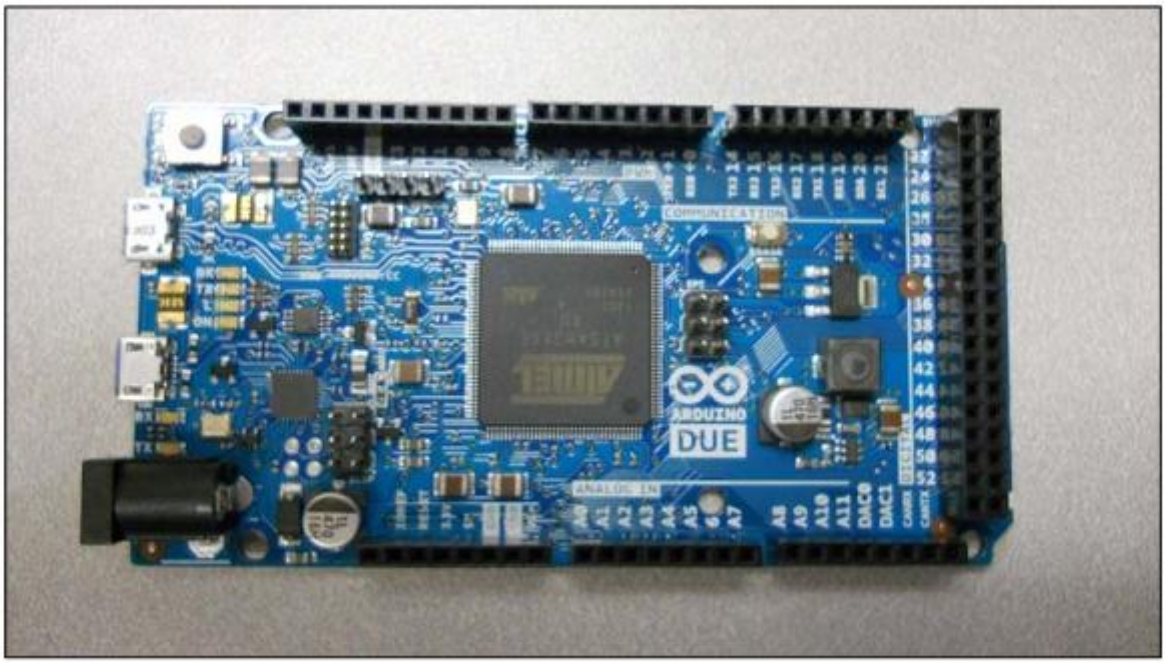
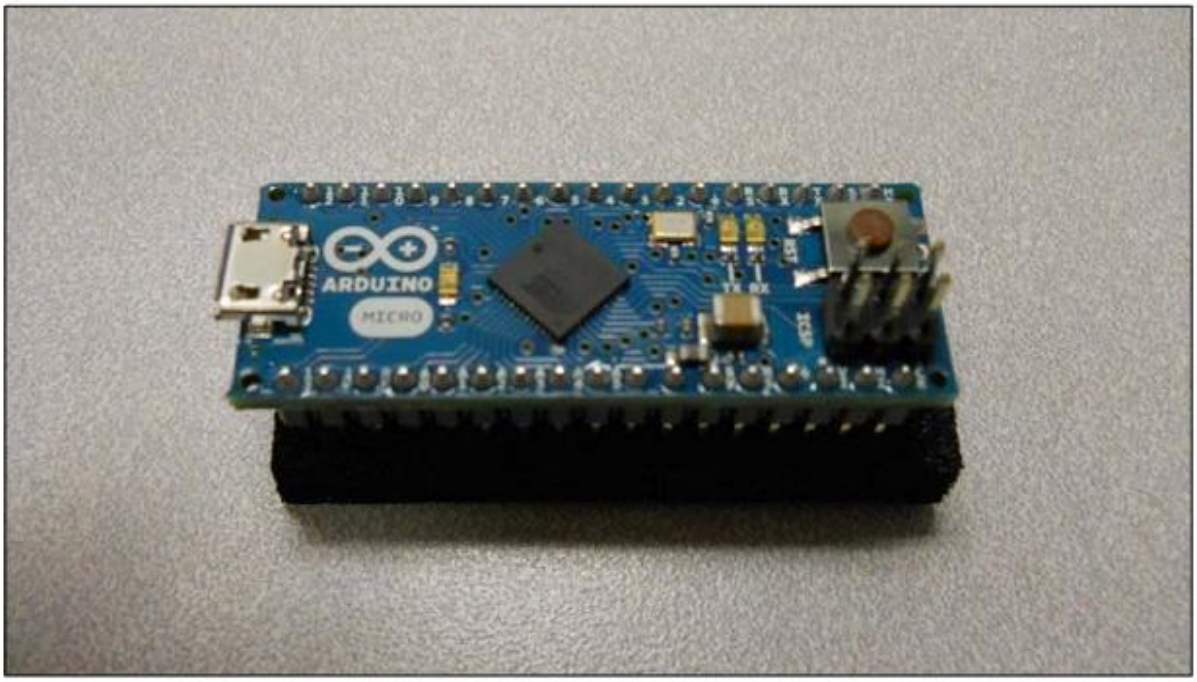
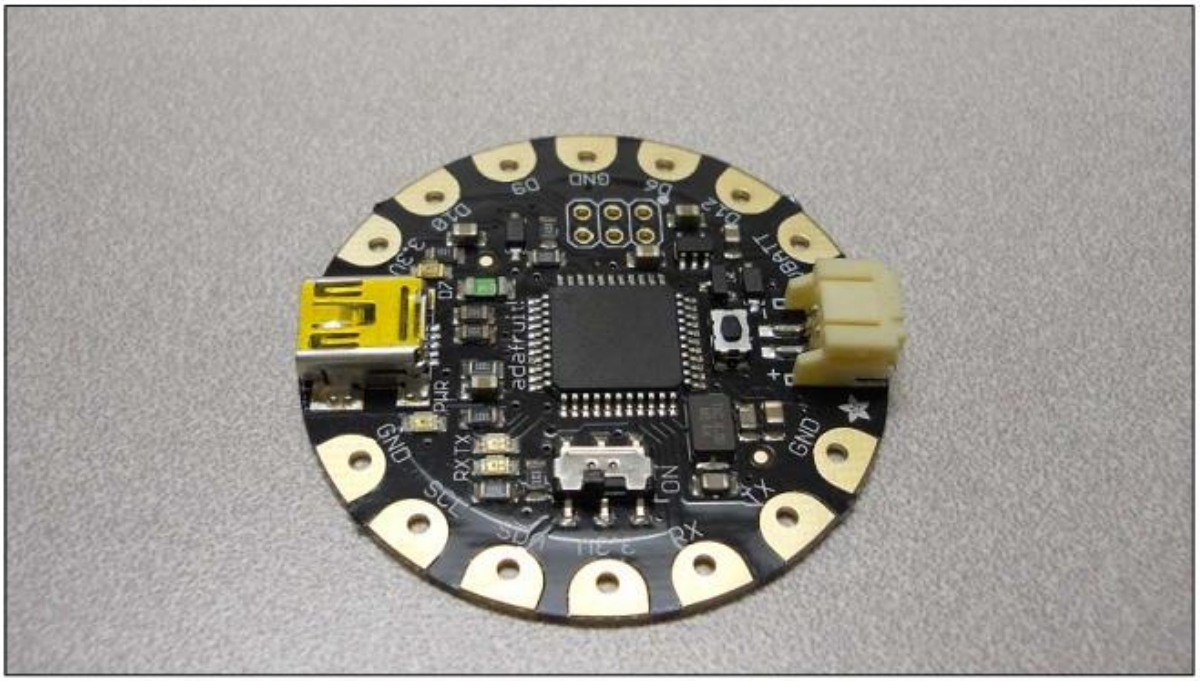
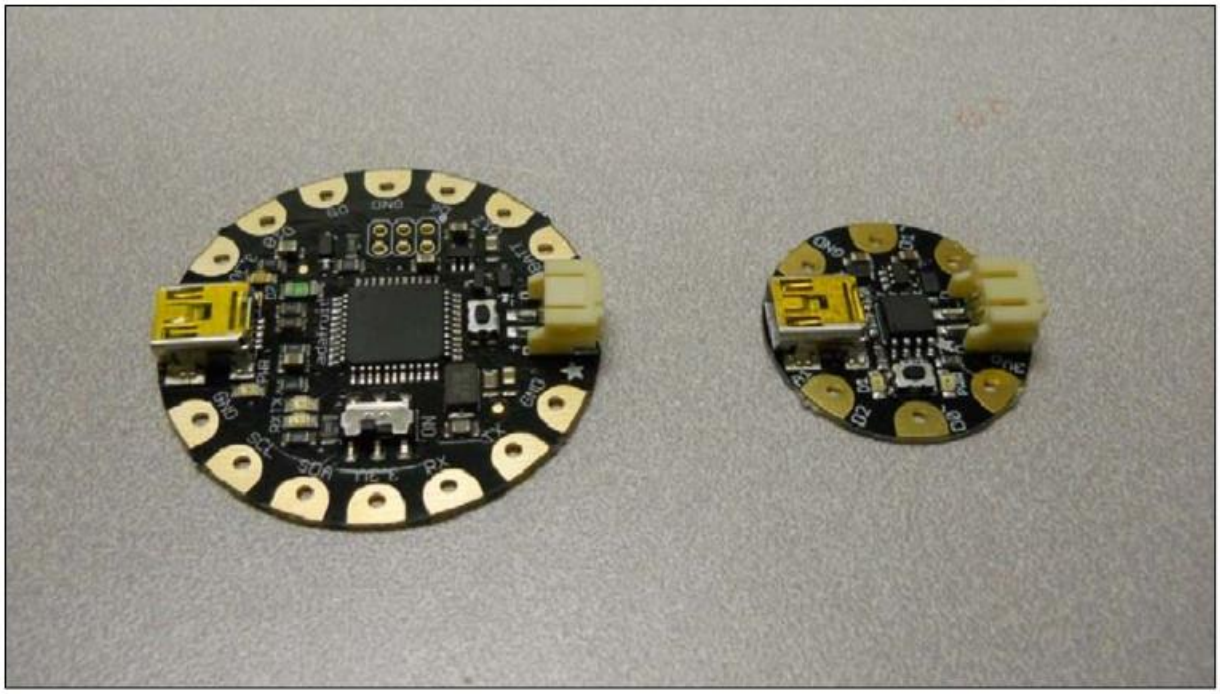
Chapter 1: Powering on Arduino

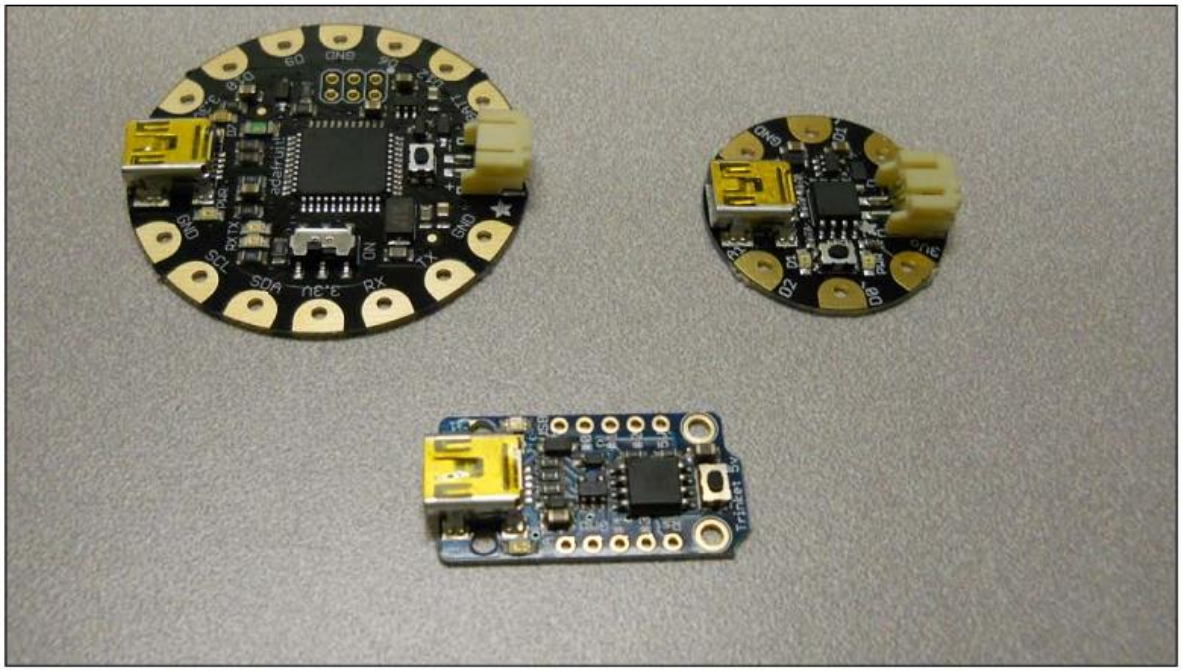

MEGA
2560

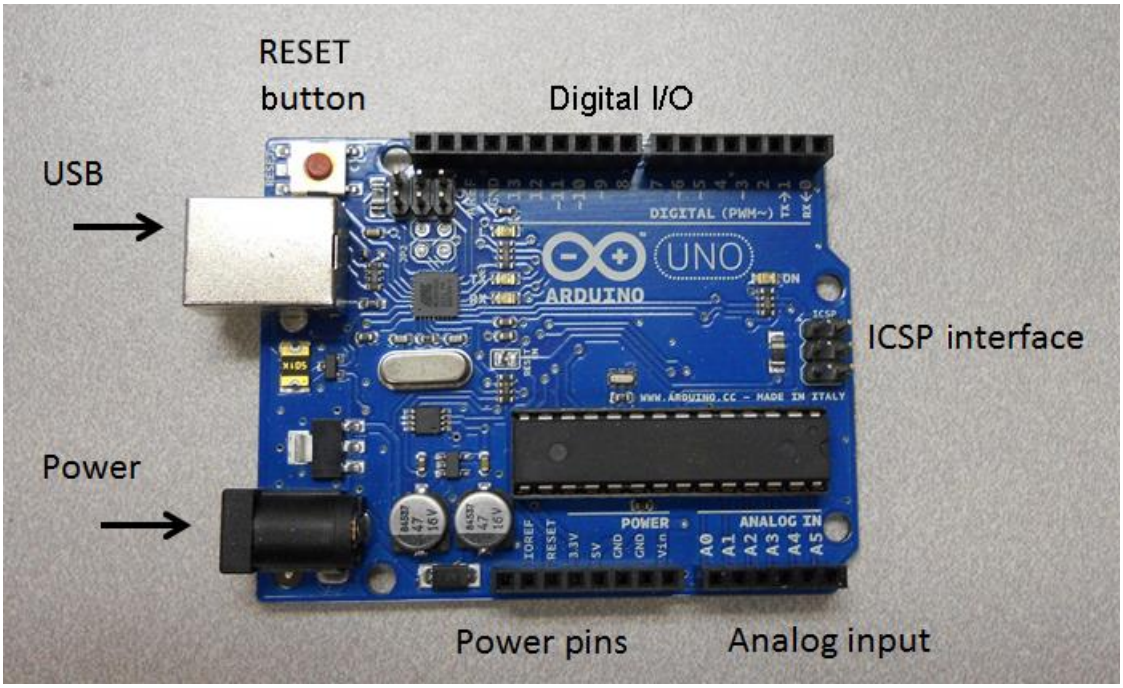

ARDUINO
DUE

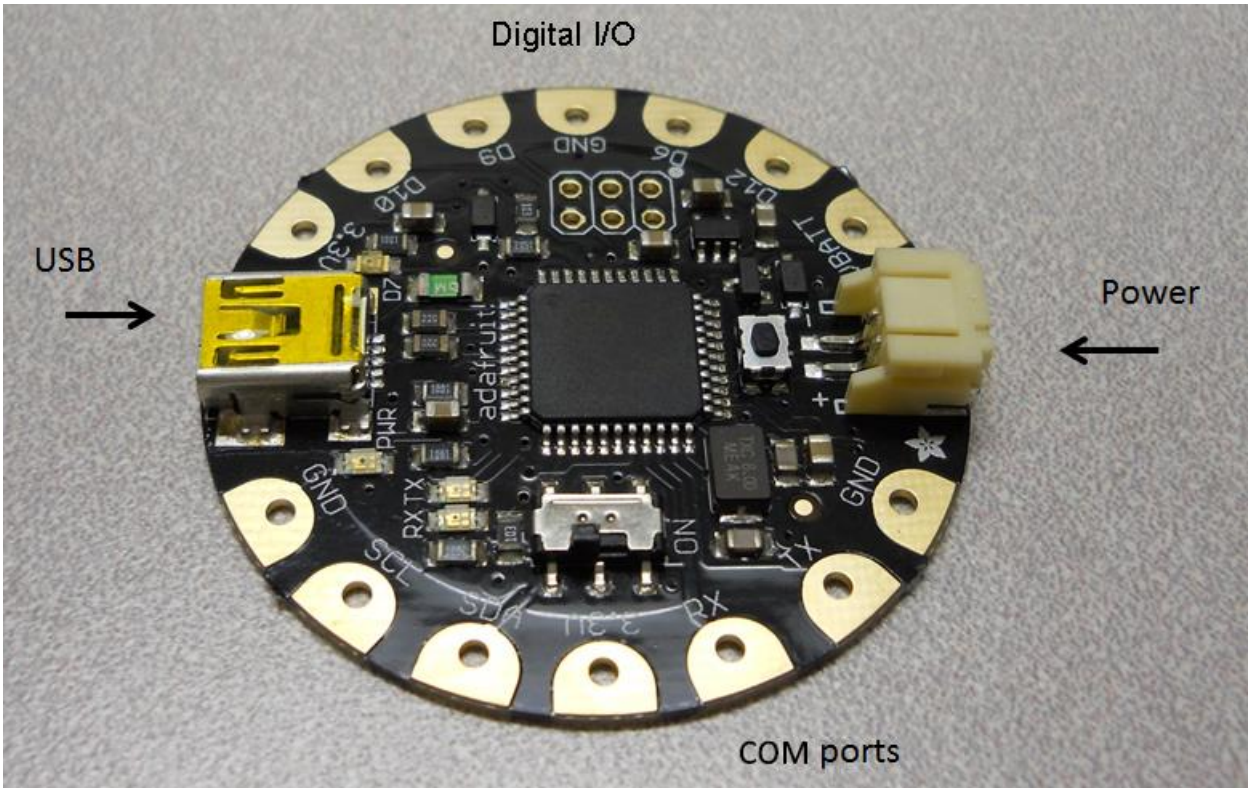

ARDUINO
MICRO


GND
D9
D6
D12
VBAT
D10
3.3V
D7
adafruit
PWR
RX
TX
GND
SCL
SDA
3.3V
RX
TX
GND
ON

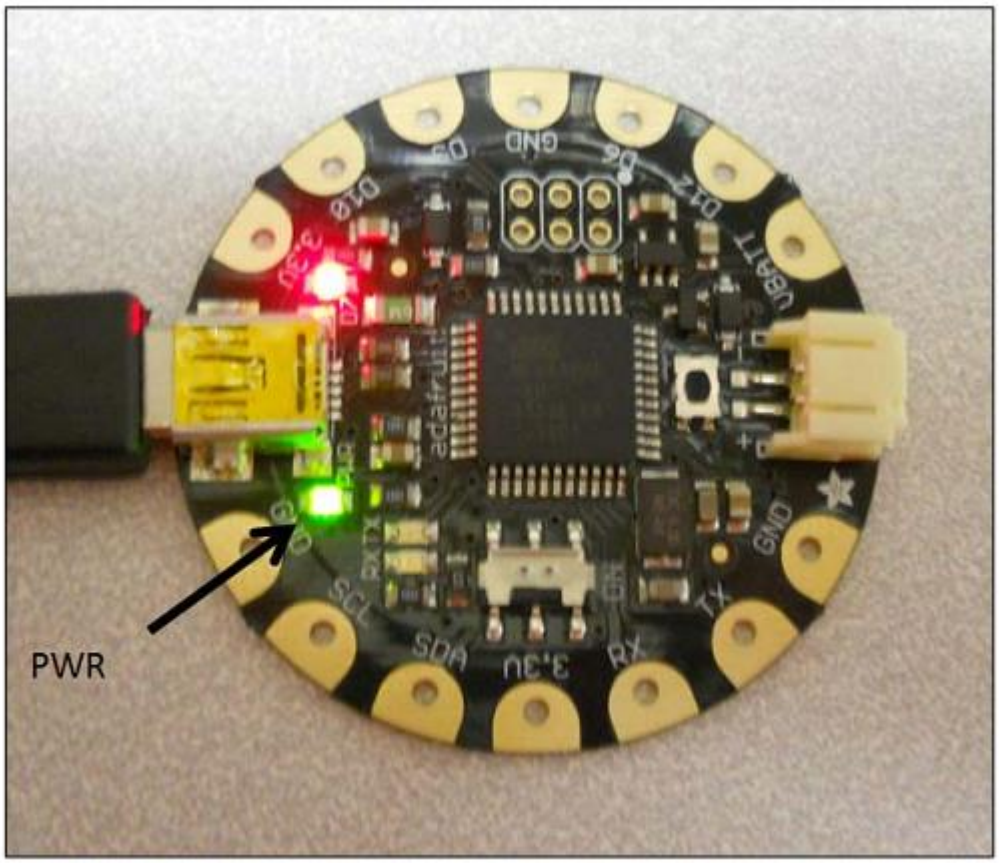




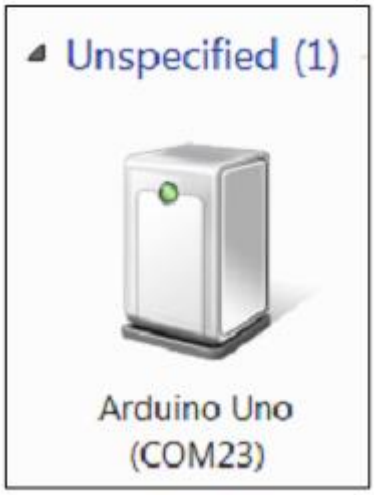

RESET
button
Digital I/O
USB
ICSP interface
Power
Power pins
Analog input

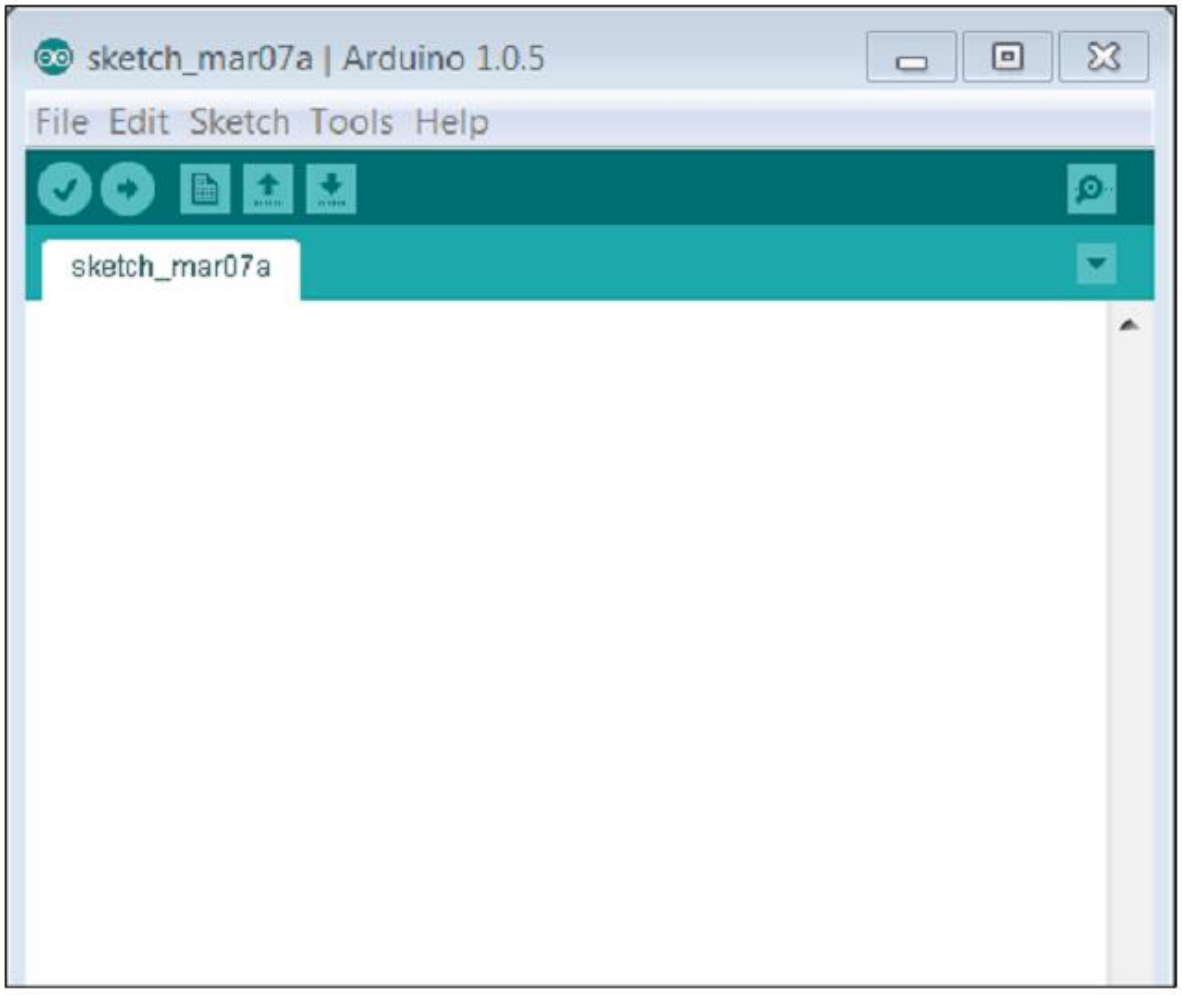

Digital I/O
USB
Power
COM ports

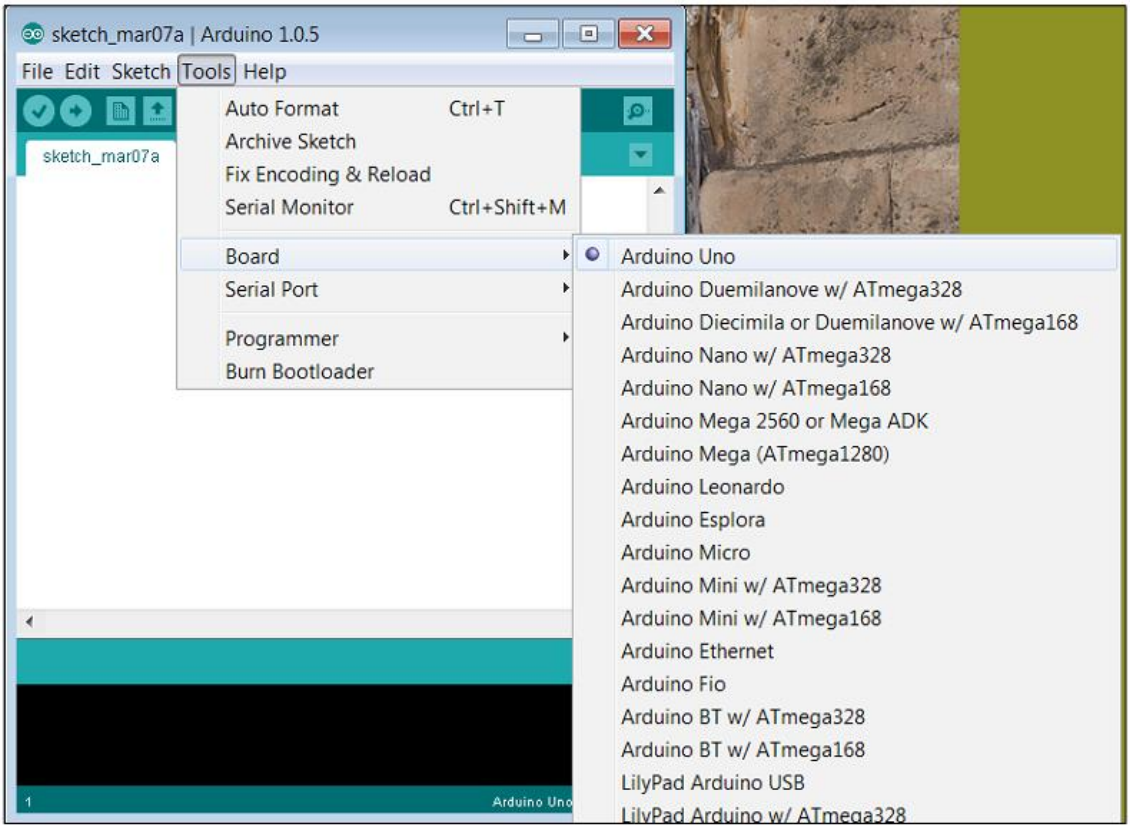

PWR
LED
UNO
ARDUINO
DIGITAL (PWM~)
ANALOG IN

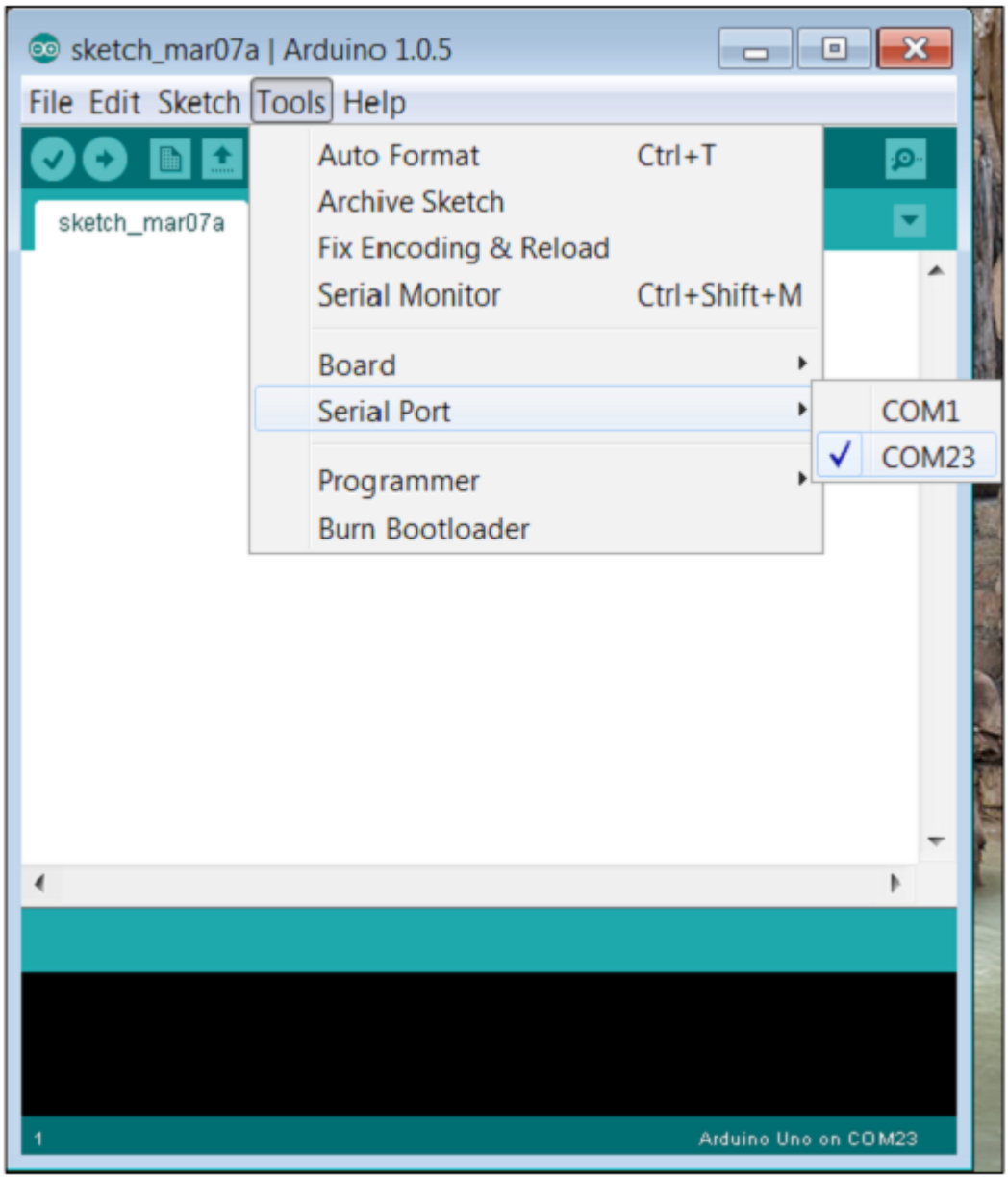

PWR
GND
3.3V
SDA
SCL
TX
RX

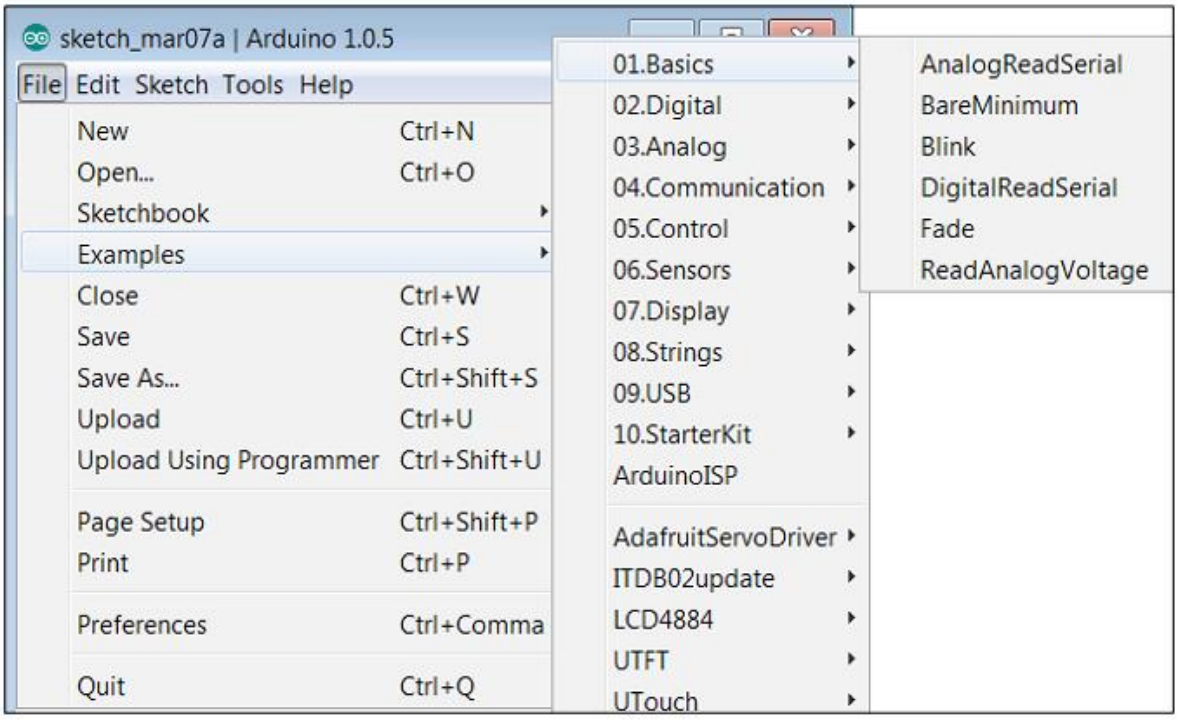
Chapter 2: Getting Started with the Arduino IDE

