Arduino 101

Introduction and Programming

Midcoast Mini Maker's Faire
9/12/2015

What is it????

The Arduino Uno is a single board computer which has a microprocessor, memory, communication, variable voltage reading and output capability, and digital input/output all on one circuit board.

Once programmed it executes the program every time power is applied. It does not lose its programming if it loses power.

And you get it all for less than $20!!!

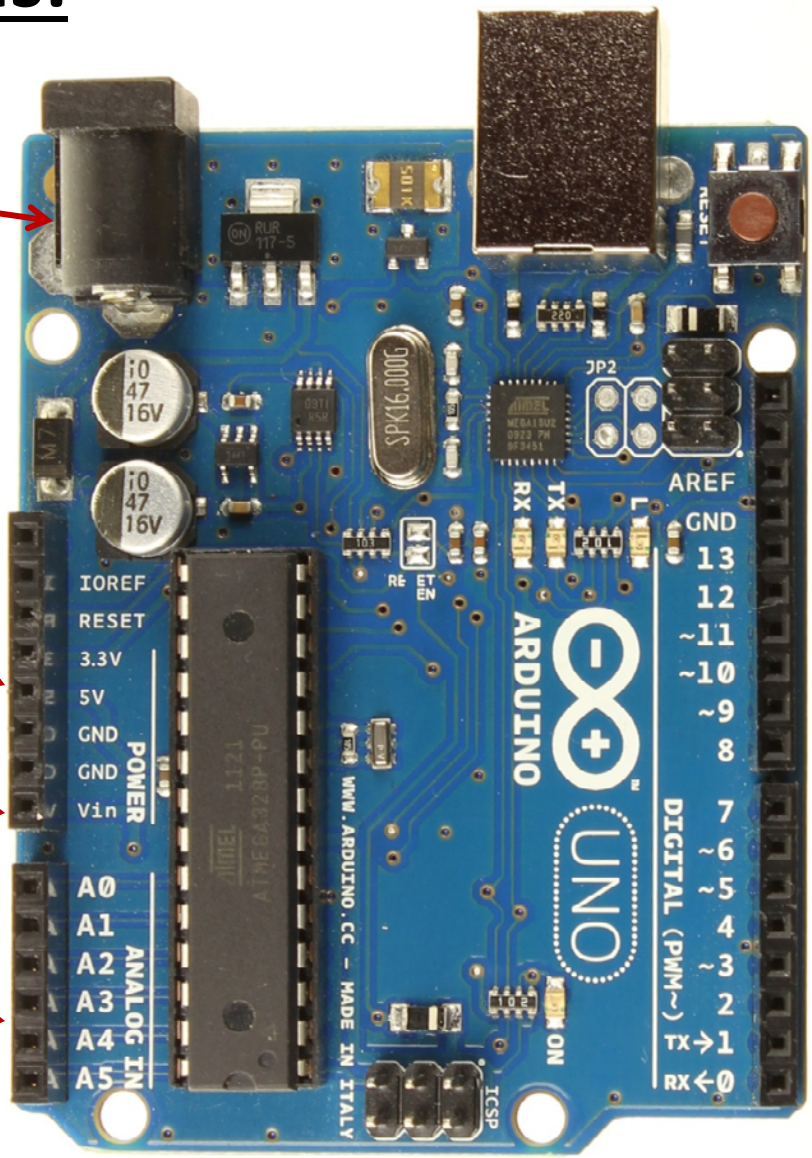
And here it is:

External 9-12V power input

Power output for things like variable resistance sensors

External 9-12V power input

Pins to read variable voltages



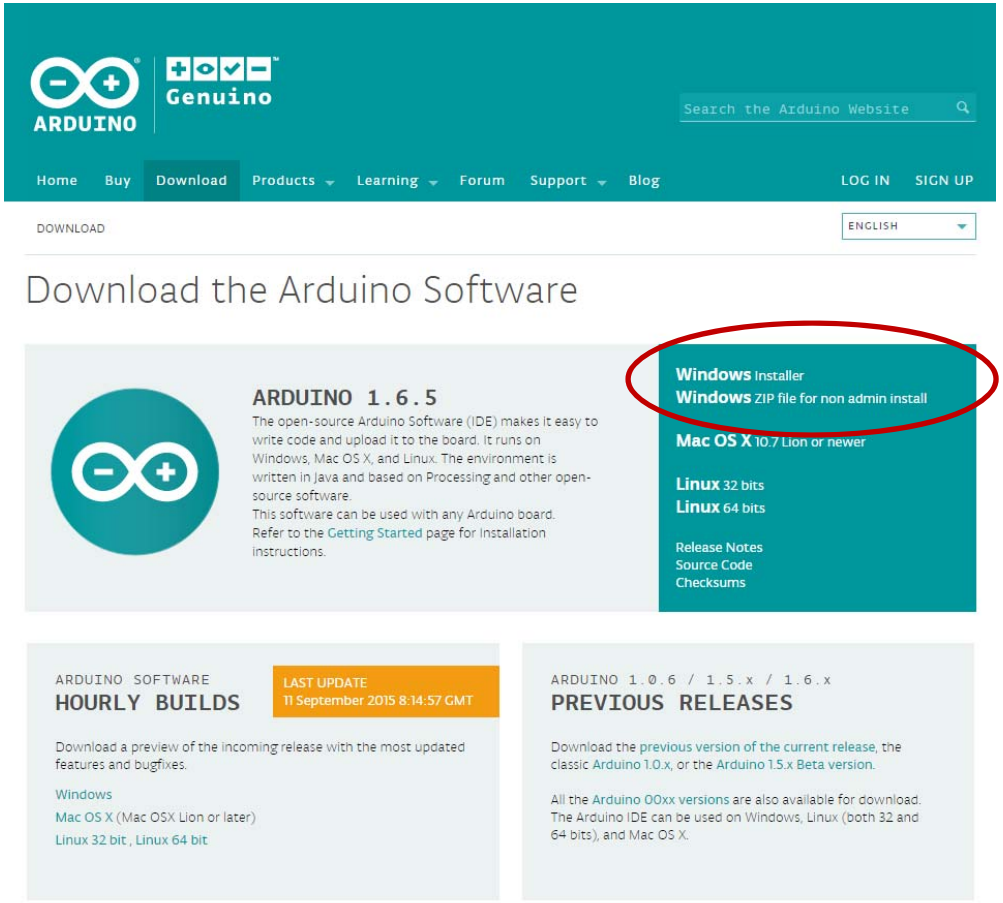
Digital input/output pins. Use these to signal to turn things on or off, read if a switch is open or closed, etc.

PWM or pulse width modulation allows the Uno to make variable voltages to do things like dim a light or change the speed of a motor.

Cool!! So how do I get started??

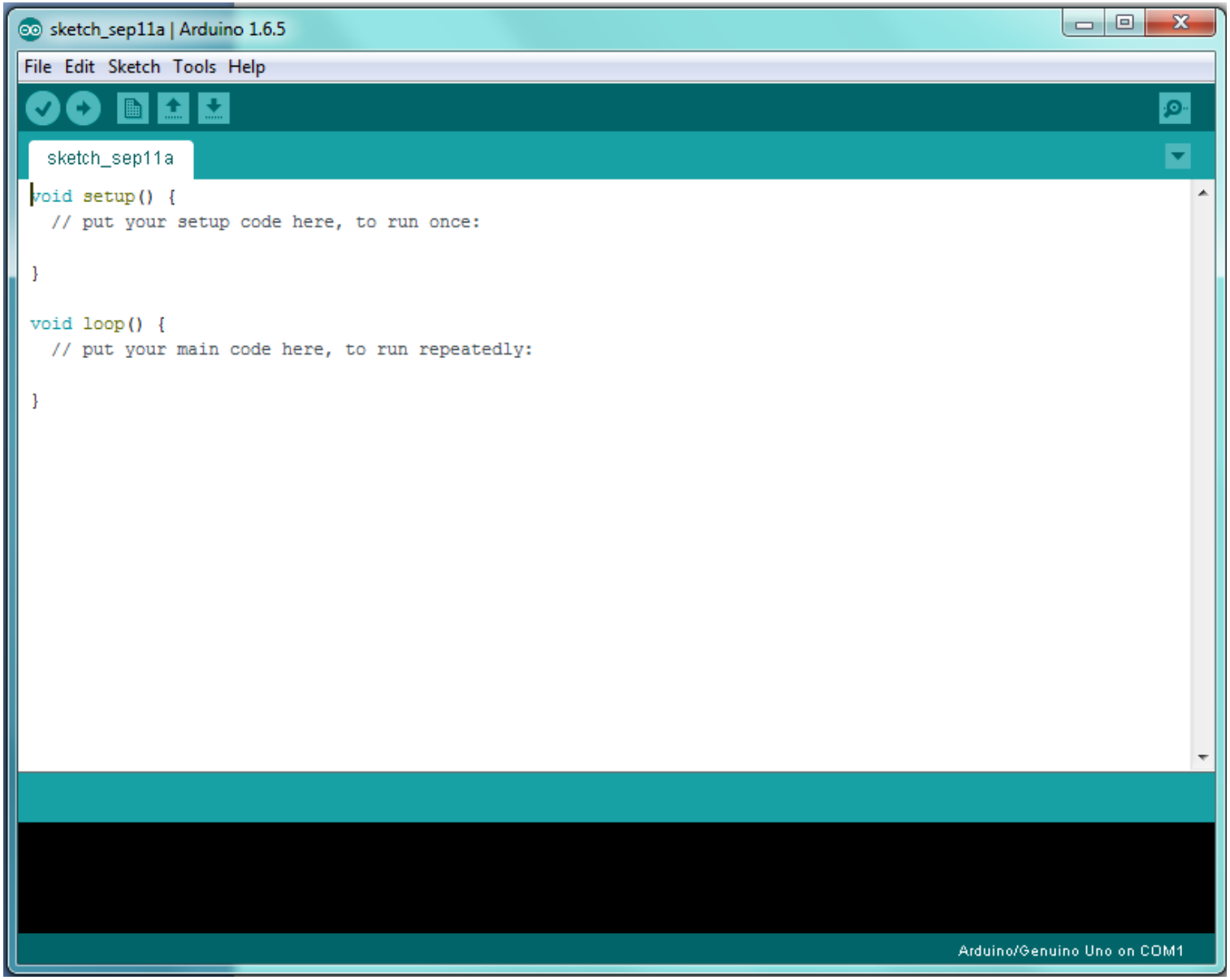
Programming the Arduino requires a computer with a USB port. It can be a Mac or a PC. First go to:

https://www.arduino.cc/en/Main/Software

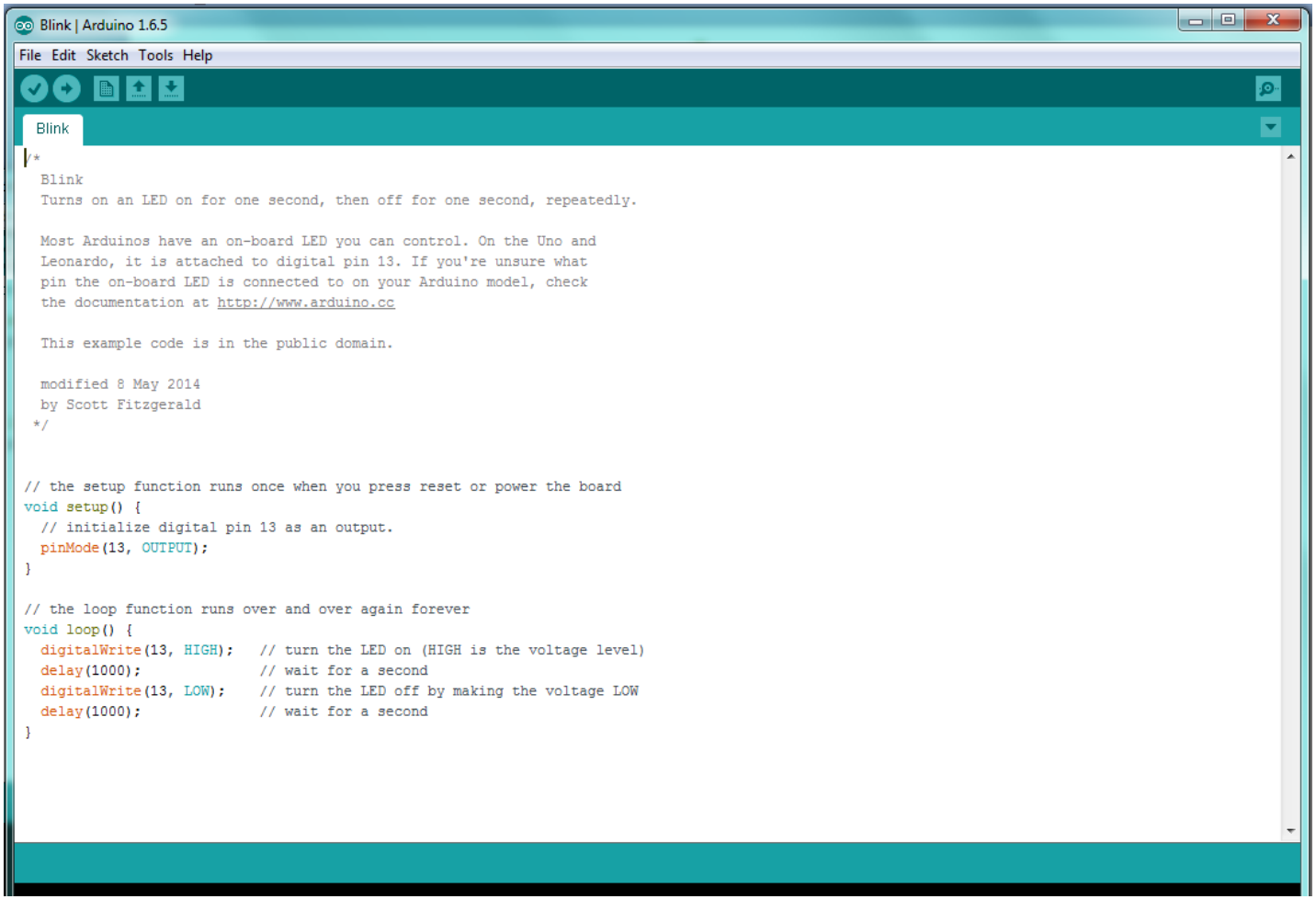


Click here and install the **FREE** programming software

Once the software is installed you access it like any other program
(ie. Start > Arduino)

