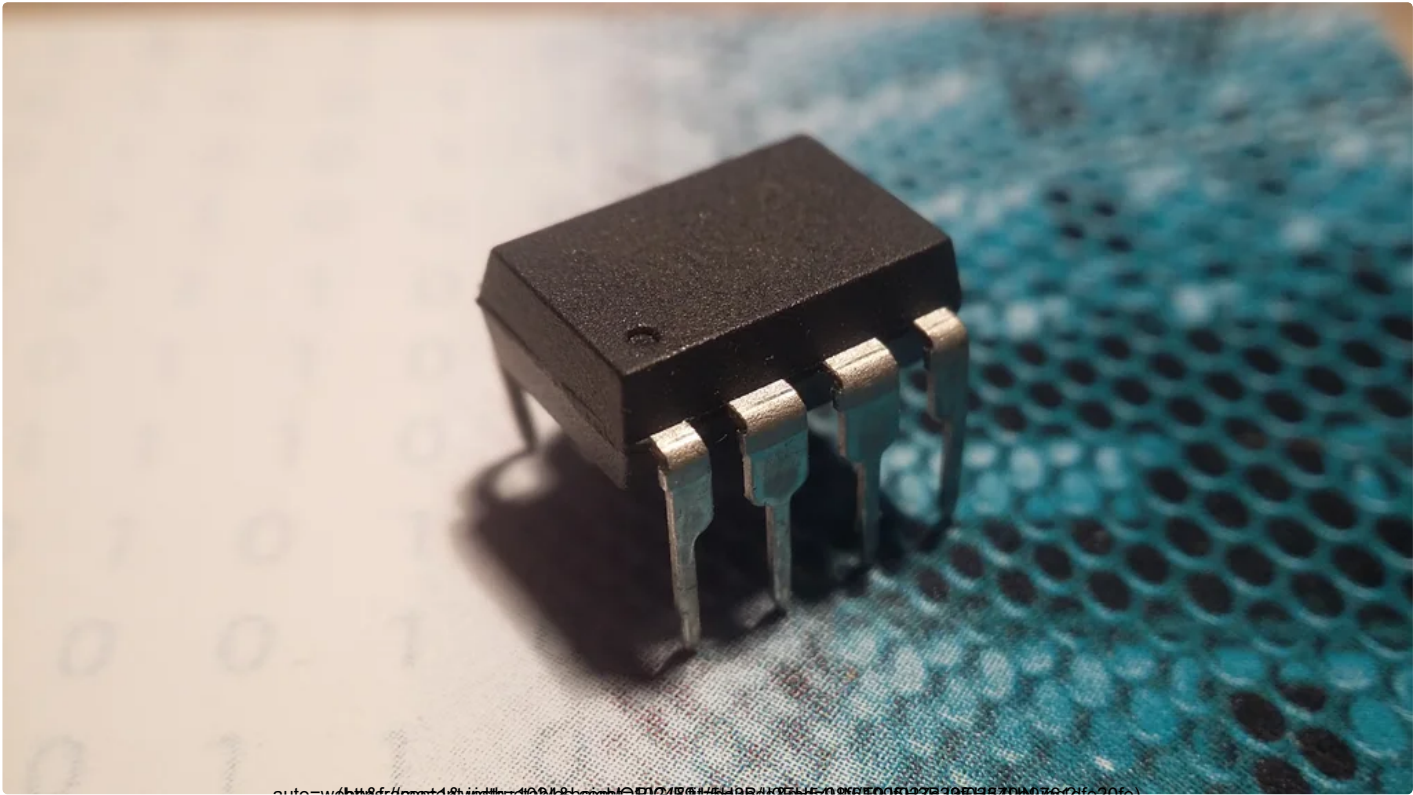


Learn How to Use the ATTiny85 in UNDER 4 Minutes!

By [adiov \(/member/adiov/\)](/member/adiov/) in [Circuits \(/circuits/\)](/circuits/) > [Arduino \(/circuits/arduino/projects/\)](/circuits/arduino/projects/) 22,995 54 5

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Here you have the comprehensive starting guide to the Attiny85 microcontroller compressed into a short but detailed video that covers everything from configuring you Arduino as ISP to Uploading some working code.

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Step 1: Video

Arduino Tutorial – Part 3 – ATTiny85 explained in 4 minutes!



