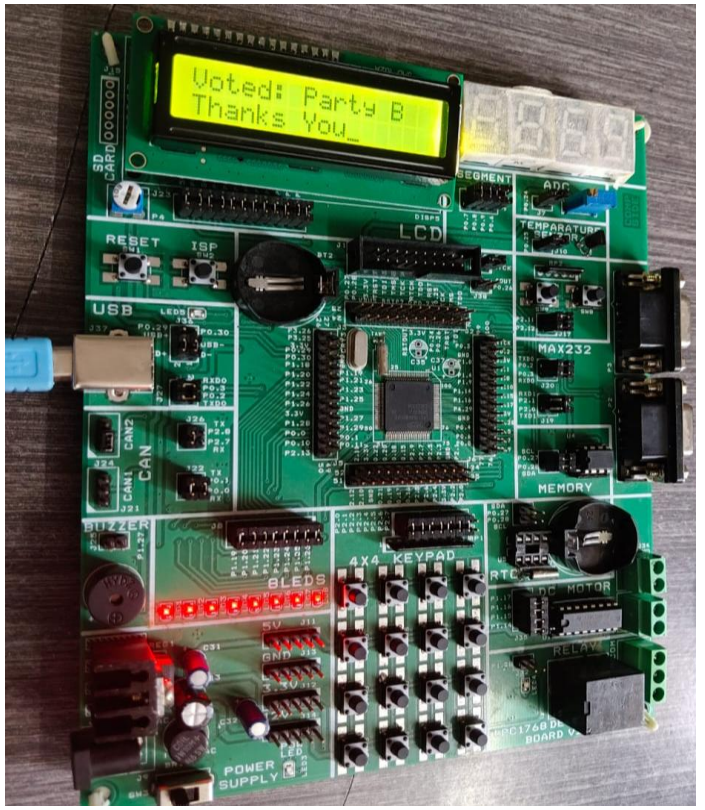
The Digital Voting Machine (DVM) developed using the LPC1768 microcontroller is designed to simulate a secure and user-friendly electronic voting system. It integrates a **4x4 matrix keypad** to allow users to cast their votes and a **16x2 LCD display** to guide the voting process and show relevant messages such as party names, voting instructions, and results. The LPC1768, based on the ARM Cortex-M3 architecture, handles all the logic, including vote counting, invalid vote detection, and displaying totals. The system starts in an idle state and begins accepting votes once initiated. After all votes are cast, results can be displayed at the press of a specific key. This project showcases the efficient use of embedded systems for real-time voting applications with minimal hardware.

❖ RESULT

The Digital Voting Machine accurately recorded and displayed votes using the LPC1768, LCD, and keypad. It successfully processed valid inputs and showed correct results after voting ended.







❖ CONCLUSION

The Digital Voting Machine using LPC1768 with LCD and keypad successfully demonstrates a simple and efficient electronic voting system. It ensures accurate vote recording, user-friendly interaction, and reliable result display. The project highlights the practical use of embedded systems in real-time applications. It also improves understanding of microcontroller interfacing and logic design. Overall, the system is cost-effective and suitable for small-scale voting scenarios.

THANK YOU…