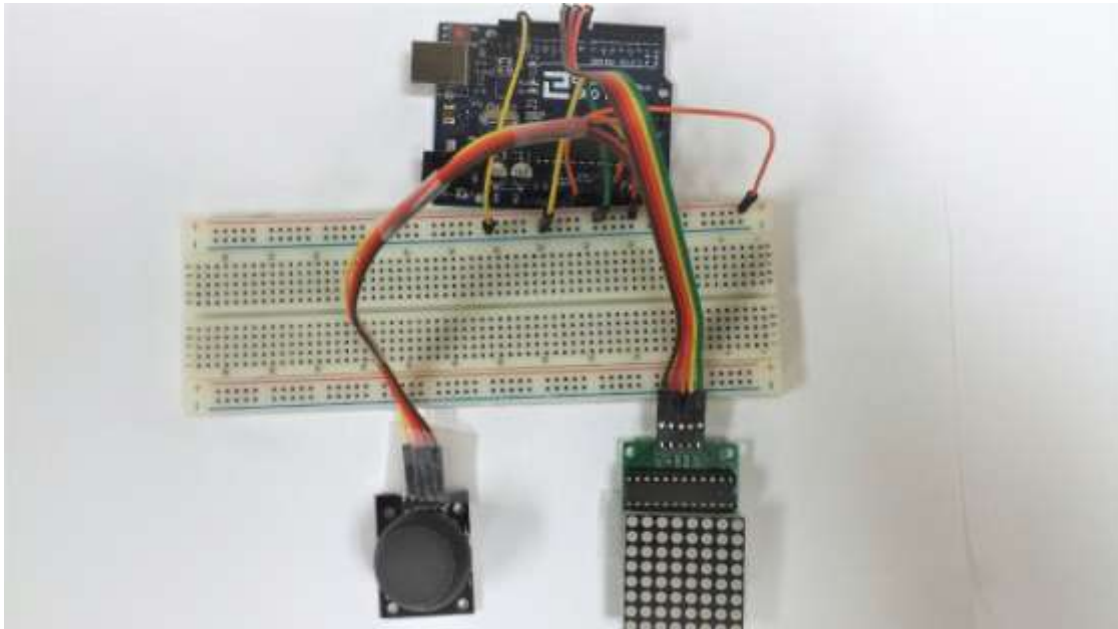


## USING A MATRIX 8X8 LED, JOYSTICK AND ARDUINO

### COMPONENTS:

1. Arduino Uno
2. Breadboard
3. Matrix 8x8 LED (MAX7219)
4. Joy Stick
5. Jumper Wires



### SETTING UP:

1. Insert two jumper wires from the 5V and GND on the Arduino Board to the Positive (+) and Negative (-) Rail of the Breadboard.
2. **JOYSTICK:** Insert a jumper wire from GND on the Joystick to the Negative (-) rail of the Breadboard. Insert a jumper wire From the +5V on the Joystick to the Positive (+) Rail of the Breadboard. Insert a jumper wire from the VRx on the Joystick to A0 on the Arduino Board. Insert a jumper wire from VRy on the Joystick to A1 on the Arduino Board.

- 3. Matrix 8x8:** Insert a jumper wire from Vcc on the Matrix to the Positive (+) Rail on the Breadboard. Insert a jumper wire from GND on the Matrix to the Negative (-) Rail on the Arduino Board. Insert a jumper wire from DIN on the Matrix to digital Pin 8 on the Arduino Board. Insert a jumper wire from CS on the Matrix to digital Pin 9 on the Arduino Board. Insert a jumper wire from CLK on the Matrix to digital Pin 10 on the Arduino Board.
- 4.** Upload the Code written below onto your Arduino. If all wires are connected right, you can use the Joystick to control the LEDs on the Matrix.

### **PROGRAM:**

```
int UD = 0;

int LR = 0;                                //Setting up controller//

#include "LedControl.h"                    // need the library
LedControl lc=LedControl(8,10,9,1); //10 is to CLOCK, 9 = CS, 8=DIN//

void setup() {
  Serial.begin(9600);

  lc.shutdown(0,false);                    // turn off power saving, enables display
  lc.setIntensity(0,8);                    // sets brightness (0~15 possible values)
  lc.clearDisplay(0);                      // clear screen
}

void loop() {
  UD = analogRead(A0);
  LR = analogRead(A1);
```

```
char x_translate = map(LR, 1021, 0, 7, 0);           //This maps the values//
char y_translate = map(UD, 1021, 0, 0, 7);

Serial.print("UD = ");
Serial.print(UD, DEC);
Serial.print(", LR = ");
Serial.print(LR, DEC);
Serial.print(", x = ");
Serial.print(x_translate, DEC);
Serial.print(", y = ");
Serial.println(y_translate, DEC);

// not in shutdown mode
lc.clearDisplay(0);
lc.setLed(0,x_translate,y_translate,true);
delay(150);                                         //adjust delay to get your joystick correct//
}
```