ELECTRONIC VOTING MACHINE

ESD LAB

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OVERVIEW

- A compact and intuitive system designed to facilitate the voting process
- Built around the Arduino Uno microcontroller
- It incorporates a 16x2 LCD display and four push buttons
- Three for voting and one for viewing results
- This setup provides a straightforward interface for voters
- Ensures transparency and ease of use.

COMPONENTS

- Arduino (UNO R3)
- 4 Push Buttons
- 16×2 LCD Display
- Jumper Wires
- Variable Resistor 10k
- Breadboard
- USB ASP Cable
- Arduino IDE Software

CODE

EVM.ino

```
#include <LiquidCrystal.h> //library for including lcd display
const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7); //adressing lcd via pins (in variable format)

#define sw1 15 // defining switch1 as pin 15 (A1) on arduino
#define sw2 16 // defining switch1 as pin 15 (A2) on arduino
#define sw3 17 // defining switch1 as pin 15 (A3) on arduino
#define resultButton 14 // defining switch1 as pin 15 (A0) on arduino

int vote1 = 0;
int vote2 = 0;
int vote3 = 0;

void setup()
{
  pinMode(sw1, INPUT);
  pinMode(sw2, INPUT);
  pinMode(sw3, INPUT);
  pinMode(resultButton, INPUT_PULLUP); // Using internal pull-up resistor for the result button

  lcd.begin(16, 2);
  lcd.print("Voting Machine");
  lcd.setCursor(0, 1);
  lcd.print("ESD Lab");
  delay(3000);
```

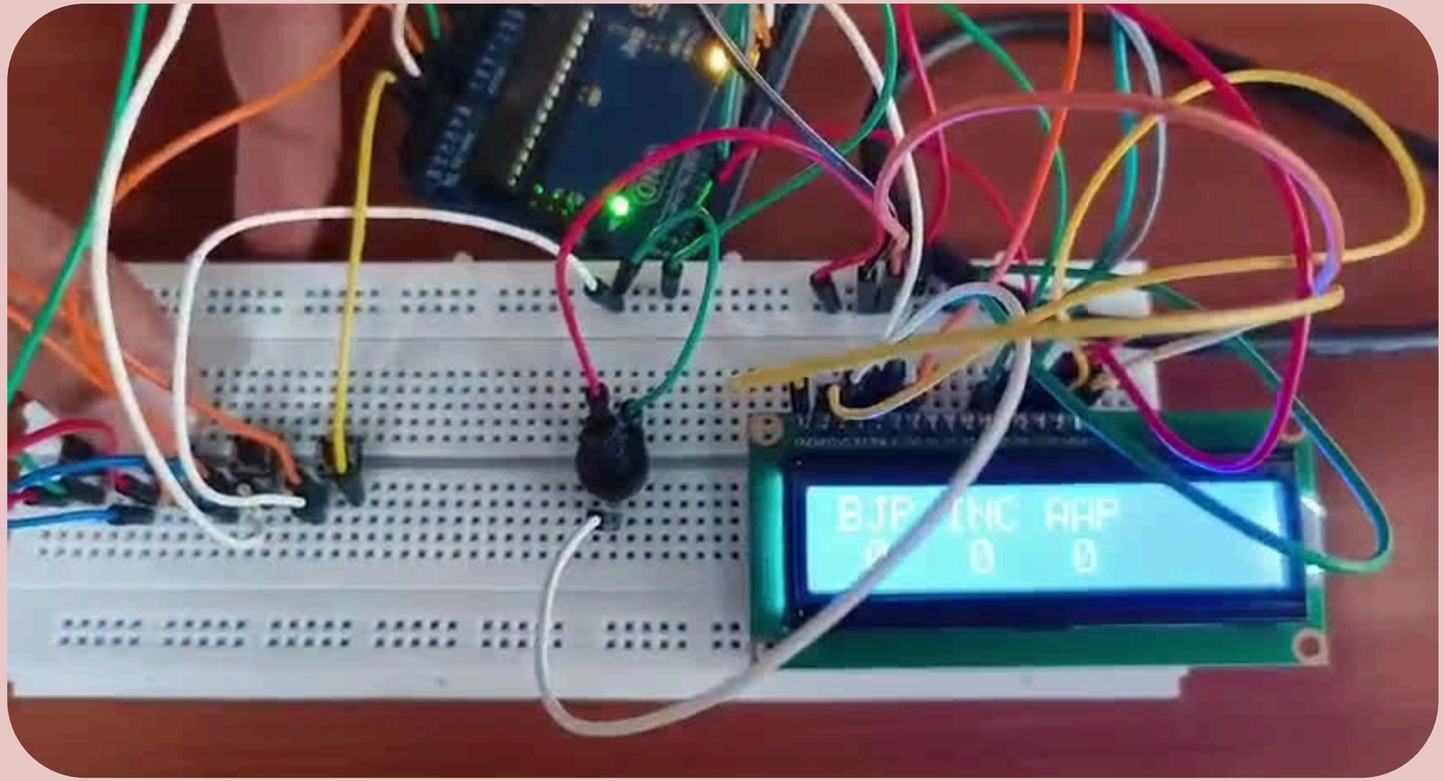
```
  digitalWrite(sw1, HIGH);
  digitalWrite(sw2, HIGH);
  digitalWrite(sw3, HIGH);
  digitalWrite(resultButton, HIGH);

  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("BJP");
  lcd.setCursor(4, 0);
  lcd.print("INC");
  lcd.setCursor(8, 0);
  lcd.print("AAP");
}

void loop()
{
  lcd.setCursor(0, 0);
  lcd.print("BJP");
  lcd.setCursor(1, 1);
  lcd.print(vote1);
  lcd.setCursor(4, 0);
  lcd.print("INC");
  lcd.setCursor(5, 1);
  lcd.print(vote2);
  lcd.setCursor(8, 0);
  lcd.print("AAP");
  lcd.setCursor(9, 1);
  lcd.print(vote3);
```

```
56  if (digitalRead(sw1) == 0)
57  {
58    vote1++;
59    while (digitalRead(sw1) == 0)
60      ;
61  }
62
63  if (digitalRead(sw2) == 0)
64  {
65    vote2++;
66    while (digitalRead(sw2) == 0)
67      ;
68  }
69
70  if (digitalRead(sw3) == 0)
71  {
72    vote3++;
73    while (digitalRead(sw3) == 0)
74      ;
75  }
76
77  if (digitalRead(resultButton) == LOW) // Check if result button is pressed
78  {
79    int totalVotes = vote1 + vote2 + vote3;
80
81    if (totalVotes > 0)
82    {
83      if (vote1 > vote2 && vote1 > vote3)
84      {
85        lcd.clear();
86        lcd.print("BJP Wins");
```

```
            delay(2000);
            lcd.clear();
          }
          else if (vote2 > vote1 && vote2 > vote3)
          {
            lcd.clear();
            lcd.print("INC Wins");
            delay(2000);
            lcd.clear();
          }
          else if (vote3 > vote1 && vote3 > vote2)
          {
            lcd.clear();
            lcd.print("AAP Wins");
            delay(2000);
            lcd.clear();
          }
          else
          {
            lcd.clear();
            lcd.print("Tie Up or No Result");
            delay(2000);
            lcd.clear();
          }
        }
        else
        {
          lcd.clear();
          lcd.print("No Voting Done");
          delay(2000);
          lcd.clear();
```

```
117         lcd.clear();
118       }
119
120       vote1 = 0;
121       vote2 = 0;
122       vote3 = 0;
123       lcd.clear();
124     }
125   }
126
```