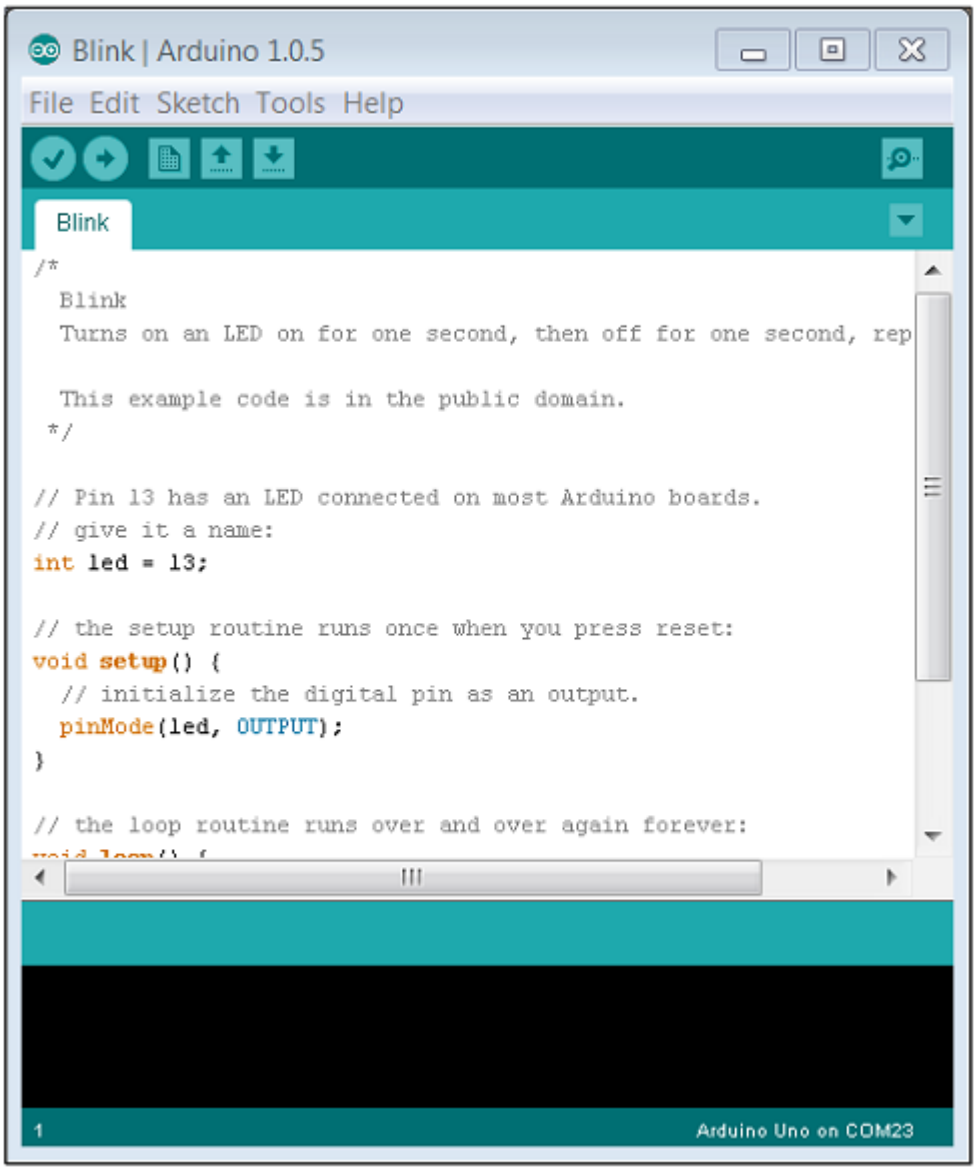


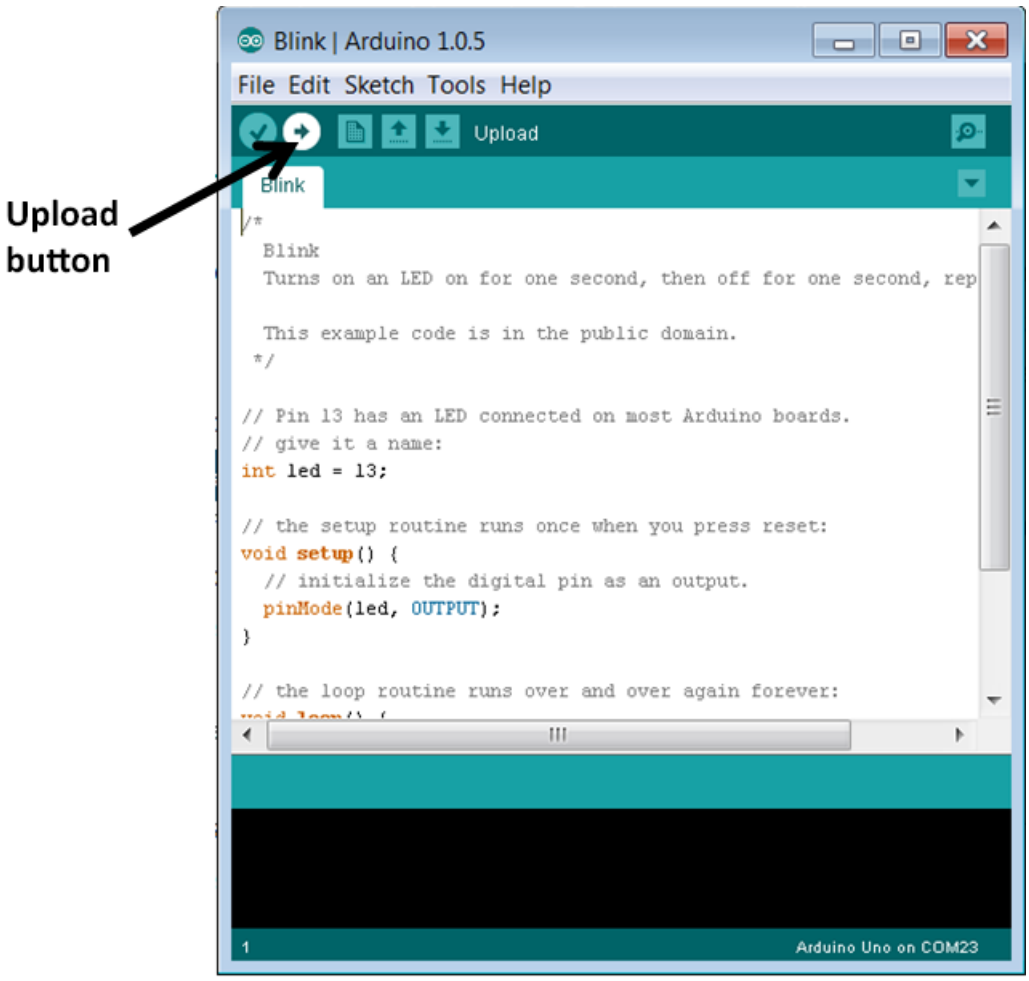

sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a


sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
Arduino Uno
Arduino Duemilanove w/ ATmega328
Arduino Diecimila or Duemilanove w/ ATmega168
Arduino Nano w/ ATmega328
Arduino Nano w/ ATmega168
Arduino Mega 2560 or Mega ADK
Arduino Mega (ATmega1280)
Arduino Leonardo
Arduino Esplora
Arduino Micro
Arduino Mini w/ ATmega328
Arduino Mini w/ ATmega168
Arduino Ethernet
Arduino Fio
Arduino BT w/ ATmega328
Arduino BT w/ ATmega168
LilyPad Arduino USB
LilyPad Arduino w/ ATmega328
1
Arduino Uno


sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
COM1
COM23
1
Arduino Uno on COM23


sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
AdafruitServoDriver
ITDB02update
LCD4884
UTFT
UTouch
AnalogReadSerial
BareMinimum
Blink
DigitalReadSerial
Fade
ReadAnalogVoltage


Blink | Arduino 1.0.5
File Edit Sketch Tools Help
Blink
/*
Blink
Turns on an LED on for one second, then off for one second, rep
This example code is in the public domain.
*/
// Pin 13 has an LED connected on most Arduino boards.
// give it a name:
int led = 13;
// the setup routine runs once when you press reset:
void setup() {
// initialize the digital pin as an output.
pinMode(led, OUTPUT);
}
// the loop routine runs over and over again forever:
1
Arduino Uno on COM23


Upload
button
Blink | Arduino 1.0.5
File Edit Sketch Tools Help
Upload
Blink
/*
Blink
Turns on an LED on for one second, then off for one second, rep
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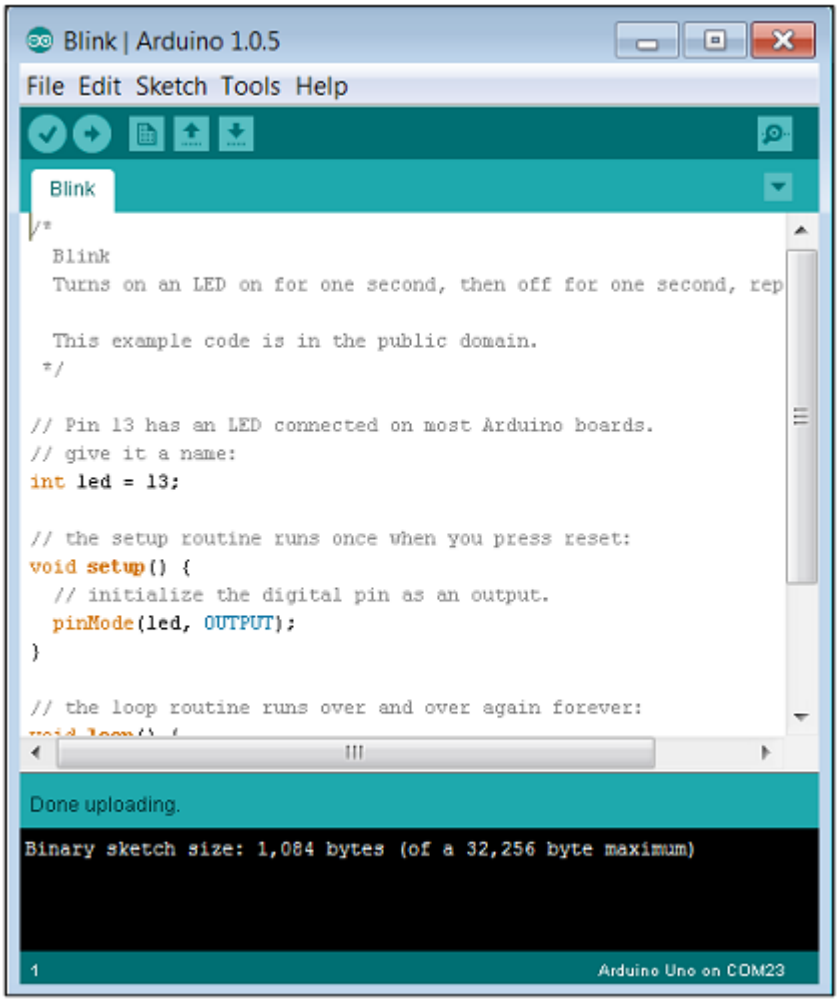
1
Arduino Uno on COM23


Blink | Arduino 1.0.5
File Edit Sketch Tools Help
Blink
/*
Blink
Turns on an LED on for one second, then off for one second, rep
This example code is in the public domain.
*/
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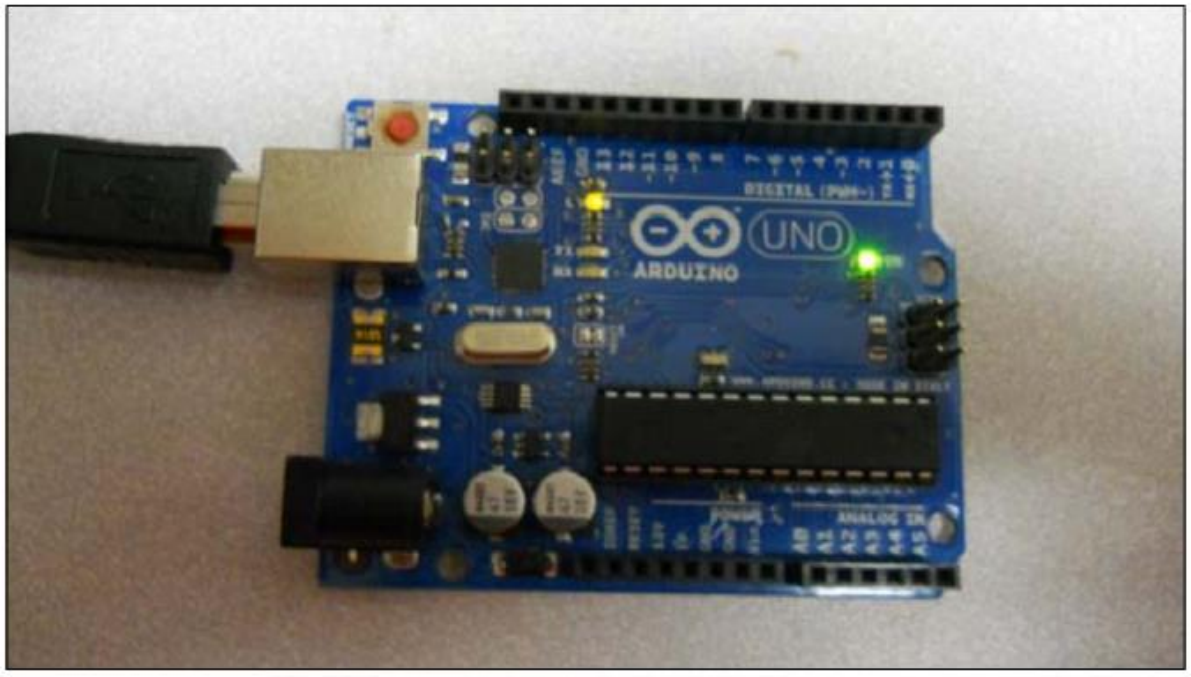
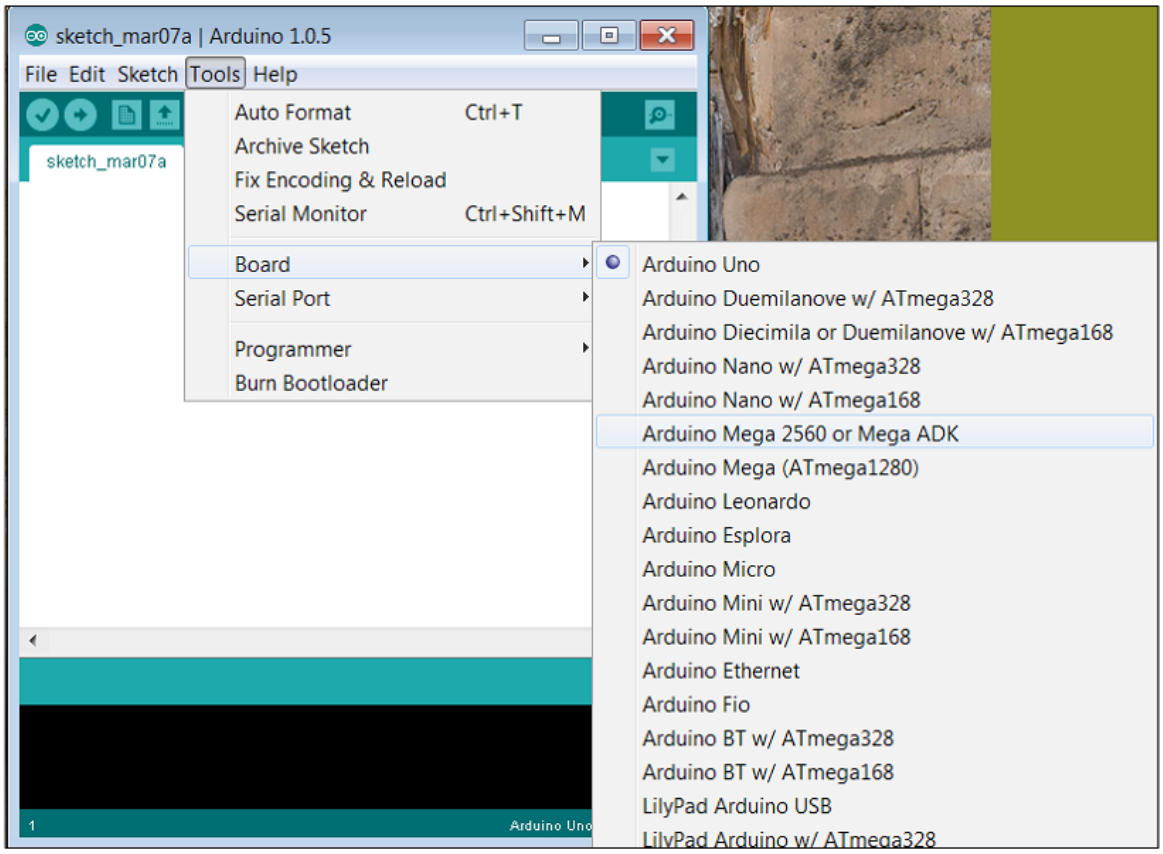
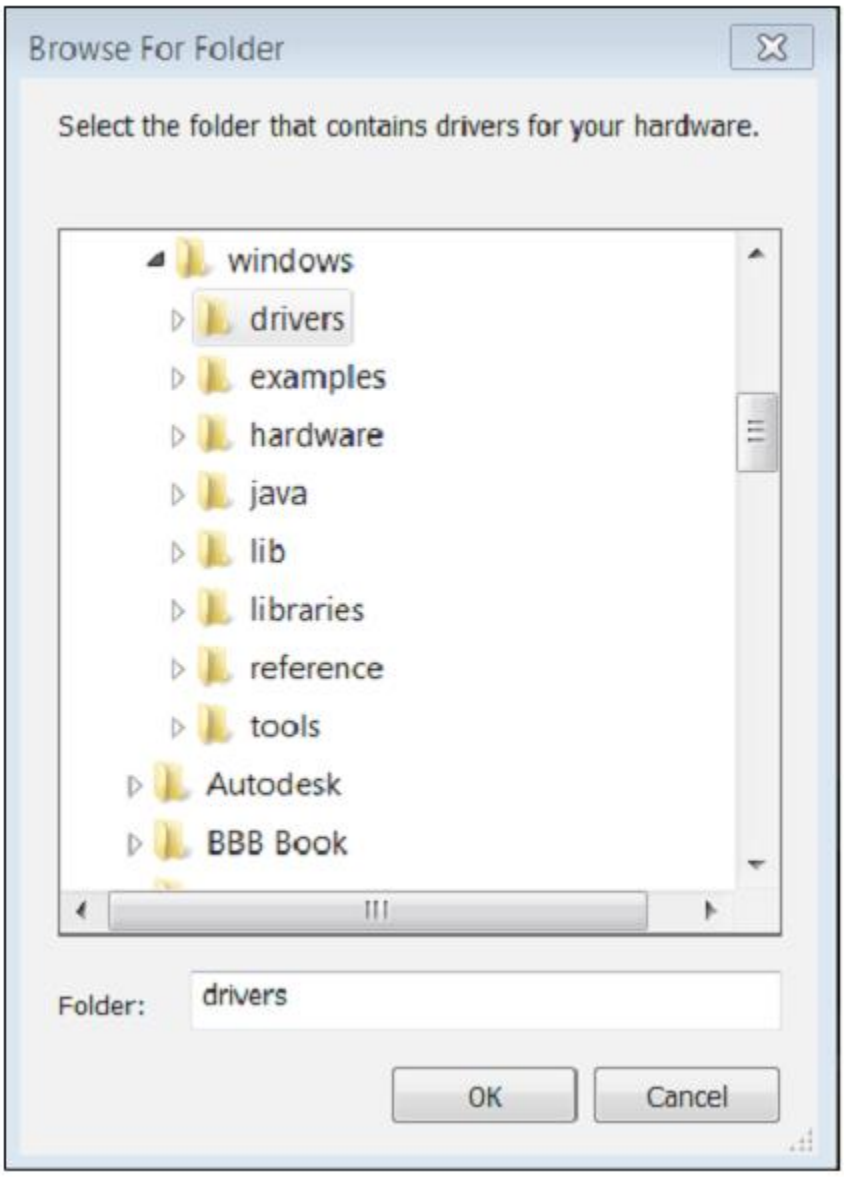
// give it a name:
int led = 13;
// the setup routine runs once when you press reset:
void setup() {
// initialize the digital pin as an output.
pinMode(led, OUTPUT);
}
// the loop routine runs over and over again forever:
Done uploading.
Binary sketch size: 1,084 bytes (of a 32,256 byte maximum)
1
Arduino Uno on COM23

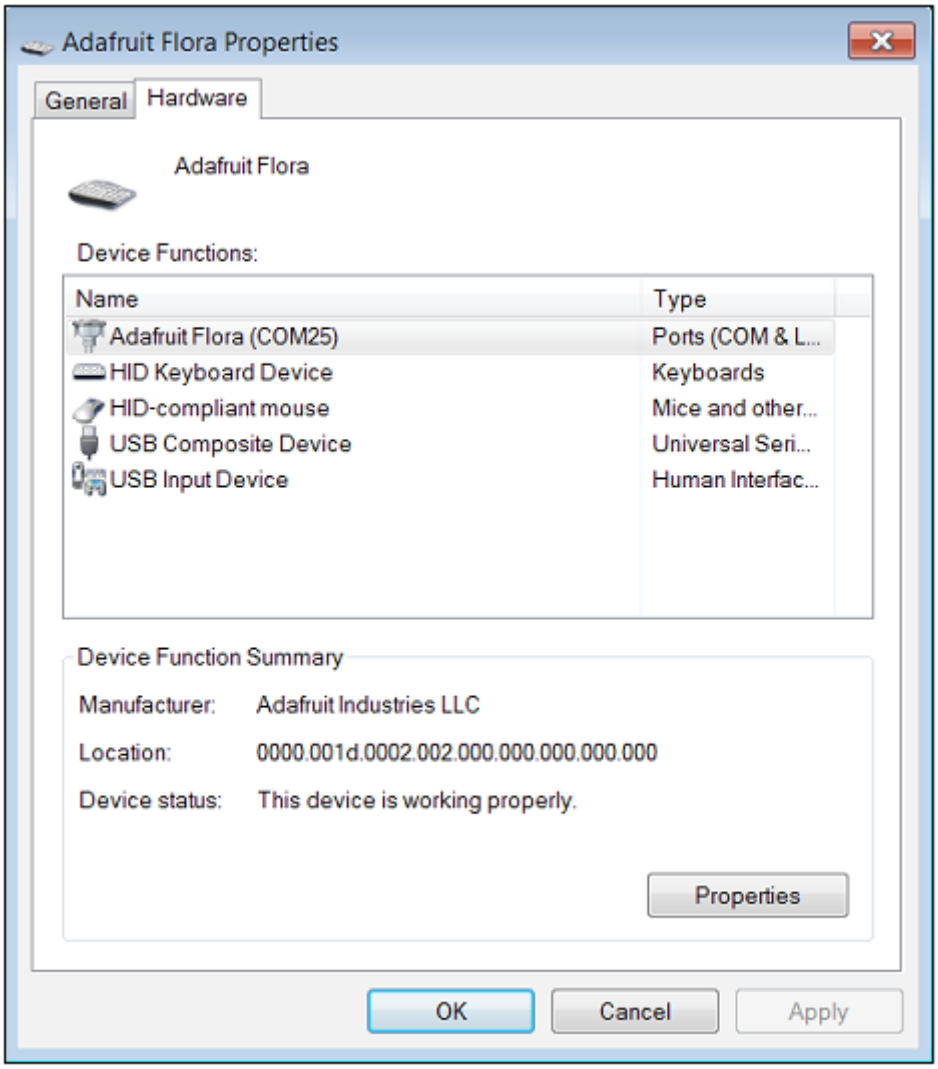

UNO
ARDUINO

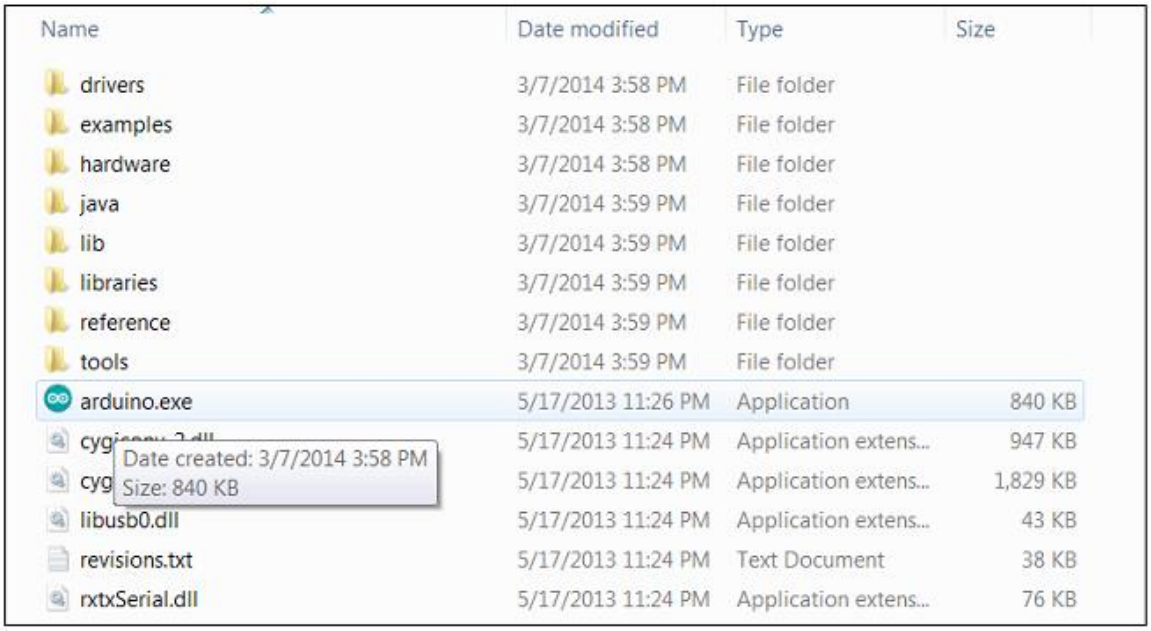

Unspecified (1)
Arduino Mega
2560 (COM24)


sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
Arduino Uno
Arduino Duemilanove w/ ATmega328
Arduino Diecimila or Duemilanove w/ ATmega168
Arduino Nano w/ ATmega328
Arduino Nano w/ ATmega168
Arduino Mega 2560 or Mega ADK
Arduino Mega (ATmega1280)
Arduino Leonardo
Arduino Esplora
Arduino Micro
Arduino Mini w/ ATmega328
Arduino Mini w/ ATmega168
Arduino Ethernet
Arduino Fio
Arduino BT w/ ATmega328
Arduino BT w/ ATmega168
LilyPad Arduino USB
LilyPad Arduino w/ ATmega328
1
Arduino Uno


Browse For Folder
Select the folder that contains drivers for your hardware.
windows
drivers
examples
hardware
java
lib
libraries
reference
tools
Autodesk
BBB Book
Folder:
drivers
OK
Cancel


Devices (6)
Adafruit Flora


Adafruit Flora Properties
General
Hardware
Adafruit Flora
Device Functions:
Name
Type
Adafruit Flora (COM25)
Ports (COM & L...
HID Keyboard Device
Keyboards
HID-compliant mouse
Mice and other...
USB Composite Device
Universal Seri...
USB Input Device
Human Interfac...
Device Function Summary
Manufacturer:
Adafruit Industries LLC
Location:
0000.001d.0002.002.000.000.000.000.000
Device status:
This device is working properly.
Properties
OK
Cancel
Apply


Name
Date modified
Type
Size
drivers
3/7/2014 3:58 PM
File folder
examples
3/7/2014 3:58 PM
File folder
hardware
3/7/2014 3:58 PM
File folder
java
3/7/2014 3:59 PM
File folder
lib
3/7/2014 3:59 PM
File folder
libraries
3/7/2014 3:59 PM
File folder
reference
3/7/2014 3:59 PM
File folder
tools
3/7/2014 3:59 PM
File folder
arduino.exe
5/17/2013 11:26 PM
Application
840 KB
5/17/2013 11:24 PM
Application extens...
947 KB
Date created: 3/7/2014 3:58 PM
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5/17/2013 11:24 PM
Application extens...
1,829 KB
libusb0.dll
5/17/2013 11:24 PM
Application extens...
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revisions.txt
5/17/2013 11:24 PM
Text Document
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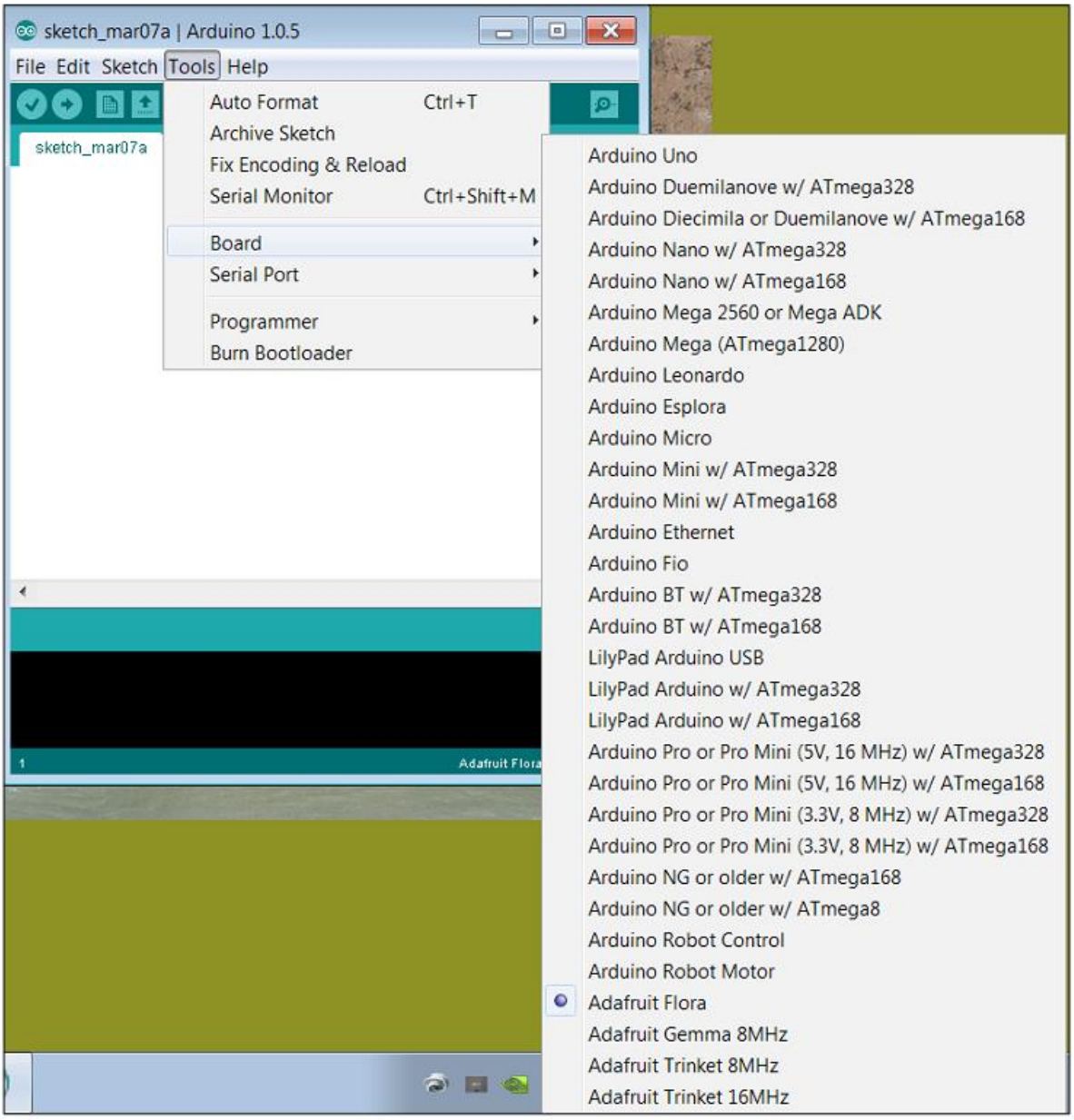
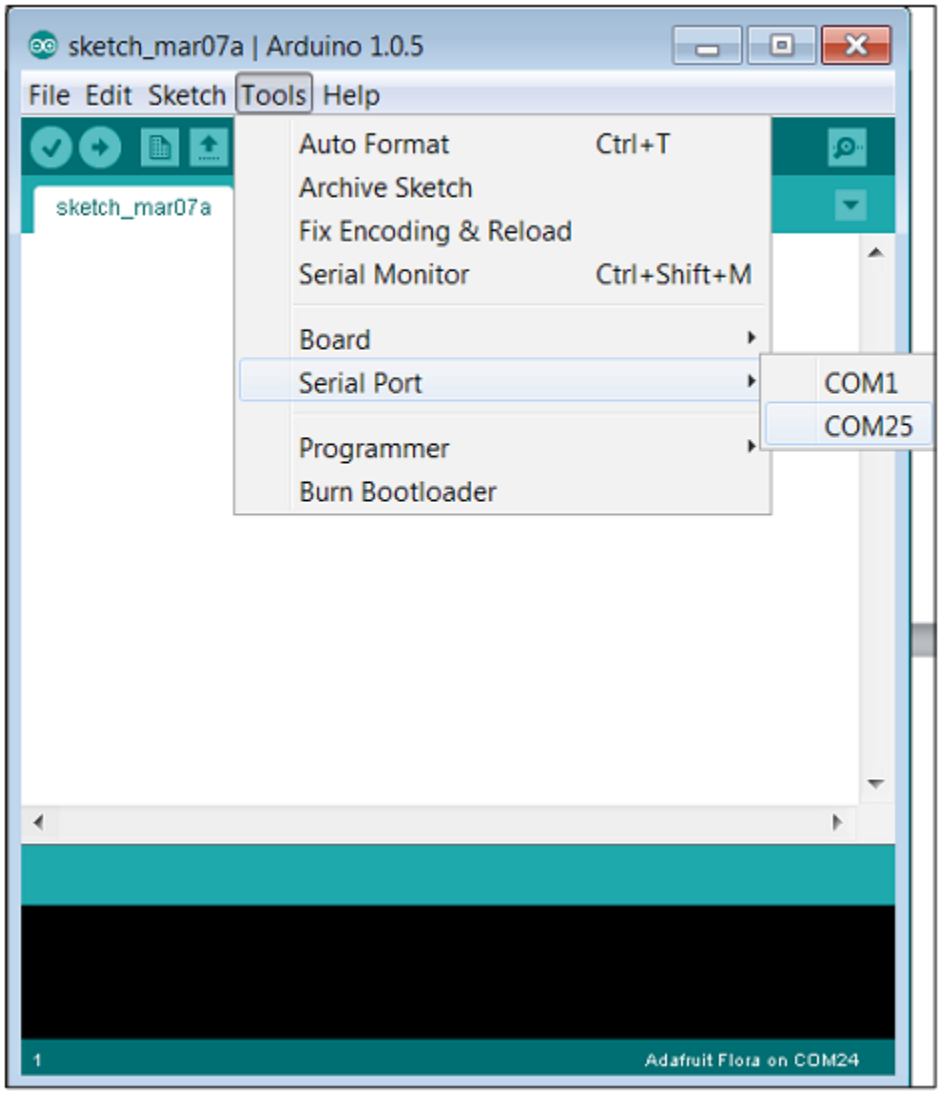
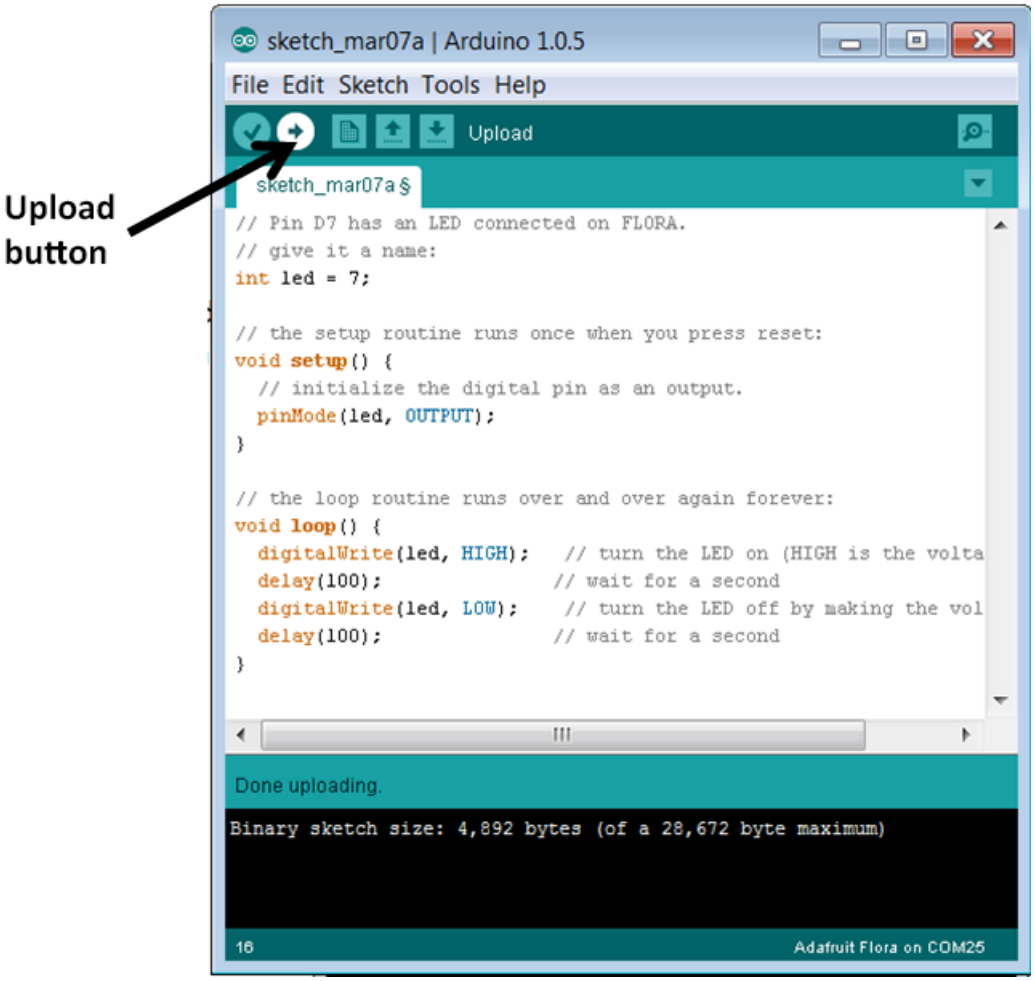
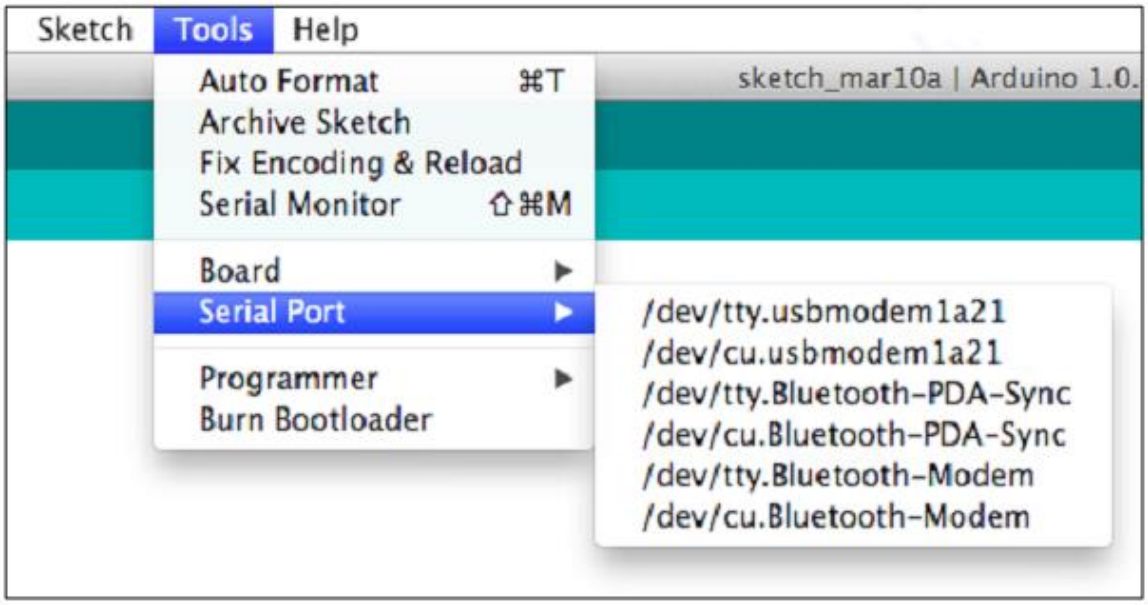
76 KB

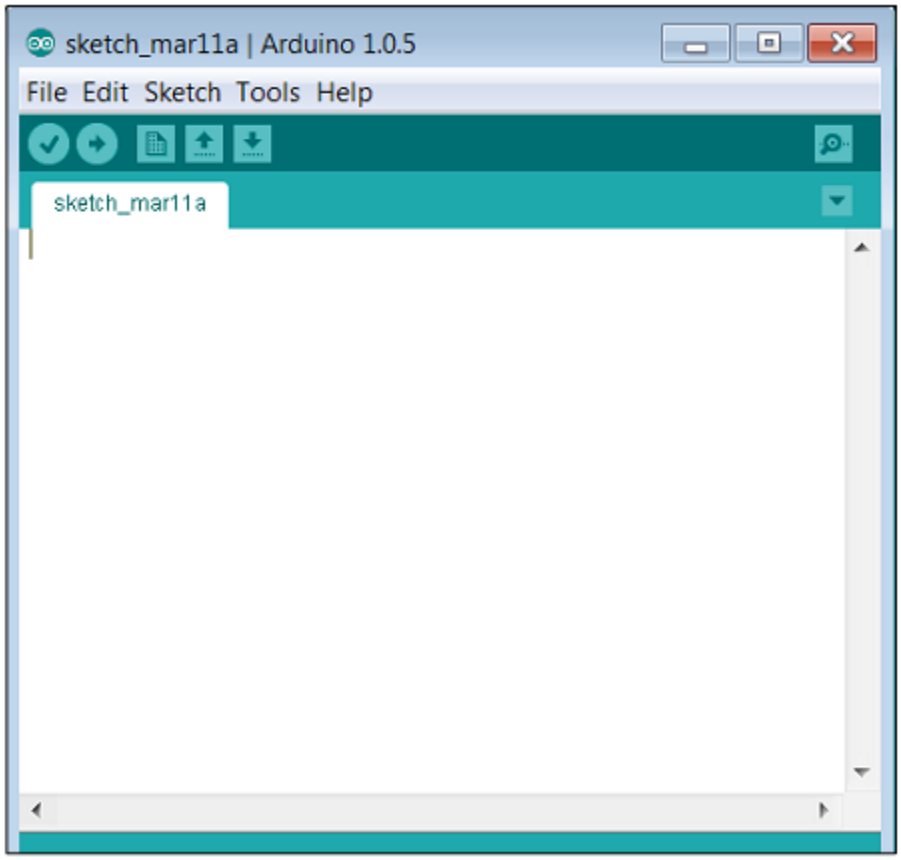

sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
Arduino Uno
Arduino Duemilanove w/ ATmega328
Arduino Diecimila or Duemilanove w/ ATmega168
Arduino Nano w/ ATmega328
Arduino Nano w/ ATmega168
Arduino Mega 2560 or Mega ADK
Arduino Mega (ATmega1280)
Arduino Leonardo
Arduino Esplora
Arduino Micro
Arduino Mini w/ ATmega328
Arduino Mini w/ ATmega168
Arduino Ethernet
Arduino Fio
Arduino BT w/ ATmega328
Arduino BT w/ ATmega168
LilyPad Arduino USB
LilyPad Arduino w/ ATmega328
LilyPad Arduino w/ ATmega168
Arduino Pro or Pro Mini (5V, 16 MHz) w/ ATmega328
Arduino Pro or Pro Mini (5V, 16 MHz) w/ ATmega168
Arduino Pro or Pro Mini (3.3V, 8 MHz) w/ ATmega328
Arduino Pro or Pro Mini (3.3V, 8 MHz) w/ ATmega168
Arduino NG or older w/ ATmega168
Arduino NG or older w/ ATmega8
Arduino Robot Control
Arduino Robot Motor
Adafruit Flora
Adafruit Gemma 8MHz
Adafruit Trinket 8MHz
Adafruit Trinket 16MHz
1
Adafruit Flora

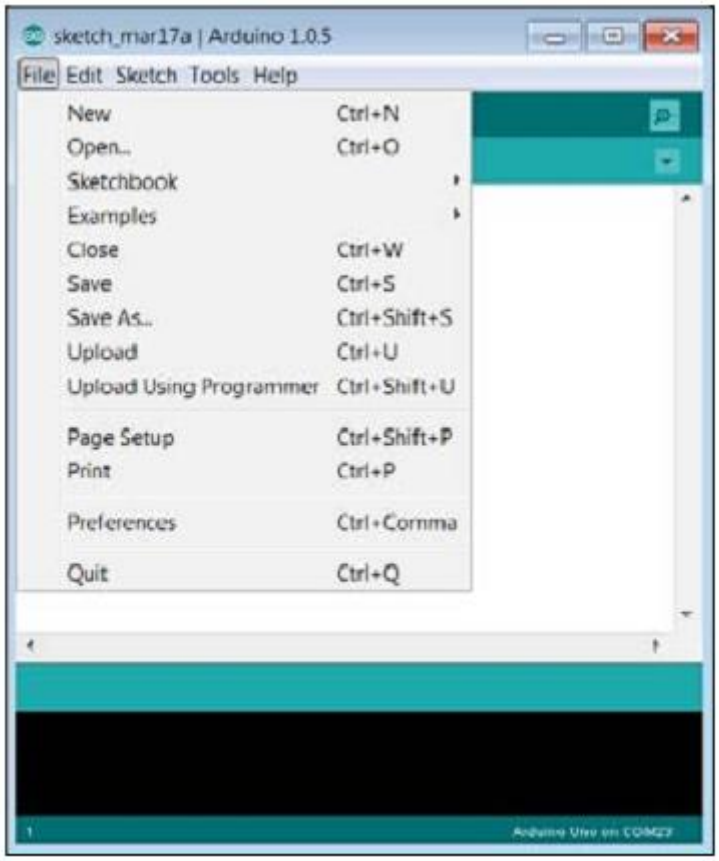

sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar07a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
COM1
COM25
1
Adafruit Flora on COM24

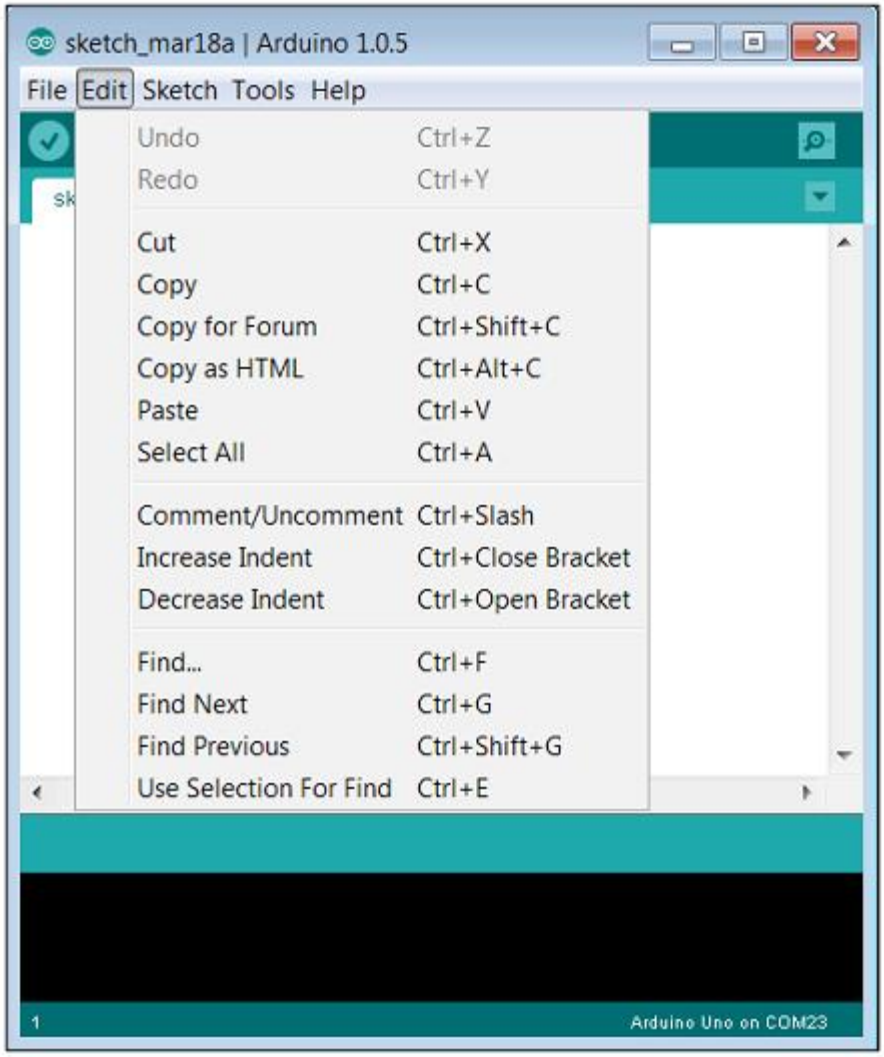

Upload
button
sketch_mar07a | Arduino 1.0.5
File Edit Sketch Tools Help
Upload
sketch_mar07a §
// Pin D7 has an LED connected on FLORA.
// give it a name:
int led = 7;
// the setup routine runs once when you press reset:
void setup() {
// initialize the digital pin as an output.
pinMode(led, OUTPUT);
}
// the loop routine runs over and over again forever:
void loop() {
digitalWrite(led, HIGH); // turn the LED on (HIGH is the volta
delay(100); // wait for a second
digitalWrite(led, LOW); // turn the LED off by making the vol
delay(100); // wait for a second
}
Done uploading.
Binary sketch size: 4,892 bytes (of a 28,672 byte maximum)
16
Adafruit Flora on COM25

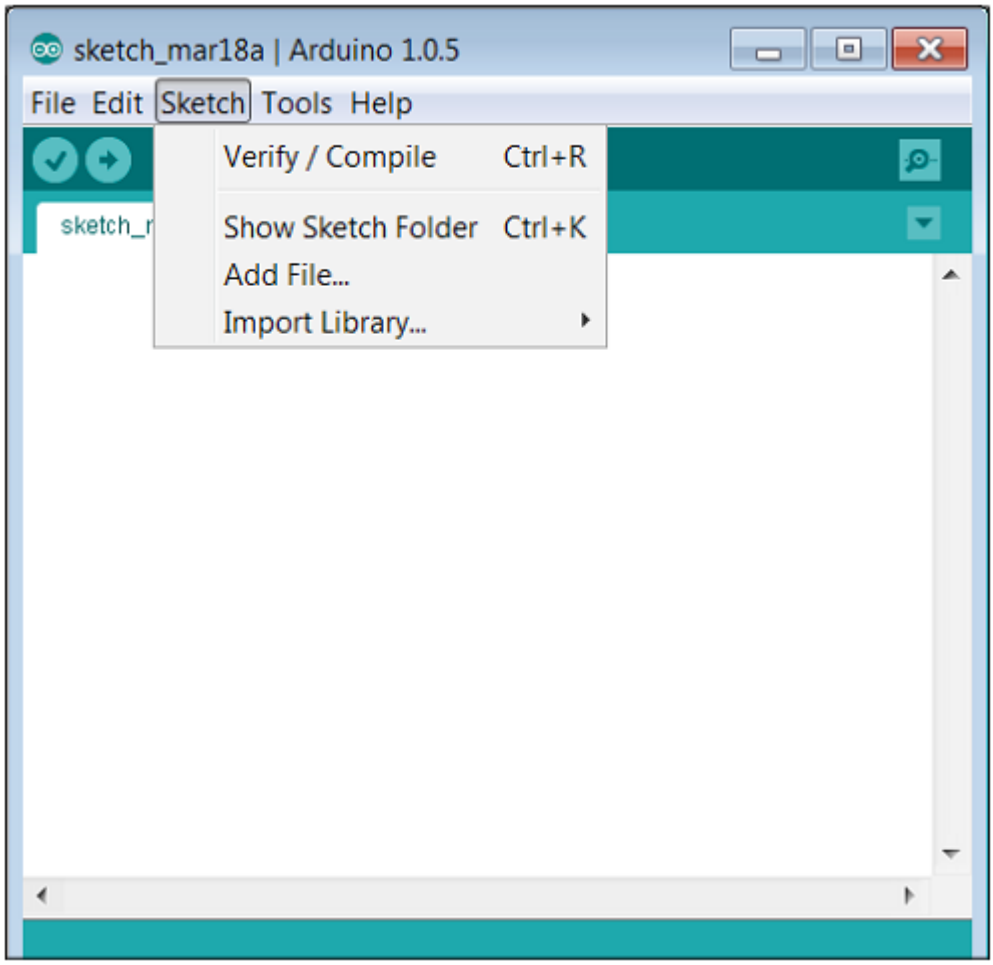


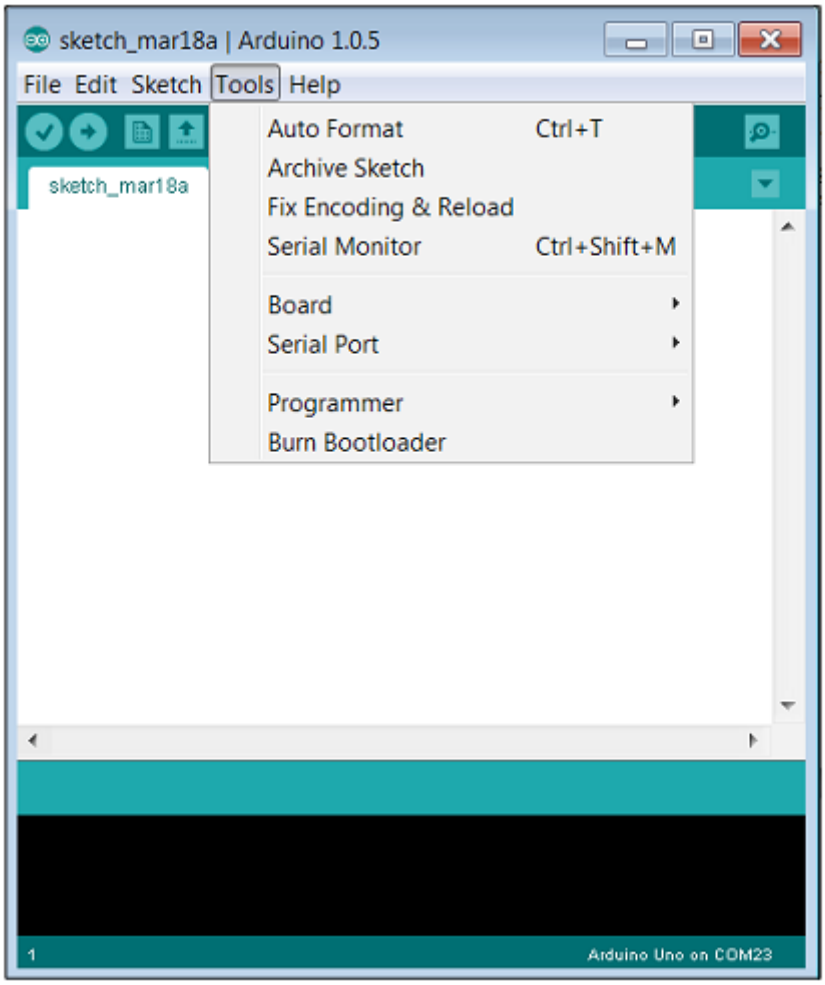
Chapter 3: Simple Programming Concepts Using the Arduino IDE

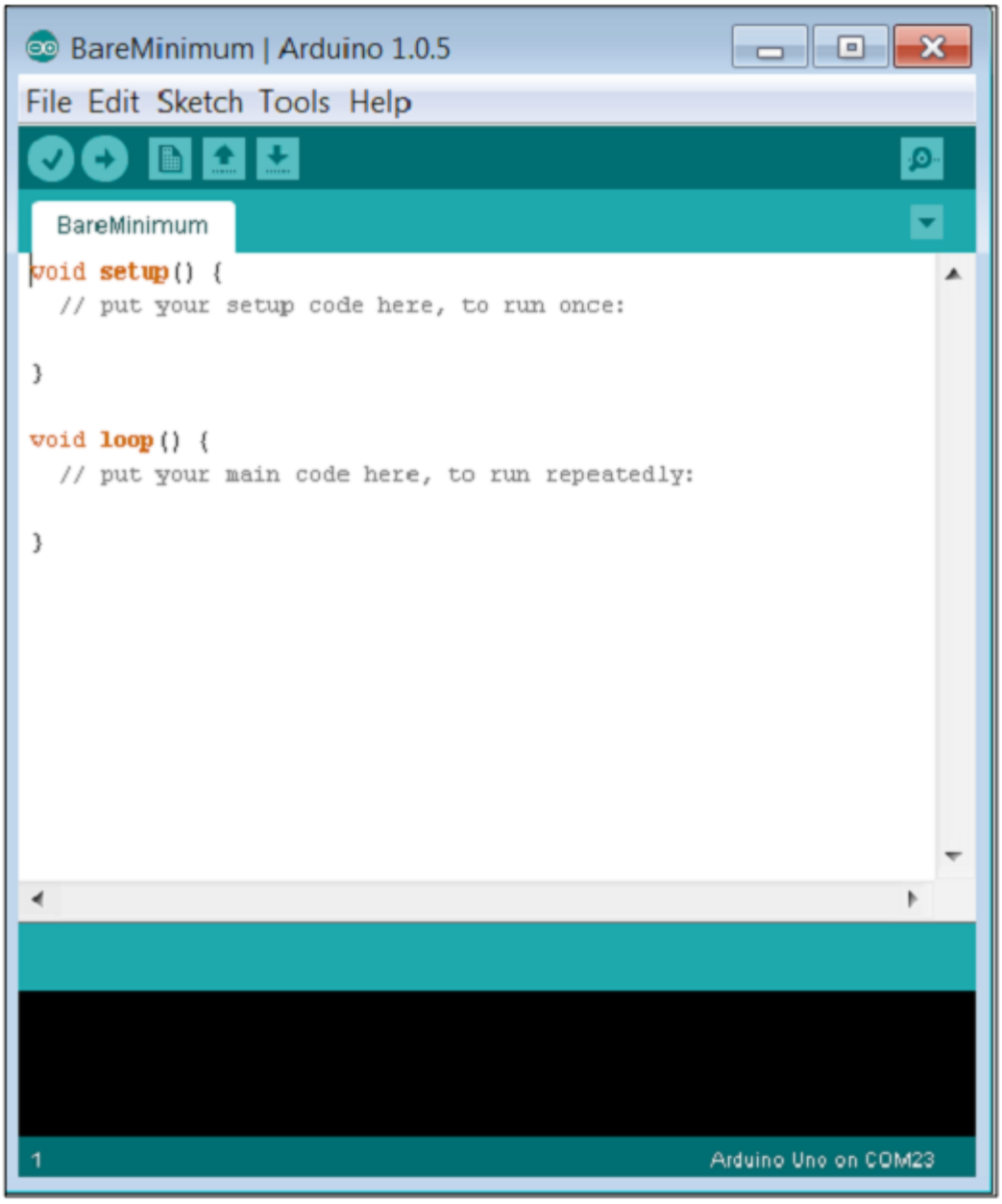

sketch_mar11a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar11a

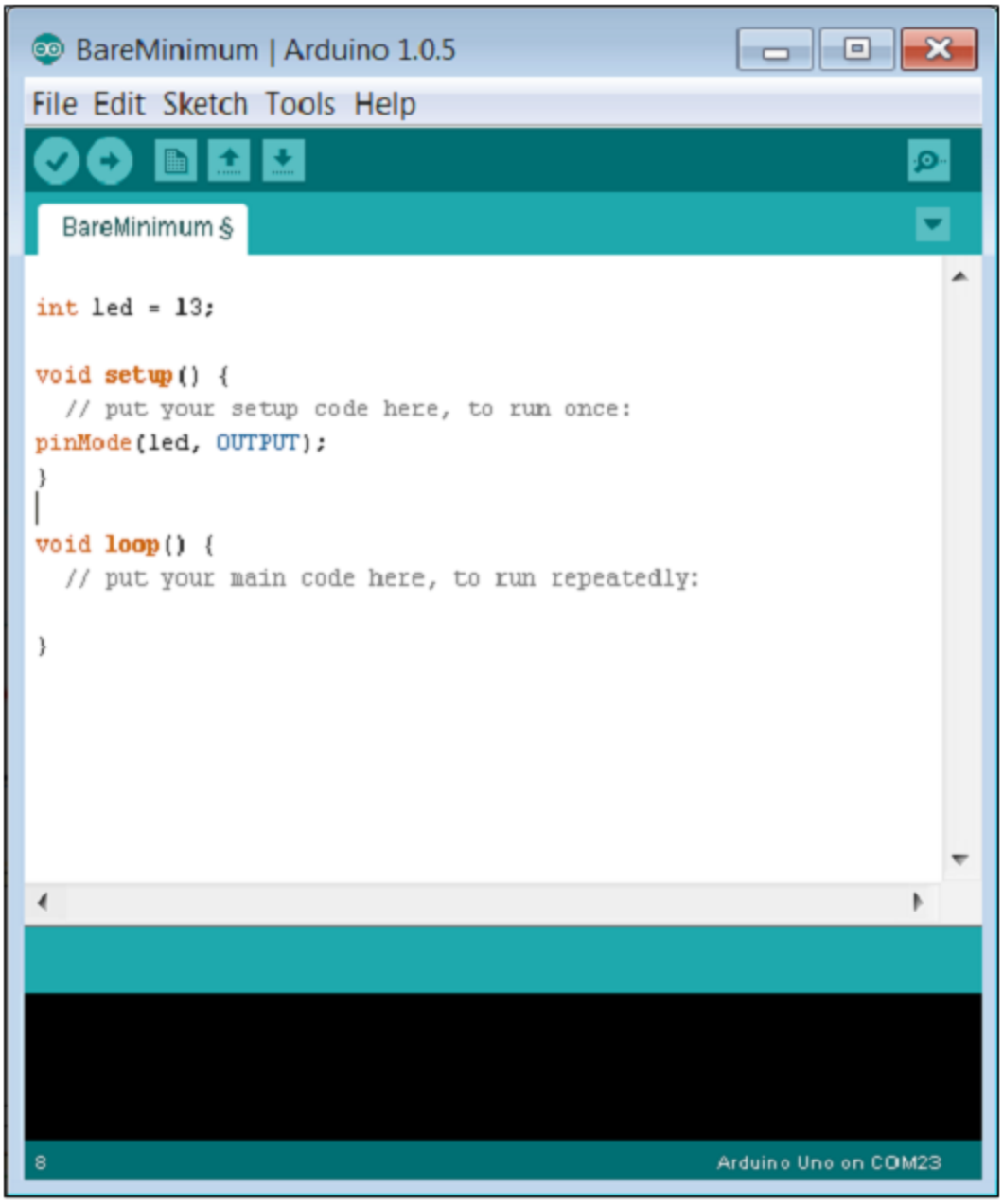

sketch_mar17a | Arduino 1.0.5
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q


sketch_mar18a | Arduino 1.0.5
File Edit Sketch Tools Help
Undo Ctrl+Z
Redo Ctrl+Y
Cut Ctrl+X
Copy Ctrl+C
Copy for Forum Ctrl+Shift+C
Copy as HTML Ctrl+Alt+C
Paste Ctrl+V
Select All Ctrl+A
Comment/Uncomment Ctrl+Slash
Increase Indent Ctrl+Close Bracket
Decrease Indent Ctrl+Open Bracket
Find... Ctrl+F
Find Next Ctrl+G
Find Previous Ctrl+Shift+G
Use Selection For Find Ctrl+E
1
Arduino Uno on COM23

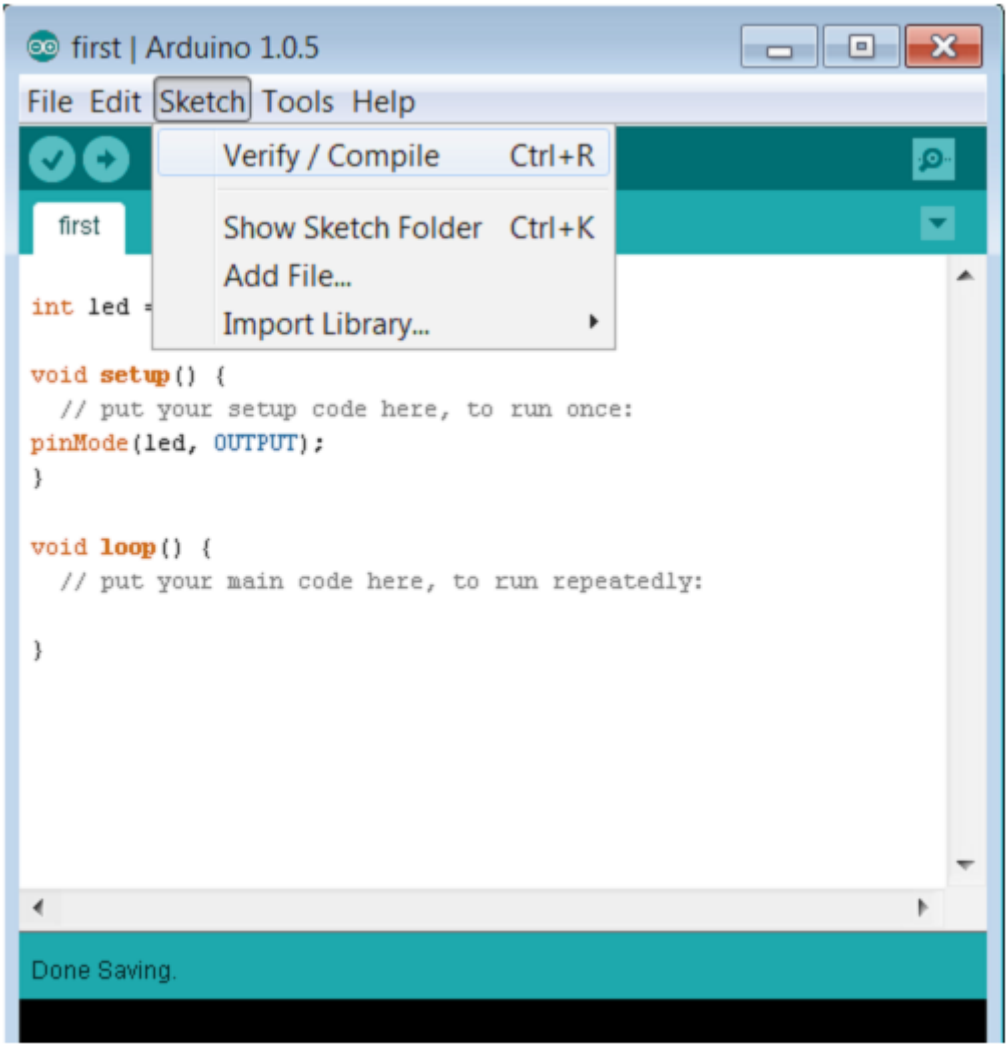

sketch_mar18a | Arduino 1.0.5
File Edit Sketch Tools Help
Verify / Compile Ctrl+R
Show Sketch Folder Ctrl+K
Add File...
Import Library...

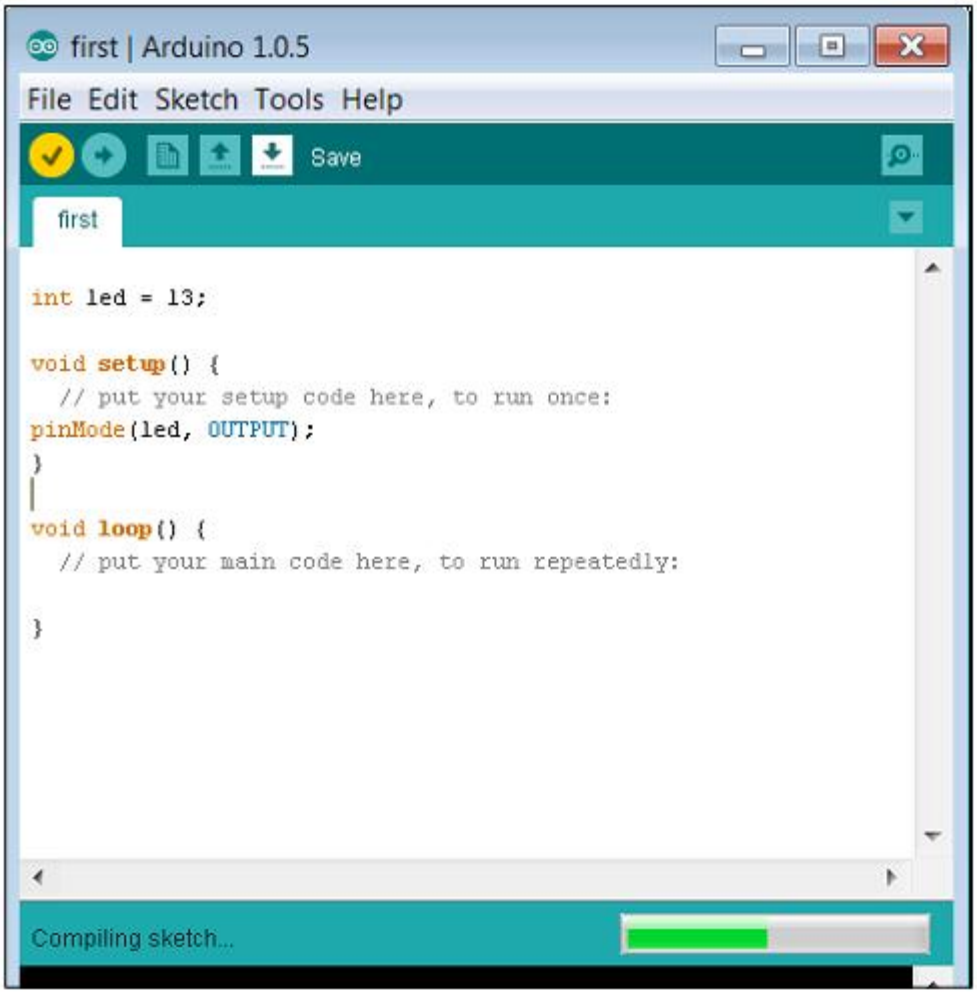

sketch_mar18a | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_mar18a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Programmer
Burn Bootloader
1
Arduino Uno on COM23

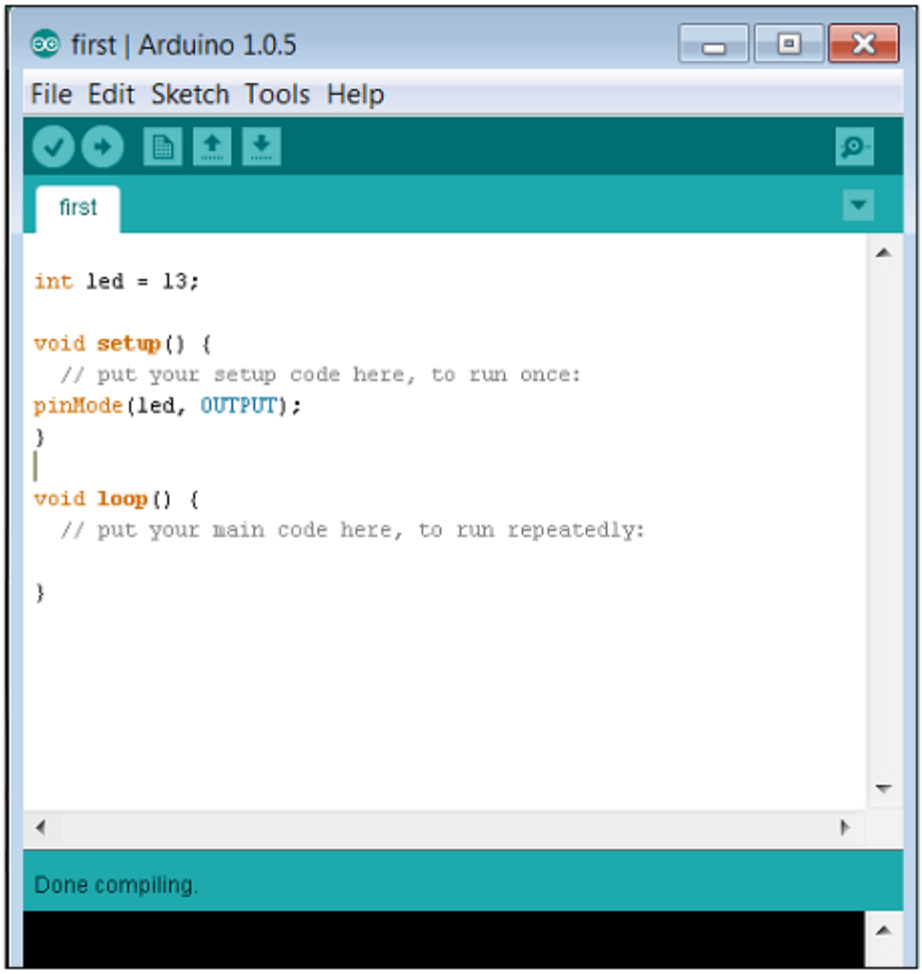

BareMinimum | Arduino 1.0.5
File Edit Sketch Tools Help
BareMinimum
void setup() {
// put your setup code here, to run once:
}
void loop() {
// put your main code here, to run repeatedly:
}
1
Arduino Uno on COM23

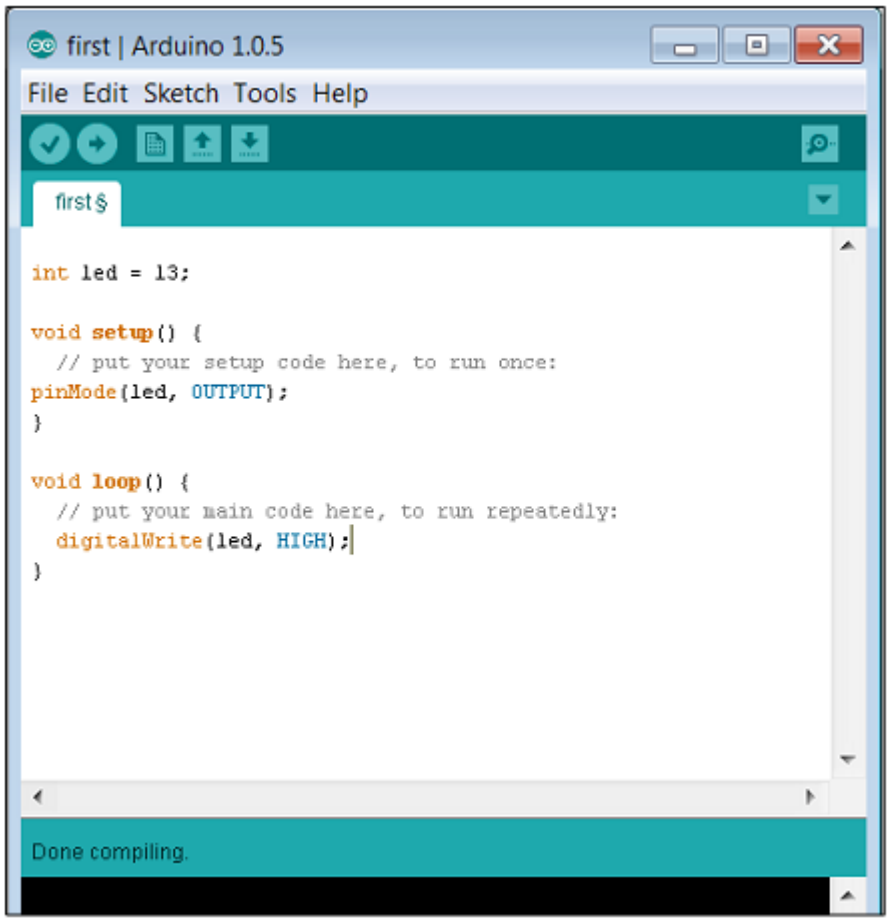

BareMinimum | Arduino 1.0.5
File Edit Sketch Tools Help
BareMinimum §
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
}
8
Arduino Uno on COM23

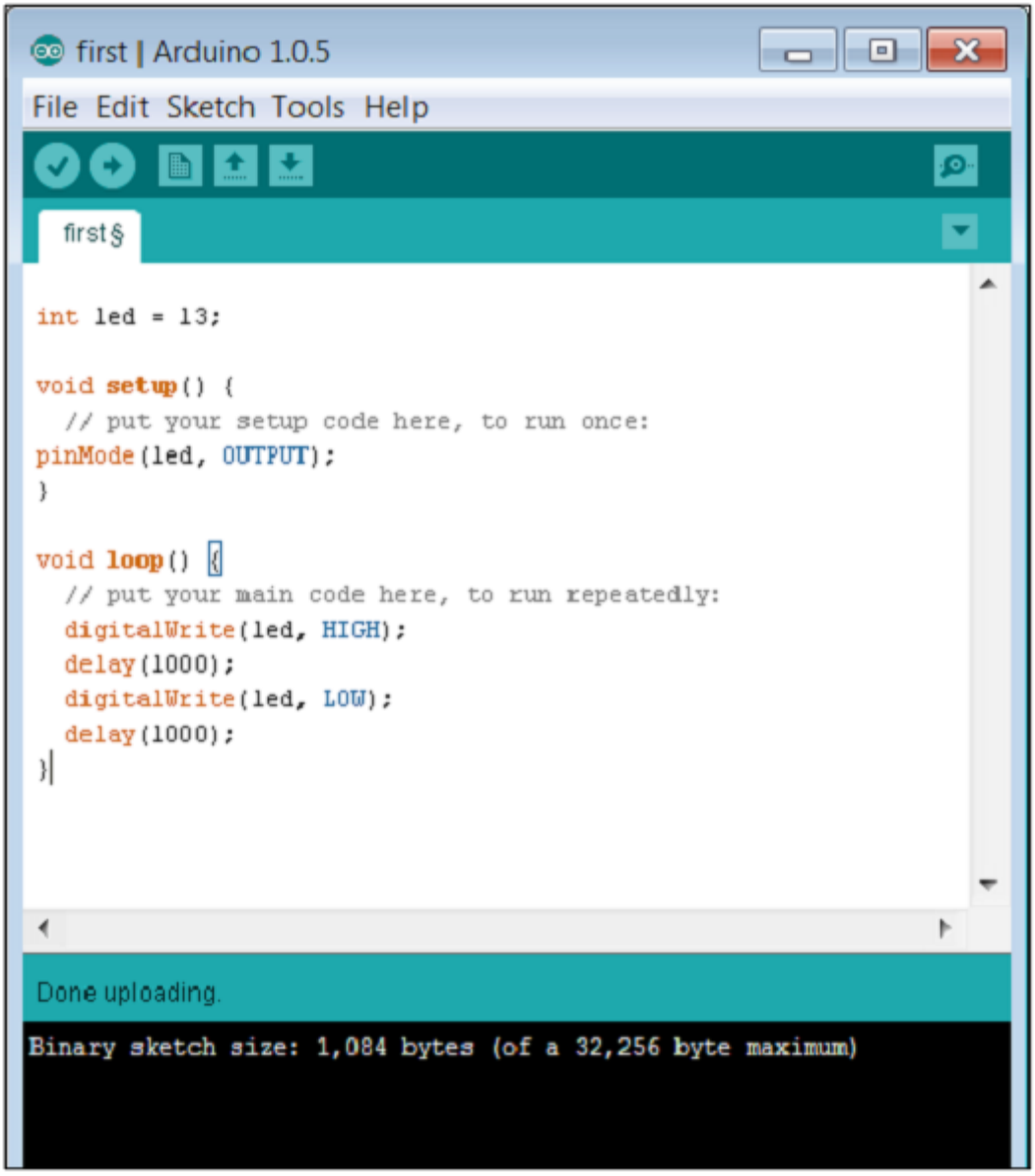

first | Arduino 1.0.5
File Edit Sketch Tools Help
first
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
}
Done Saving.
8
Arduino Uno on COM23


first | Arduino 1.0.5
File Edit Sketch Tools Help
Verify / Compile Ctrl+R
Show Sketch Folder Ctrl+K
Add File...
Import Library...
first
int led =
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
}
Done Saving.


first | Arduino 1.0.5
File Edit Sketch Tools Help
Save
first
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
}
Compiling sketch...