ATtiny85: In 4 minutes

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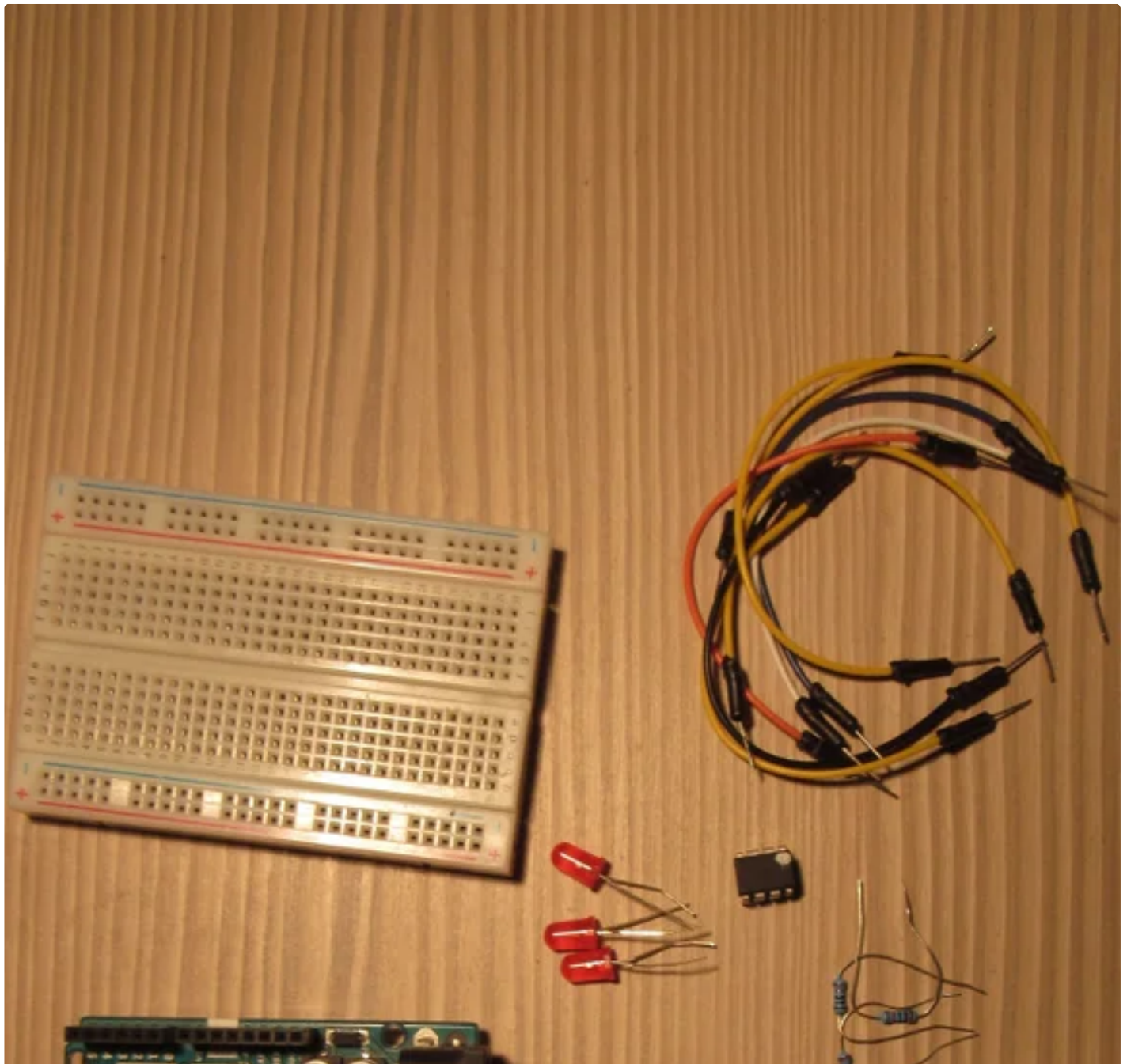
