Used AtTinty84A chip for this project and homemade programmer\* based on wiring and insturctions here: <https://create.arduino.cc/projecthub/Arnov_Sharma_makes/programming-attiny84-088482>

\**found in the accompanying folder*

* Goto this GitHub directory:

<https://github.com/SpenceKonde/ATTinyCore>

* Follow the ‘Installation’ instructions:

1. Go to ‘*File->Preferences’* on a PC, or *‘Arduino->Preferences’* on a Mac and enter the URL below in *‘Additional Boards Manager URLs’*
2. <http://drazzy.com/package_drazzy.com_index.json>
3. Go to *‘Tools -> Boards -> Boards Manager’*
4. Select *‘ATTinyCore by Spence Konde’* and click *‘Install’*

* In the Arduino IDE software, go to: ‘*File>Examples>11.ArduinoISP’* and open the ‘*ArduinoISP’* sketch, then upload it to the board

The below is the correct way, integrate:

Choose Attiny84 with all defaults

Set programmer ‘Arduino leo/micro as ISP (ATMega32u4)’

Burn bootloader

Select sketch and ‘Sketch’> ‘Upload using Programmer’

* Select your current Arduino board and port from the *‘Tools’* menu and then the *‘Tools>Burn Bootloader’* option NB – do this BEFORE inserting in programmer circuit or you will get an error
* You are now ready to upload code to the ATTiny chip
* Select *‘ATtiny24/44/84(a) (No bootloader)’* from the *‘Tools>Board’* menu and current port
* Open the sketch you want and hit ‘Upload’

NB – found issue with ATtiny84a and LED dimmer where it was **flashing at low PWM duty**, investigation found this entry in library for ATtinyCore:

“*When using a chip for the first time, or after changing the clock speed, EESAVE or BOD settings, you must do "burn bootloader" to set the fuses, even if you are not using the chip with a bootloader”*

Just selecting *‘ATtiny24/44/84(a) (No bootloader)’,* but then doing ‘Burn Bootloader’ before uploading code seemed to fix the issue

Explanation of the capacitor: <https://www.instructables.com/Programming-the-ATTiny85-ATTiny84-and-ATMega328P-A/>

Preparing your Arduino Uno

This is a relatively simple procedure and is as follows;

Ensure you have Arduino IDE 1.6.9 installed,

Ensure you do not have the ISP programming prototype shield plugged onto your Arduino Uno R3 (if you do you will not be able to programme it as the 10uF capacitor C6 will prevent the Arduino IDE from resetting the ATMega328P),

Ensure your Arduino Uno R3 is connected to your PC (sorry MAC users) via USB,

Run up Arduino IDE and connect to your Arduino Uno R3,

From File->Examples->11.ArduinoISP->ArduinoISP, open the ArduinoISP sketch,

Programme your Arduino Uno R3,

Once complete, plug your ISP programming prototype shield onto the Arduino Uno R3 as in pic 2 above.