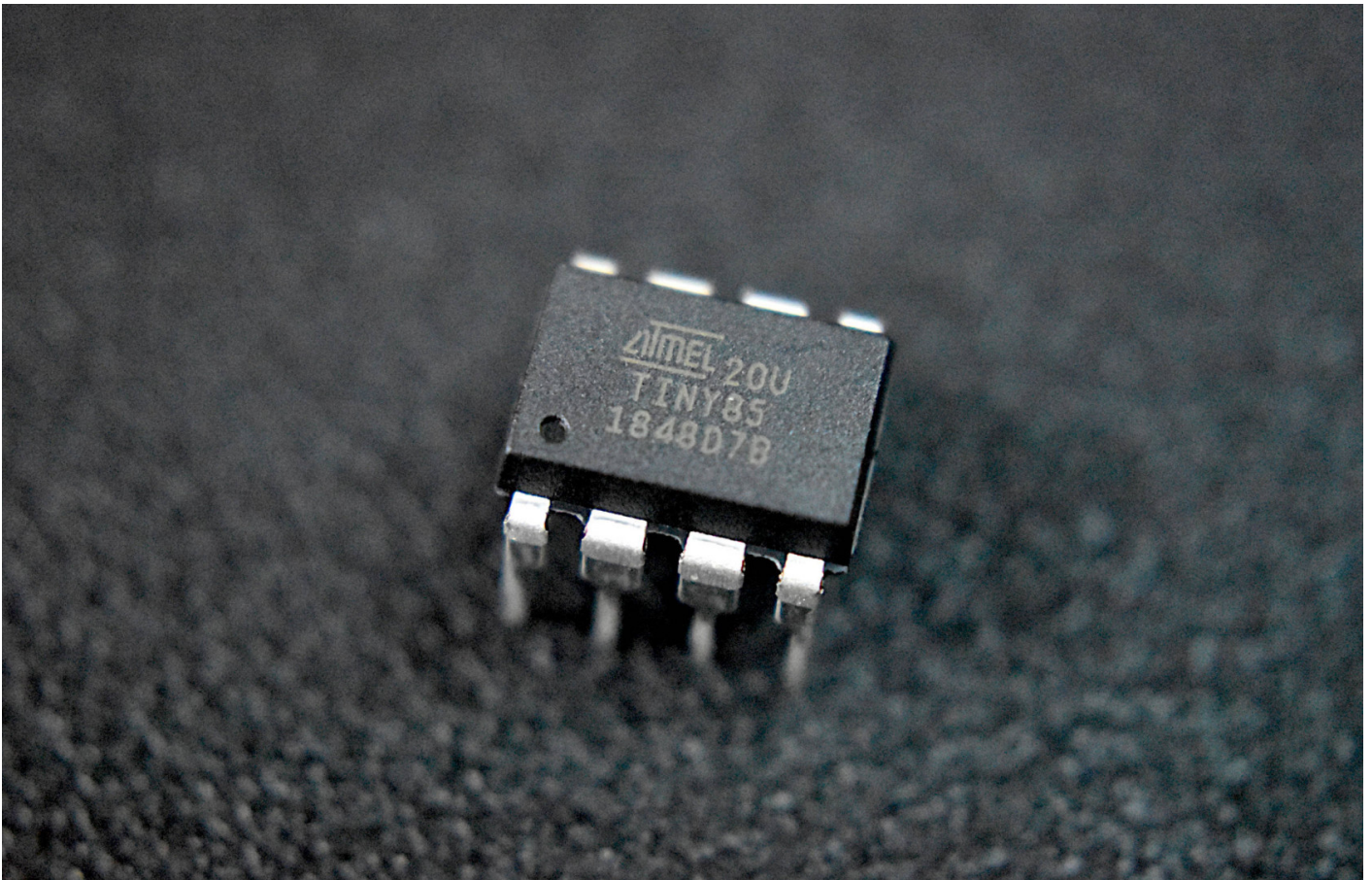# How to Program an ATtiny85 with an Arduino Uno

What is an ATtiny85?

ATtiny85 is a 8-bit AVR microcontroller based on AVR enhanced RISC architecture. It has an 8-pin interface (PDIP) and comes in the category of low-power microcontrollers. This microcontroller is designed and manufactured by Microchip. **Know More**
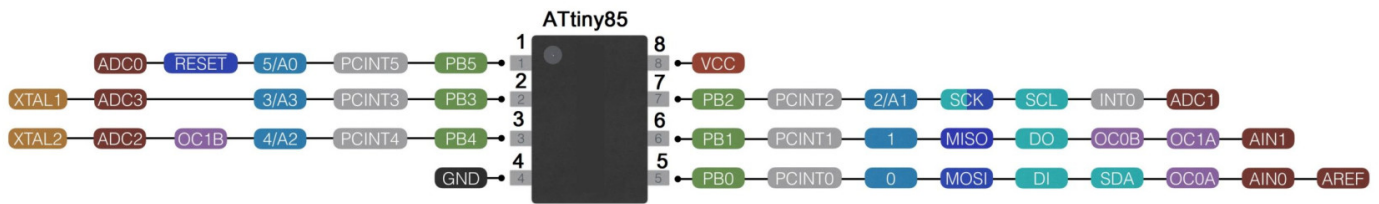

Set the Arduino Uno Into ISP Mode

So that the Arduino can act as a device to upload code to ATtiny85. `File - Examples - Arduino ISP - ArduinoISP`

Add this line `#define USE_OLD_STYLE_WIRING` to the code before `setup()`

UPLOAD!

Wiring

The pins are not labelled so you will have to refer to the pinout.

Arduino --> ATtiny85

1. 5V --> Vcc (8)
2. GND --> GND (4)
3. Pin 13 --> Pin 2 (7)
4. Pin 12 --> Pin 1 (6)
5. Pin 11 --> Pin 0 (5)
6. Pin 10 --> Reset (1)

> **Only when you are uploading code to ATtiny85**
> Put a 10uF capacitor between GND and RESET on Arduino

Adding Attiny85 to Boards Manager

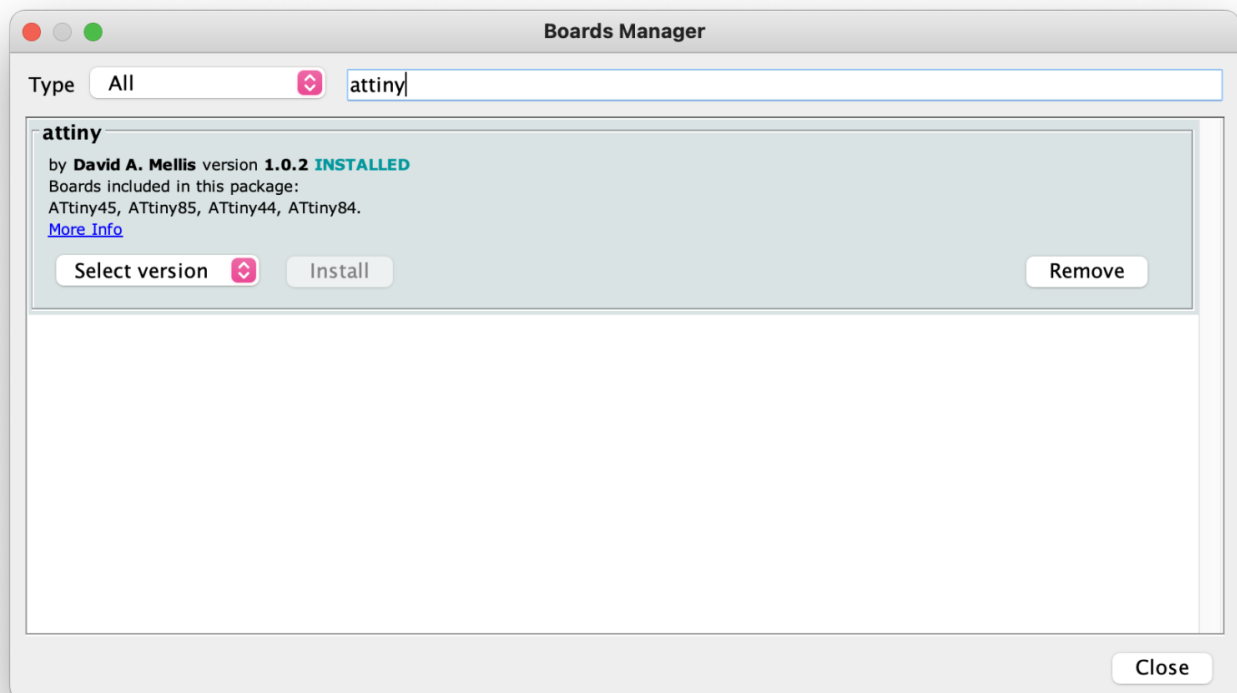We have to make ATtiny compatible with Arduino IDE first, so that we can choose ATting85 from `Tools -> Board` Go to `Arduino Preference`

Copy the below code and paste it into `Additional Boards Manager URLs`, if you already have a board manager URL just add a comma before pasting. Click OK and restart Arduino IDE.

`https://raw.githubusercontent.com/damellis/attiny/ide-1.6.x-boards-manager/package_damellis_attiny_index.json`
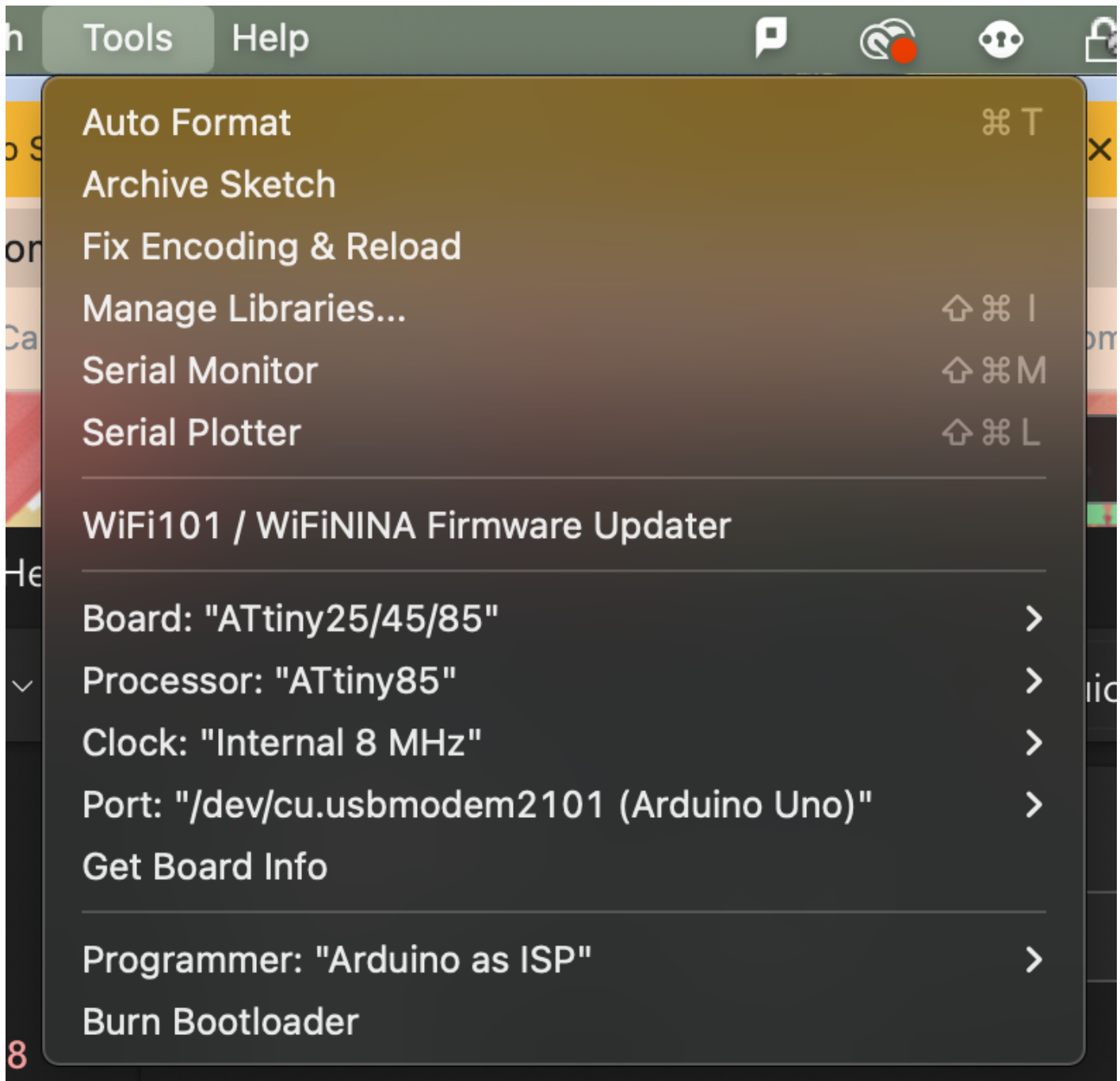
Preferences

Settings   Network

Sketchbook location:

/Users/joanneleung/Documents/Arduino   Browse

Editor language: System Default   (requires restart of Arduino)

Editor font size: 12

Interface scale: ☑ Automatic   100 ◊%   (requires restart of Arduino)

Theme: Default theme   (requires restart of Arduino)

Show verbose output during: ☐ compilation   ☐ upload

Compiler warnings: None

☑ Display line numbers   ☐ Enable Code Folding
☑ Verify code after upload   ☐ Use external editor
☑ Check for updates on startup   ☑ Save when verifying or uploading
☐ Use accessibility features

Additional Boards Manager URLs: https://raw.githubusercontent.com/damellis/attiny/ide-1.6.x-boards-manag 🖵

More preferences can be edited directly in the file
/Users/joanneleung/Library/Arduino15/preferences.txt
(edit only when Arduino is not running)

                                                  OK   Cancel

---

Go to Tools - Board - Boards Manager , search for ATtiny, then install!

Boards Manager

Type   All   attiny

attiny
by **David A. Mellis** version **1.0.2** INSTALLED
Boards included in this package:
ATtiny45, ATtiny85, ATtiny44, ATtiny84.
More Info

Select version   Install   Remove

                                                      Close

Get Started

Before uploading the code, we have to change some settings.

1. Tools -> Board scroll to the bottom select ATtiny25/45/85
2. Tools -> Processor--> 8 MHz (internal)
3. Tools-->Programmer-->Arduino as ISP
4. Check that all wiring, capacitor, and board selections are correct.

Open up a basic code and upload as usual! If it doesn't work, try Tools - Burn Bootloader

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