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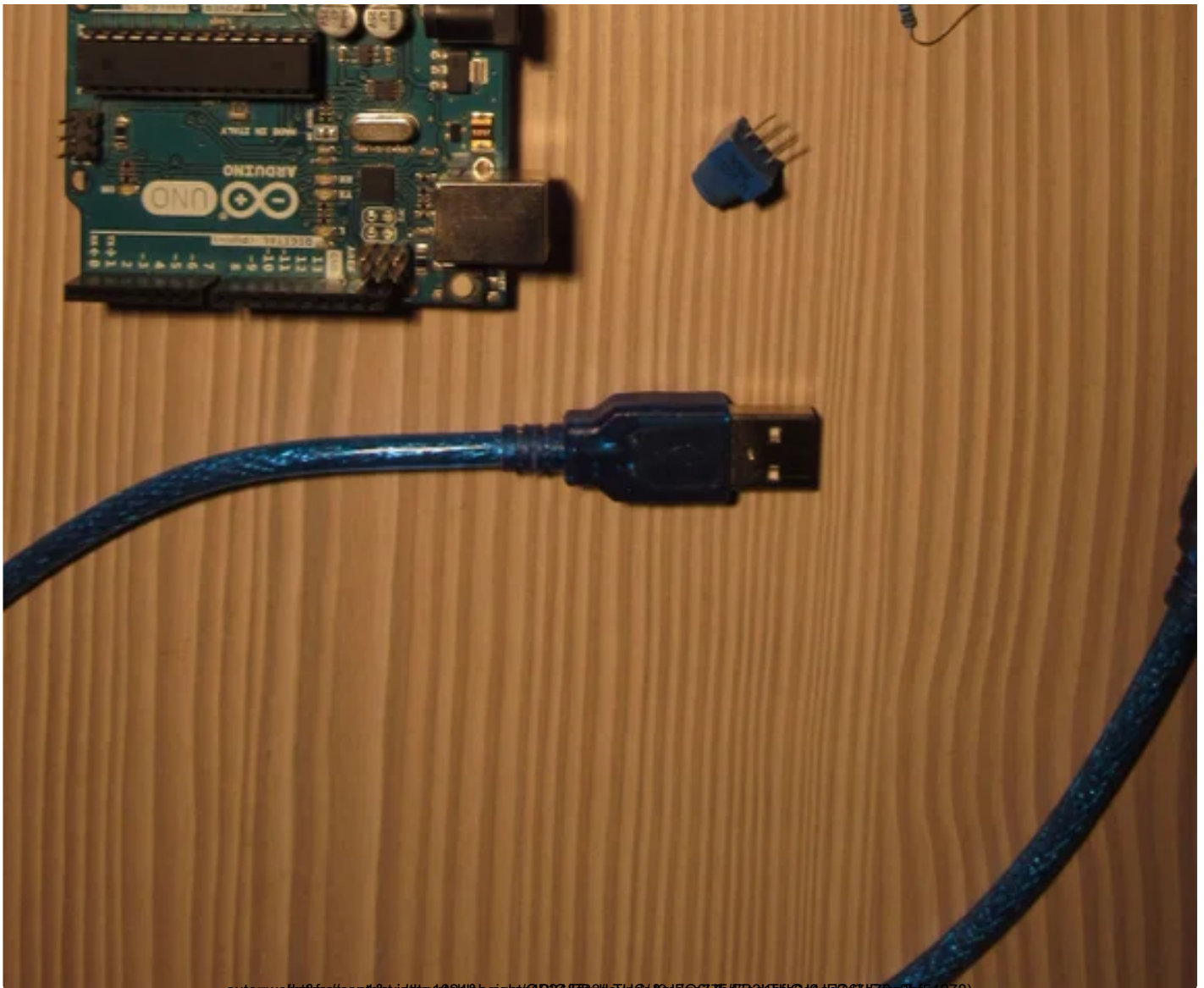


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Step 2: Parts





- Arduino Uno
- USB printer Cable
- ATtiny85
- Jumper cables
- 3 Red LED's
- 3 220 Ohm resistors
- 10 KOhm Potentiometer
- Breadboard
- Optional : 10 μ F Capacitor

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Step 3: Install the ATtiny85 Drivers

Go to the Arduino IDE, and under File/Preferences fill in the field "Additional Boards URLs" with this command:

<https://raw.githubusercontent.com/damellis/attiny/...>
(https://raw.githubusercontent.com/damellis/attiny/ide-1.6.x-boards-manager/package_damellis_attiny_index.json).

Then click close.

Now go to Tools/Boards/Boards Manager, and in there search **attiny** in the search box. Then click the attiny box and press install - close when finished.





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Step 4: Setting Up Arduino UNO As ISP

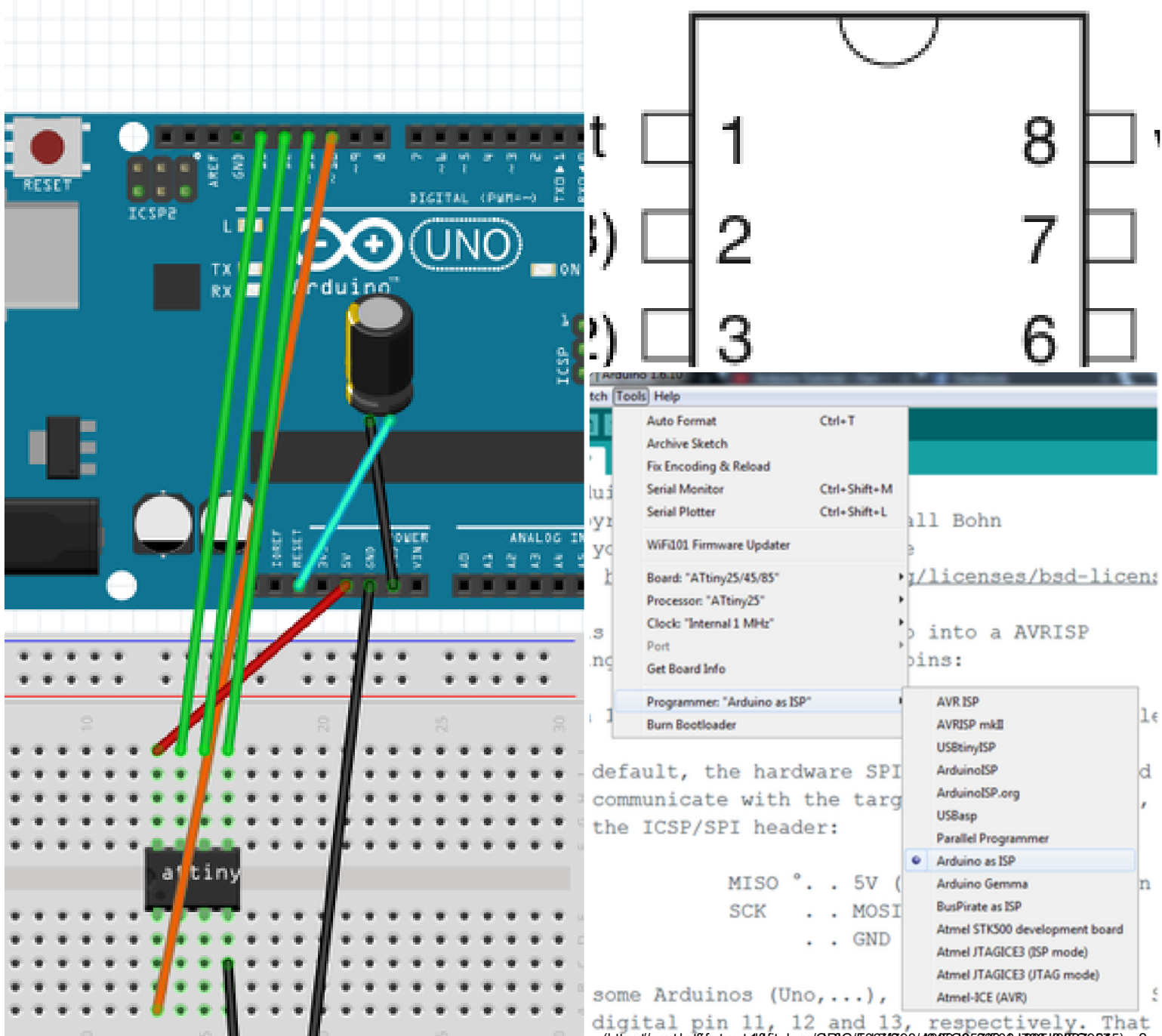


```
// ArduinoISP
// Copyright (c) 2008-2011 Randall Bohn
// If you require a license, see
//   http://www.opensource.org/licenses/bsd-license.php
//
// This sketch turns the Arduino into a AVRISP
// using the following arduino pins:
//
// Pin 10 is used to reset the target microcontroller.
//
// By default, the hardware SPI pins MISO, MOSI and SCK pins are used
// to communicate with the target. On all Arduinos, these pins can be found
// on the ICSP/SPI header:
//
//           MISO  °. . 5V (!) Avoid this pin on Due, Zero...
//           SCK   °. . MOSI
//           °. . GND
//
// On some Arduinos (Uno,...), pins MOSI, MISO and SCK are the same pins
// as digital pin 11, 12 and 13, respectively. That is why many tutorials
```

Start of by configuring your Arduino Uno as a programmer for the ATtiny85. Plug your Arduino using a USB cable into your Computer, and in the Arduino IDE load up the example sketch "Arduino as ISP" under File/Examples/Arduino as ISP. Then just click upload as with any other code. No connections to the Arduino Uno are needed so far.

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Step 5: Programming the ATtiny85



Now to program the ATtiny85 itself, place it into a breadboard and connect jumper cables according to the sketch:

- **GND** - Arduino Ground
- **VCC** - Arduino 5V
- **Reset** - Arduino Pin 10
- **Pin 0** - Arduino Pin 11
- **Pin 1** - Arduino Pin 12
- **Pin 2** - Arduino Pin 13

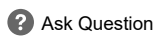
Optional : You can add a 10 uF Capacitor between Reset and Ground

It is up to you now what you want to upload to the ATtiny85, but before that, select the correct settings by:

- Selecting the ATtiny85 board option under Tools/Boards/ATtiny25/45/58
- Processor as "ATtiny85" with "1 MHz" clock
- and the correct programmer : "Arduino as ISP"



Add Tip



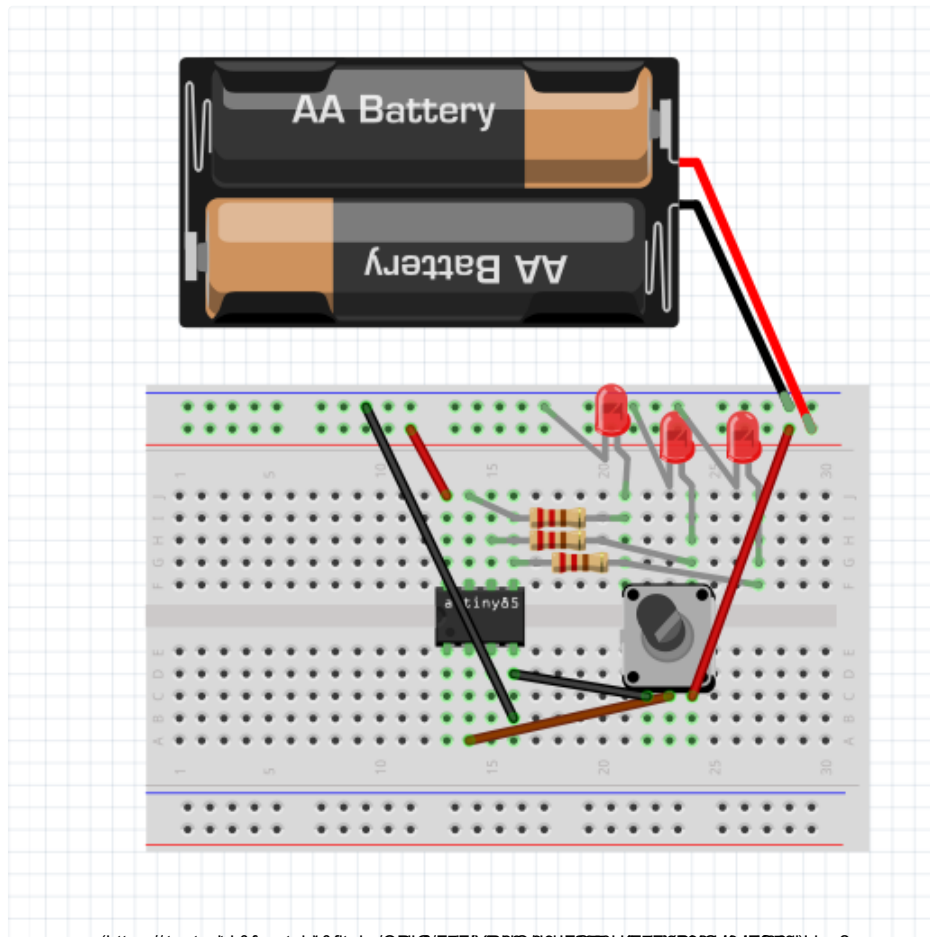
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Step 6: LED Blinker



First download the attached .ino program from this page. Then upload it with the same configuration as in the previous step. This is just an extension to see if your ATtiny85 works. Basically it is a blinking LED toy where the speed is controlled with the potentiometer.

Disconnect your ATtiny85 from your Uno, and hook it up to any power source, like some batteries.

