Arduino LED Controller Manual
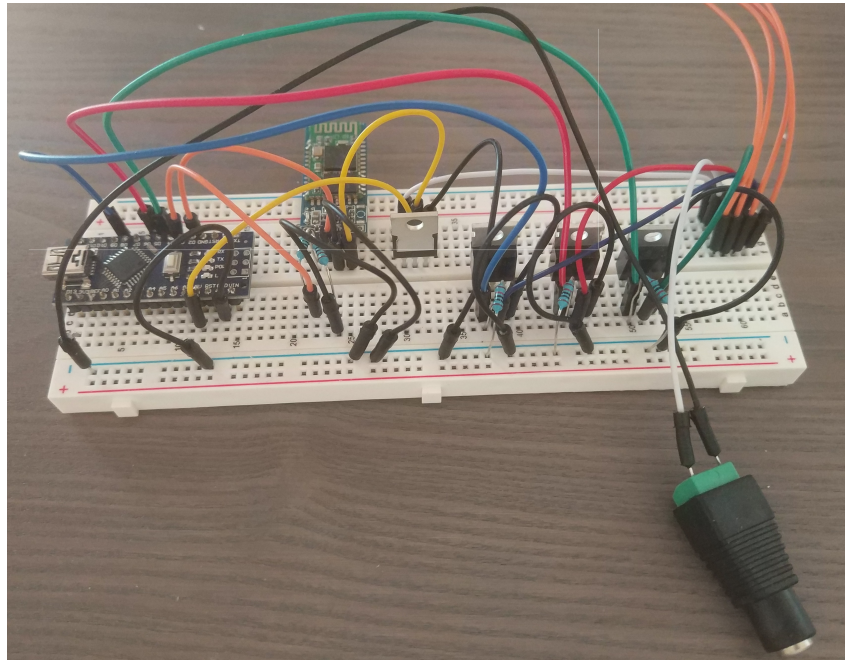

Figure 1: Breadboard Implementation
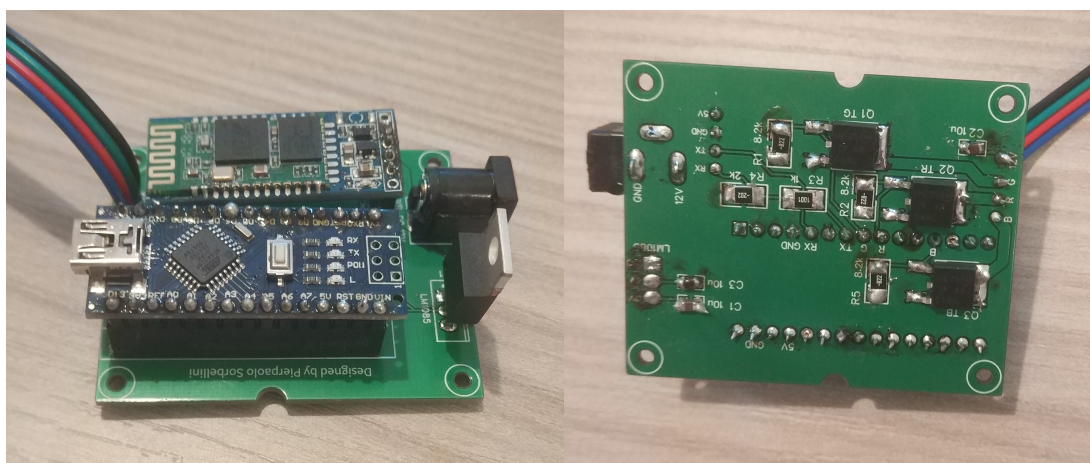

Figure 2: Welded PCB

Schematic and Components

The schematic of the controller circuit:
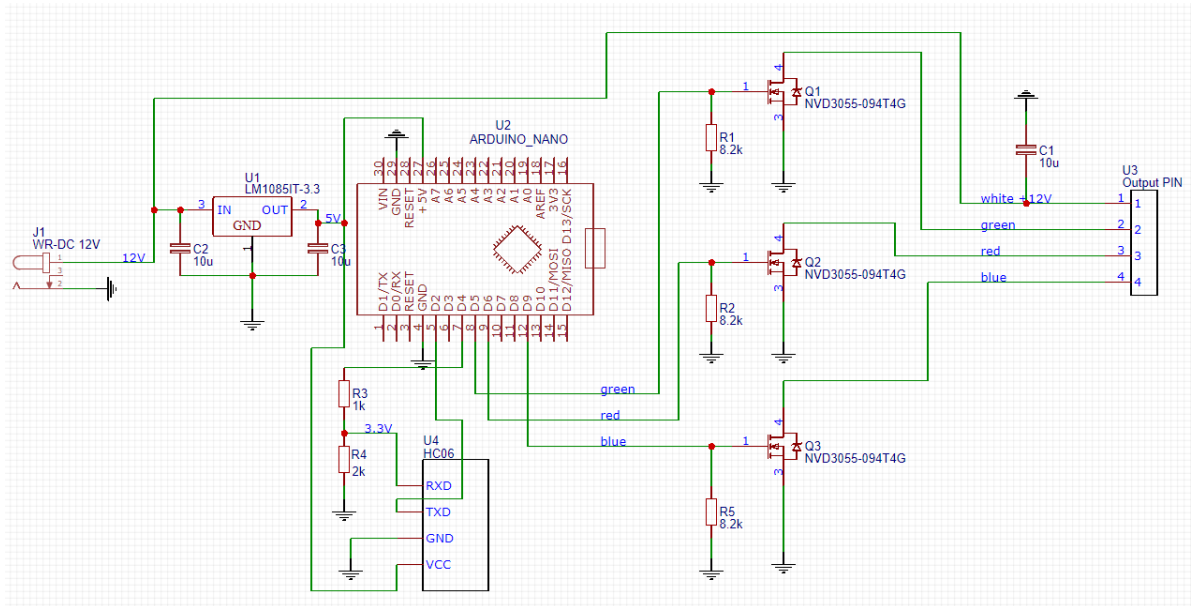