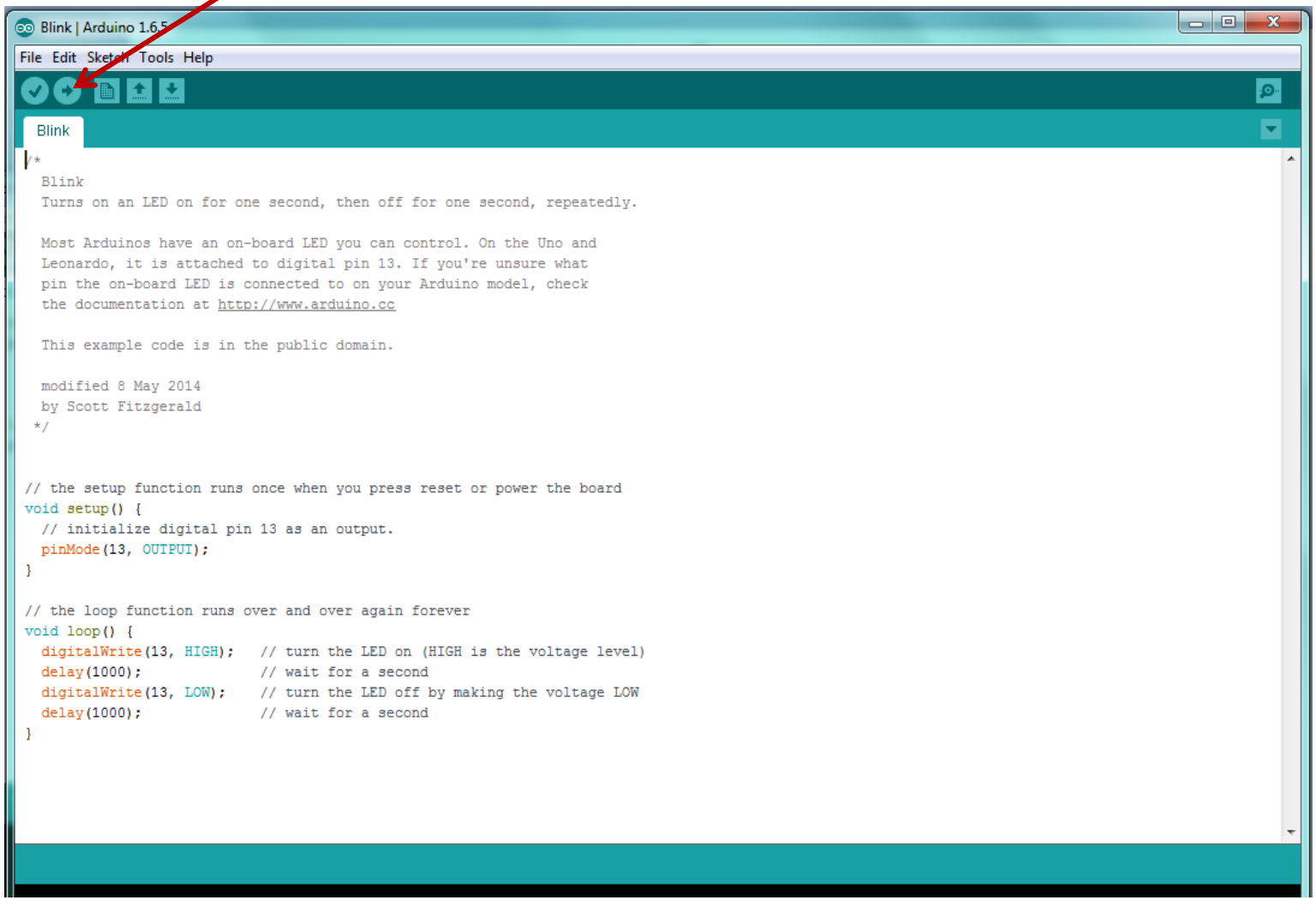


Under Files > Examples there are many examples which you can hack. The easiest is probably “Blink”



The Arduino environment uses the standard “C” language.

To upload the code into the Arduino simply attach the Arduino via a USB cable and click this button



There is no need to compile the code before uploading it. All of the power needed to program the Arduino is supplied by the computer's USB port.

Now whenever the Uno is connected to a 9V battery, the board mounted LED should flash.