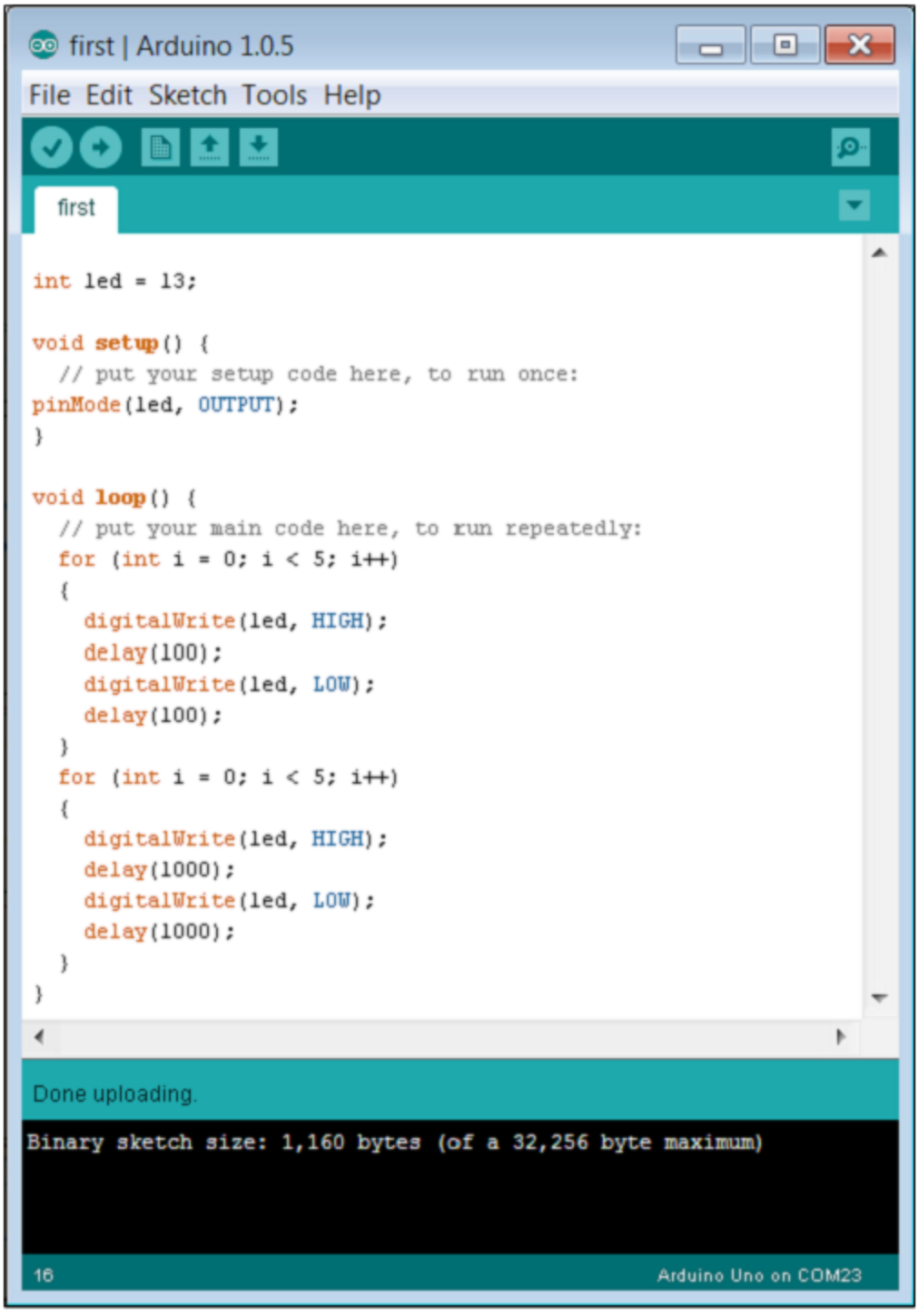

first | Arduino 1.0.5
File Edit Sketch Tools Help
first
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
}
Done compiling.


first | Arduino 1.0.5
File Edit Sketch Tools Help
first §
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
digitalWrite(led, HIGH);
}
Done compiling.

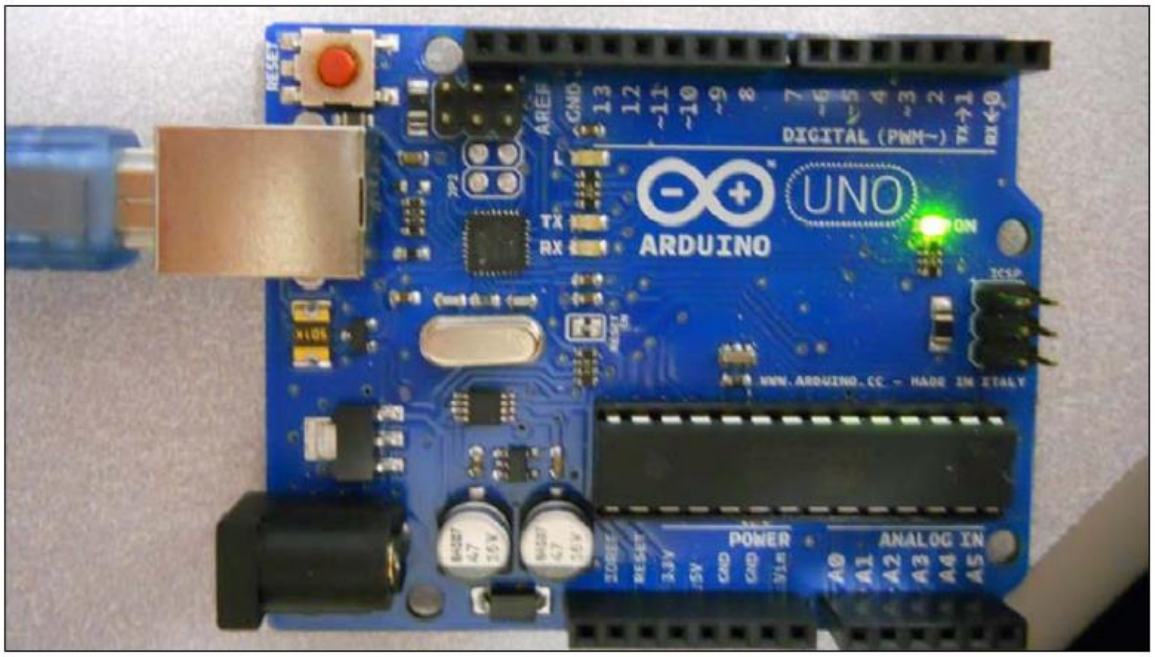

first | Arduino 1.0.5
File Edit Sketch Tools Help
first §
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
digitalWrite(led, HIGH);
delay(1000);
digitalWrite(led, LOW);
delay(1000);
}
Done uploading.
Binary sketch size: 1,084 bytes (of a 32,256 byte maximum)

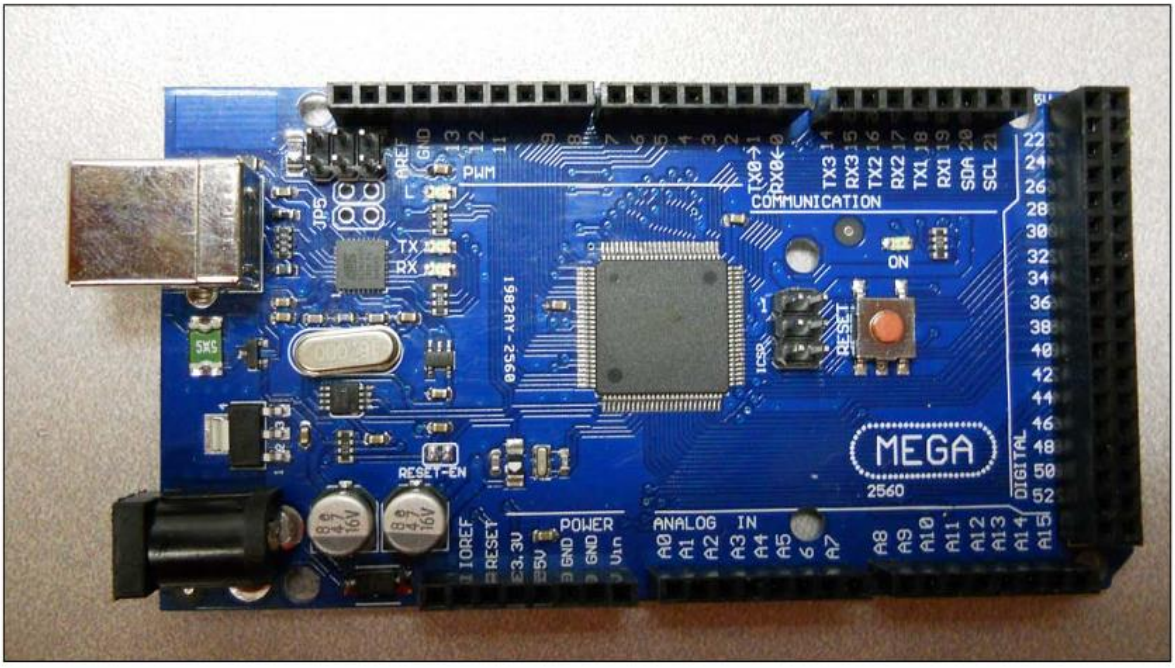

first | Arduino 1.0.5
File Edit Sketch Tools Help
first
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
digitalWrite(led, HIGH);
delay(1000);
digitalWrite(led, LO);
delay(1000);
}
'LO' was not declared in this scope
first.ino: In function 'void loop()':
first:13: error: 'LO' was not declared in this scope
13
Arduino Uno on COM23

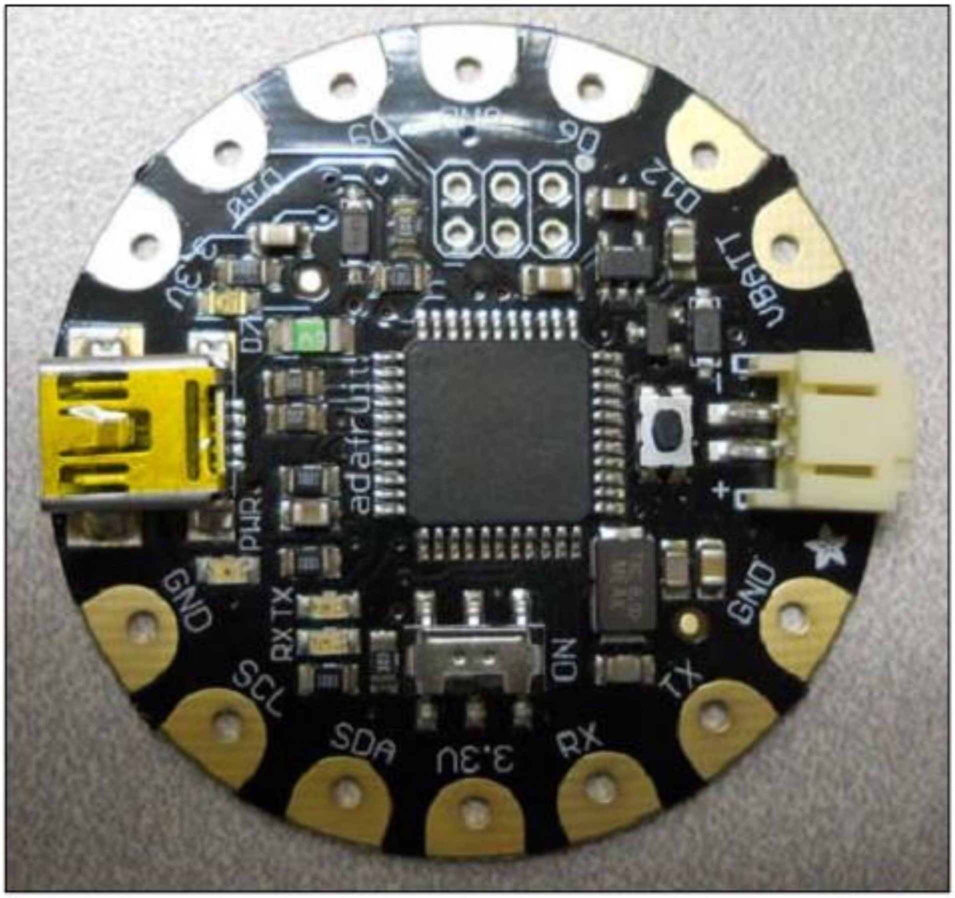

first | Arduino 1.0.5
File Edit Sketch Tools Help
first §
int led = 13;
int whichLED = 1;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
if (whichLED == 1)
{
digitalWrite(led, HIGH);
delay(100);
digitalWrite(led, LOW);
delay(100);
whichLED = 0;
}
else
{
digitalWrite(led, HIGH);
delay(1000);
digitalWrite(led, LOW);
delay(1000);
whichLED = 1;
}
}
Done uploading.
Binary sketch size: 1,164 bytes (of a 32,256 byte maximum)
25
Arduino Uno on COM23



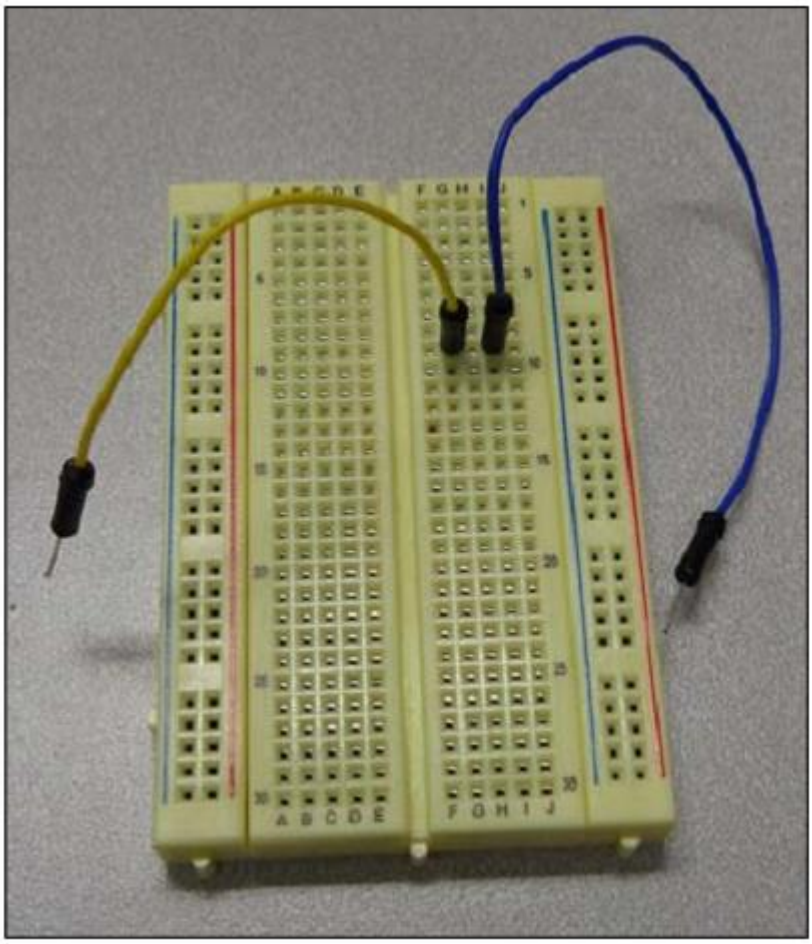
Chapter 4: Accessing the GPIO Pins

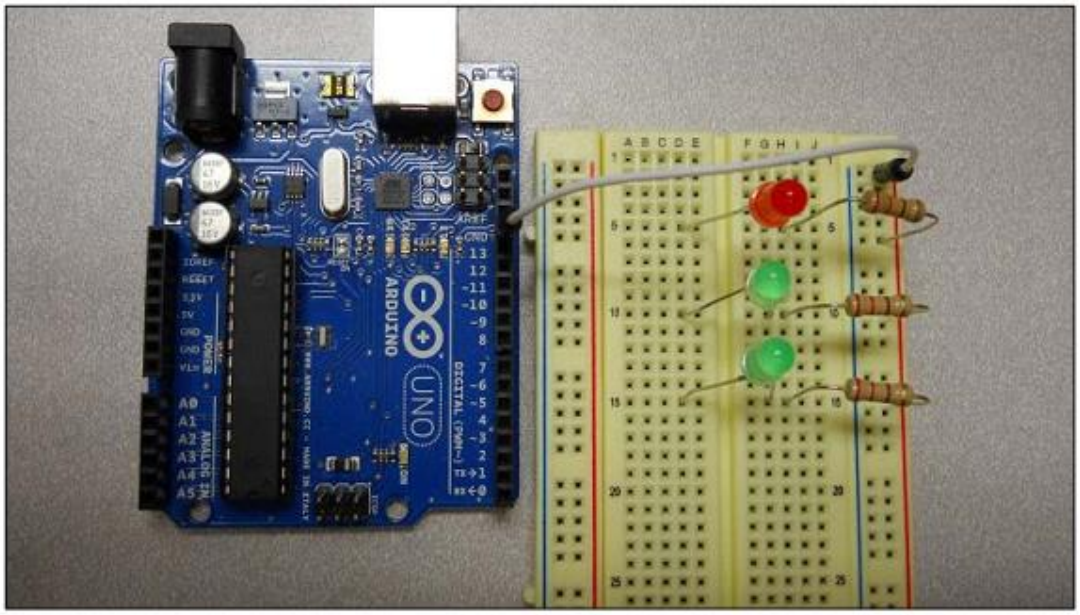

DIGITAL (PWM~)
UNO
ARDUINO
ON
POWER
ANALOG IN
WWW.ARDUINO.CC - MADE IN ITALY

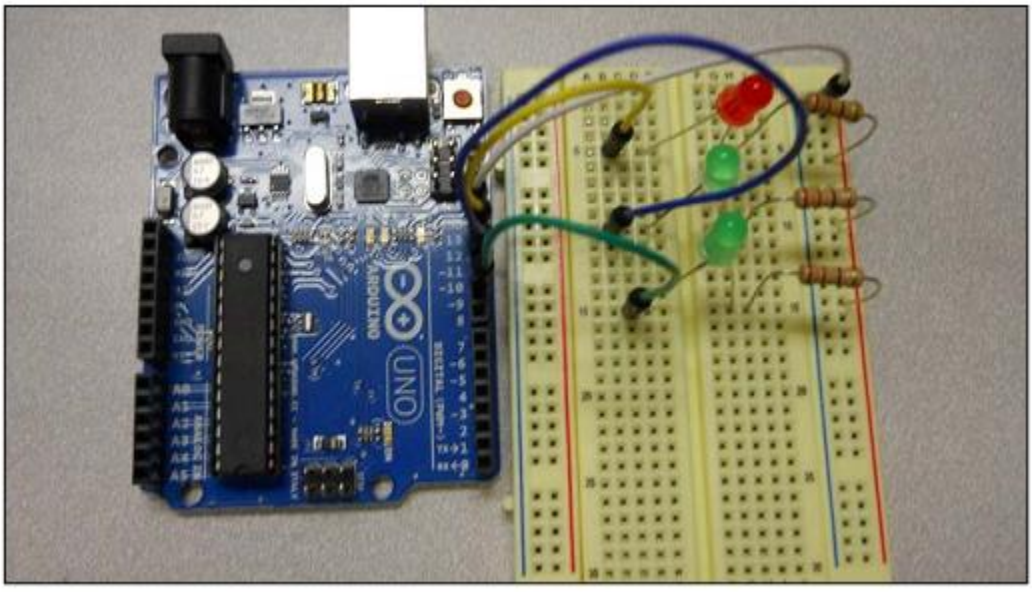

PWM
COMMUNICATION
ON
MEGA
2560
POWER
ANALOG IN
DIGITAL

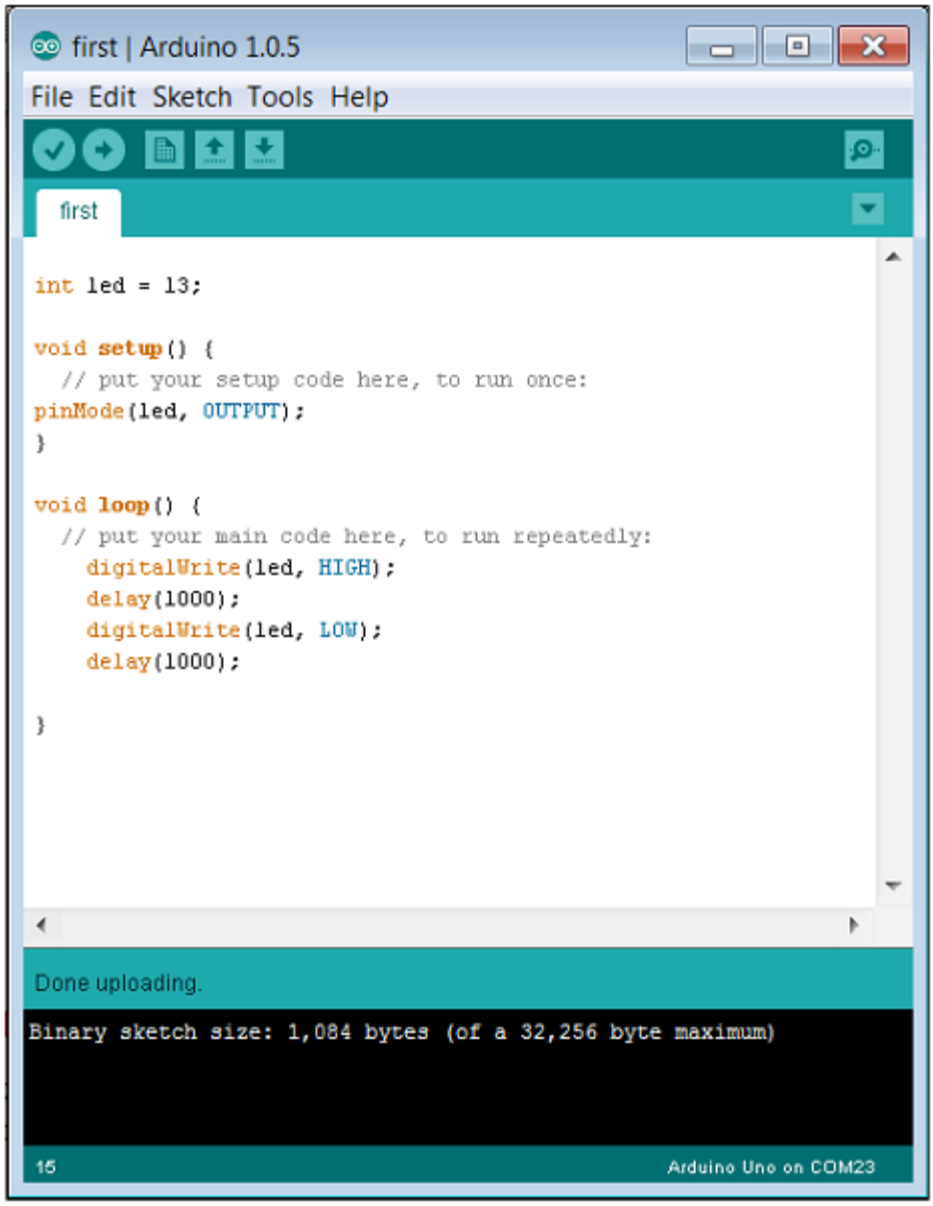


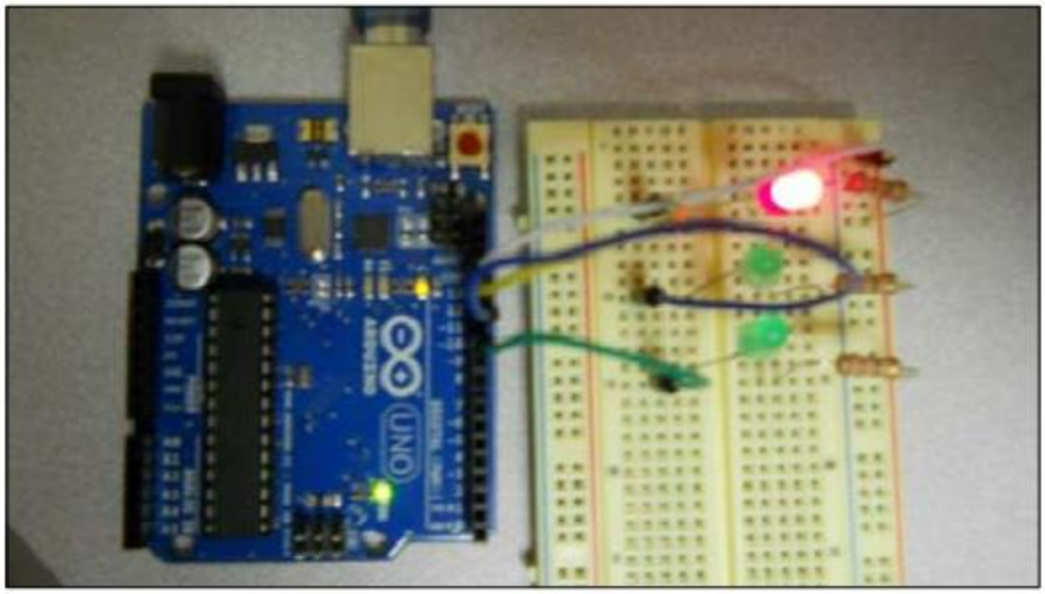
adafruit
PWR
RX TX
ON
GND
SCL
SDA
3.3V
RX
TX
GND
VBATT
D12

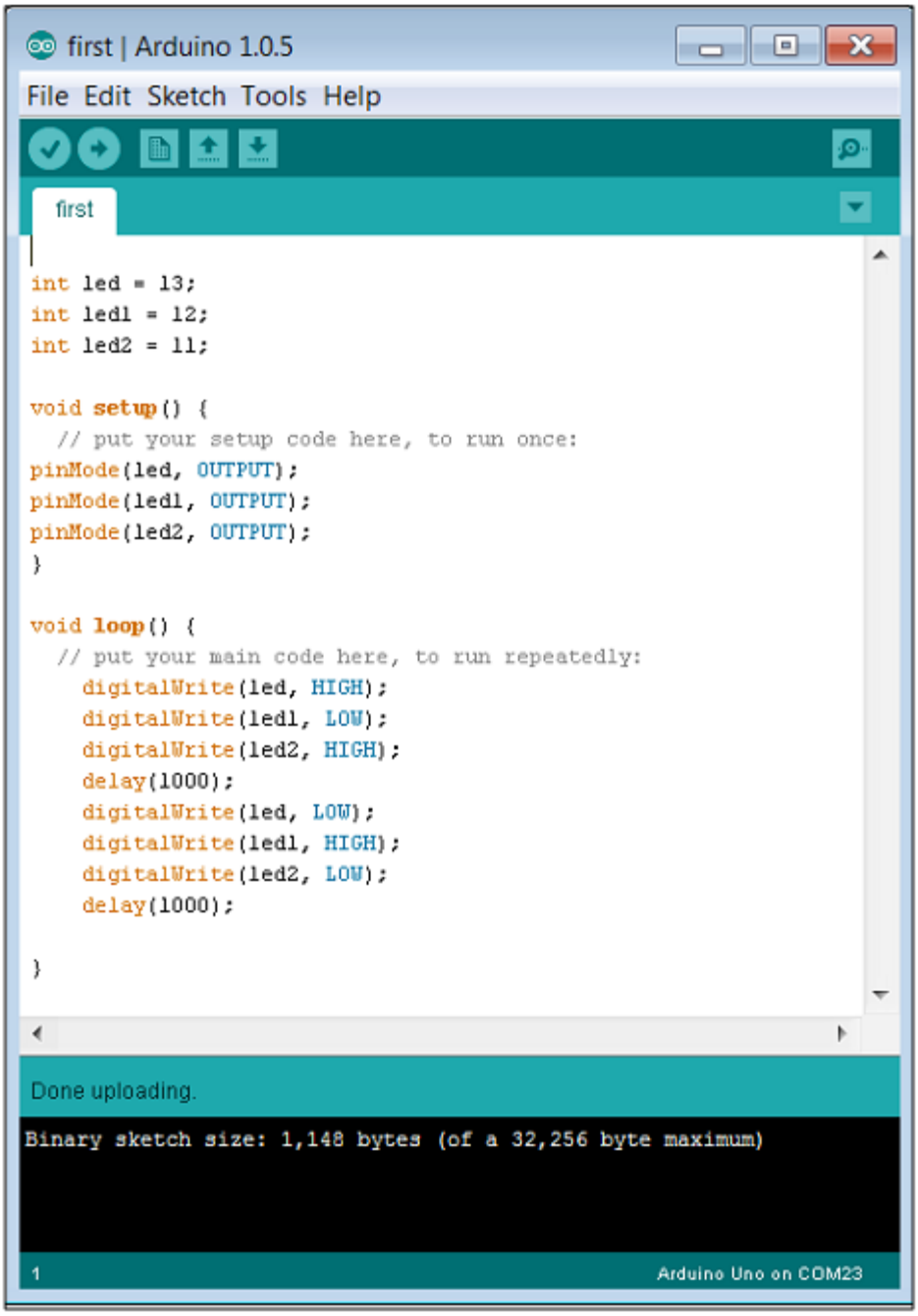


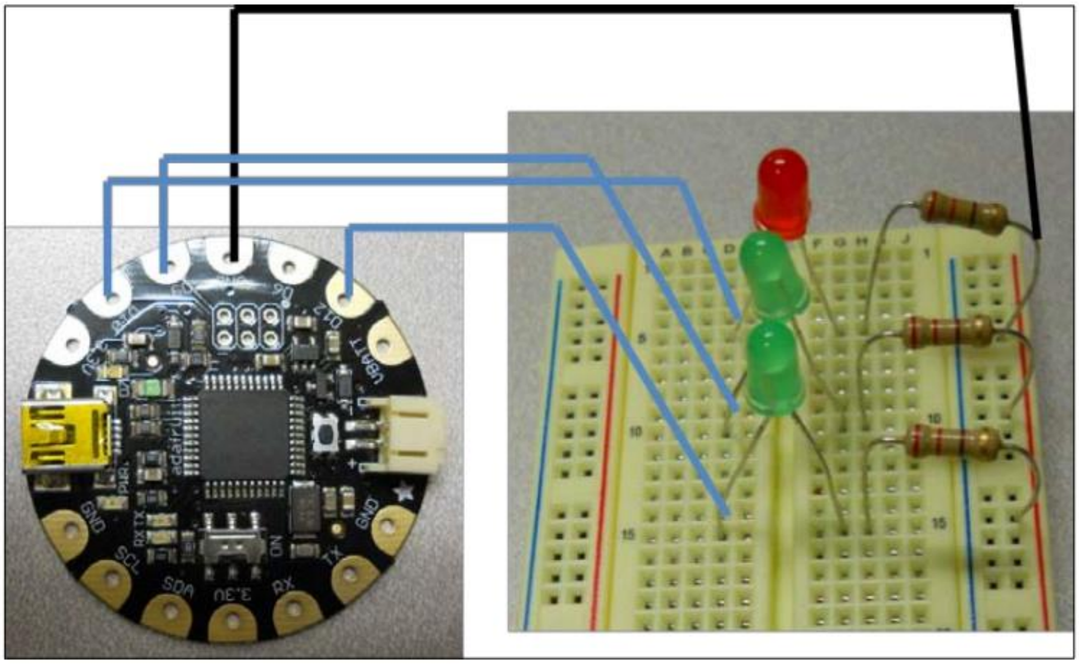

ARDUINO
UNO

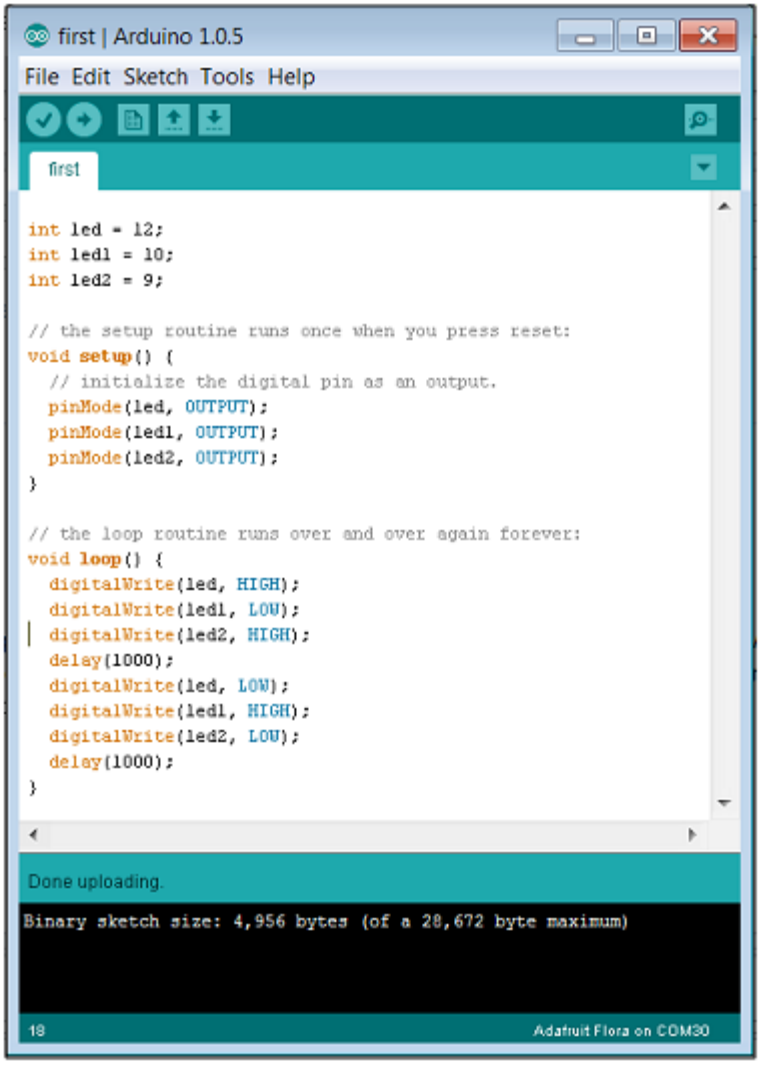

ARDUINO
UNO


first | Arduino 1.0.5
File Edit Sketch Tools Help
first
int led = 13;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
digitalWrite(led, HIGH);
delay(1000);
digitalWrite(led, LOW);
delay(1000);
}
Done uploading.
Binary sketch size: 1,084 bytes (of a 32,256 byte maximum)
15
Arduino Uno on COM23

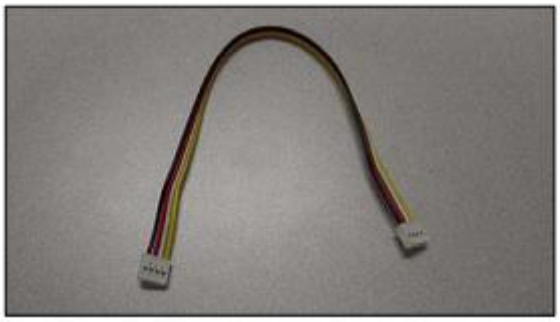

UNO

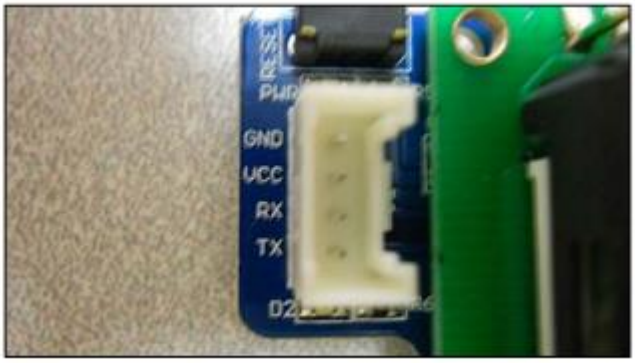

first | Arduino 1.0.5
File Edit Sketch Tools Help
first
int led = 13;
int led1 = 12;
int led2 = 11;
void setup() {
// put your setup code here, to run once:
pinMode(led, OUTPUT);
pinMode(led1, OUTPUT);
pinMode(led2, OUTPUT);
}
void loop() {
// put your main code here, to run repeatedly:
digitalWrite(led, HIGH);
digitalWrite(led1, LOW);
digitalWrite(led2, HIGH);
delay(1000);
digitalWrite(led, LOW);
digitalWrite(led1, HIGH);
digitalWrite(led2, LOW);
delay(1000);
}
Done uploading.
Binary sketch size: 1,148 bytes (of a 32,256 byte maximum)
1
Arduino Uno on COM23

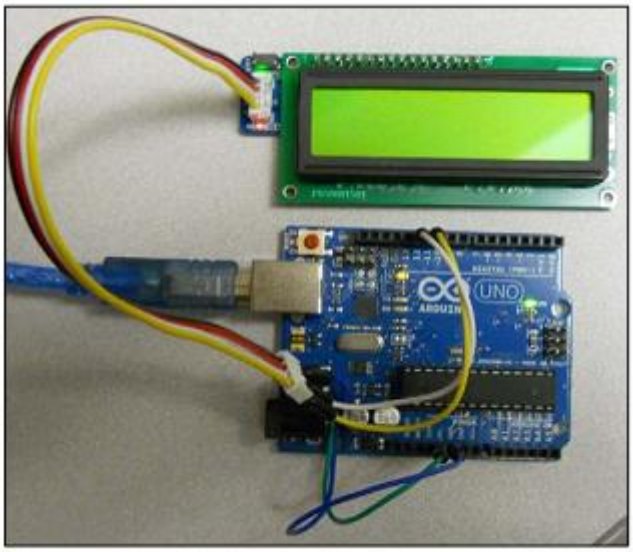

GND
SCL
SDA
3.3V
RX
TX
GND
VBATT
D12
D6

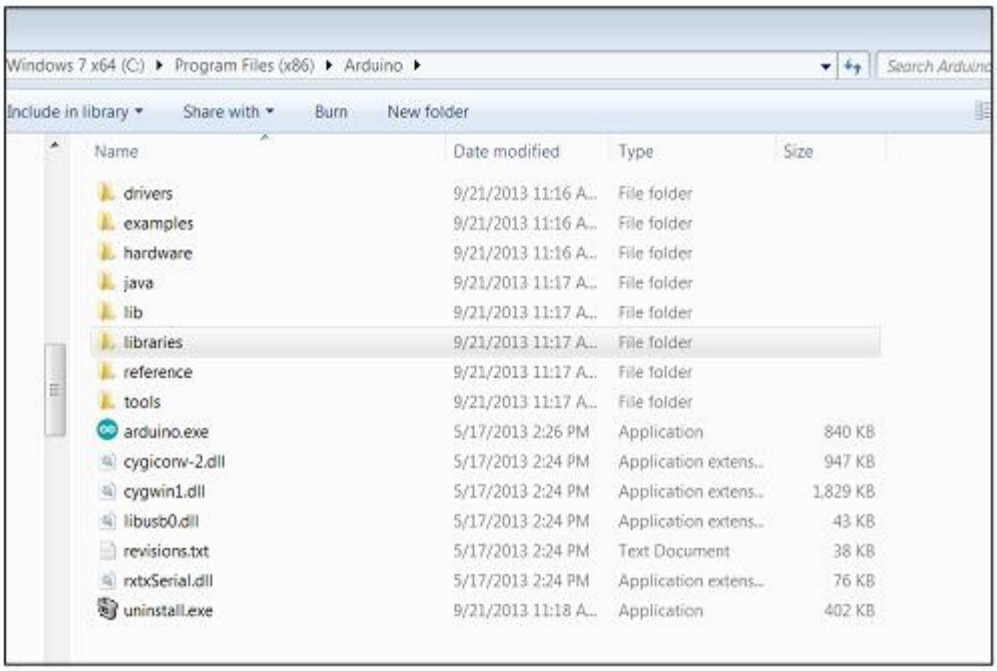


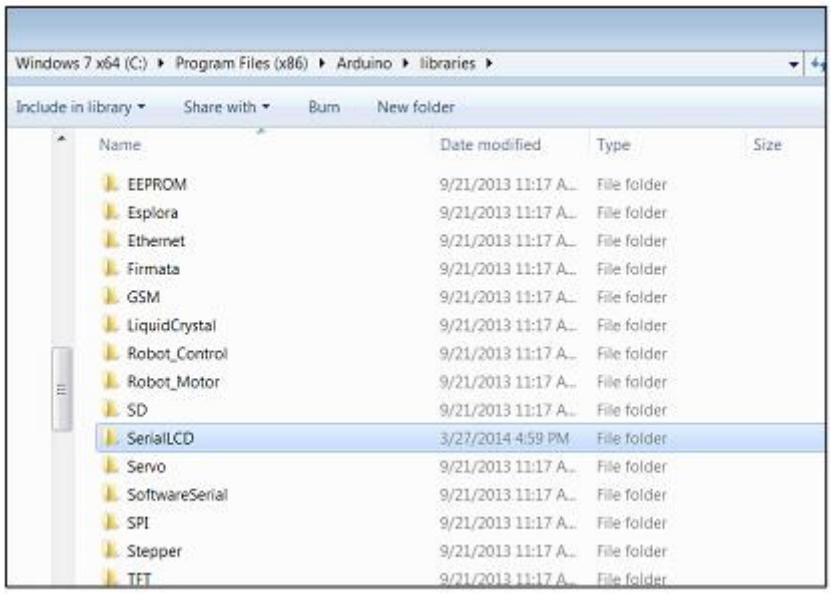
Chapter 5: Working with Displays

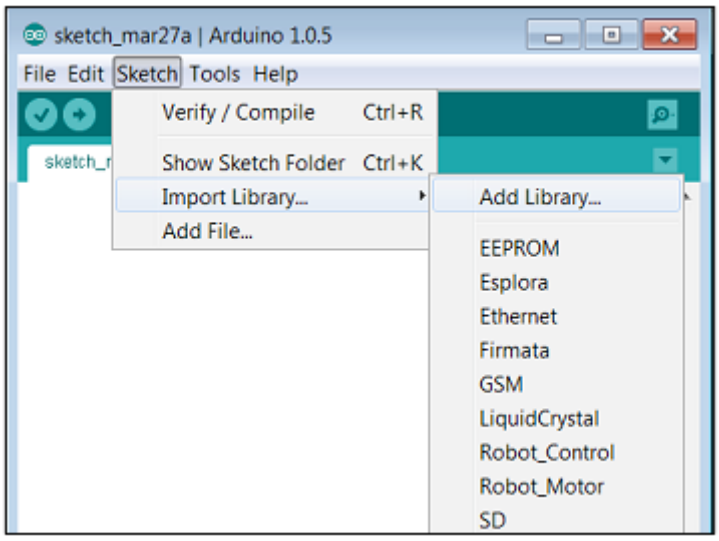


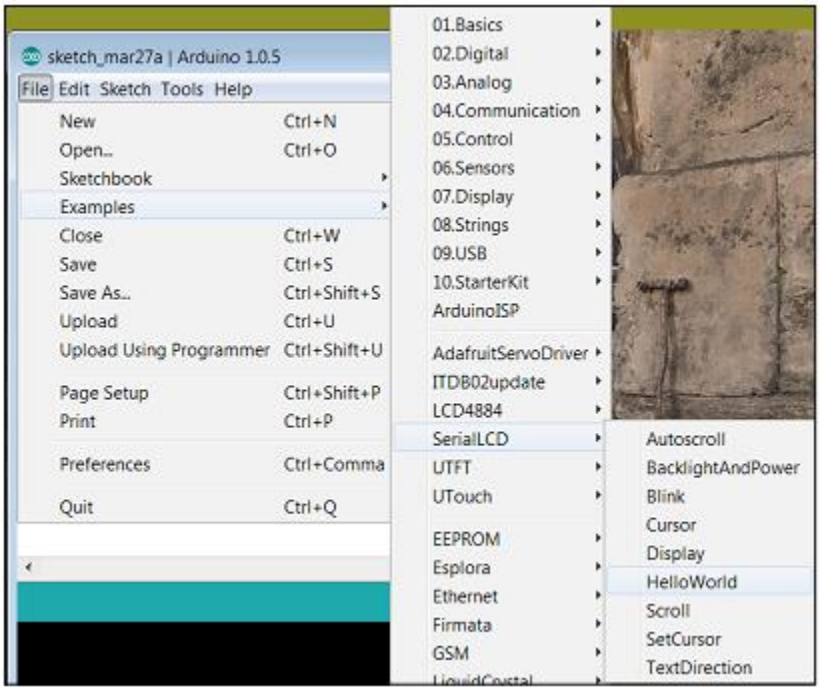

GND
VCC
RX
TX


UNO


Windows 7 x64 (C:) ▸ Program Files (x86) ▸ Arduino ▸
Include in library
Share with
Burn
New folder
Name
Date modified
Type
Size
drivers 9/21/2013 11:16 A... File folder
examples 9/21/2013 11:16 A... File folder
hardware 9/21/2013 11:16 A... File folder
java 9/21/2013 11:17 A... File folder
lib 9/21/2013 11:17 A... File folder
libraries 9/21/2013 11:17 A... File folder
reference 9/21/2013 11:17 A... File folder
tools 9/21/2013 11:17 A... File folder
arduino.exe 5/17/2013 2:26 PM Application 840 KB
cygiconv-2.dll 5/17/2013 2:24 PM Application extens... 947 KB
cygwin1.dll 5/17/2013 2:24 PM Application extens... 1,829 KB
libusb0.dll 5/17/2013 2:24 PM Application extens... 43 KB
revisions.txt 5/17/2013 2:24 PM Text Document 38 KB
rxtxSerial.dll 5/17/2013 2:24 PM Application extens... 76 KB
uninstall.exe 9/21/2013 11:18 A... Application 402 KB


Windows 7 x64 (C:) ▸ Program Files (x86) ▸ Arduino ▸ libraries ▸
Include in library
Share with
Burn
New folder
Name
Date modified
Type
Size
EEPROM 9/21/2013 11:17 A... File folder
Esplora 9/21/2013 11:17 A... File folder
Ethernet 9/21/2013 11:17 A... File folder
Firmata 9/21/2013 11:17 A... File folder
GSM 9/21/2013 11:17 A... File folder
LiquidCrystal 9/21/2013 11:17 A... File folder
Robot_Control 9/21/2013 11:17 A... File folder
Robot_Motor 9/21/2013 11:17 A... File folder
SD 9/21/2013 11:17 A... File folder
SerialLCD 3/27/2014 4:59 PM File folder
Servo 9/21/2013 11:17 A... File folder
SoftwareSerial 9/21/2013 11:17 A... File folder
SPI 9/21/2013 11:17 A... File folder
Stepper 9/21/2013 11:17 A... File folder
TFT 9/21/2013 11:17 A... File folder


sketch_mar27a | Arduino 1.0.5
File Edit Sketch Tools Help
Verify / Compile Ctrl+R
Show Sketch Folder Ctrl+K
Import Library...
Add File...
Add Library...
EEPROM
Esplora
Ethernet
Firmata
GSM
LiquidCrystal
Robot_Control
Robot_Motor
SD


sketch_mar27a | Arduino 1.0.5
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
AdafruitServoDriver
ITDB02update
LCD4884
SerialLCD
UTFT
UTouch
EEPROM
Esplora
Ethernet
Firmata
GSM
Autoscroll
BacklightAndPower
Blink
Cursor
Display
HelloWorld
Scroll
SetCursor
TextDirection

HelloWorld | Arduino 1.0.5

File Edit Sketch Tools Help

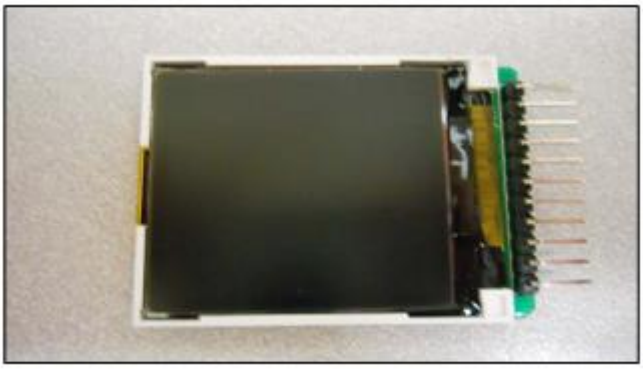
HelloWorld

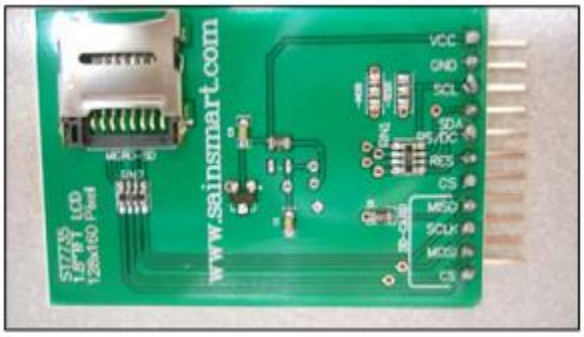
```
/*
  SerialLCD Library - Hello World

 Demonstrates the use a 16x2 LCD SerialLCD driver from Seeedstudio.

 This sketch prints "Hello, Seeeduino!" to the LCD
 and shows the time.

 Library originally added 16 Dec. 2010
 by Jimbo.we
 http://www.seeedstudio.com
 */

// include the library code:
#include <SerialLCD.h>
#include <SoftwareSerial.h> //this is a must

// initialize the library
SerialLCD slcd(11,12);//this is a must, assign soft serial pins

void setup() {
  // set up
  slcd.begin();
  // Print a message to the LCD.
  slcd.print("Hello, world!");
}

void loop() {
  // set the cursor to column 0, line 1
  // (note: line 1 is the second row, since counting begins with 0):
  slcd.setCursor(0, 1);
  // print the number of seconds since reset:
  slcd.print(millis()/1000);
}
```

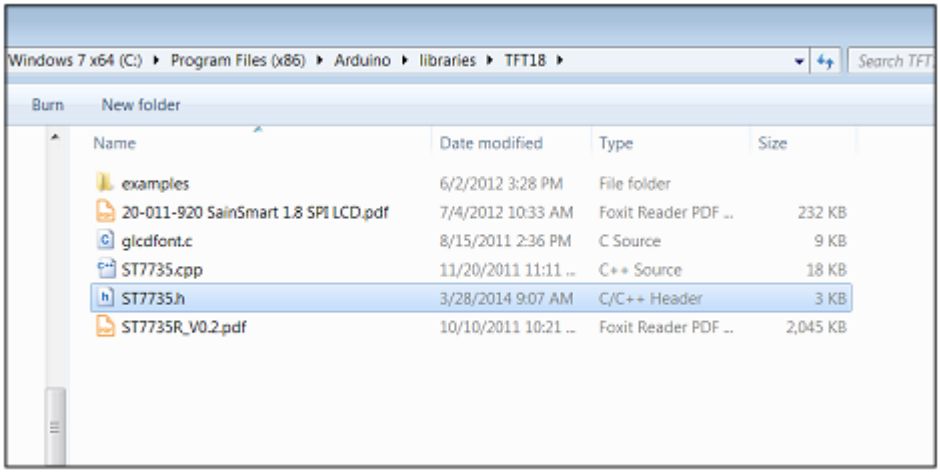
Done uploading.

```
Binary sketch size: 3,830 bytes (of a 32,256 byte maximum)
```

1 Arduino Uno on COM23



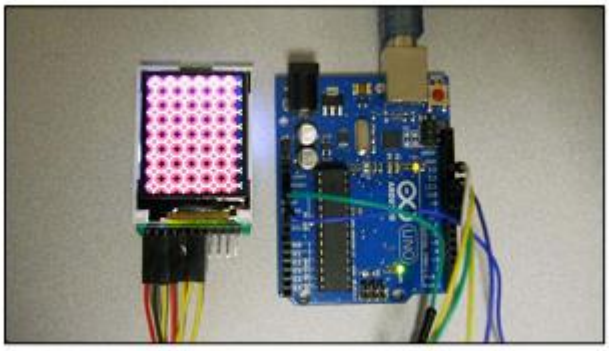

www.sainsmart.com
VCC
GND
SCL
SDA
RS/DC
RES
CS
MISO
SCLK
MOSI
CS


Windows 7 x64 (C:) ▸ Program Files (x86) ▸ Arduino ▸ libraries ▸ TFT18 ▸
Search TFT
Burn
New folder
Name
Date modified
Type
Size
examples
6/2/2012 3:28 PM
File folder
20-011-920 SainSmart 1.8 SPI LCD.pdf
7/4/2012 10:33 AM
Foxit Reader PDF ...
232 KB
glcdfont.c
8/15/2011 2:36 PM
C Source
9 KB
ST7735.cpp
11/20/2011 11:11 ...
C++ Source
18 KB
ST7735.h
3/28/2014 9:07 AM
C/C++ Header
3 KB
ST7735R_V0.2.pdf
10/10/2011 10:21 ...
Foxit Reader PDF ...
2,045 KB

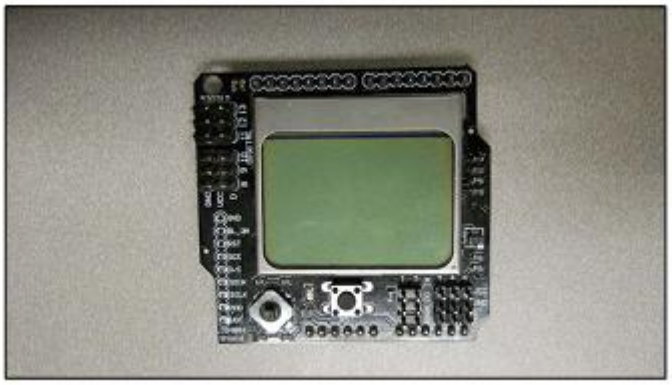
ST7735.h - Notepad2 (Administrator)

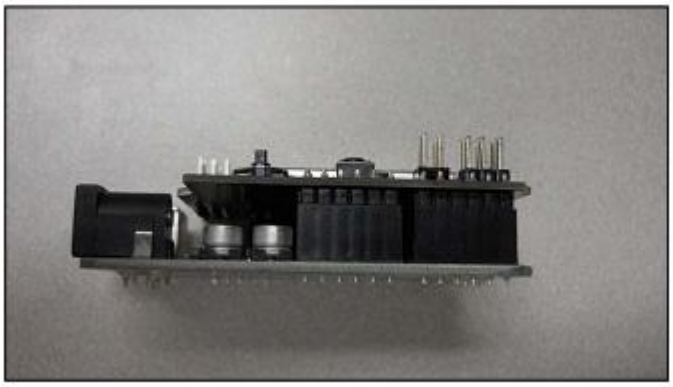
File Edit View Settings ?

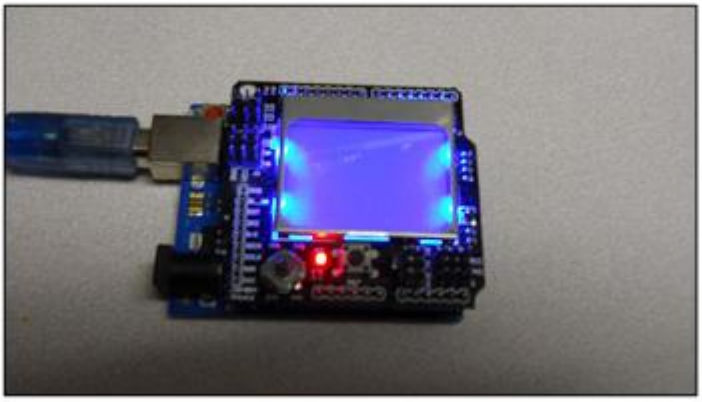
```
// Graphics library by ladyada/adafruit
// MIT license

#define swap(a, b) { uint16_t t = a; a = b; b = t; }

//#include <WProgram.h>
#include <Arduino.h>

#define ST7735_NOP 0x0
#define ST7735_SWRESET 0x01
#define ST7735_RDDID 0x04
#define ST7735_RDDST 0x09

#define ST7735_SLPIN  0x10
#define ST7735_SLPOUT  0x11
#define ST7735_PTLON  0x12
#define ST7735_NORON  0x13

#define ST7735_INVOFF 0x20
#define ST7735_INVON 0x21
#define ST7735_DISPOFF 0x28
#define ST7735_DISPON 0x29
#define ST7735_CASET 0x2A
#define ST7735_RASET 0x2B
#define ST7735_RAMWR 0x2C
#define ST7735_RAMRD 0x2E

```

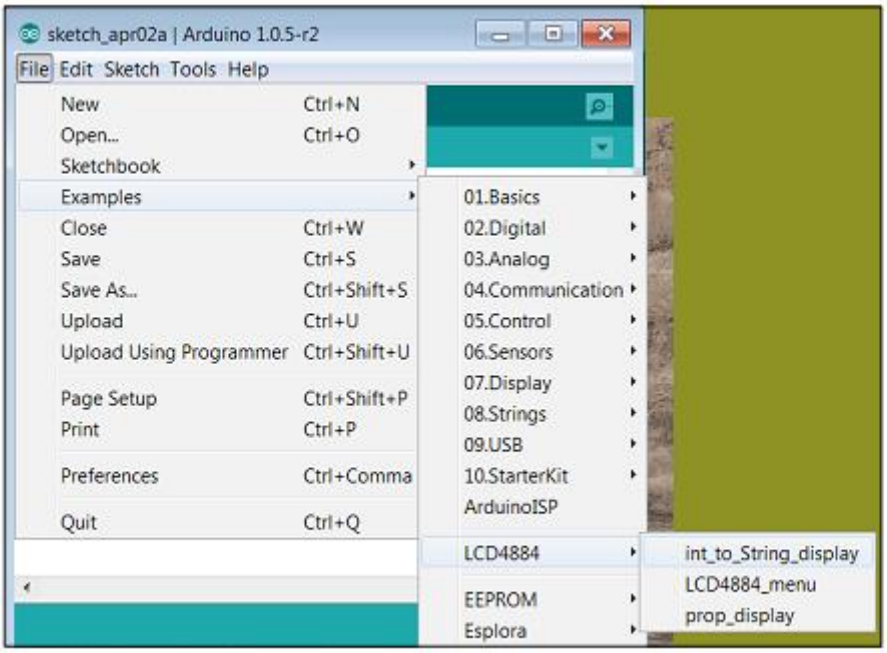


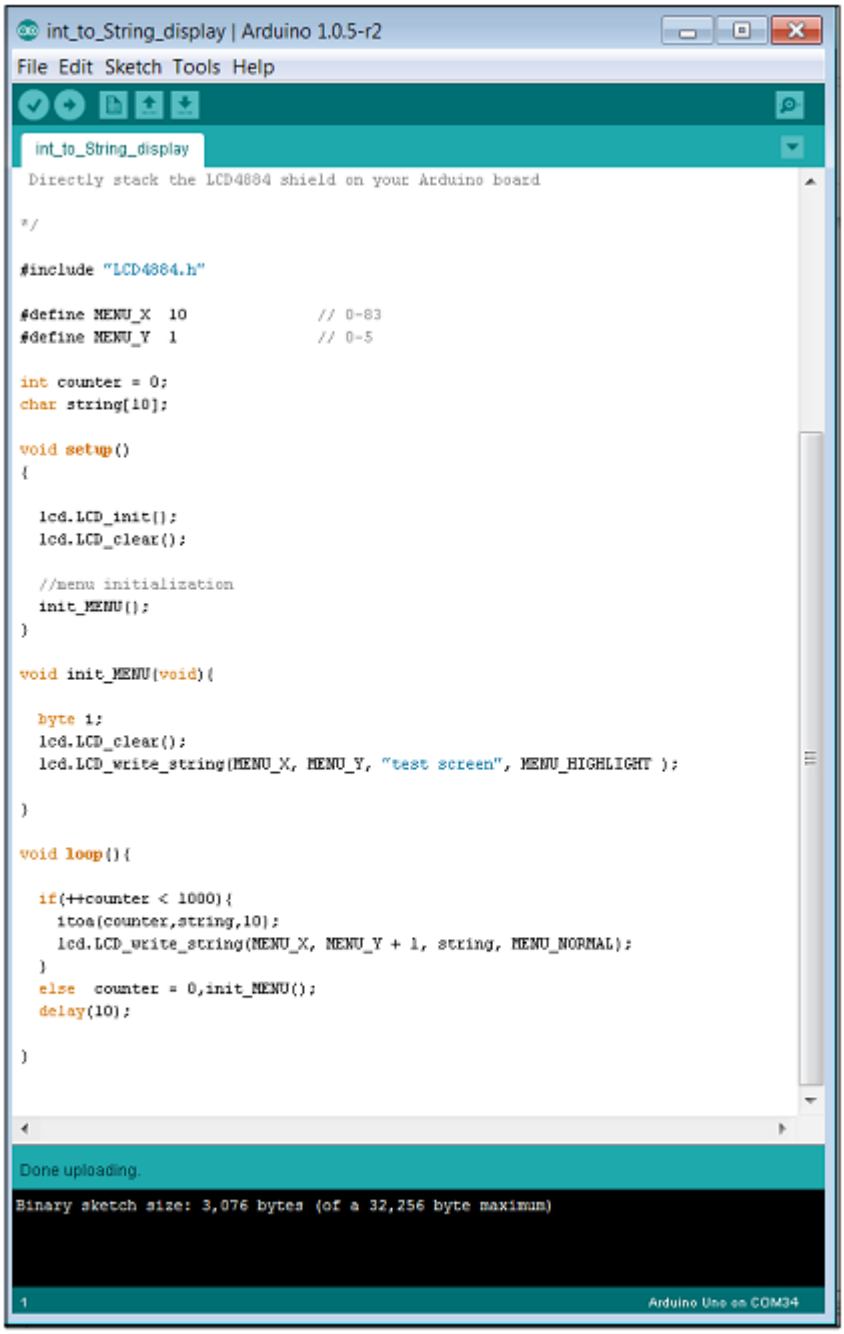

UNO
Sensor Value
250



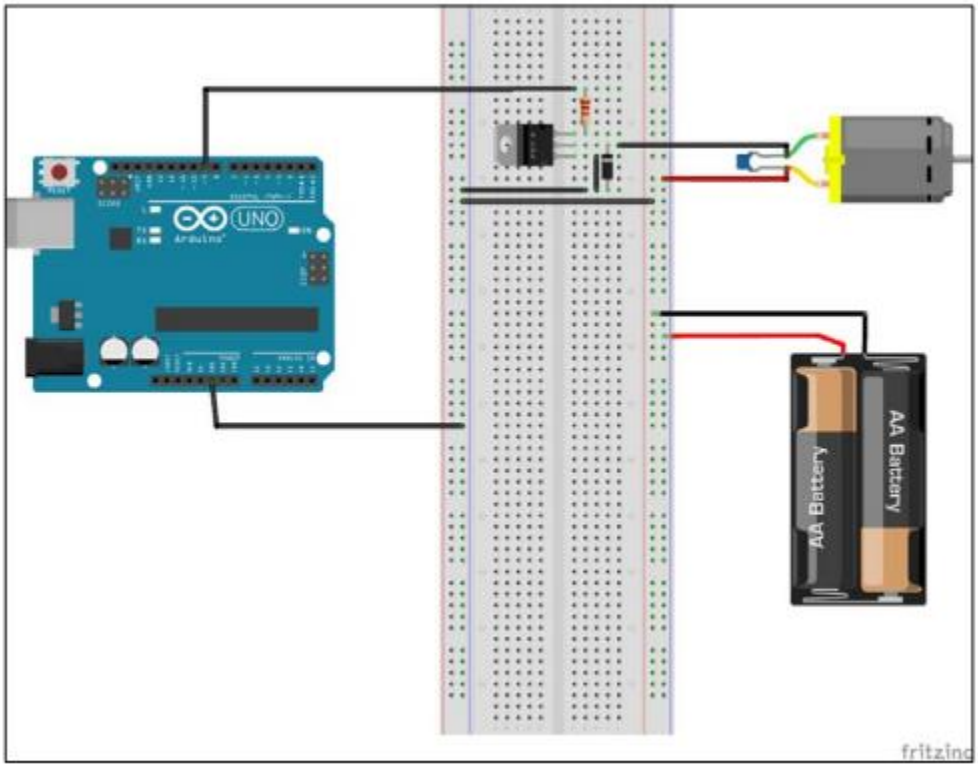


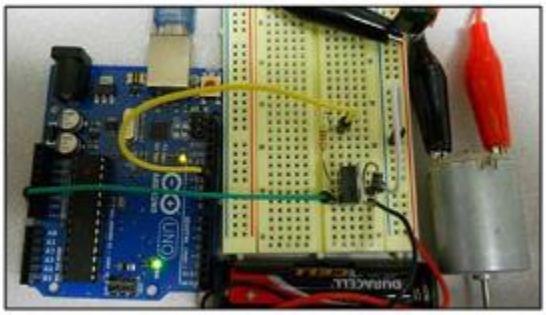



sketch_apr02a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
LCD4884
EEPROM
Esplora
int_to_String_display
LCD4884_menu
prop_display


int_to_String_display | Arduino 1.0.5-r2
File Edit Sketch Tools Help
int_to_String_display
Directly stack the LCD4884 shield on your Arduino board
*/
#include "LCD4884.h"
#define MENU_X 10 // 0-83
#define MENU_Y 1 // 0-5
int counter = 0;
char string[10];
void setup()
{
lcd.LCD_init();
lcd.LCD_clear();
//menu initialization
init_MENU();
}
void init_MENU(void){
byte i;
lcd.LCD_clear();
lcd.LCD_write_string(MENU_X, MENU_Y, "test screen", MENU_HIGHLIGHT);
}
void loop(){
if(++counter < 1000){
itoa(counter,string,10);
lcd.LCD_write_string(MENU_X, MENU_Y + 1, string, MENU_NORMAL);
}
else counter = 0,init_MENU();
delay(10);
}
Done uploading.
Binary sketch size: 3,076 bytes (of a 32,256 byte maximum)
1
Arduino Uno on COM34

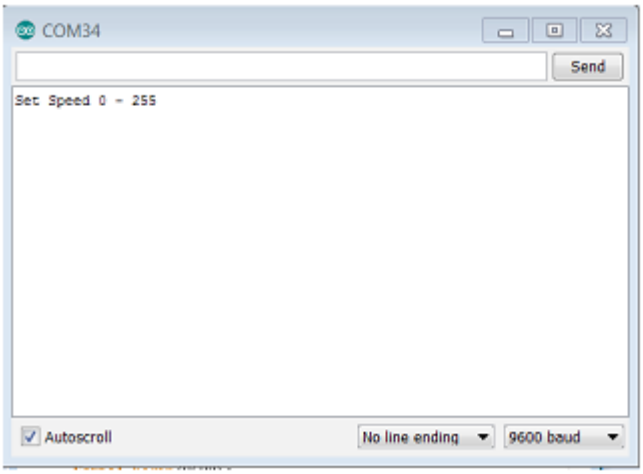
Chapter 6: Controlling DC Motors

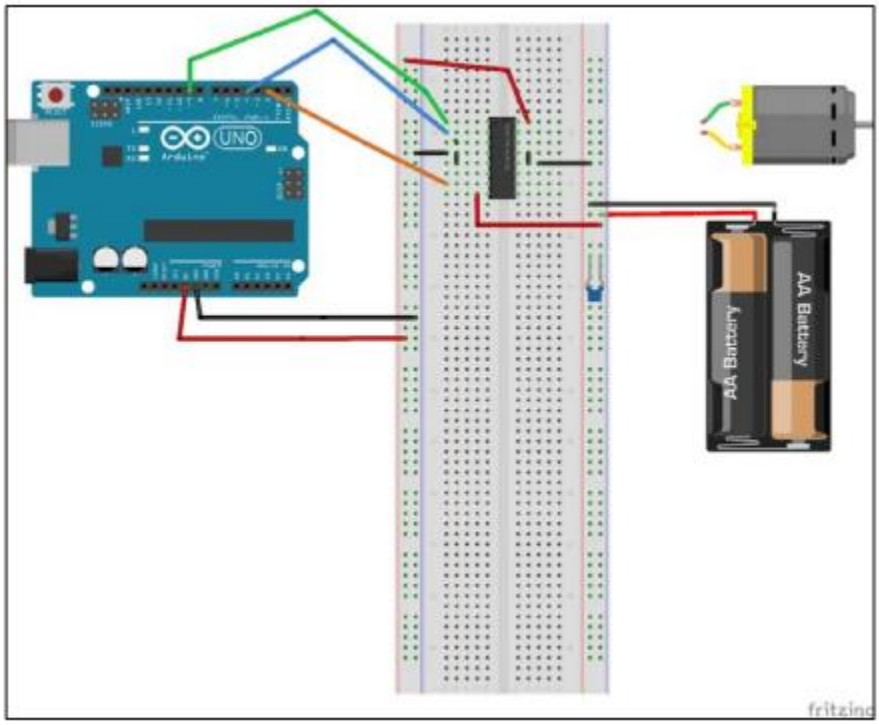

UNO
AA Battery
AA Battery
fritzing



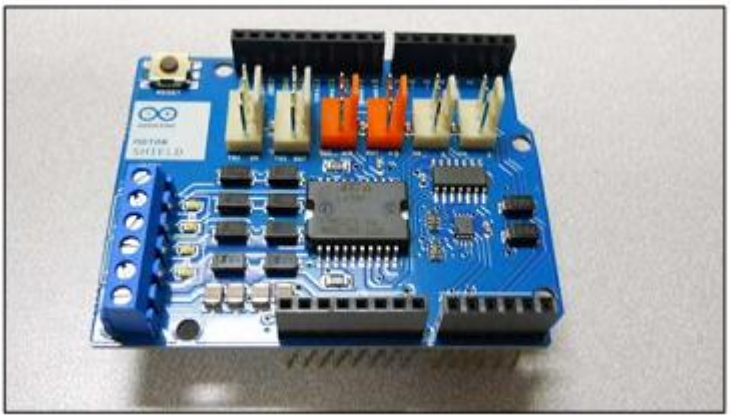

sketch_apr03a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
sketch_apr03a §
int motorPin = 11;
void setup()
{
pinMode(motorPin, OUTPUT);
Serial.begin(9600);
while (! Serial)
;
Serial.println("Set Speed 0 - 255");
}
void loop()
{
if (Serial.available())
{
char str[10];
int speed = Serial.parseInt();
itoa(speed, str, 10);
Serial.println("Speed");
Serial.println(str);
if (speed >= 0 && speed <= 255)
{
analogWrite(motorPin, speed);
}
}
}
Done uploading.
Binary sketch size: 3,266 bytes (of a 32,256 byte maximum)
24
Arduino Uno on COM34

–

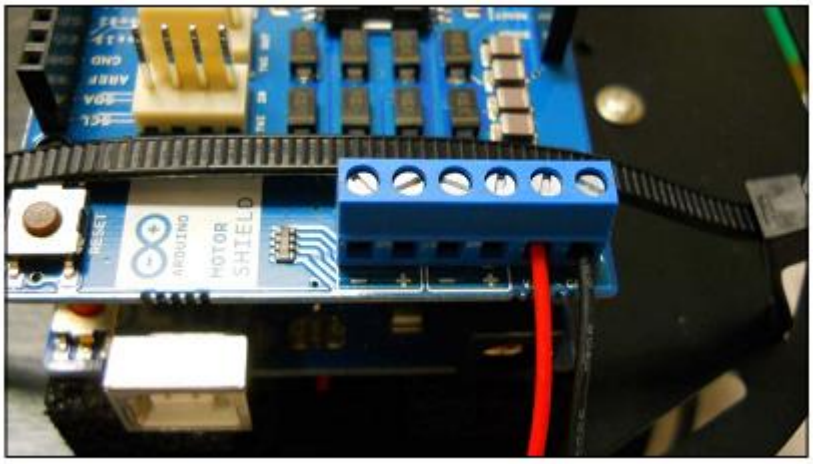

COM34
Send
Set Speed 0 - 255
Autoscroll
No line ending
9600 baud

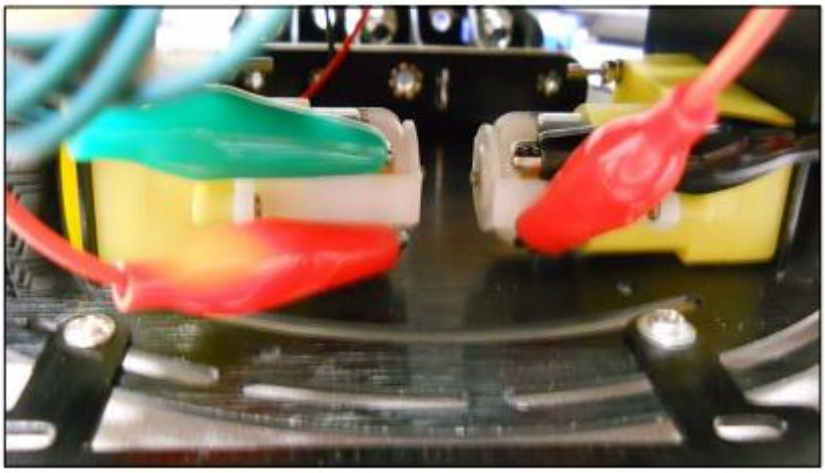

UNO
AA Battery
AA Battery
fritzing

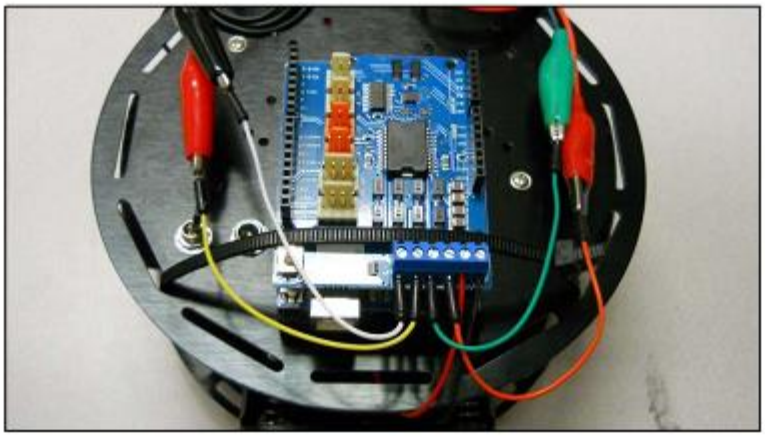

hbridge | Arduino 1.0.5-r2
File Edit Sketch Tools Help
hbridge
const int motor1Pin = 3;
const int motor2Pin = 4;
const int enablePin = 9;
void setup()
{
pinMode(motor1Pin, OUTPUT);
pinMode(motor2Pin, OUTPUT);
pinMode(enablePin, OUTPUT);
digitalWrite(enablePin, HIGH);
Serial.begin(9600);
while (! Serial)
;
Serial.println("Set Direction 0 - Forward, 1 - Reverse");
}
void loop()
{
if (Serial.available())
{
char str[10];
int direction = Serial.parseInt();
if (direction == 0)
{
Serial.println("Forward");
digitalWrite(motor1Pin, HIGH);
digitalWrite(motor2Pin, LOW);
}
else
{
Serial.println("Reverse");
digitalWrite(motor1Pin, LOW);
digitalWrite(motor2Pin, HIGH);
}
}
}
Done Saving.
Binary sketch size: 2,946 bytes (of a 32,256 byte maximum)
55
Arduino Uno on COM34



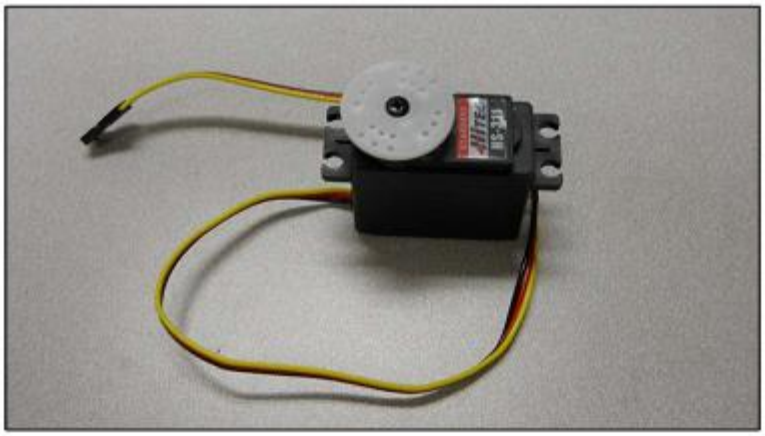

MOTOR
SHIELD

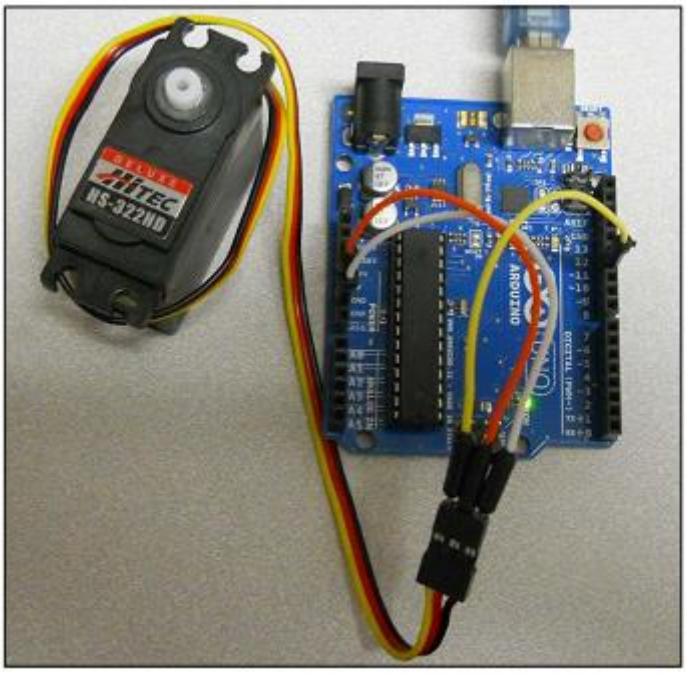

RESET
ARDUINO
MOTOR
SHIELD

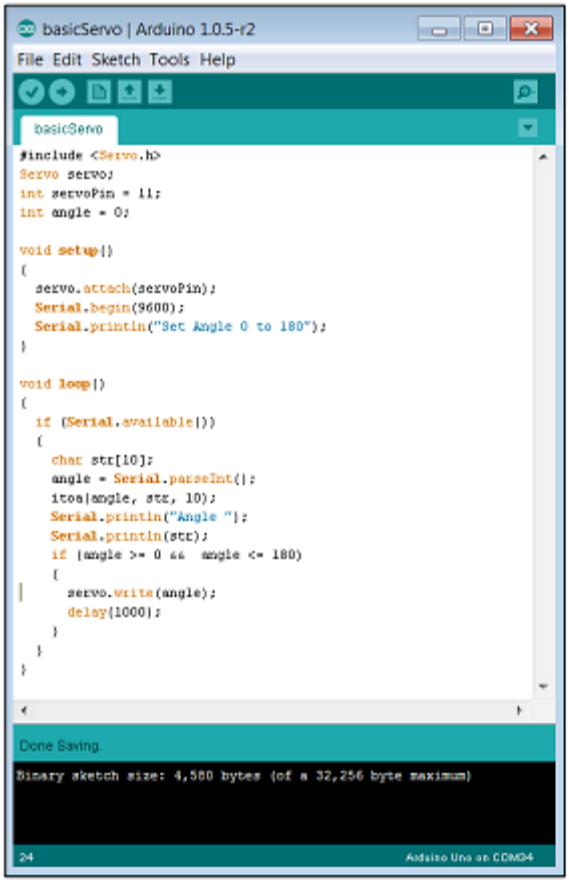


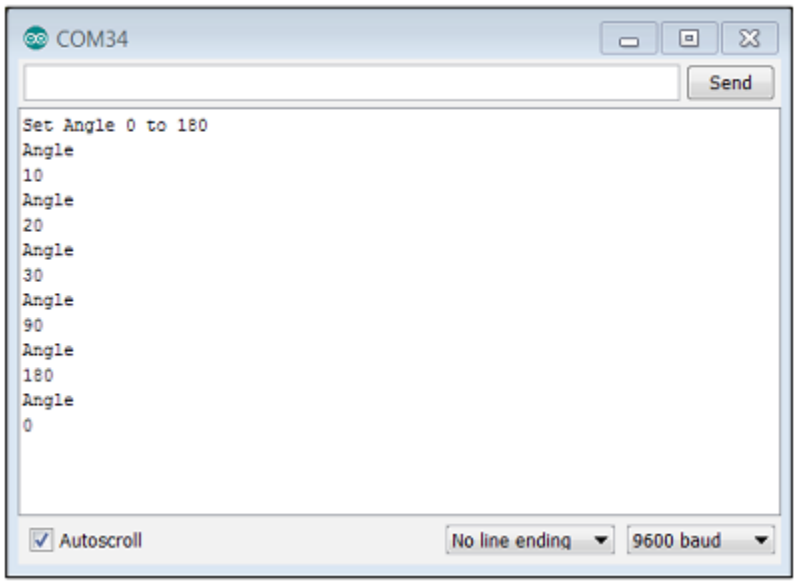


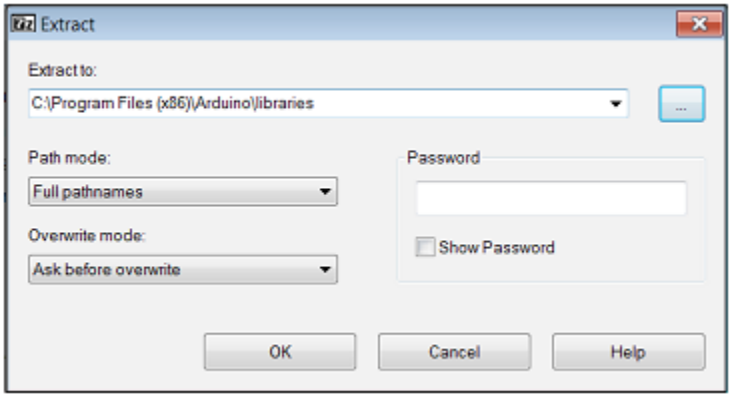
Chapter 7: Controlling Servos with Arduino

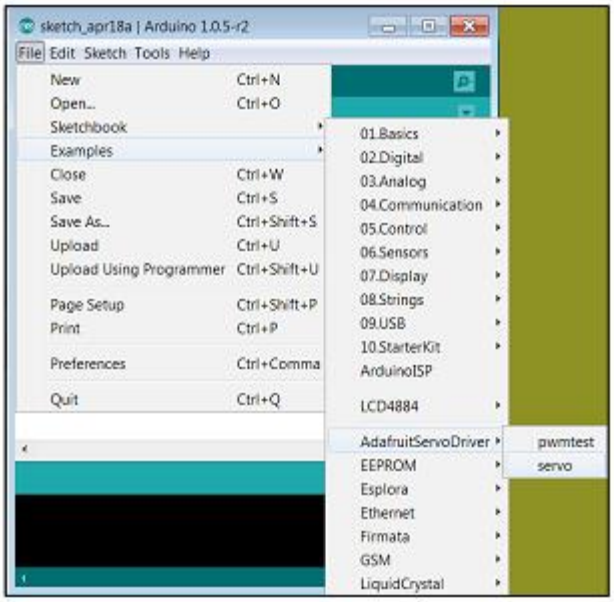


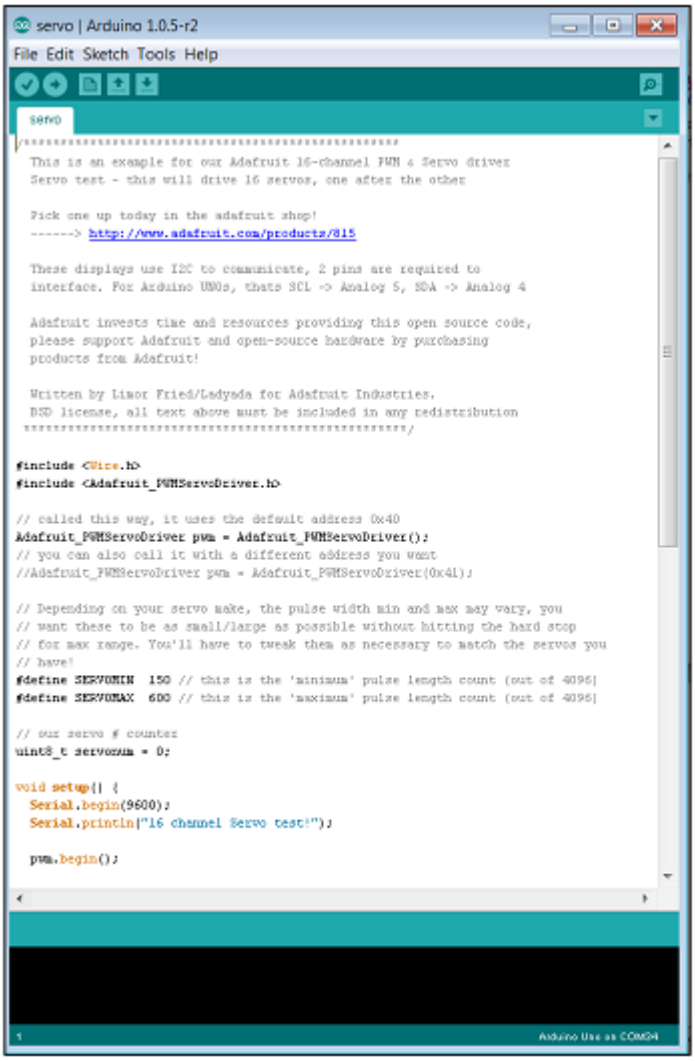

HITEC
HS-422HD
ARDUINO

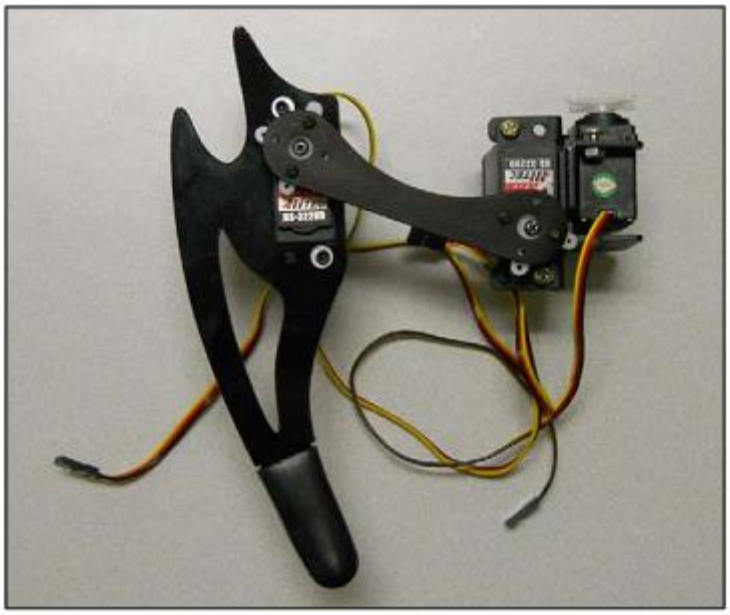

basicServo | Arduino 1.0.5-r2
File Edit Sketch Tools Help
basicServo
#include <Servo.h>
Servo servo;
int servoPin = 11;
int angle = 0;
void setup()
{
servo.attach(servoPin);
Serial.begin(9600);
Serial.println("Set Angle 0 to 180");
}
void loop()
{
if (Serial.available())
{
char str[10];
angle = Serial.parseInt();
itoa(angle, str, 10);
Serial.println("Angle ");
Serial.println(str);
if (angle >= 0 && angle <= 180)
{
servo.write(angle);
delay(1000);
}
}
}
Done Saving.
Binary sketch size: 4,580 bytes (of a 32,256 byte maximum)
24
Arduino Uno on COM34

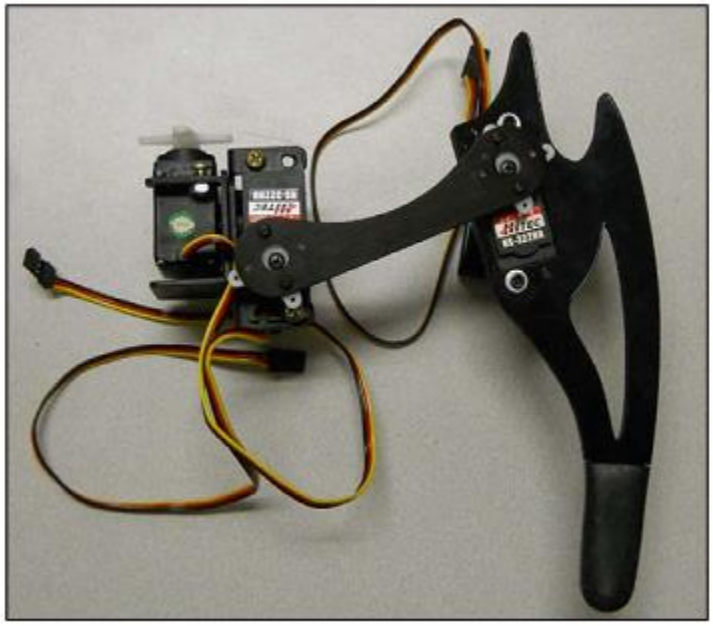

COM34
Send
Set Angle 0 to 180
Angle
10
Angle
20
Angle
30
Angle
90
Angle
180
Angle
0
Autoscroll
No line ending
9600 baud

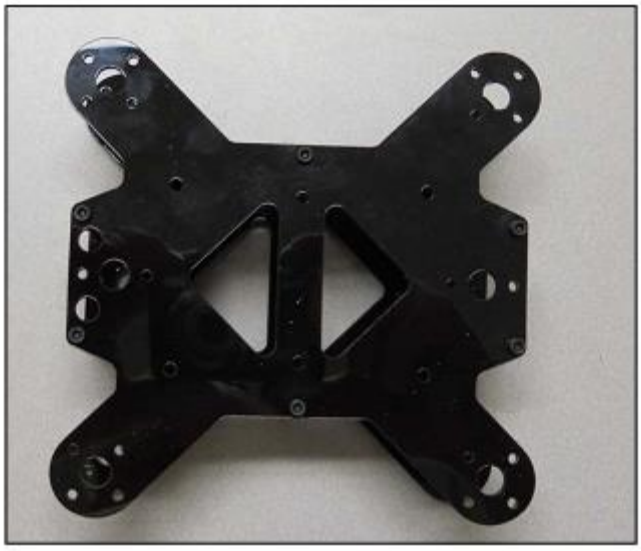

Extract
Extract to:
C:\Program Files (x86)\Arduino\libraries
...
Path mode:
Full pathnames
Overwrite mode:
Ask before overwrite
Password
Show Password
OK
Cancel
Help

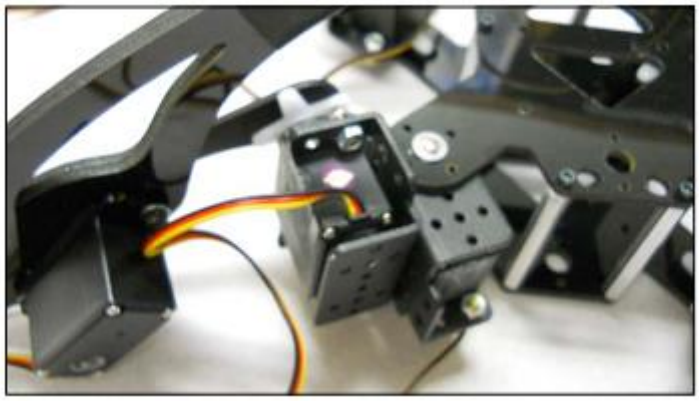

sketch_apr18a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
LCD4884
AdafruitServoDriver
EEPROM
Esplora
Ethernet
Firmata
GSM
LiquidCrystal
pwmtest
servo

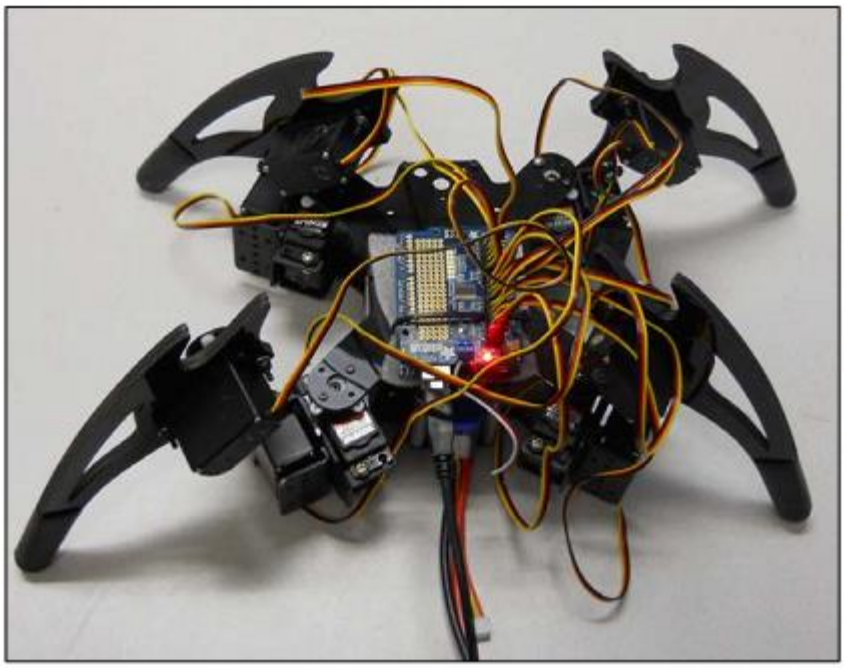

servo | Arduino 1.0.5-r2
File Edit Sketch Tools Help
servo
/***
This is an example for our Adafruit 16-channel PWM & Servo driver
Servo test - this will drive 16 servos, one after the other
Pick one up today in the adafruit shop!
------> http://www.adafruit.com/products/815
These displays use I2C to communicate, 2 pins are required to
interface. For Arduino UNOs, thats SCL -> Analog 5, SDA -> Analog 4
Adafruit invests time and resources providing this open source code,
please support Adafruit and open-source hardware by purchasing
products from Adafruit!
Written by Limor Fried/Ladyada for Adafruit Industries.
BSD license, all text above must be included in any redistribution
***/
#include <Wire.h>
#include <Adafruit_PWMServoDriver.h>
// called this way, it uses the default address 0x40
Adafruit_PWMServoDriver pwm = Adafruit_PWMServoDriver();
// you can also call it with a different address you want
//Adafruit_PWMServoDriver pwm = Adafruit_PWMServoDriver(0x41);
// Depending on your servo make, the pulse width min and max may vary, you
// want these to be as small/large as possible without hitting the hard stop
// for max range. You'll have to tweak them as necessary to match the servos you
// have!
#define SERVOMIN 150 // this is the 'minimum' pulse length count (out of 4096)
#define SERVOMAX 600 // this is the 'maximum' pulse length count (out of 4096)
// our servo # counter
uint8_t servonum = 0;
void setup() {
Serial.begin(9600);
Serial.println("16 channel Servo test!");
pwm.begin();
1
Arduino Uno on COM24











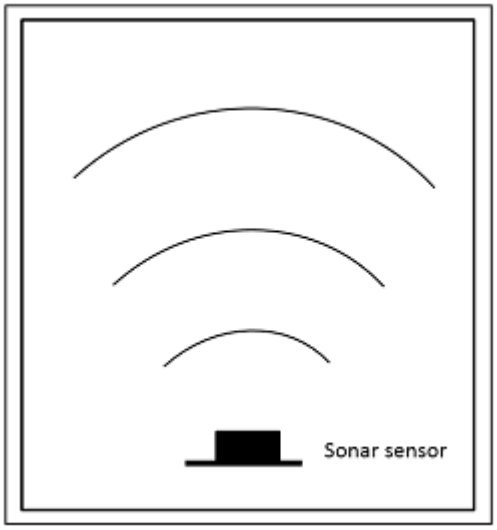
Quadruped | Arduino 1.0.5-r2

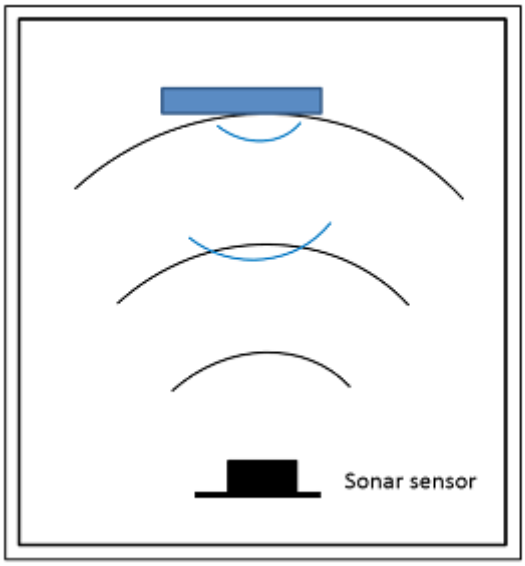
File Edit Sketch Tools Help

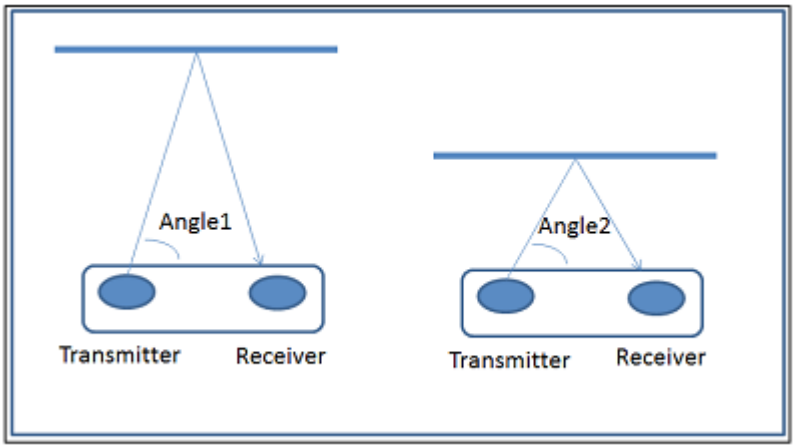
Quadruped

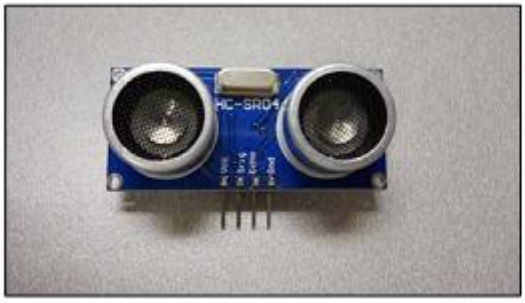
```
#include <Wire.h>
#include <Adafruit_PWMServoDriver.h>

Adafruit_PWMServoDriver pwm = Adafruit_PWMServoDriver();

#define SERVOMIN  150
#define SERVOMAX  600
#define CENTER 375

void setup() {
  Serial.begin(9600);
  Serial.println("Controlling a Single Servo");
  pwm.begin();
  pwm.setPWMFreq(60);  // Analog servos run at ~60 Hz updates
  for (int i = 0; i < 12; i++)
    pwm.setPWM(i, 0, CENTER);
  Serial.println("Enter Servo Number, then angle");
}

void loop() {
  if (Serial.available())
  {
    int servo = Serial.parseInt();
    float angle = Serial.parseFloat();
    int pwmValue;
    Serial.println("Servo ");
    Serial.println(servo);
    Serial.println("Angle ");
    Serial.println(angle);
    pwmValue = (SERVOMIN + float(angle/180)*(SERVOMAX-SERVOMIN));
    Serial.println(pwmValue);
    pwm.setPWM(servo, 0, pwmValue);
    delay(500);
  }
}
```

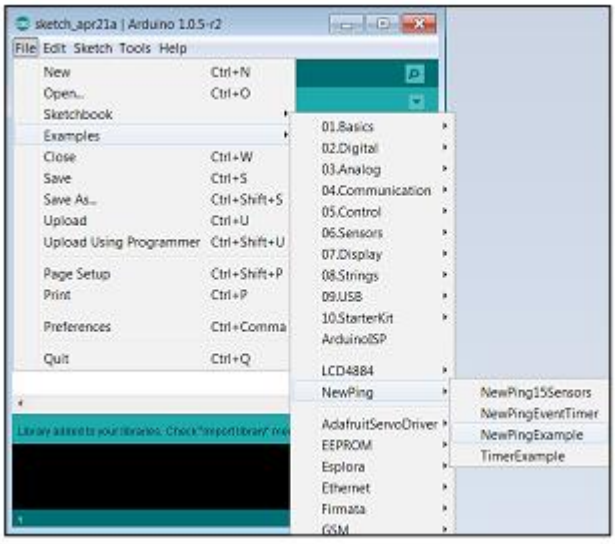
Chapter 8: Avoiding Obstacles Using Sensors

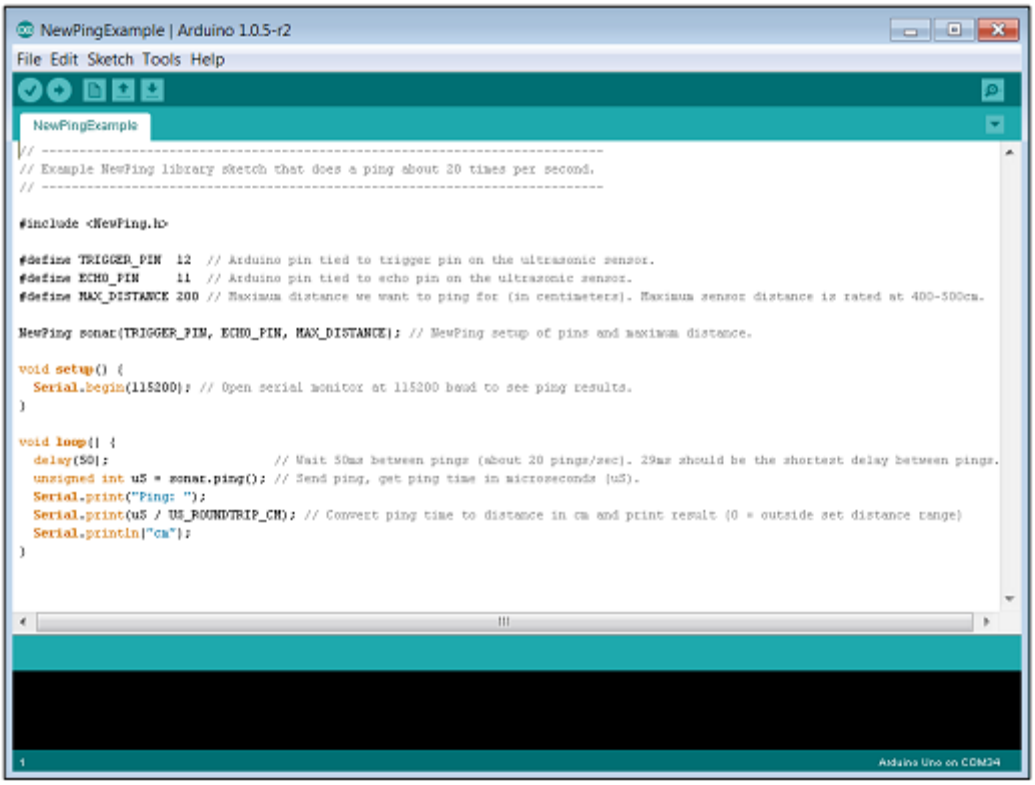

Sonar sensor

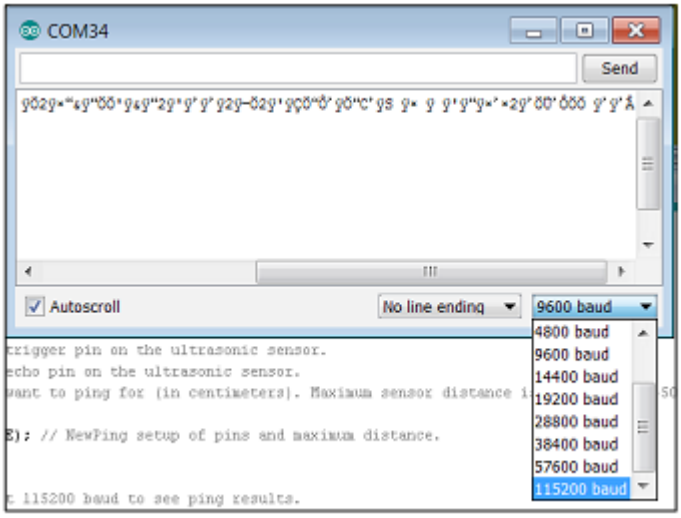

Sonar sensor


Angle1
Transmitter
Receiver
Angle2
Transmitter
Receiver

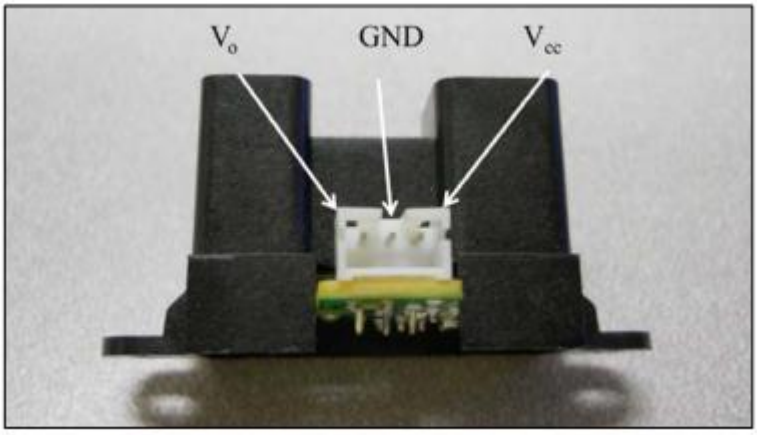

HC-SR04


sketch_apr21a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
LCD4884
NewPing
AdafruitServoDriver
EEPROM
Esplora
Ethernet
Firmata
GSM
NewPing15Sensors
NewPingEventTimer
NewPingExample
TimerExample


NewPingExample | Arduino 1.0.5-r2
File Edit Sketch Tools Help
NewPingExample
// ----------
// Example NewPing library sketch that does a ping about 20 times per second.
// ----------
#include <NewPing.h>
#define TRIGGER_PIN 12 // Arduino pin tied to trigger pin on the ultrasonic sensor.
#define ECHO_PIN 11 // Arduino pin tied to echo pin on the ultrasonic sensor.
#define MAX_DISTANCE 200 // Maximum distance we want to ping for (in centimeters). Maximum sensor distance is rated at 400-500cm.
NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE); // NewPing setup of pins and maximum distance.
void setup() {
Serial.begin(115200); // Open serial monitor at 115200 baud to see ping results.
}
void loop() {
delay(50); // Wait 50ms between pings (about 20 pings/sec). 29ms should be the shortest delay between pings.
unsigned int uS = sonar.ping(); // Send ping, get ping time in microseconds (uS).
Serial.print("Ping: ");
Serial.print(uS / US_ROUNDTRIP_CM); // Convert ping time to distance in cm and print result (0 = outside set distance range)
Serial.println("cm");
}
Arduino Uno on COM34


COM34
Send
Autoscroll
No line ending
9600 baud
4800 baud
9600 baud
14400 baud
19200 baud
28800 baud
38400 baud
57600 baud
115200 baud


COM18
Send
Ping: 24cm
Ping: 23cm
Ping: 20cm
Ping: 32cm
Ping: 20cm
Ping: 37cm
Ping: 25cm
Ping: 24cm
Ping: 24cm
Ping: 24cm
Ping: 24cm
Ping: 24cm
Ping: 24cm
Ping: 25cm
Ping: 24cm
Autoscroll
No line ending
115200 baud


V_o
GND
V_{cc}

IRSensor | Arduino 1.0.5-r2

File Edit Sketch Tools Help

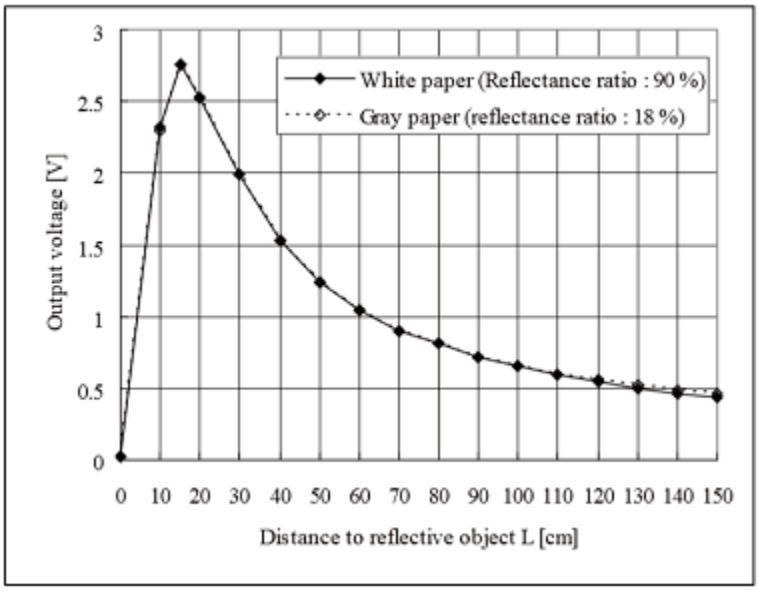
IRSensor §

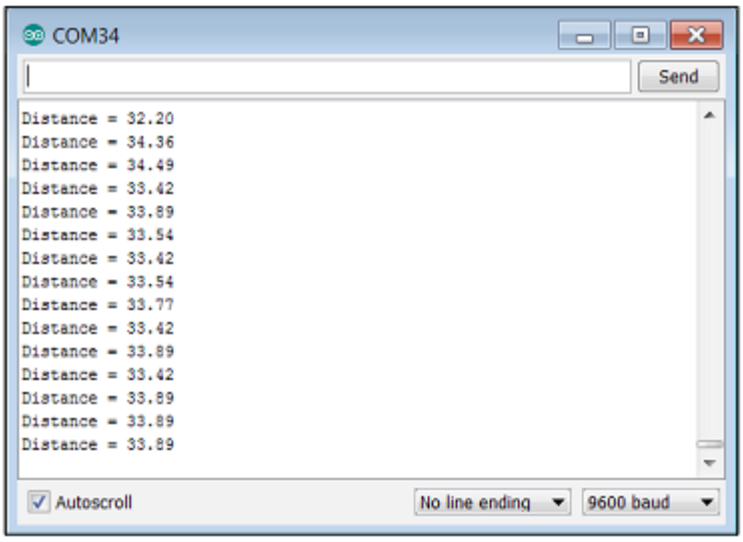
```
int inputPin = 3;
float inValue;
float distance;

void setup() {
  Serial.begin(9600);
  Serial.println("Starting Reading");
}

void loop() {
  inValue = analogRead(inputPin);
  distance = 30431 * pow(inValue, -1.169);
  Serial.print("Distance = ");
  Serial.println(distance);
  delay(100);
}
```

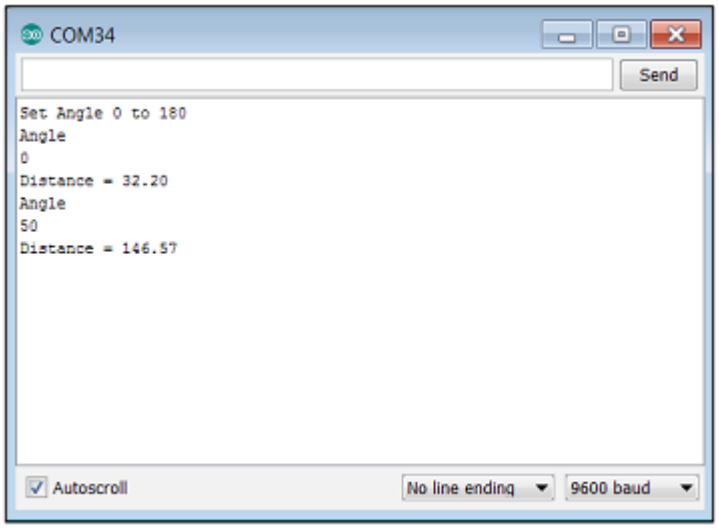
Done uploading.

```
Binary sketch size: 5,216 bytes (of a 32,256 byte maximum)
```

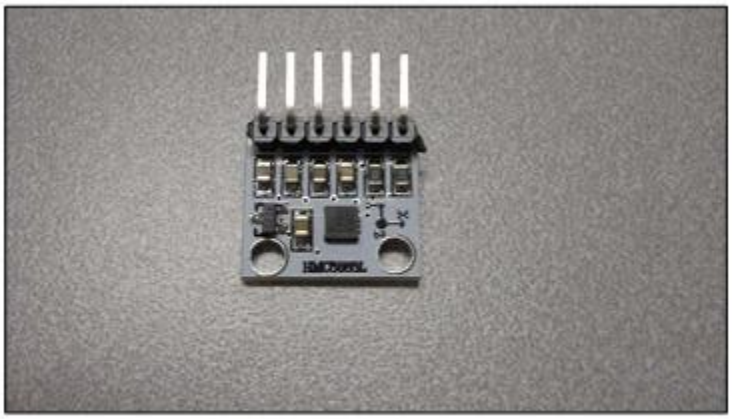
11 Arduino Uno on COM34

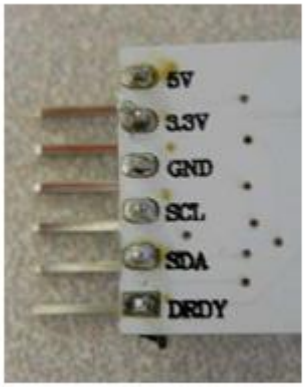


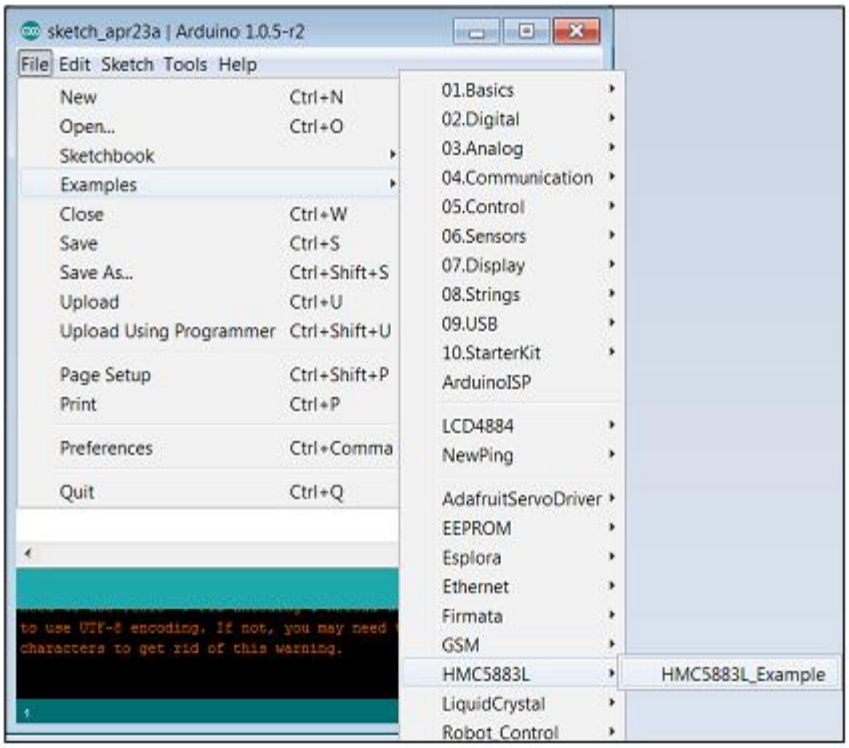

COM34
Send
Distance = 32.20
Distance = 34.36
Distance = 34.49
Distance = 33.42
Distance = 33.89
Distance = 33.54
Distance = 33.42
Distance = 33.54
Distance = 33.77
Distance = 33.42
Distance = 33.89
Distance = 33.42
Distance = 33.89
Distance = 33.89
Distance = 33.89
Autoscroll
No line ending
9600 baud

