8X8 Led Matrix with Arduino

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Abstract

In the following pages I will explain how to make your own 8x8 RGB WS2812b led matrix and control it with Arduino.

Contents

1 Introduction

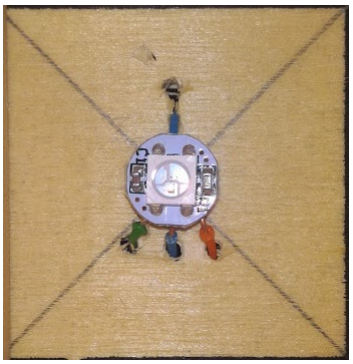
Things you need to have for this Project:

1. 64 WS2812b LEDs
2. Arduino UNO
3. Wood board
4. 2.5mm opal acrylic glass
5. stiff 1.5 X 1.5 wire
6. flexible 0.75 X 0.75 wire
7. 2.5mm acrylic glass

2 Set Up

2.1 Preparing the board

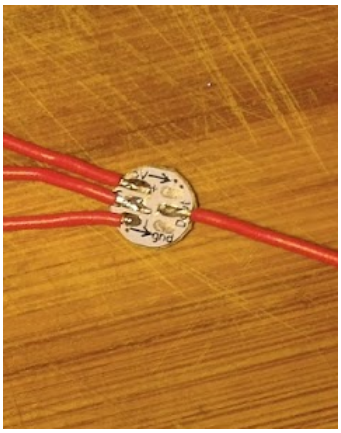
first thing to do is to prepare your board .I am using a chessboard. Draw an X in every square to find the middle of it .Put the led in the middle of the square and then drill 3 2mm holes at the bottom of the led and one 2mm hole at the top of the led in the middle.



2.2 Cabling the LEDs

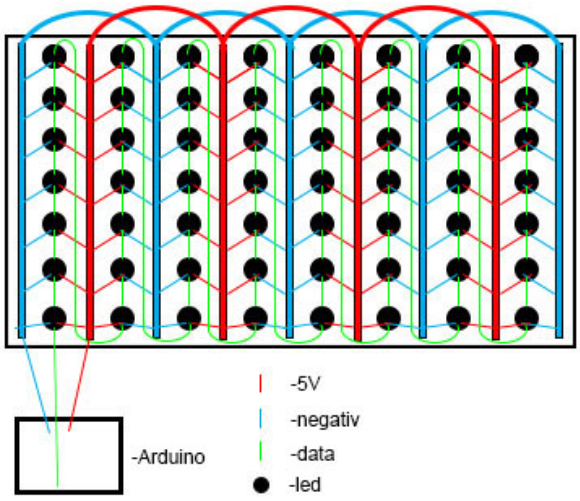
The three holes at the bottom of the led are for "GND","DATA IN" and "5V" cables and the hole at the top is for the "DATA OUT" cable.All the leds have a little arrow on the back to show you the way.

This is how you need to put the cables on a led:



2.3 Connecting the LEDs

At the back of the board you need to connect the LEDs.You need 9 pieces of stiff wire one between every LED row and one at the beginning and ending of the matrix :5 for GND and 4 for 5V. Connect the LEDs GND to the GND wire and the 5v ti the 5V wire.The first led DATA IN in need to be connected to the arduino and the DATA OUT to the next led.The last LED DATA OUT of the row is connected to the first DATA IN of the next row.the last thing to do is to connect the GND wires together and the 5v wire together and connect them to the GND and 5V pin of the Arduino. I also use a glue gun to isolate the weirs.

