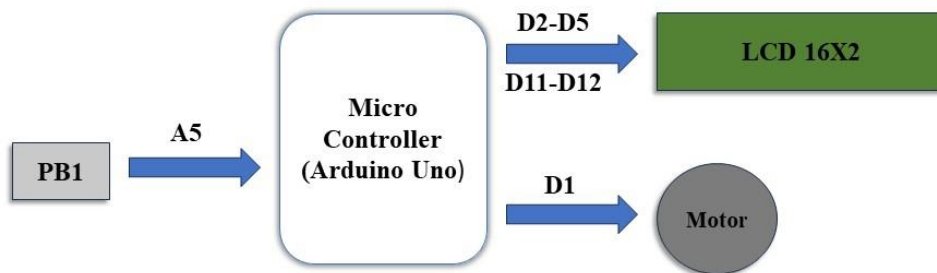


# MOTOR STATUS DISPLAY

- **Description:** Interfacing an LCD and a motor with an Arduino in Proteus involves connecting the components and writing code to control them. The LCD is used for display purposes, while the motor is controlled using the Arduino's digital output pins. The LCD is connected using its data and control lines, and the motor is connected through a transistor to amplify the Arduino's output signal. The code includes initializing the LCD and motor pin, and then sending commands to the LCD for display and turning the motor on/off by push button.

- **Block Diagram:**



## • Inputs and Outputs:

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	DO	Digital	Active High
7	LCD DATA PIN	D7	OUT	DO	Digital	Active High
8	MOTOR PIN	D1	OUT	DO	Digital	Active High

## • Source 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); // Set initial motor state  
  updateLCD();  
}
```

```
void loop() {  
  buttonState = digitalRead(buttonPin);  
  
  if (buttonState != lastButtonState) {  
    if (buttonState == LOW) {  
      motorState = 255 - motorState; // Toggle motor state (0 to 255 and vice versa)  
      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:

