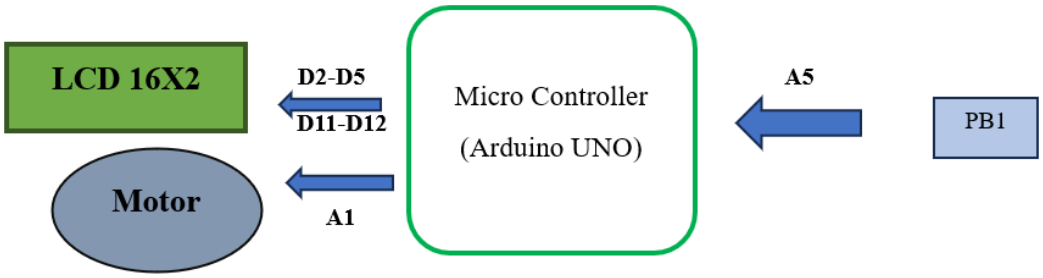
Motor Status using Arduino UNO

Description:

In this project, we are using an Arduino Uno board to control the status of a DC motor. The motor can be turned on and off using a push button, and its status is displayed on an LCD display. The push button is connected to one of the digital pins of the Arduino board, and the DC motor is connected to one of the analog output pins. When the push button is pressed, the Arduino board reads the input and sends a signal to the motor to turn on. The LCD display then shows the status of the motor as "on". When the push button is released, the Arduino board sends a signal to turn off the motor and displays the status as "off" on the LCD display.

Block Diagram :



Input and Output :

S.No	Description	Name	Type	Data Direction	Specification	Remarks
1	Button Pin	PB1	INP	D1	Digital	Active High
2	LCD RST	RS	OUT	DO	Digital	Active High
3	LCD EN	EN	OUT	DO	Digital	Active High
4	LCD DATA PIN	D4	OUT	DO	Digital	Active High
5	LCD DATA PIN	D5	OUT	DO	Digital	Active High

6	LCD DATA PIN	D6	OUT	D0	Digital	Active High
7	LCD DATA PIN	D7	OUT	DO	Digital	Active High
8	Motor	PD1	OUT	AO	Analog	Active High

Souce Code :

```
#include <LiquidCrystal.h>
const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);
const int motorPin = 1;
const int buttonPin = A5;

// Variables
boolean motorOn = false;
int motorStatusValue = 0;

void setup() {
  // Set up motor and button pins
  pinMode(motorPin, OUTPUT);
  pinMode(buttonPin, INPUT_PULLUP);

  // Initialize LCD
  lcd.begin(16, 2);
  lcd.print("Motor: OFF");
}

void loop() {
  // Read button state
  int buttonState = digitalRead(buttonPin);

  // If button is pressed, toggle motor state
  if (buttonState == LOW)
  {
    motorOn = !motorOn;
    digitalWrite(motorPin, motorOn);

    // Update motor status value for analog output
    motorStatusValue = motorOn ;

    // Update LCD display
    lcd.clear();
    if (motorOn) {
      lcd.print("Motor: ON");
    } else {
      lcd.print("Motor: OFF");
```

```
    }

    delay(2000);
  }

  // Update analog output for motor status
  analogWrite(motorPin, motorStatusValue);
}
```