Getting Started with Arduino

Download and Install Software

Before you start controlling the world around you, you'll need to download the IDE to program your board.
The Arduino IDE allows you to write programs and upload them to your Arduino.
Download the latest version of the IDE from arduino.org/download

> Windows users - choose the "Installer" version to get the necessary drivers installed automatically

Connect the Board and Install Drivers

Plug the Arduino board into your computer using the USB cable

- **OSX**: The first time you plug your board into a Mac, the "Keyboard Setup Assistant" will launch. There's nothing to configure, so you can close this dialogue by clicking the red button (close button) at the left top of the window.
- **Windows:** If you downloaded the Installer package then all the necessary drivers should automatically be installed
- **Linux**: There is no need to install drivers for Ubuntu 10.0.4 .In some computers, you need to setup user permissions and some udev rules. You can find detailed information on how to achieve this at this page

Testing the Board Works

Now that you've installed the Arduino IDE and your computer can talk to the board, it's time to make sure you can upload a program

- Open the example program
    - Open the LED blink example program
    - **File > Examples > 1.Basics > Blink**

- Select your board
    - Select the entry in the **Tools > Board** menu that corresponds to your Arduino board

- Select your serial port

    - Select the serial device corresponding to your Arduino board from the **Tools | Serial Port** menu

- Upload the program
    - Click the **Upload** button in the IDE

You should see the pin13 begin to blink, you've just run your first Arduino program!

You can have a go changing the number in the `delay()` command, re-uploading the program, and seeing what happens

Looking at the Code

The code for the blink program is as below :

```
void setup() {
    // initialize the digital pin as an output.
    // Pin 13 has an LED connected on most Arduino boards:
    pinMode(13, OUTPUT);
}

void loop() {
    digitalWrite(13, HIGH); // set the LED on
    delay(1000); // wait for a second
    digitalWrite(13, LOW); // set the LED off
    delay(1000); // wait for a second
}
```

- The `setup()` function is run initially - only once. It is used to tell that Arduino what's connected where and initialise any variables you might need in your program
    - The line `pinMode(13, OUTPUT);` in the `setup` function is saying "Set pin 13 to output mode" (13 is the board's built-in LED)

- The `loop()` function is run continually for the duration of the program
    - The `HIGH` and `LOW` refer to the `ON` and `OFF` state of the digital output (here the LED)
    - `delay` tells the Arduino to wait for *1000 milliseconds* (1 second)