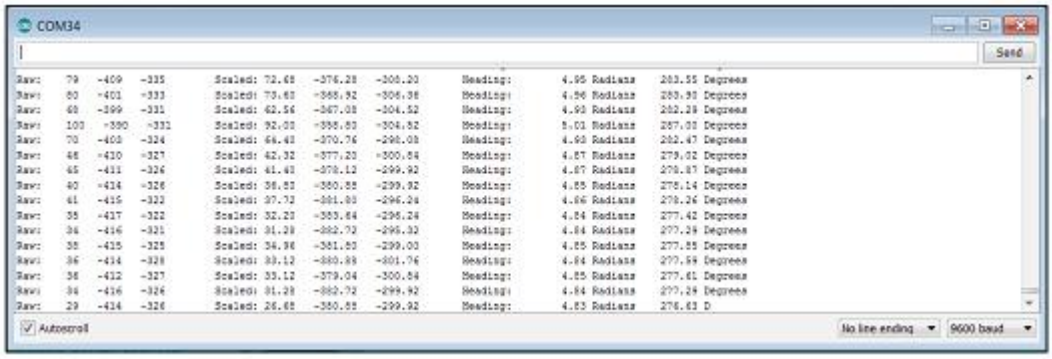


Chapter 9: Even More Useful Sensors

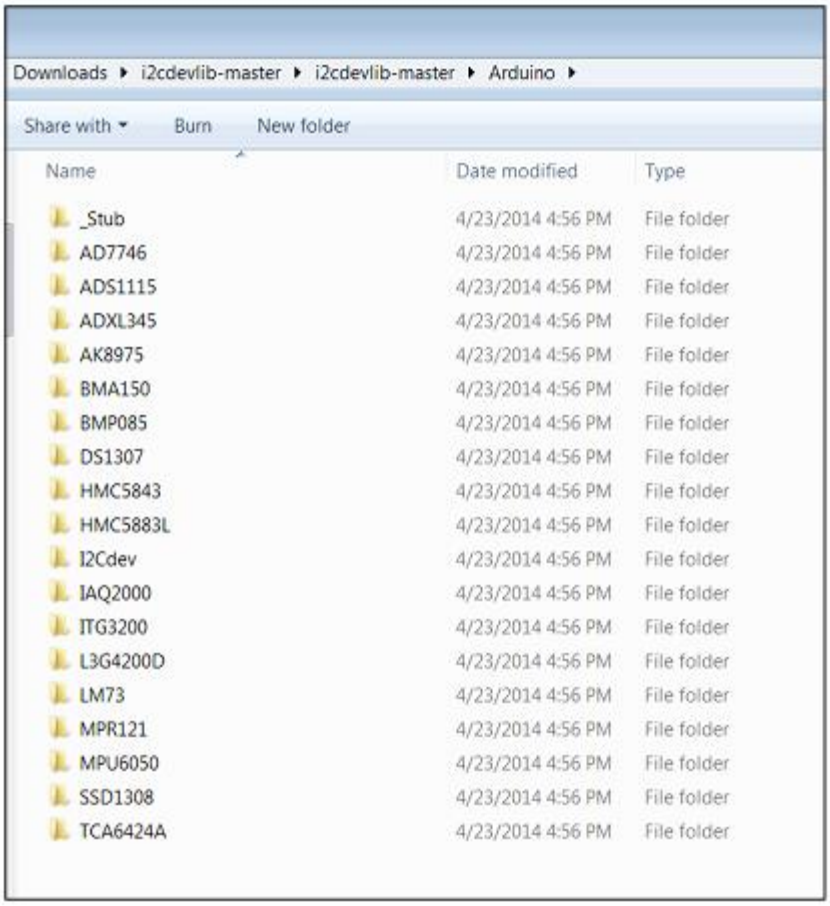


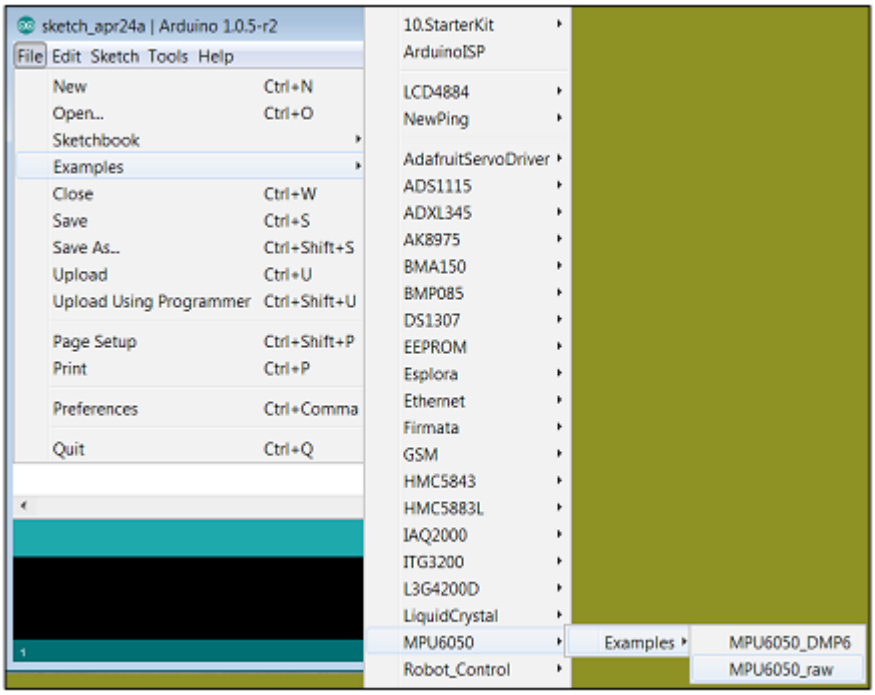

5V
3.3V
GND
SCL
SDA
DRDY

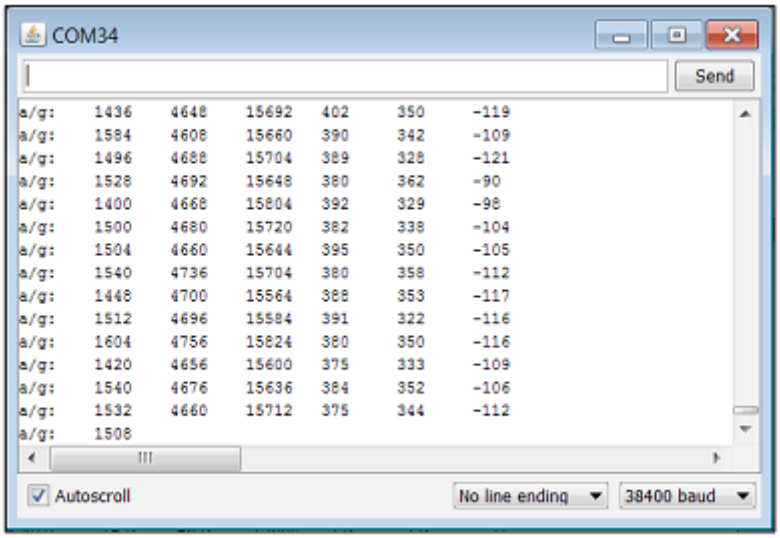

sketch_apr23a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
to use UTF-8 encoding. If not, you may need
characters to get rid of this warning.
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
LCD4884
NewPing
AdafruitServoDriver
EEPROM
Esplora
Ethernet
Firmata
GSM
HMC5883L
HMC5883L_Example
LiquidCrystal
Robot_Control

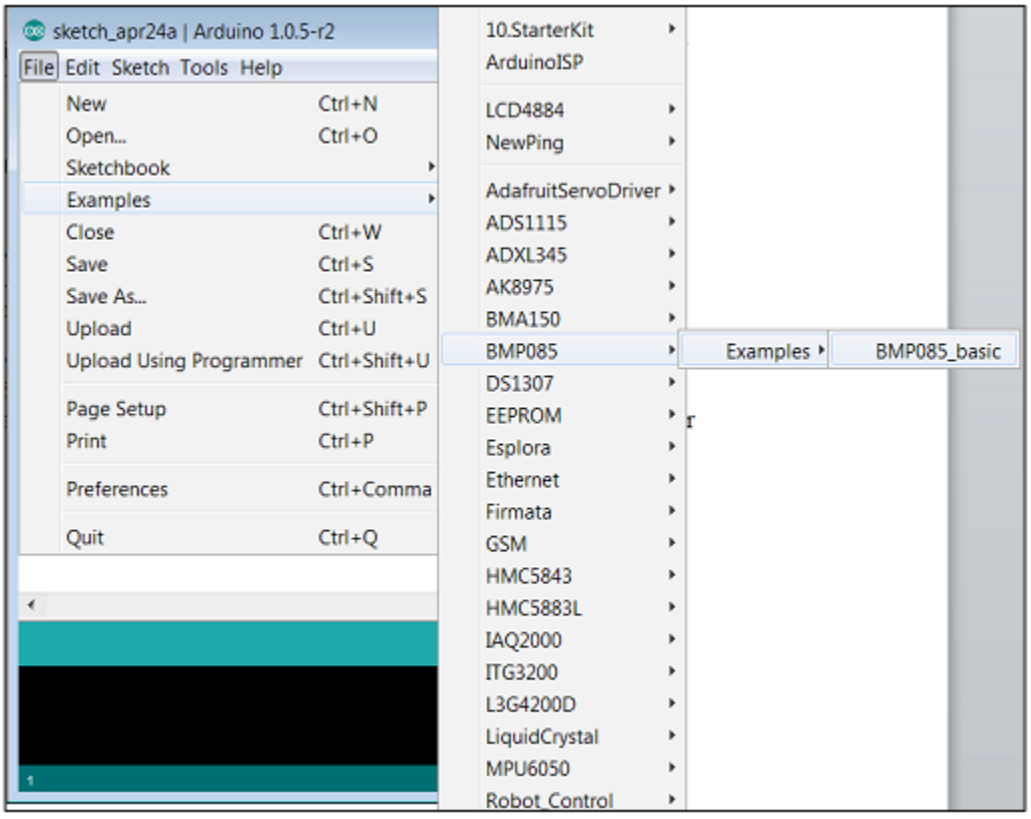

COM34
Send
Autoscroll
No line ending
9600 baud


VDD
GND
ADO
INT
FSYNC
SCL
SDA
VIO
CLK
X
Y
Z
ASCL


Downloads ▸ i2cdevlib-master ▸ i2cdevlib-master ▸ Arduino ▸
Share with
Burn
New folder
Name
Date modified
Type
_Stub 4/23/2014 4:56 PM File folder
AD7746 4/23/2014 4:56 PM File folder
ADS1115 4/23/2014 4:56 PM File folder
ADXL345 4/23/2014 4:56 PM File folder
AK8975 4/23/2014 4:56 PM File folder
BMA150 4/23/2014 4:56 PM File folder
BMP085 4/23/2014 4:56 PM File folder
DS1307 4/23/2014 4:56 PM File folder
HMC5843 4/23/2014 4:56 PM File folder
HMC5883L 4/23/2014 4:56 PM File folder
I2Cdev 4/23/2014 4:56 PM File folder
IAQ2000 4/23/2014 4:56 PM File folder
ITG3200 4/23/2014 4:56 PM File folder
L3G4200D 4/23/2014 4:56 PM File folder
LM73 4/23/2014 4:56 PM File folder
MPR121 4/23/2014 4:56 PM File folder
MPU6050 4/23/2014 4:56 PM File folder
SSD1308 4/23/2014 4:56 PM File folder
TCA6424A 4/23/2014 4:56 PM File folder


sketch_apr24a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
10.StarterKit
ArduinoISP
LCD4884
NewPing
AdafruitServoDriver
ADS1115
ADXL345
AK8975
BMA150
BMP085
DS1307
EEPROM
Esplora
Ethernet
Firmata
GSM
HMC5843
HMC5883L
IAQ2000
ITG3200
L3G4200D
LiquidCrystal
MPU6050
Robot_Control
Examples
MPU6050_DMP6
MPU6050_raw


COM34
Send
a/g: 1436 4648 15692 402 350 -119
a/g: 1584 4608 15660 390 342 -109
a/g: 1496 4688 15704 389 328 -121
a/g: 1528 4692 15648 380 362 -90
a/g: 1400 4668 15804 392 329 -98
a/g: 1500 4680 15720 382 338 -104
a/g: 1504 4660 15644 395 350 -105
a/g: 1540 4736 15704 380 358 -112
a/g: 1448 4700 15564 388 353 -117
a/g: 1512 4696 15584 391 322 -116
a/g: 1604 4756 15824 380 350 -116
a/g: 1420 4656 15600 375 333 -109
a/g: 1540 4676 15636 384 352 -106
a/g: 1532 4660 15712 375 344 -112
a/g: 1508
Autoscroll
No line ending
38400 baud


sketch_apr24a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
10.StarterKit
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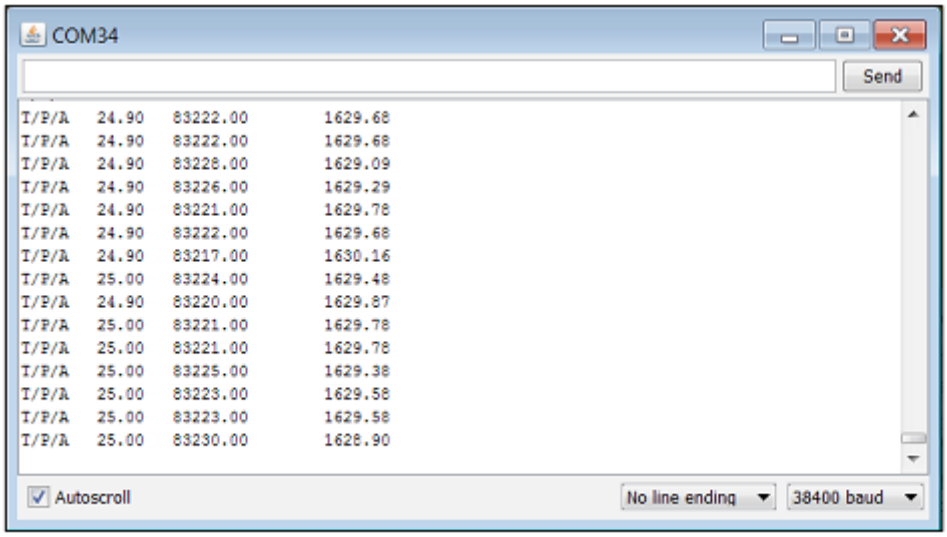
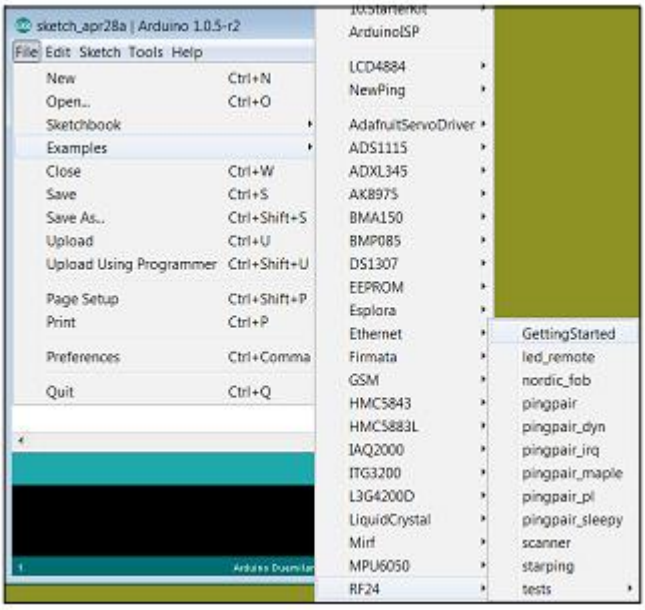
Firmata
GSM
HMC5843
HMC5883L
IAQ2000
ITG3200
L3G4200D
LiquidCrystal
MPU6050
Robot_Control
Examples
BMP085_basic



Chapter 10: Going Truly Mobile – the Remote Control of Your Mobile


VCC
GND
CSN
CE
MOSI
SCK
IRQ
MISO


sketch_apr28a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
ArduinoISP
LCD4884
NewPing
AdafruitServoDriver
ADS1115
ADXL345
AK8975
BMA150
BMP085
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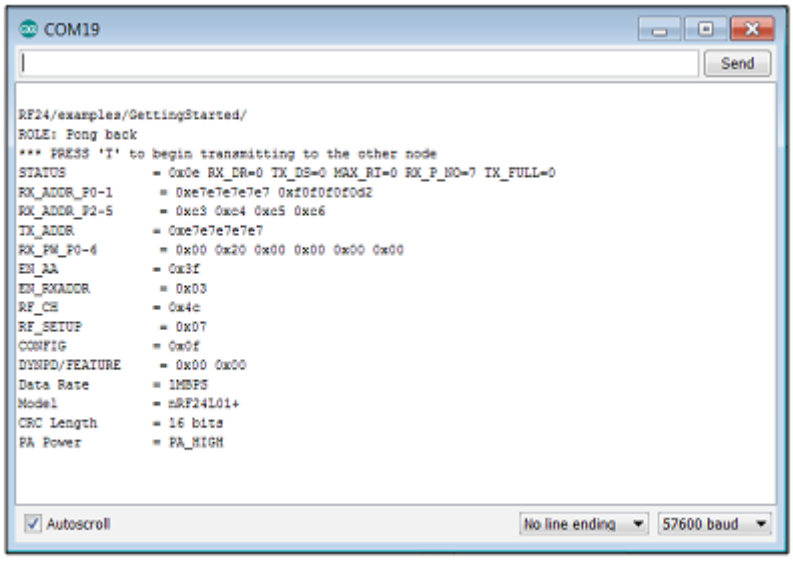
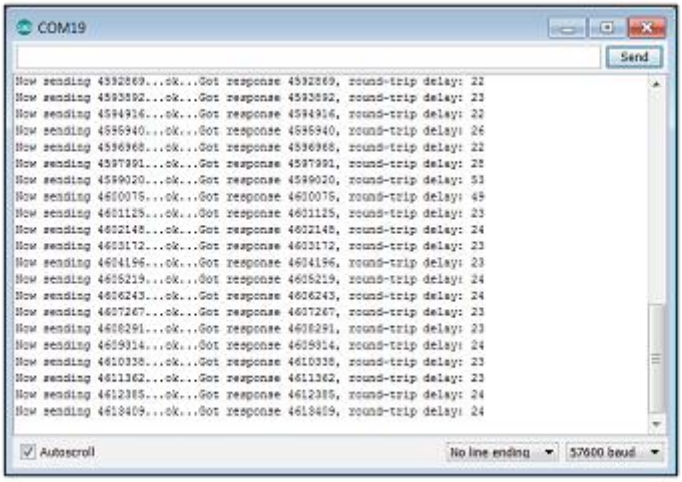
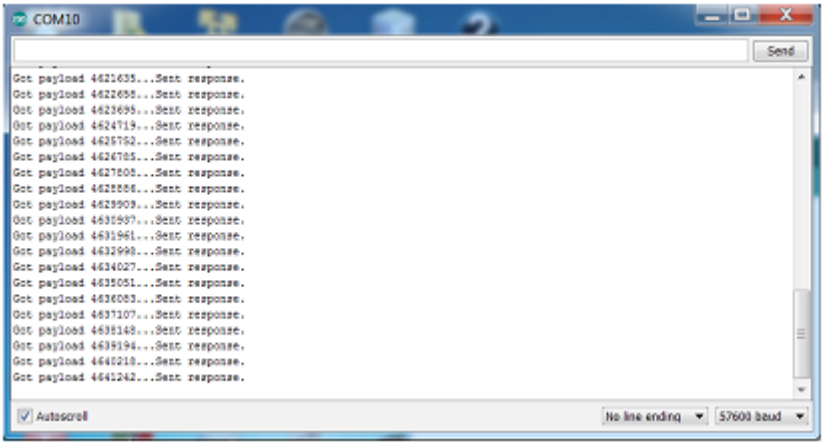
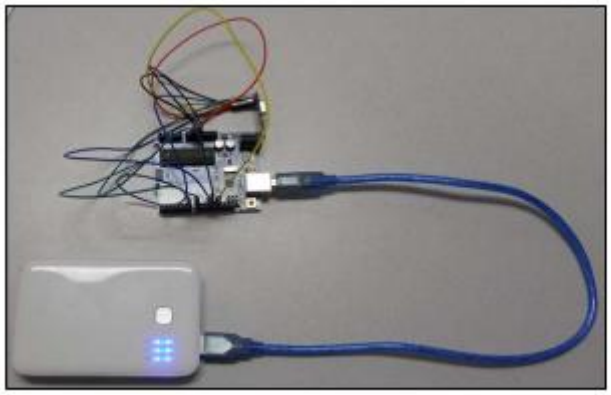
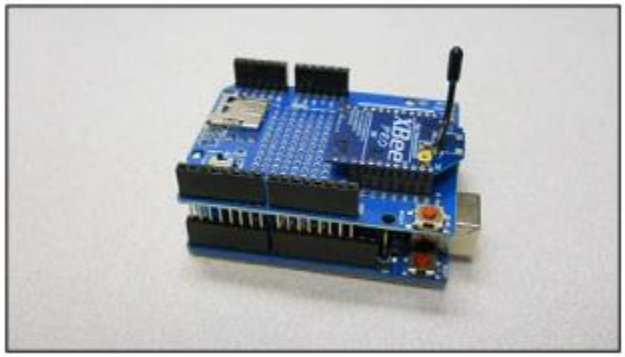
EEPROM
Esplora
Ethernet
Firmata
GSM
HMC5843
HMC5883L
IAQ2000
ITG3200
L3G4200D
LiquidCrystal
Mirf
MPU6050
RF24
GettingStarted
led_remote
nordic_fob
pingpair
pingpair_dyn
pingpair_irq
pingpair_maple
pingpair_pl
pingpair_sleepy
scanner
starping
tests

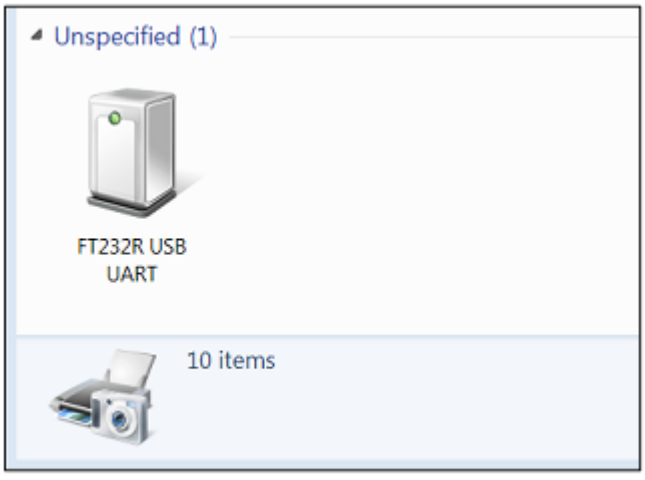

COM19
Send
RF24/examples/GettingStarted/
ROLE: Pong back
*** PRESS 'T' to begin transmitting to the other node
STATUS = 0x0e RX_DR=0 TX_DS=0 MAX_RT=0 RX_P_NO=7 TX_FULL=0
RX_ADDR_P0-1 = 0xe7e7e7e7e7 0xf0f0f0f0d2
RX_ADDR_P2-5 = 0xc3 0xc4 0xc5 0xc6
TX_ADDR = 0xe7e7e7e7e7
RX_PW_P0-6 = 0x00 0x20 0x00 0x00 0x00 0x00
EN_AA = 0x3f
EN_RXADDR = 0x03
RF_CH = 0x4c
RF_SETUP = 0x07
CONFIG = 0x0f
DYNPD/FEATURE = 0x00 0x00
Data Rate = 1MBPS
Model = nRF24L01+
CRC Length = 16 bits
PA Power = PA_HIGH
Autoscroll
No line ending
57600 baud

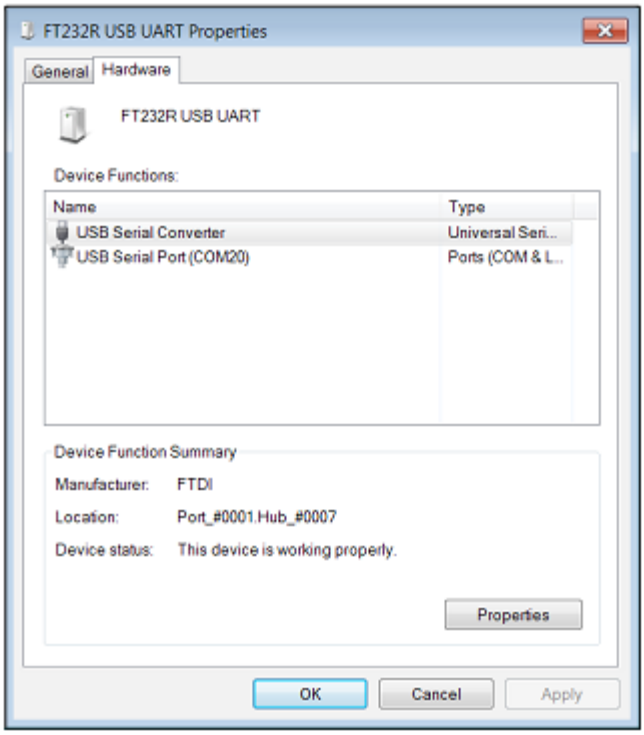

COM19
Send
Now sending 4592869...ok...Got response 4592869, round-trip delay: 22
Now sending 4593892...ok...Got response 4593892, round-trip delay: 23
Now sending 4594916...ok...Got response 4594916, round-trip delay: 22
Now sending 4595940...ok...Got response 4595940, round-trip delay: 26
Now sending 4596968...ok...Got response 4596968, round-trip delay: 22
Now sending 4597991...ok...Got response 4597991, round-trip delay: 25
Now sending 4599020...ok...Got response 4599020, round-trip delay: 53
Now sending 4600075...ok...Got response 4600075, round-trip delay: 49
Now sending 4601125...ok...Got response 4601125, round-trip delay: 23
Now sending 4602148...ok...Got response 4602148, round-trip delay: 24
Now sending 4603172...ok...Got response 4603172, round-trip delay: 23
Now sending 4604196...ok...Got response 4604196, round-trip delay: 23
Now sending 4605219...ok...Got response 4605219, round-trip delay: 24
Now sending 4606243...ok...Got response 4606243, round-trip delay: 24
Now sending 4607267...ok...Got response 4607267, round-trip delay: 23
Now sending 4608291...ok...Got response 4608291, round-trip delay: 23
Now sending 4609314...ok...Got response 4609314, round-trip delay: 24
Now sending 4610338...ok...Got response 4610338, round-trip delay: 23
Now sending 4611362...ok...Got response 4611362, round-trip delay: 23
Now sending 4612385...ok...Got response 4612385, round-trip delay: 24
Now sending 4613409...ok...Got response 4613409, round-trip delay: 24
Autoscroll
No line ending
57600 baud

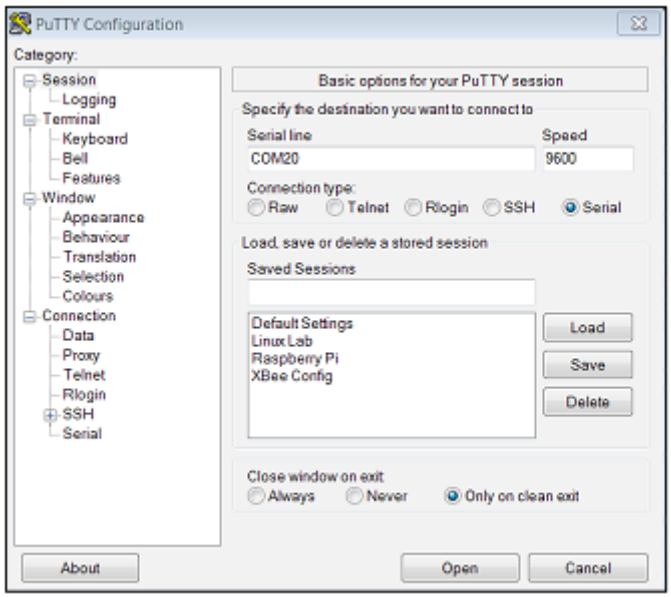

COM10
Send
Got payload 4621635...Sent response.
Got payload 4622658...Sent response.
Got payload 4623695...Sent response.
Got payload 4624719...Sent response.
Got payload 4625752...Sent response.
Got payload 4626785...Sent response.
Got payload 4627808...Sent response.
Got payload 4628886...Sent response.
Got payload 4629909...Sent response.
Got payload 4630997...Sent response.
Got payload 4631961...Sent response.
Got payload 4632998...Sent response.
Got payload 4634027...Sent response.
Got payload 4635051...Sent response.
Got payload 4636083...Sent response.
Got payload 4637107...Sent response.
Got payload 4638148...Sent response.
Got payload 4639194...Sent response.
Got payload 4640218...Sent response.
Got payload 4641242...Sent response.
Autoscroll
No line ending
57600 baud

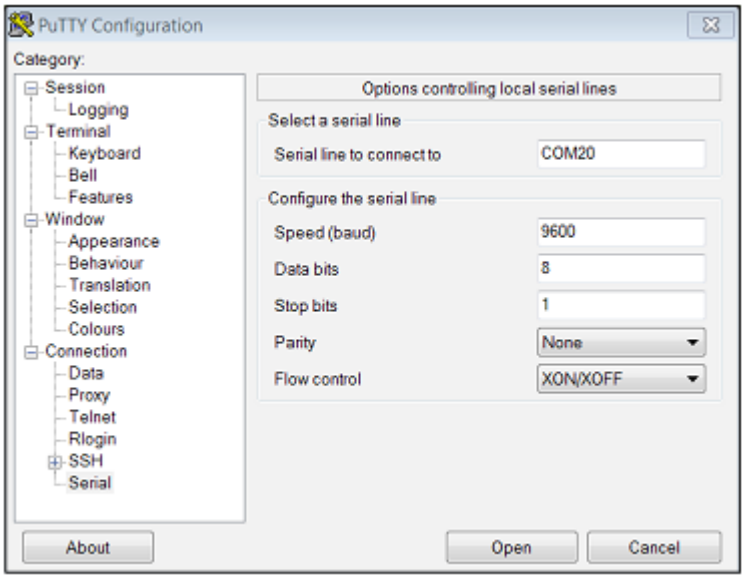





Unspecified (1)
FT232R USB
UART
10 items


FT232R USB UART Properties
General
Hardware
FT232R USB UART
Device Functions:
Name
Type
USB Serial Converter
Universal Seri...
USB Serial Port (COM20)
Ports (COM & L...
Device Function Summary
Manufacturer:
FTDI
Location:
Port_#0001.Hub_#0007
Device status:
This device is working properly.
Properties
OK
Cancel
Apply


PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Basic options for your PuTTY session
Specify the destination you want to connect to
Serial line
Speed
COM20
9600
Connection type:
Raw
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Default Settings
Linux Lab
Raspberry Pi
XBee Config
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Open
Cancel

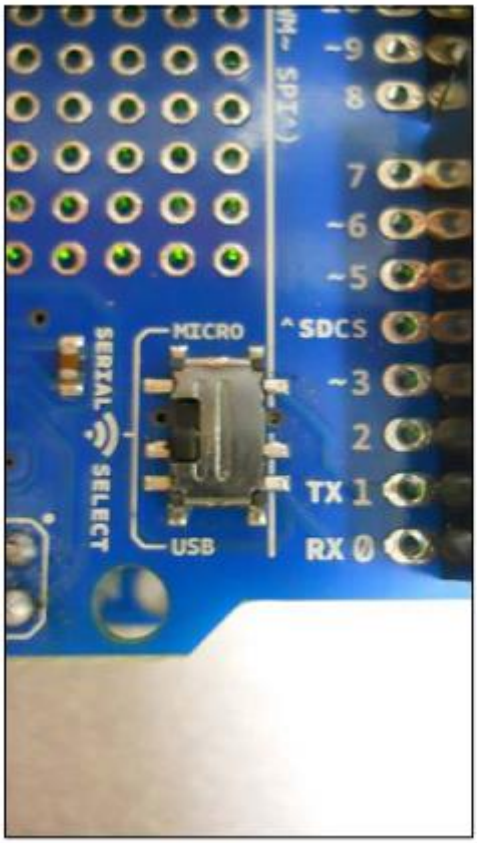

PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Options controlling local serial lines
Select a serial line
Serial line to connect to
COM20
Configure the serial line
Speed (baud)
9600
Data bits
8
Stop bits
1
Parity
None
Flow control
XON/XOFF
About
Open
Cancel

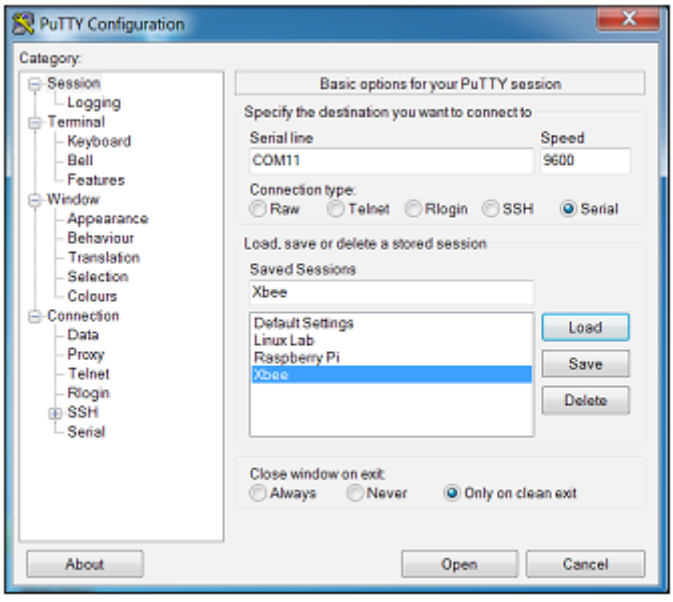

PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Options controlling the terminal emulation
Set various terminal options
Auto wrap mode initially on
DEC Origin Mode initially on
Implicit CR in every LF
Implicit LF in every CR
Use background colour to erase screen
Enable blinking text
Answerback to ^E:
PuTTY
Line discipline options
Local echo:
Auto
Force on
Force off
Local line editing:
Auto
Force on
Force off
Remote-controlled printing
Printer to send ANSI printer output to:
About
Open
Cancel

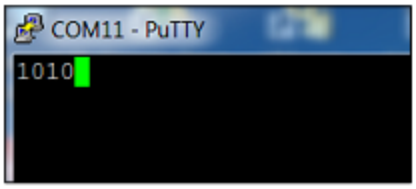

COM20 - PuTTY
+++OK
ATID3001
OK
ATMY1
OK
ATDH0
OK
ATDL2
OK
ATID
3001
ATMY
1
ATDH
0
ATDL
2
ATWR
OK

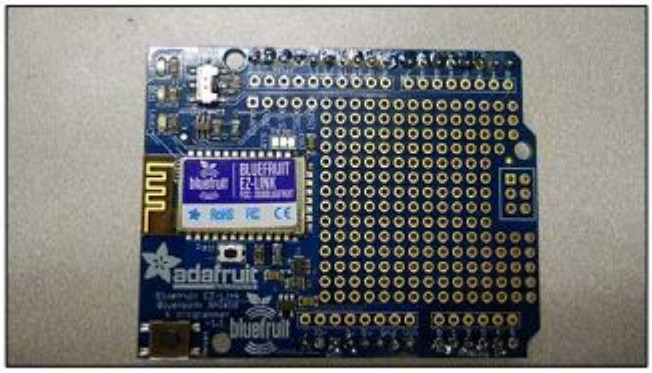

COM21 - PuTTY
+++OK
ATID3001
OK
ATMY2
OK
ATDH0
OK
ATDL1
OK
ATID
3001
ATMY
2
ATDH
0
ATDL
1
ATWR
OK


XBeeReceive | Arduino 1.0.5-r2
File Edit Sketch Tools Help
XBeeReceive
int data;
int led = 13;
void setup() {
Serial.begin(9600);
pinMode(led, OUTPUT);
}
void loop() {
if (Serial.available() > 0)
{
data = Serial.read();
if(data == '1')
digitalWrite(led, HIGH);
if(data == '0')
digitalWrite(led, LOW);
}
}
Done Saving.
Binary sketch size: 2,206 bytes (of a 32,256 byte maximum)
16
Arduino Uno on COM34

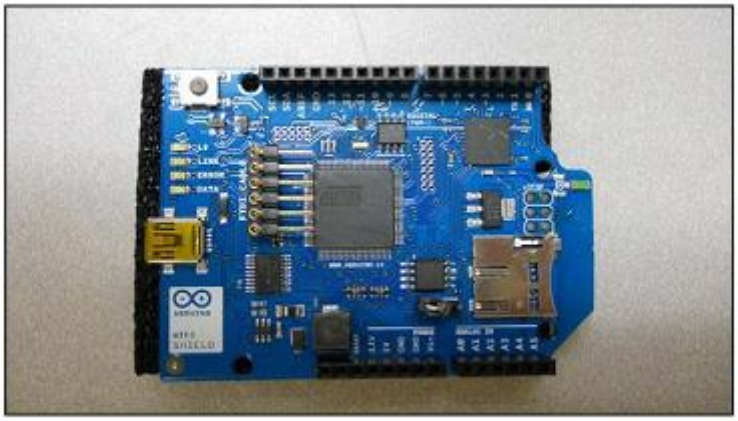

~9
8
7
~6
~5
^SDCS
~3
2
TX 1
RX 0
MICRO
USB
SERIAL SELECT

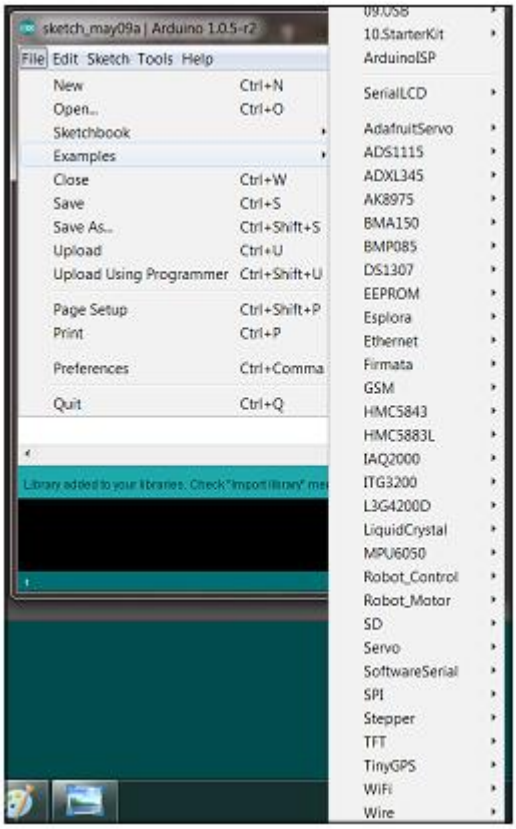

PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Basic options for your PuTTY session
Specify the destination you want to connect to
Serial line
Speed
COM11
9600
Connection type:
Raw
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Xbee
Default Settings
Linux Lab
Raspberry Pi
Xbee
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Open
Cancel


