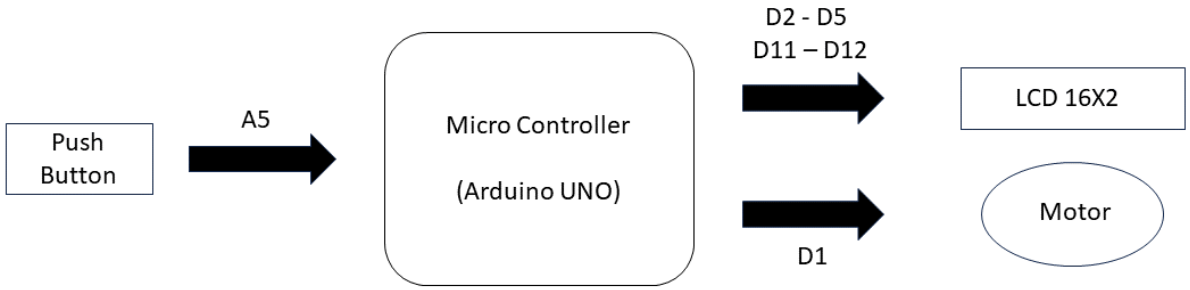
Displaying the motor status on LCD using Arduino UNO

Description:

In this project we will be displaying the status of a DC Motor on a Liquid Crystal Display. It consists of a Microcontroller (Arduino UNO), LCD 16X2, Motor, Push button. The LCD is connected to Arduino through digital pins (D2-D5, D11, D12), DC motor is connected to digital pin (D1) and the Push button is connected to an analog pin (A5). The motor can be turned ON and OFF using the push button and the respective result is displayed on the LCD. When the push button is pressed, the Arduino reads the input and sends a signal to the motor to turn ON and at the same time LCD display the status of the DC motor as 'ON'. When the push button is again pressed the DC motor is turned OFF and the LCD display the status of the DC motor as 'OFF'.

Block diagram:



Input and Output:

Sl.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 buttonPin = A5;

const int motorPin = 1;

int motorState = 0;
int lastButtonState = HIGH;
int buttonState;

void setup() {
  lcd.begin(16, 2);
```

```
  pinMode(buttonPin, INPUT);
  analogWrite(motorPin, motorState);
  updateLCD();
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState != lastButtonState) {
    if (buttonState == LOW) {
      motorState = 255 - motorState;

      analogWrite(motorPin, motorState);
      updateLCD();
    }
  }
  lastButtonState = buttonState;
}

void updateLCD() {
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Motor: ");
  if (motorState == 0) {
    lcd.print("OFF");
  } else {
```

```
    lcd.print("ON");
}
}
```

Schematic: