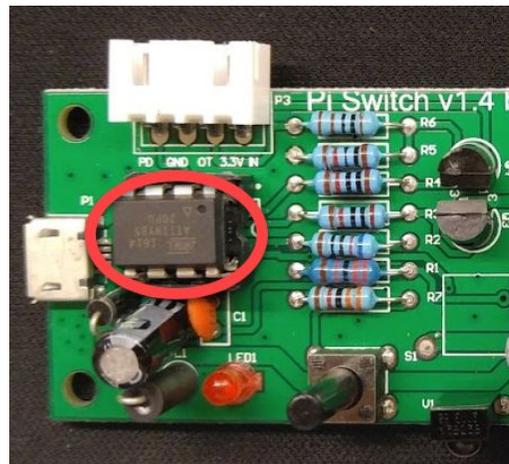# Hackable Pi Switch Programming Guide

1. Overview

The Hackable Pi Switch comes with an onboard microprocessor - Attiny85. The Attiny85 allow developers to modify the software using Arduino language. This guide provide instructions of how to do so.


2. Requirement

In order to program the onboard Attiny85, you will need a programmer. You may purchase a programming kit from Nanomesher store. This programming kit uses an Arduino Uno as ISP (In-System Programmer)

3. Instruction

The instruction are very similar regardless of platform

1. Download and install Arduino from https://www.arduino.cc/en/Main/Software
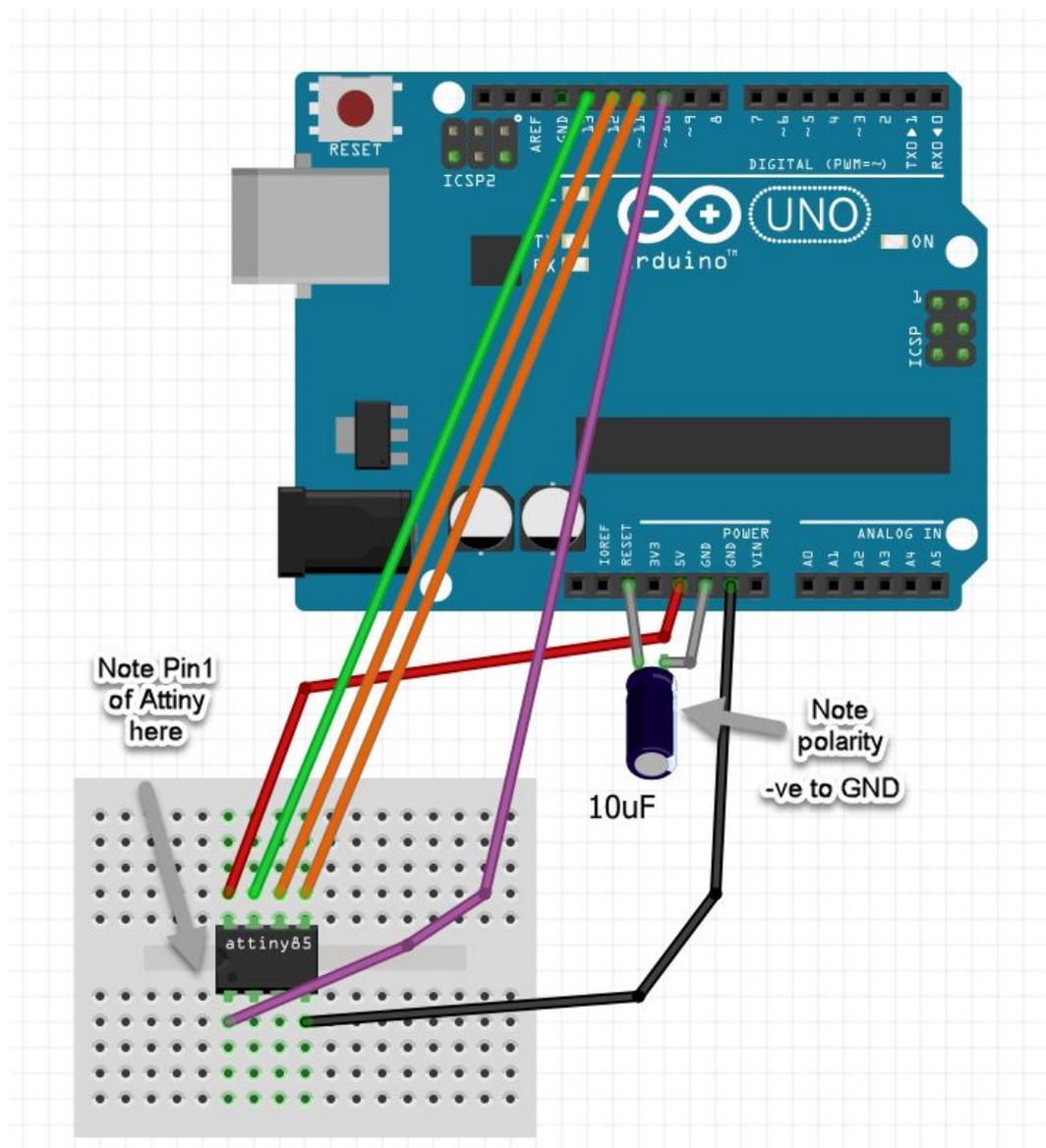
2. Open Arduino, under Tools > Board, choose "Arduino / Genuino Uno" (The board to be used as programmer), choose the COM port which is used by Uno (tip: see which COM port appear / disappear when you plug the Uno into the computer)
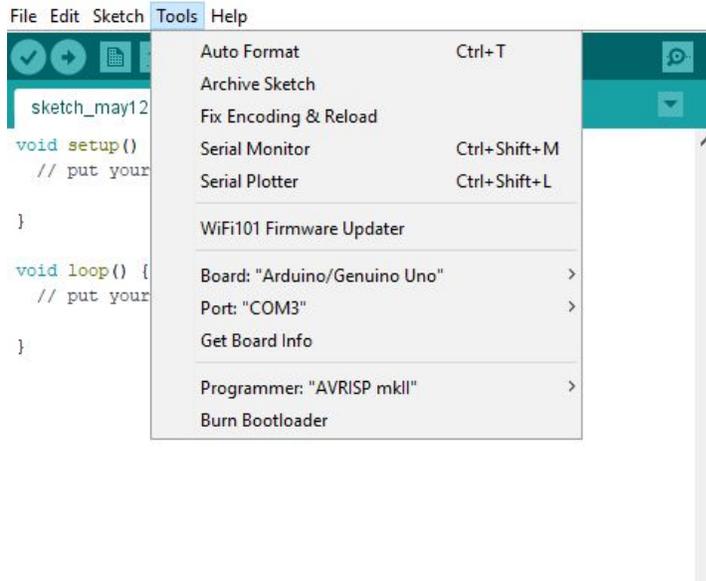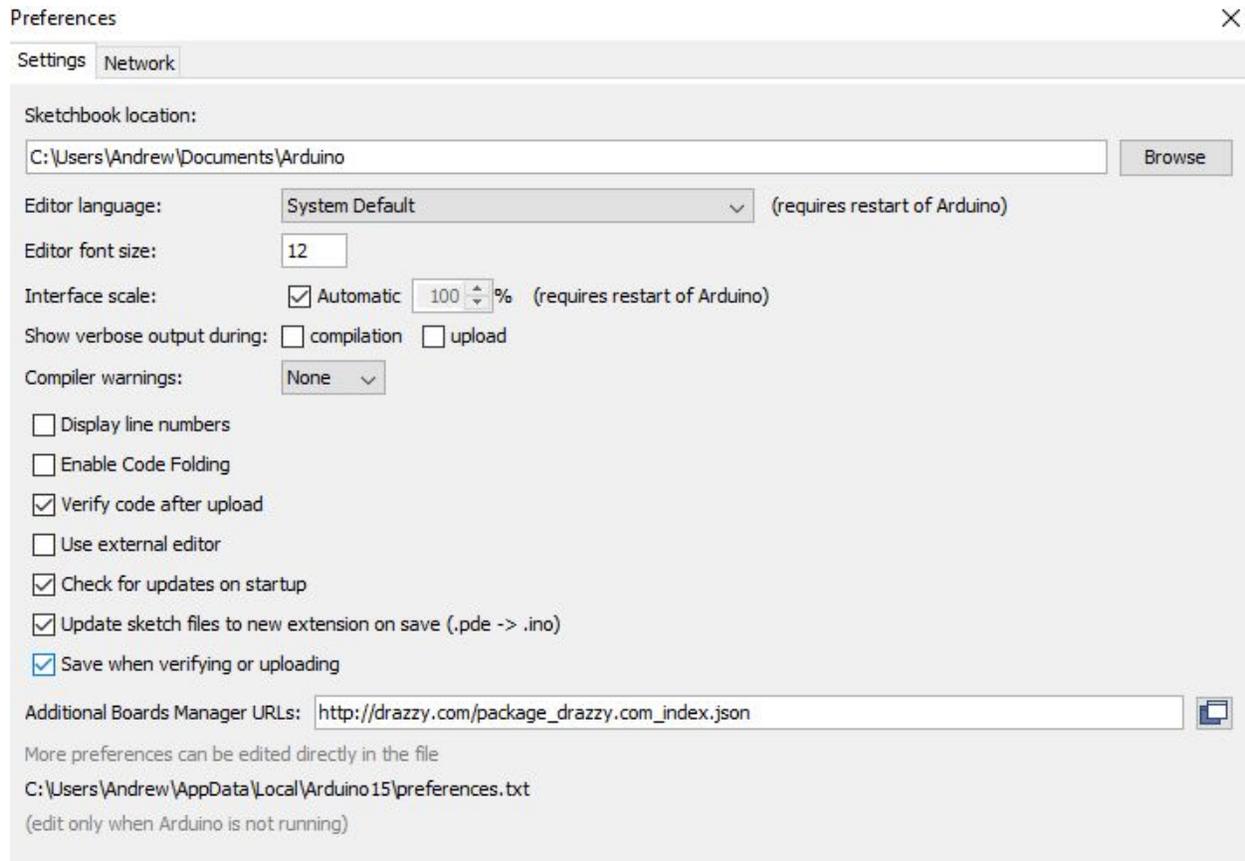

3. Load the Arduino as ISP example
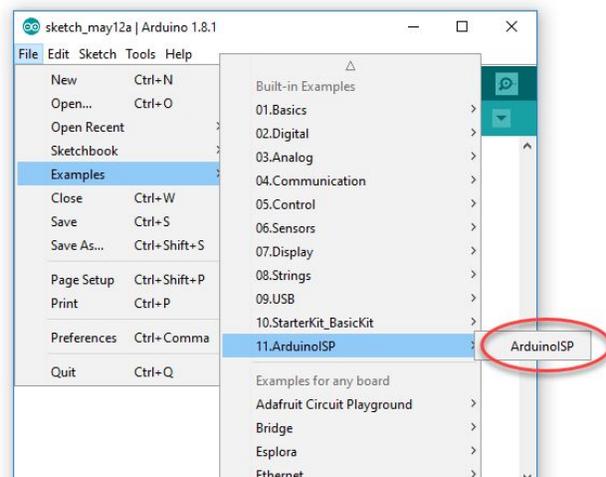
4. Plug in the Arduino Uno into USB and choose Tools > Upload
5. Wire up the Attiny programmer as below
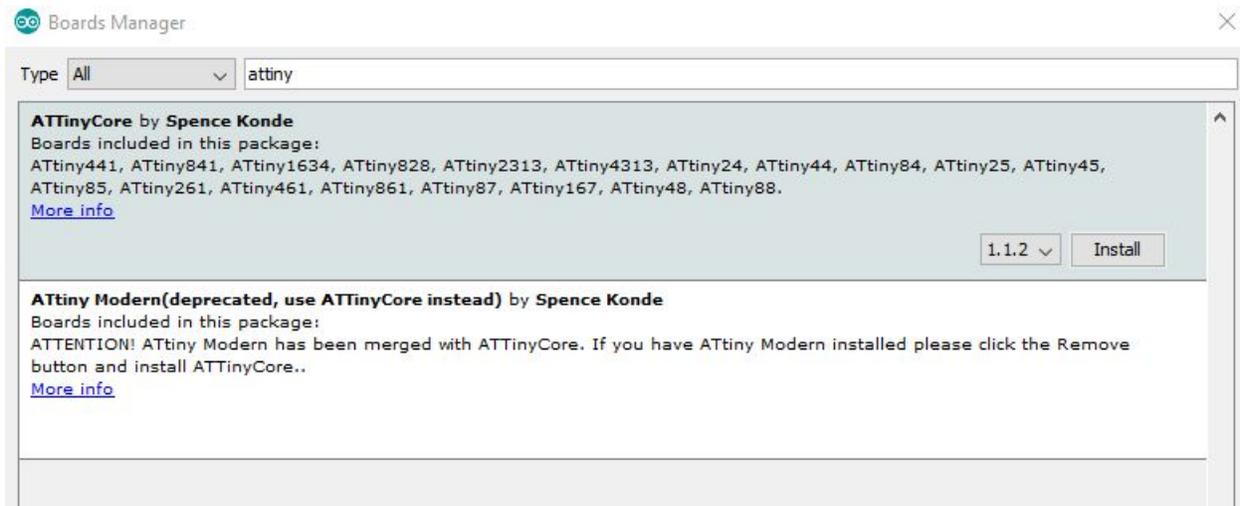
6. Start programming Attiny
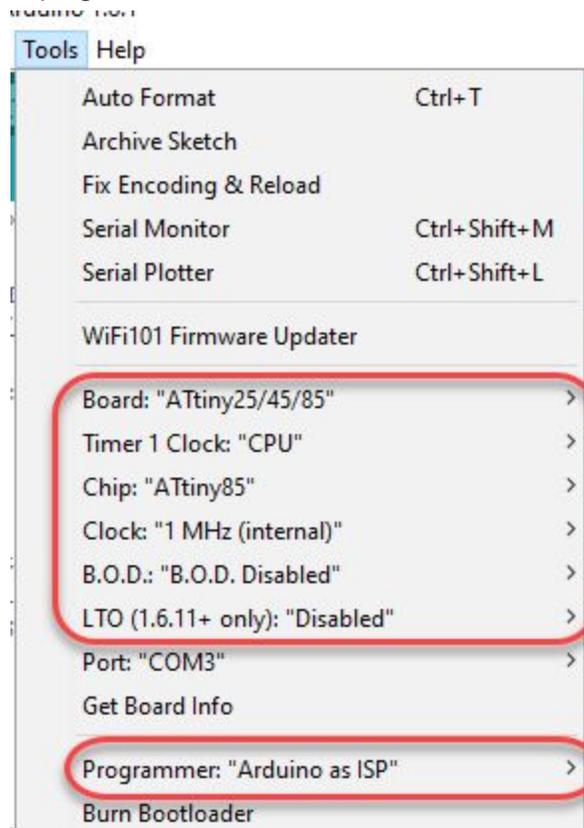
Go to File > Preference

Add this URL to Additional Boards Manager URLs:
http://drazzy.com/package_drazzy.com_index.json

7. Go to Tools > Board Manager

Search for AttinyCore , select it and Install

8. Go to Tools , change the settings to as below. The COM Port should be whichever one detected which you plug in the Uno.

9. Open the sketch to be uploaded

   The Hackable Pi Switch sketch is in

   https://github.com/nanomesher/Nanomesher_PiSwitch_Attiny

10. Put the attiny85 chip into the programmer
11. If you start from a brand new attiny85, Go to Tools > Burn Bootloader to burn the bootloader on to the Attiny85
12. Then upload the Sketch, Go to Sketch > Upload
13. Wait for the upload to complete.

14. Remove the Attiny85 chip and put it back onto the Pi Switch. **Remember to put back the chip in the right orientation, you might damage the chip if you put it the wrong way.**