Figure 3: Schematic
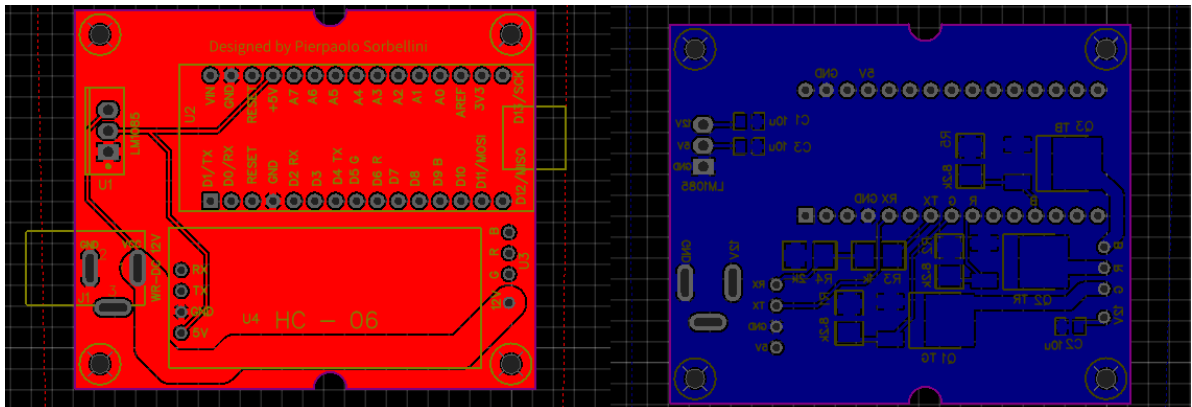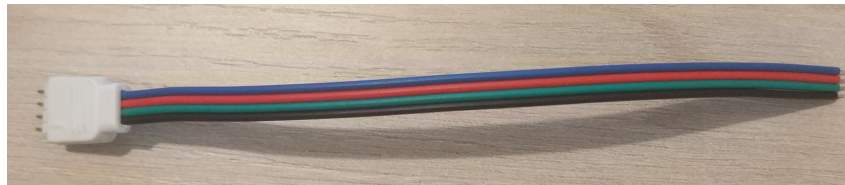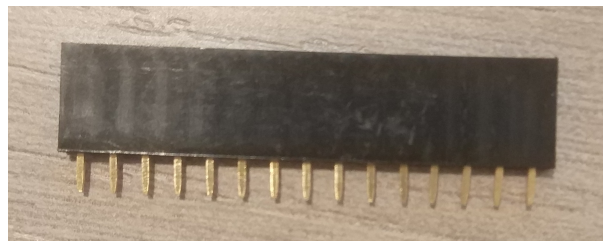

Figure 4: PCB Design

Specification on the components:

- 3x Transistor N-Channel that handle $2A$ at $12V$, the package for the PCB implementation is DPAK (TO-252), 3 Pin. The transistor actually used are:

  - Breadboard: IRFZ44N
  - PCB: NTD4804NT4G

- Resistance package for PCB is 1210.

- Capacitor package for PCB is 0805.

- Voltage Regulator: LM1085 package TO-220 also for the PCB implementation (improve thermal exchange)

- Bluetooth Module: HC-06.

- Arduino Nano

- Additional Component for PCB connectivity:

  - 1x12V-Socket
  - 1x RGB connector

  - 3x 15Pin Socket

  2 of them are needed for the arduino nano to be connected with the PCB and the third one is cut to get a 4pin Socket to connected the Bluetooth module.

Download and Setting Procedure

Once the circuit is composed:

- Upload the script on the Arduino.

- Download the App to connect to the bluetooth module and run it.

Download:

- Arduino-Script

- Case-for-3D-printing

- Gerber-for-PCB