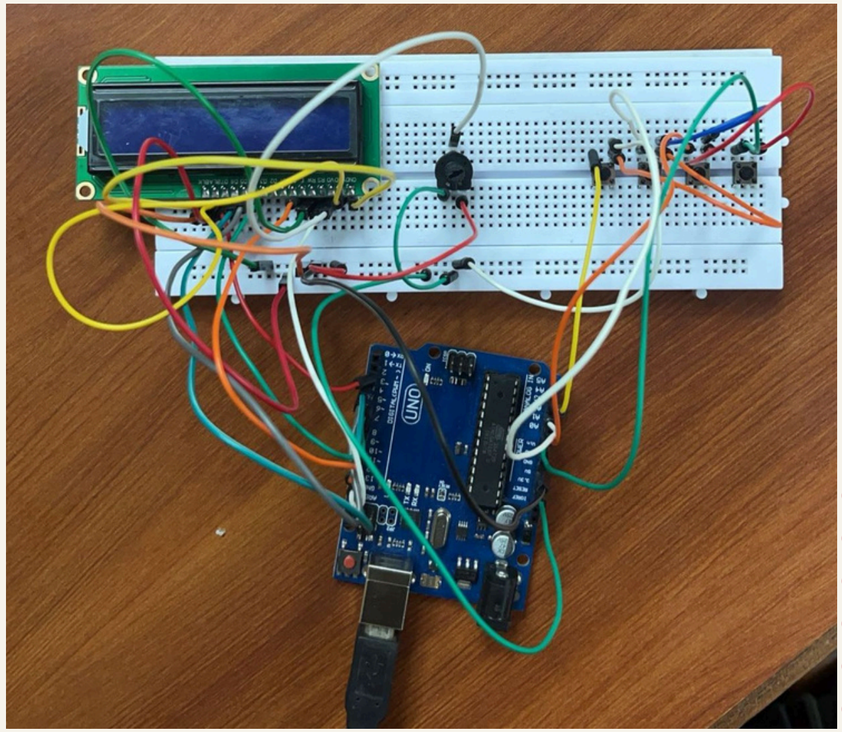
HARDWARE



WORKING

1. Hardware Setup:
   - Connect push buttons for candidate selection
   - an LCD display for showing options and results
   - and a keypad for voter ID input to the Arduino Uno R3.

2. Software Implementation
   - Program the Arduino to initialize the LCD display and keypad.
   - Set up variables to store candidate votes and voter IDs.
   - Display candidate options on the LCD screen.
   - Accept voter ID input from the keypad.
   - Enable the voter to select a candidate using push buttons.
   - Record the vote in memory.
   - Display the final results on the LCD screen.



APPLICATIONS

1. Student Elections
2. Community Group Elections
3. Corporate Board Elections
4. Non-Profit Organizations
5. Clubs and Societies
6. Home Automation
7. Feedback Collection
8. Market Research
9. Remote Voting
10. Prototype Development

REFERENCES

https://techatronic.com/how-to-make-electronic-voting-machine-project-evm-with-arduino/

THANK YOU

For Your Attention