- Take the three 220 Ohm resistors, and connect each of them separately to pin 0,1 and 2
- Connect each LED anode to separate resistors
- Connect all LED cathodes to GND
- Connect the VCC of the ATtiny to your power source positive terminal, and the GND pin to ground
- Last connect the middle potentiometer pin to Pin 3 of the ATtiny85, and the opposing pins to Ground and power respectively

And we are done.



Add Tip



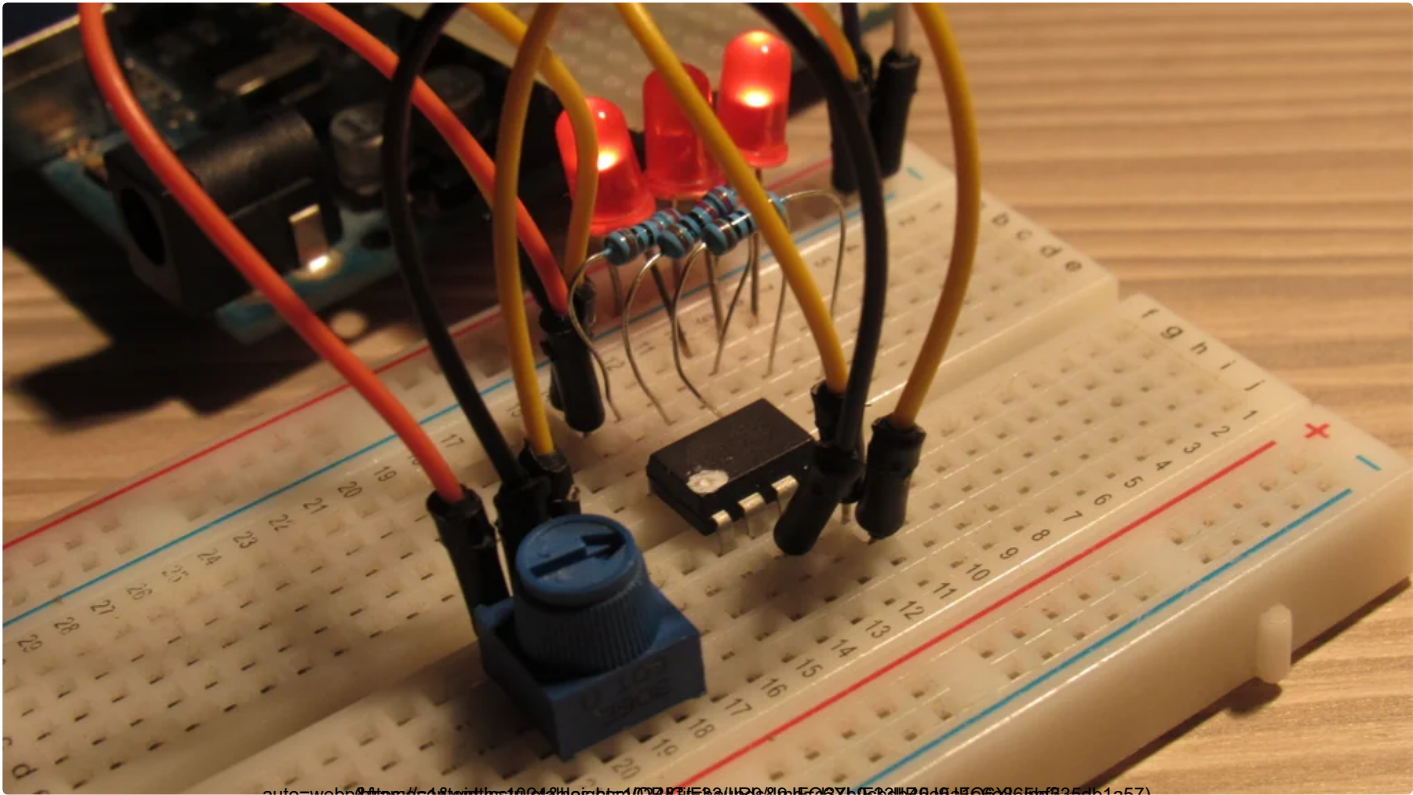
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Step 7: Finished Circuit



It can also be seen working in the video. Enjoy!



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Step 8: Code Download



attiny_blinker.ino
<https://content.instructables.com/ORIG/GFB/P0V9P/PEJ5256/P0V9P/PEJ5256/no>



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