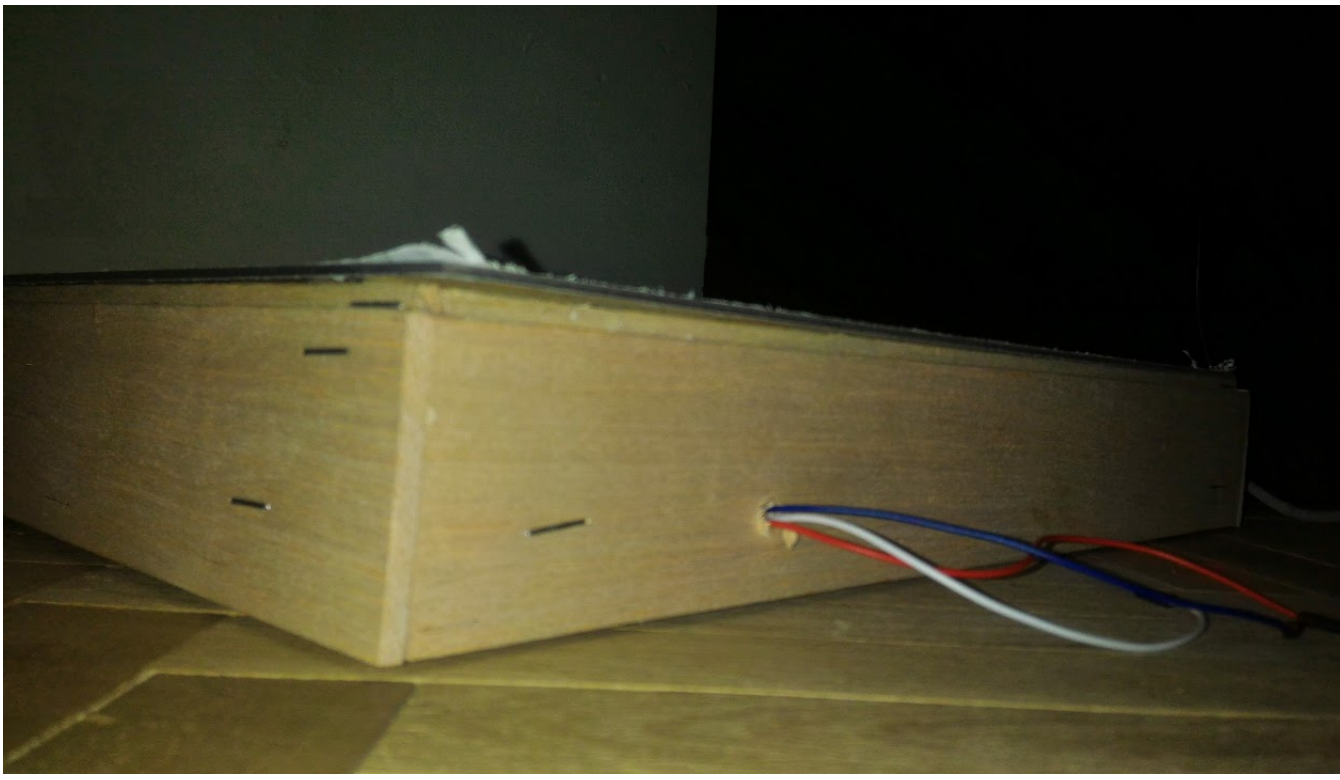


2.4 building the case

You need 4 pieces of wood for the edges ,a big piece for the back and acrylic glass for the top.

Top:

Edges:



Back:

2.5 building the Matrix

You need 15 pieces like this

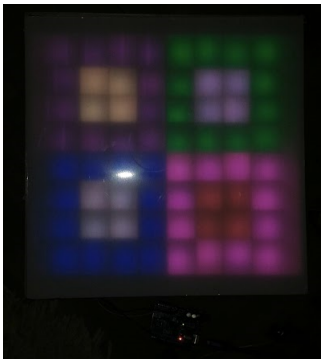
4 Pieces like this:

Assemble the matrix:

And the 8x8 WS2812b LEDs matrix is complete.

3 Results

You can control the matrix with arduino codes or with this app :https://drive.google.com/file/d/0B3



4 Conclusions

In conclusion you can use it to display animation or play old school games like Snake or Pong. It was a fun project to make.