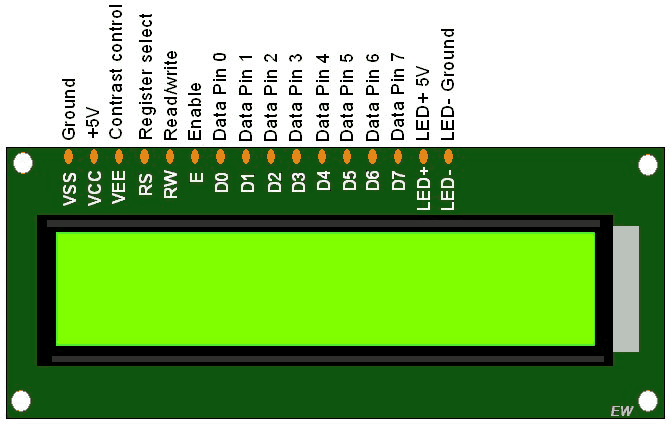
**LCD 16x2**



**Definition:**

**LCD** is a electric device for display data. It has 16 Column with 2 Row. **+Set up:**  
  
 1. connect 5v with VCC, ( LED+, or A )  
 2. connect gnd with VSS, RW, ( LED**-** , K )

3. connect PIN 6 with (VEE, Or Vo)  
 4. connect PIN 12 with RS  
 5. connect PIN 11 with E

**Digital PIN for data**  
 6. connect D5(Arduino) with D4(LCD)  
 7. connect D4(Arduino) with D3(LCD)  
 8. connect D3(Arduino) with D2(LCD)  
 9. connect D2(Arduino) with D1(LCD)

10. add 240Ω between 5v and (LED+ , A)

**+ Library**: LiquidCrystal.h

- LiquidCystal allows you to control LCD displays that are compatible with the Hitachi HD44780 Driver.  
 - It has 16-pin interface.  
+PINXxsxxsfgaCDA`

**+ Code:**

#include<LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

void setup() {

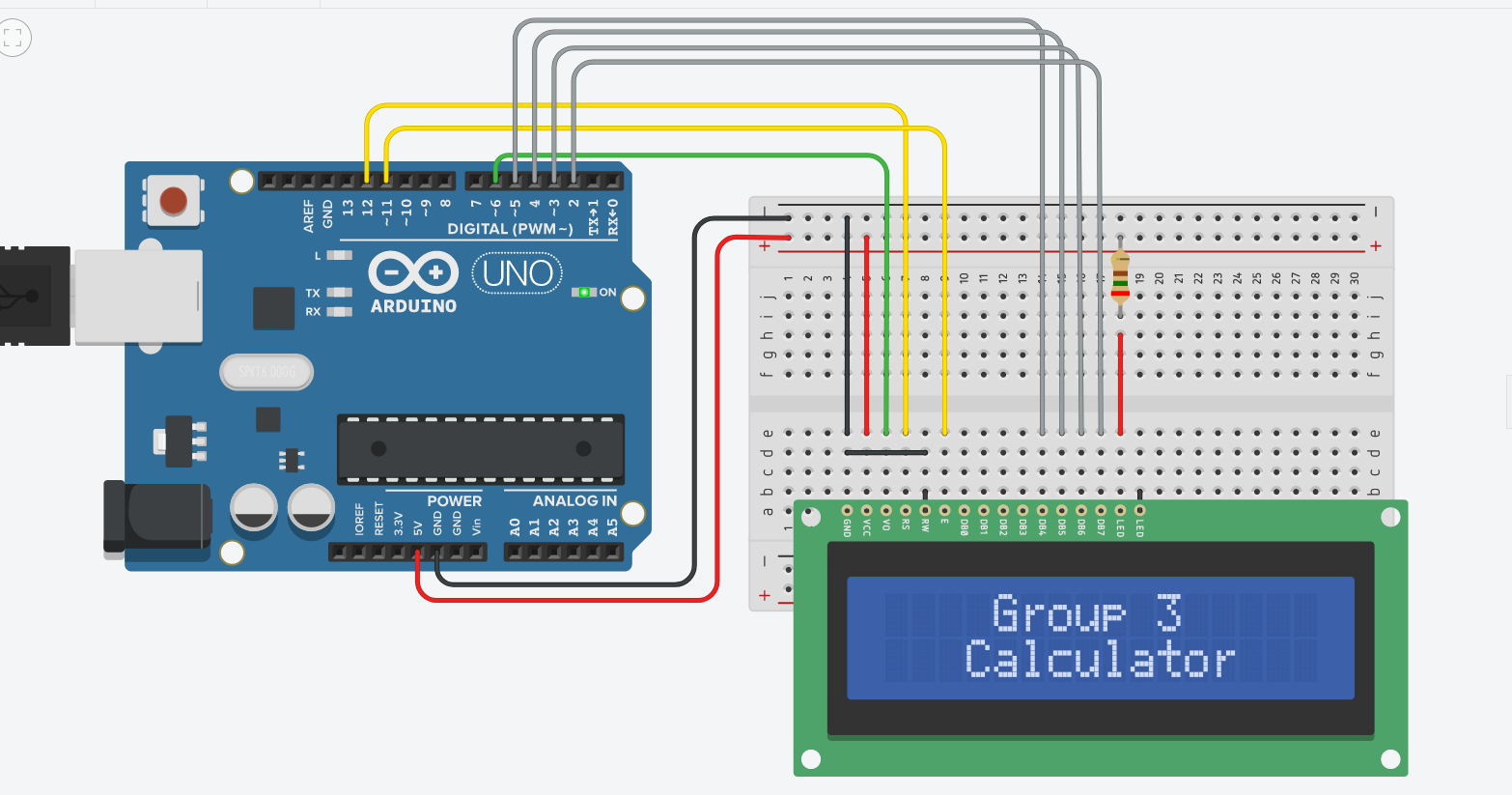
lcd.setCursor(0, 0);

lcd.print("Group 3");

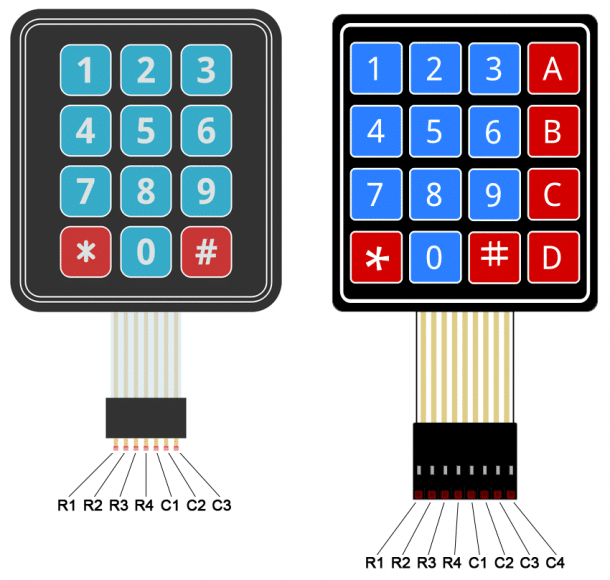
lcd.setCursor(0, 1);

lcd.print("Calculator");

}  
**+ Explaination:**



**Keypad**



Keypad has 2 type 4x4 (4Colum, 4Row) and 4x3(4Column, 3Row).

**+ Set up:**

1. connect R1 with D10

2. connect R2 with D9  
 3. connect R3 with D8  
 4. connect R4 with D7  
 **Use Analog PIN**  
 5. connect C1 with A0  
 6. connect C2 with A1  
 7. connect C3 with A2  
 8. connect C4 with A3