COM11 - PuTTY
1010

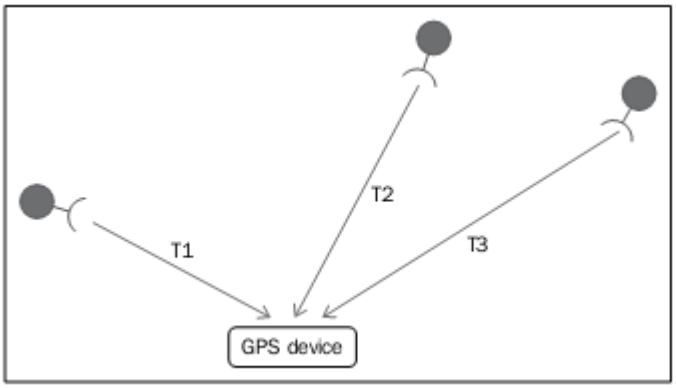

BLUEFRUIT
EZ-LINK
adafruit
bluefruit

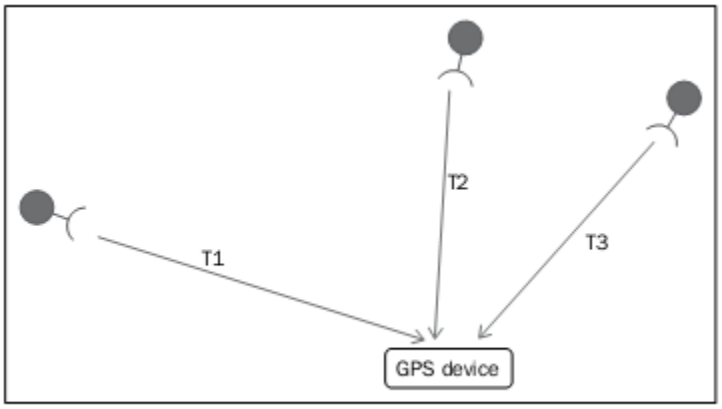

CSR 4.0

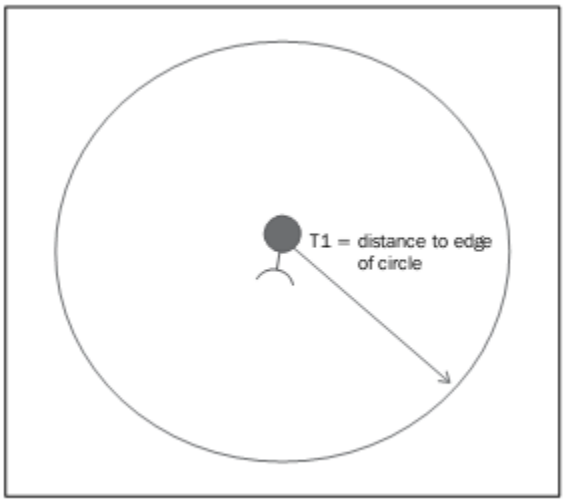


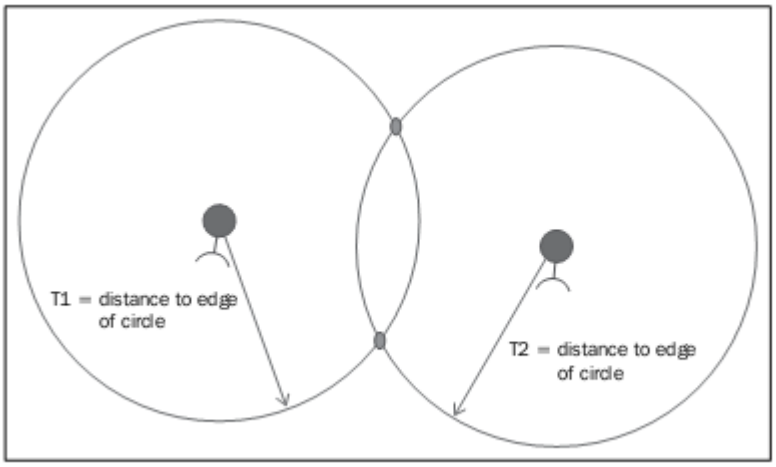


Chapter 11: Using a GPS Device with Arduino

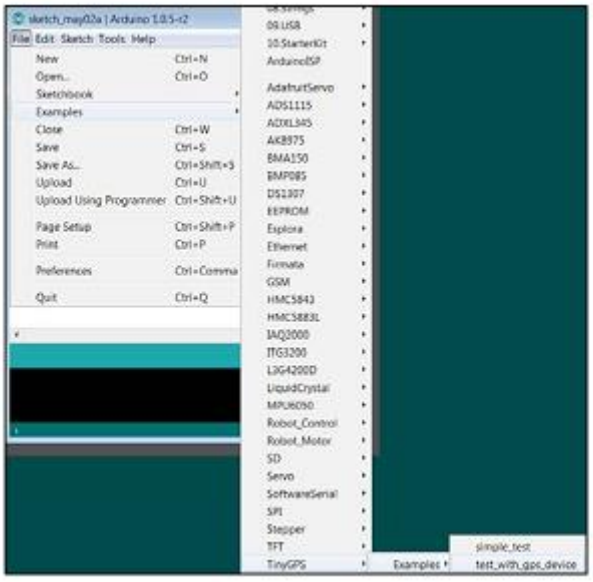

T1
T2
T3
GPS device


T1
T2
T3
GPS device


T1 = distance to edge
of circle


T1 = distance to edge of circle
T2 = distance to edge of circle


SimplyTronics
www.simplytronics.com
VPN1513 GPS Receiver
RST
TX
RX
VCC
GND
ST-00058
Rev A


sketch_may02a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
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Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
09.USB
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Ethernet
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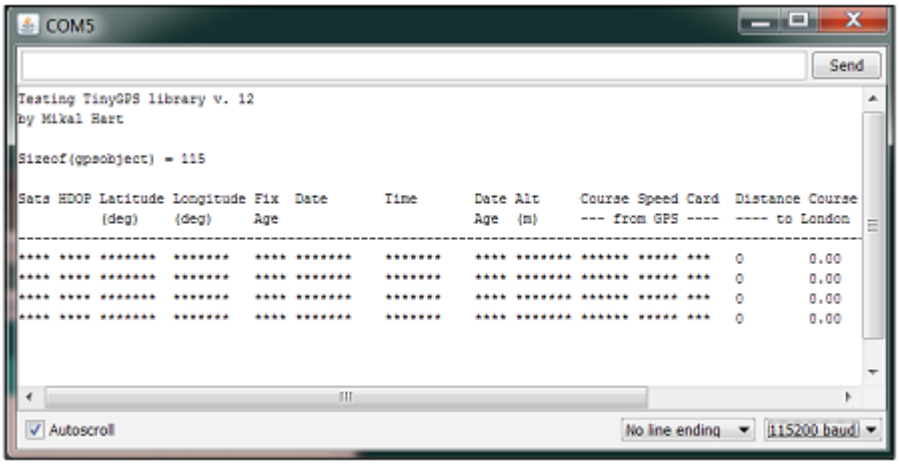
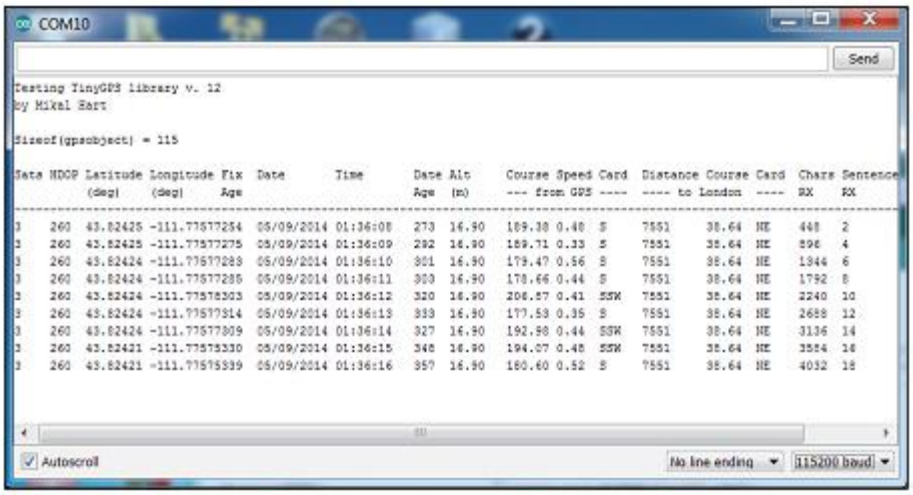
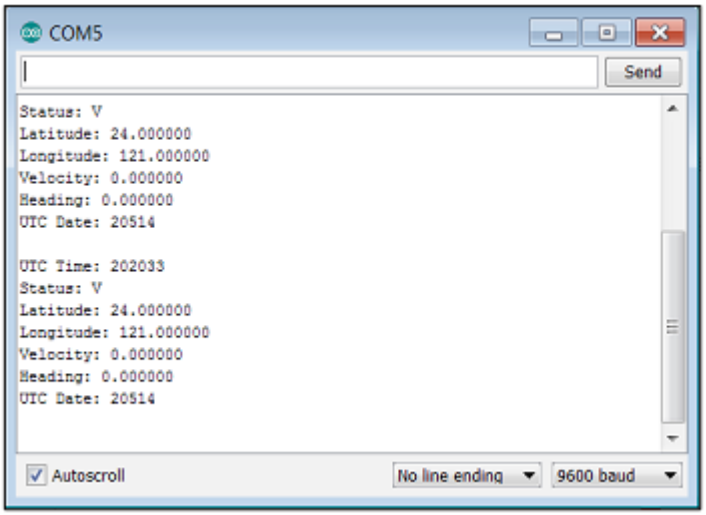
HMC5843
HMC5883L
IAQ2000
ITG3200
L3G4200D
LiquidCrystal
MPU6050
Robot_Control
Robot_Motor
SD
Servo
SoftwareSerial
SPI
Stepper
TFT
TinyGPS
Examples
simple_test
test_with_gps_device

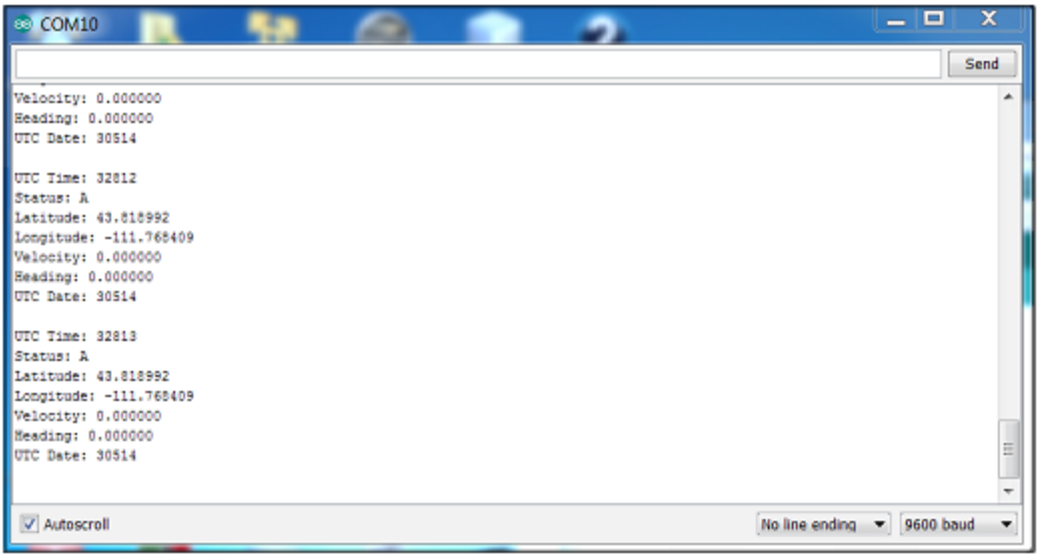

COM5
Send
Testing TinyGPS library v. 12
by Mikal Hart
Sizeof(gpsobject) = 115
Sats HDOP Latitude Longitude Fix Date Time Date Alt Course Speed Card Distance Course
(deg) (deg) Age Age (m) --- from GPS ---- ---- to London
**** **** ******* ******* **** ******* ******* **** ******* ****** ***** *** 0 0.00
**** **** ******* ******* **** ******* ******* **** ******* ****** ***** *** 0 0.00
**** **** ******* ******* **** ******* ******* **** ******* ****** ***** *** 0 0.00
**** **** ******* ******* **** ******* ******* **** ******* ****** ***** *** 0 0.00
Autoscroll
No line ending
115200 baud


COM10
Send
Testing TinyGPS library v. 12
by Mikal Hart
Sizeof(gpsobject) = 115
Sats HDOP Latitude Longitude Fix Date Time Date Alt Course Speed Card Distance Course Card Chars Sentences
(deg) (deg) Age Age (m) --- from GPS ---- ---- to London ---- RX RX
3 260 43.82425 -111.77577254 05/09/2014 01:36:08 273 16.90 189.38 0.48 S 7551 38.64 NE 448 2
3 260 43.82425 -111.77577275 05/09/2014 01:36:09 292 16.90 189.71 0.33 S 7551 38.64 NE 896 4
3 260 43.82424 -111.77577283 05/09/2014 01:36:10 301 16.90 179.47 0.56 S 7551 38.64 NE 1344 6
3 260 43.82424 -111.77577285 05/09/2014 01:36:11 303 16.90 178.66 0.44 S 7551 38.64 NE 1792 8
3 260 43.82424 -111.77576303 05/09/2014 01:36:12 320 16.90 206.57 0.41 SSW 7551 38.64 NE 2240 10
3 260 43.82424 -111.77577314 05/09/2014 01:36:13 333 16.90 177.53 0.35 S 7551 38.64 NE 2688 12
3 260 43.82424 -111.77577309 05/09/2014 01:36:14 327 16.90 192.98 0.44 SSW 7551 38.64 NE 3136 14
3 260 43.82421 -111.77575330 05/09/2014 01:36:15 348 16.90 194.07 0.48 SSW 7551 38.64 NE 3584 16
3 260 43.82421 -111.77575339 05/09/2014 01:36:16 357 16.90 180.60 0.52 S 7551 38.64 NE 4032 18
Autoscroll
No line ending
115200 baud

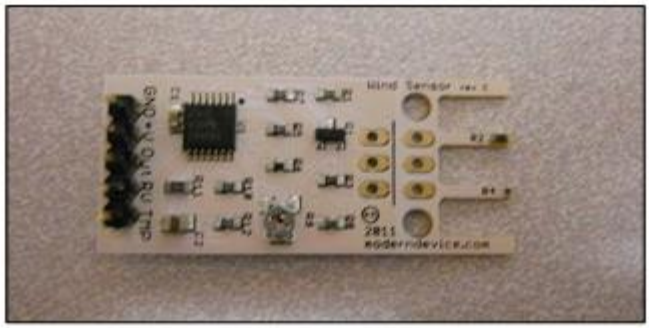

GPS Shield

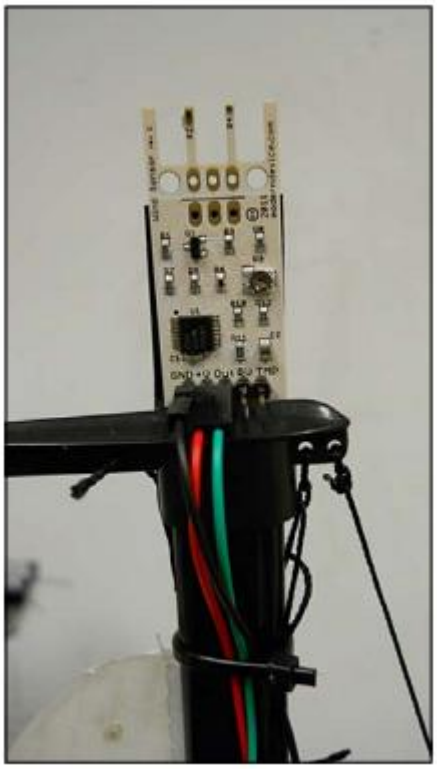

GPSExample | Arduino 1.0.5-r2
File Edit Sketch Tools Help
GPSExample
#include "SoftwareSerial.h"
#include "dGPS.h"
int ledPin = 13;
dGPS dgps = dGPS();
void setup() {
pinMode(ledPin, OUTPUT);
Serial.begin(9600);
dgps.init();
delay(1000);
}
void loop() {
float desLat;
float desLon;
dgps.update(desLat, desLon);
Serial.print("UTC Time: ");
Serial.println(dgps.Time());
Serial.print("Status: ");
Serial.println(dgps.Status());
Serial.print("Latitude: ");
Serial.println(dgps.Lat(), 6);
Serial.print("Longitude: ");
Serial.println(dgps.Lon(), 6);
Serial.print("Velocity: ");
Serial.println(dgps.Vel(), 6);
Serial.print("Heading: ");
Serial.println(dgps.Head(), 6);
Serial.print("UTC Date: ");
Serial.println(dgps.Date());
Serial.println("");
}
Done uploading.
Binary sketch size: 11,010 bytes (of a 32,256 byte maximum)

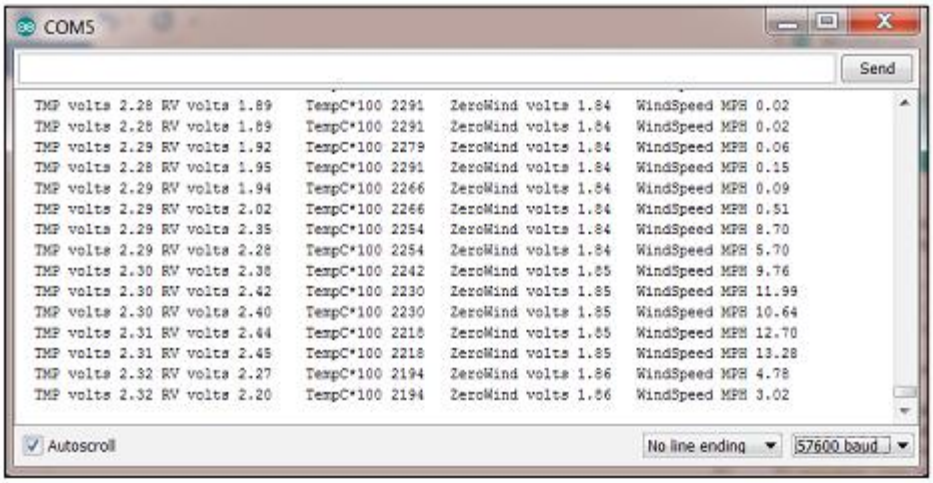

COM5
Send
Status: V
Latitude: 24.000000
Longitude: 121.000000
Velocity: 0.000000
Heading: 0.000000
UTC Date: 20514
UTC Time: 202033
Status: V
Latitude: 24.000000
Longitude: 121.000000
Velocity: 0.000000
Heading: 0.000000
UTC Date: 20514
Autoscroll
No line ending
9600 baud

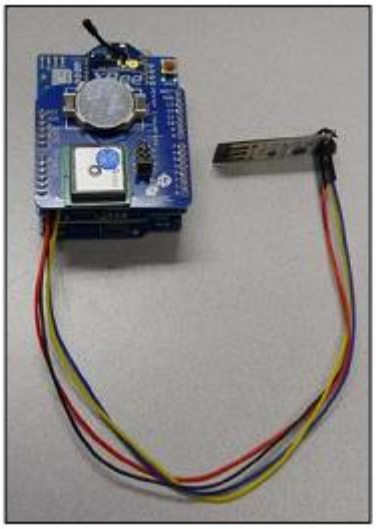


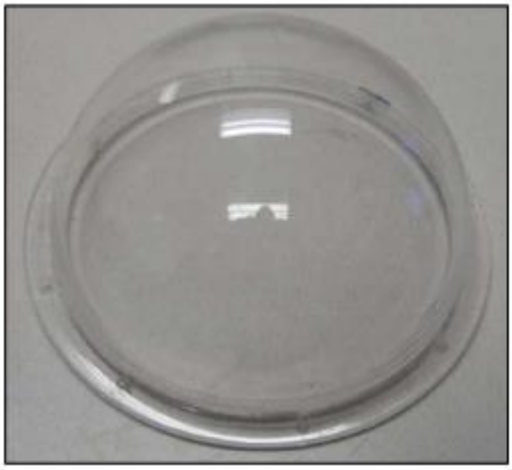
Chapter 12: Taking Your Robot to Sea

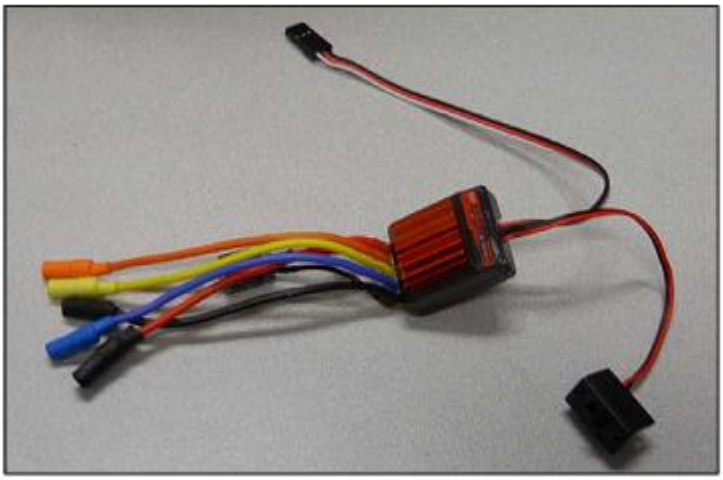


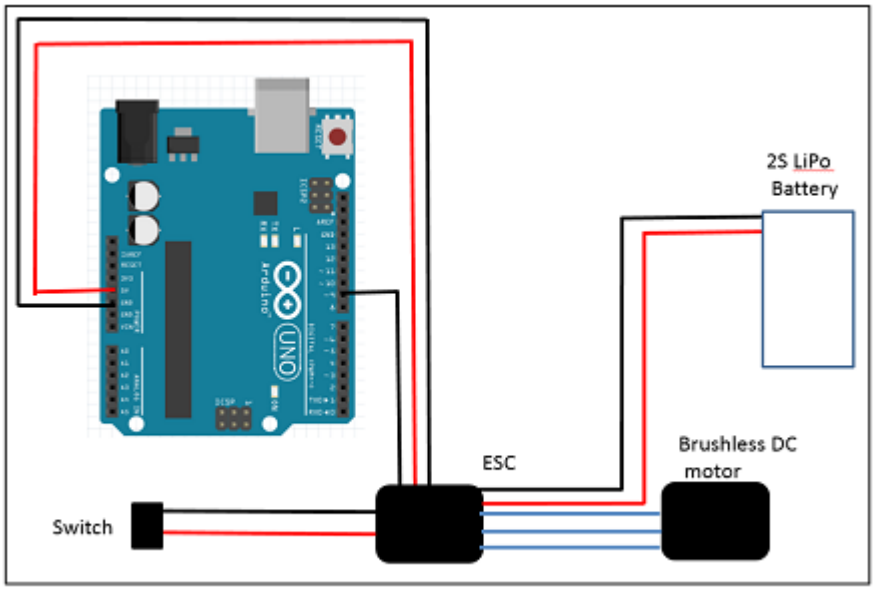



COM5
Send
TMP volts 2.28 RV volts 1.89 TempC*100 2291 ZeroWind volts 1.84 WindSpeed MPH 0.02
TMP volts 2.28 RV volts 1.89 TempC*100 2291 ZeroWind volts 1.84 WindSpeed MPH 0.02
TMP volts 2.29 RV volts 1.92 TempC*100 2279 ZeroWind volts 1.84 WindSpeed MPH 0.06
TMP volts 2.28 RV volts 1.95 TempC*100 2291 ZeroWind volts 1.84 WindSpeed MPH 0.15
TMP volts 2.29 RV volts 1.94 TempC*100 2266 ZeroWind volts 1.84 WindSpeed MPH 0.09
TMP volts 2.29 RV volts 2.02 TempC*100 2266 ZeroWind volts 1.84 WindSpeed MPH 0.51
TMP volts 2.29 RV volts 2.35 TempC*100 2254 ZeroWind volts 1.84 WindSpeed MPH 8.70
TMP volts 2.29 RV volts 2.28 TempC*100 2254 ZeroWind volts 1.84 WindSpeed MPH 5.70
TMP volts 2.30 RV volts 2.38 TempC*100 2242 ZeroWind volts 1.85 WindSpeed MPH 9.76
TMP volts 2.30 RV volts 2.42 TempC*100 2230 ZeroWind volts 1.85 WindSpeed MPH 11.99
TMP volts 2.30 RV volts 2.40 TempC*100 2230 ZeroWind volts 1.85 WindSpeed MPH 10.64
TMP volts 2.31 RV volts 2.44 TempC*100 2218 ZeroWind volts 1.85 WindSpeed MPH 12.70
TMP volts 2.31 RV volts 2.45 TempC*100 2218 ZeroWind volts 1.85 WindSpeed MPH 13.28
TMP volts 2.32 RV volts 2.27 TempC*100 2194 ZeroWind volts 1.86 WindSpeed MPH 4.78
TMP volts 2.32 RV volts 2.20 TempC*100 2194 ZeroWind volts 1.86 WindSpeed MPH 3.02
Autoscroll
No line ending
57600 baud

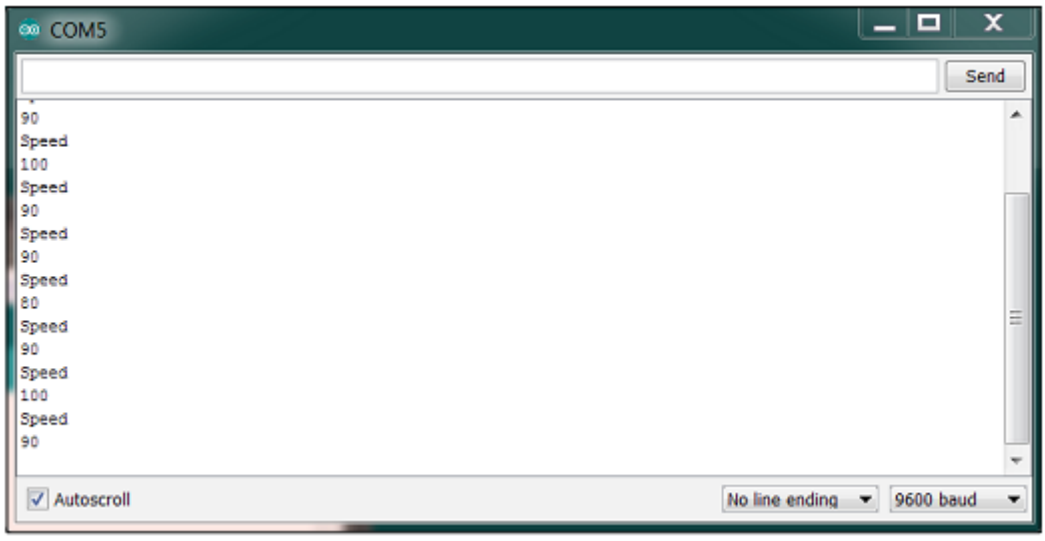


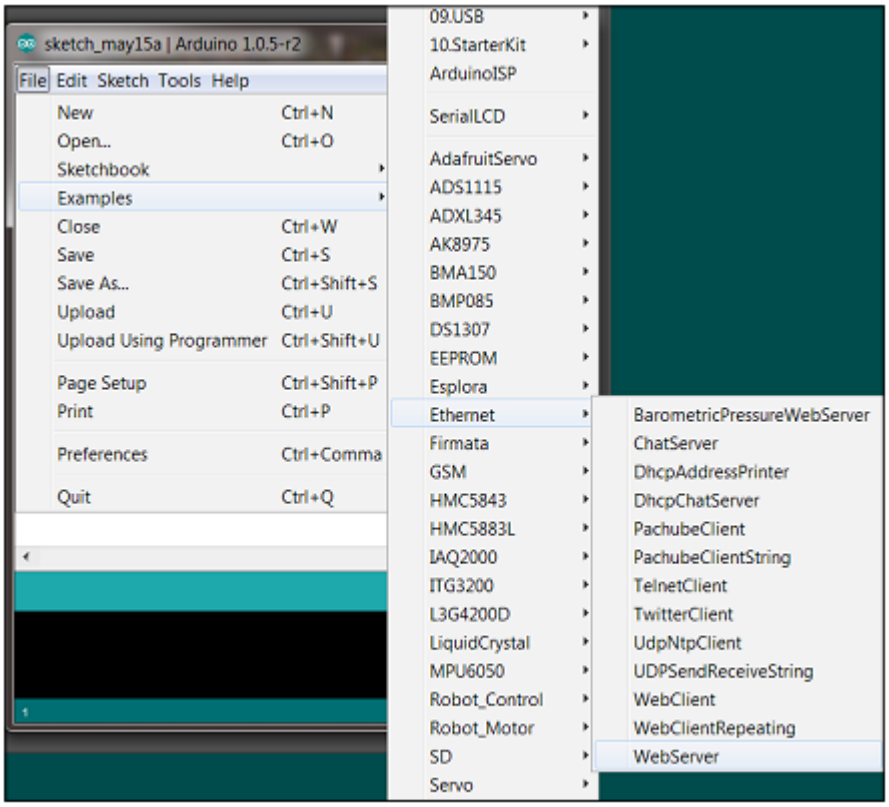




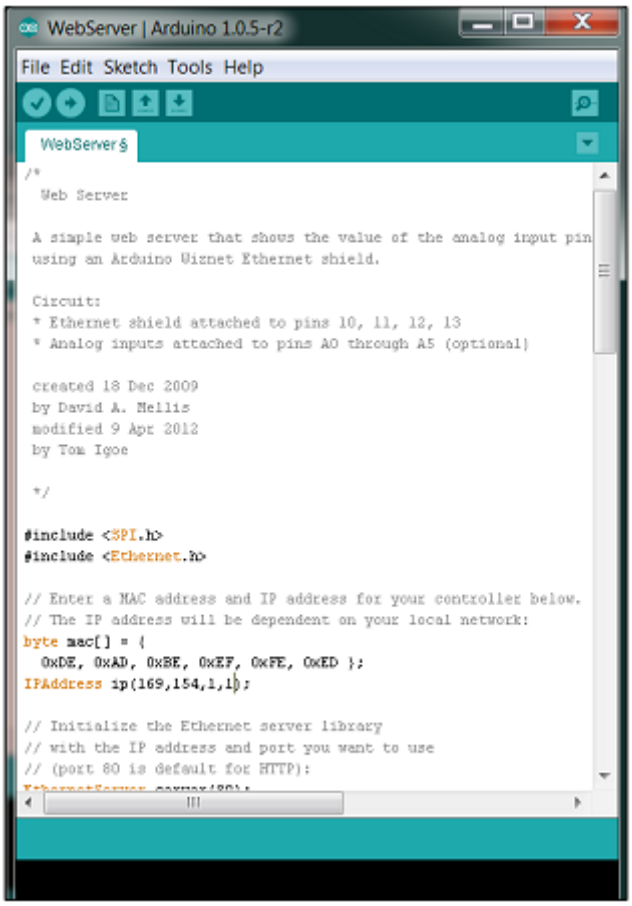

2S LiPo
Battery
ESC
Brushless DC
motor
Switch

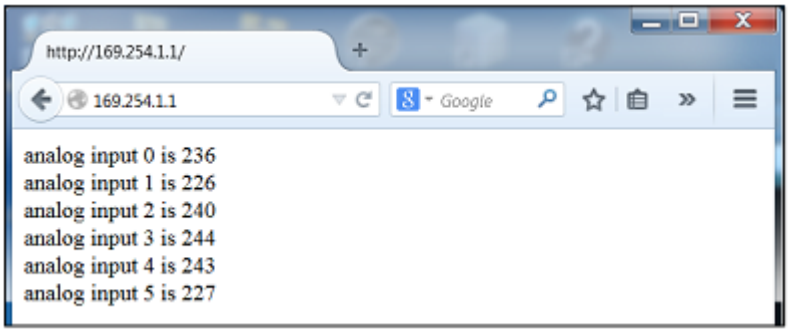

ESCcontrol | Arduino 1.0.5-r2
File Edit Sketch Tools Help
ESCcontrol
#include <Servo.h>
Servo servo;
int servoPin = 9;
int speed = 0;
void setup()
{
servo.attach(servoPin);
Serial.begin(9600);
Serial.println("Set Speed 0 to 180");
speed = 90;
}
void loop()
{
if (Serial.available())
{
char str[10];
speed = Serial.parseInt();
itoa(speed, str, 10);
Serial.println("Speed ");
Serial.println(str);
if (speed >= 0 && speed <= 180)
{
servo.write(speed);
delay(1000);
}
}
}
Done uploading.
Binary sketch size: 4,592 bytes (of a 32,256 byte maximum)
11
Arduino Uno on COM5

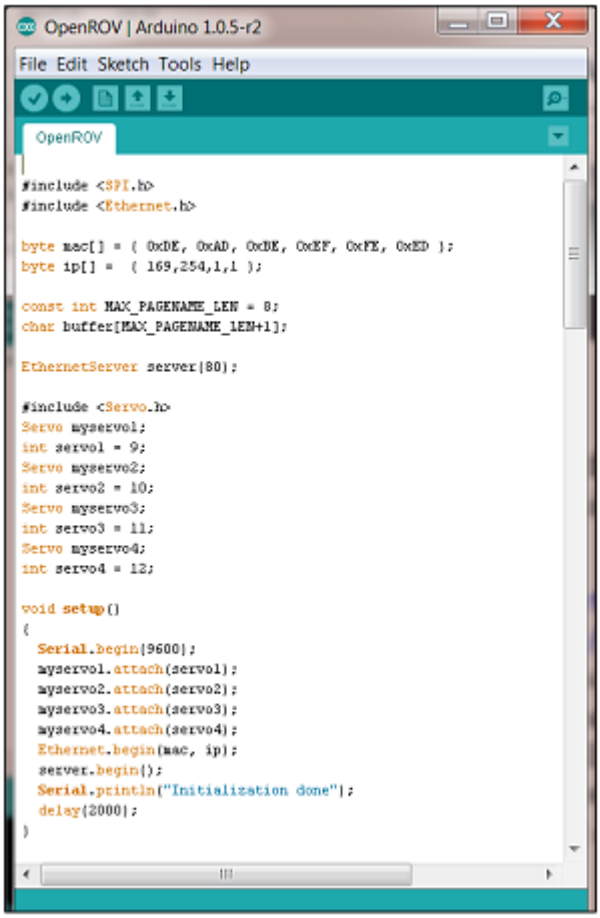

COM5
Send
90
Speed
100
Speed
90
Speed
90
Speed
80
Speed
90
Speed
100
Speed
90
Autoscroll
No line ending
9600 baud

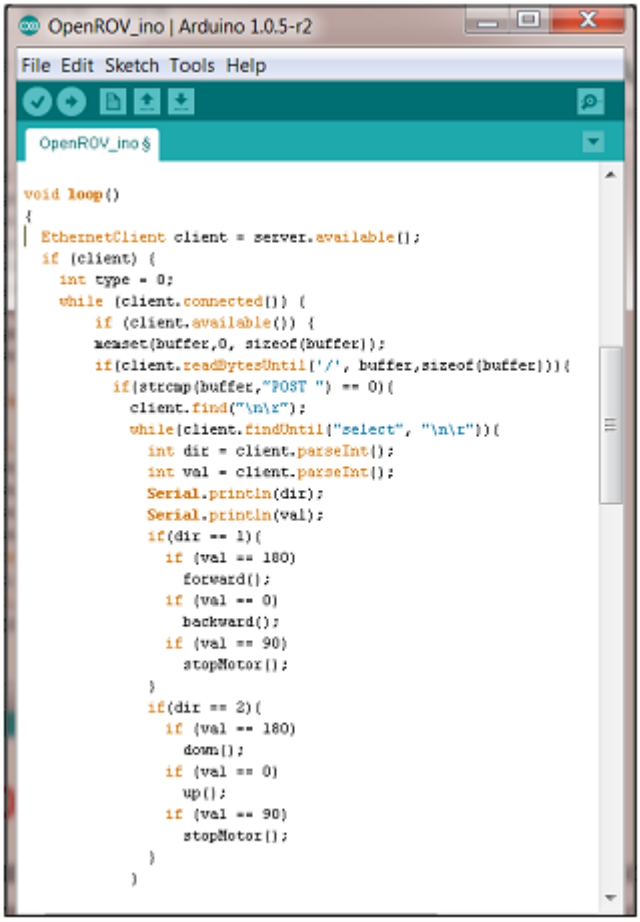

sketch_may15a | Arduino 1.0.5-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
09.USB
10.StarterKit
ArduinoISP
SerialLCD
AdafruitServo
ADS1115
ADXL345
AK8975
BMA150
BMP085
DS1307
EEPROM
Esplora
Ethernet
Firmata
GSM
HMC5843
HMC5883L
IAQ2000
ITG3200
L3G4200D
LiquidCrystal
MPU6050
Robot_Control
Robot_Motor
SD
Servo
BarometricPressureWebServer
ChatServer
DhcpAddressPrinter
DhcpChatServer
PachubeClient
PachubeClientString
TelnetClient
TwitterClient
UdpNtpClient
UDPSendReceiveString
WebClient
WebClientRepeating
WebServer

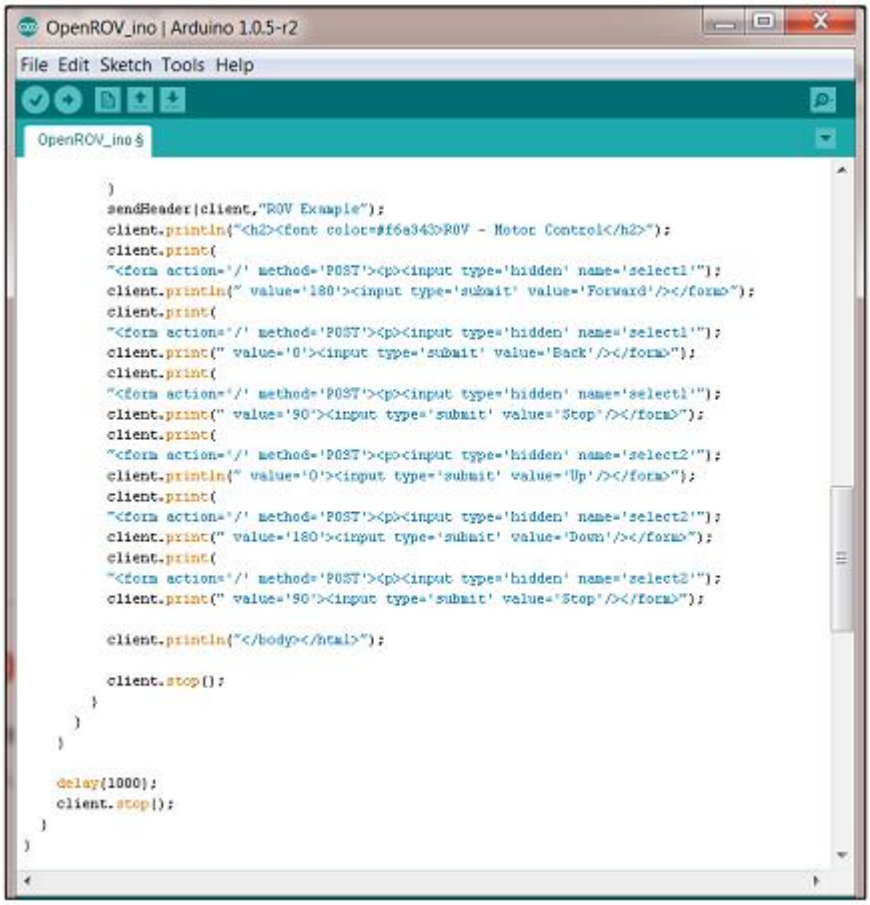
```
Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Autoconfiguration IPv4 Address. . : 169.254.135.137
   Subnet Mask . . . . . . . . . . . : 255.255.0.0
   Default Gateway . . . . . . . . . :
```



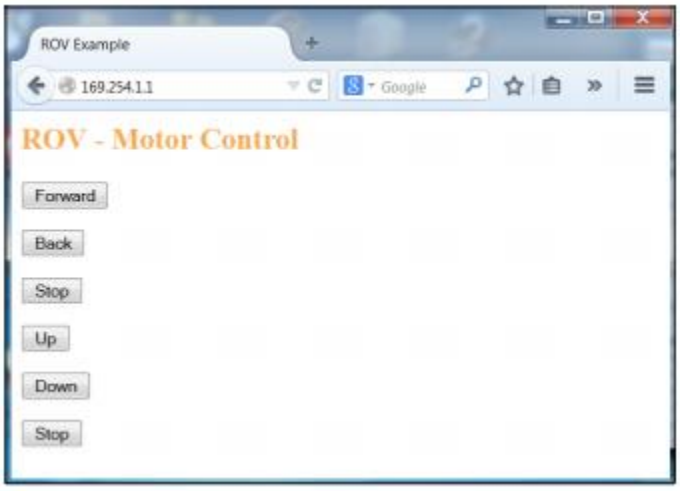

http://169.254.1.1/
169.254.1.1
Google
analog input 0 is 236
analog input 1 is 226
analog input 2 is 240
analog input 3 is 244
analog input 4 is 243
analog input 5 is 227

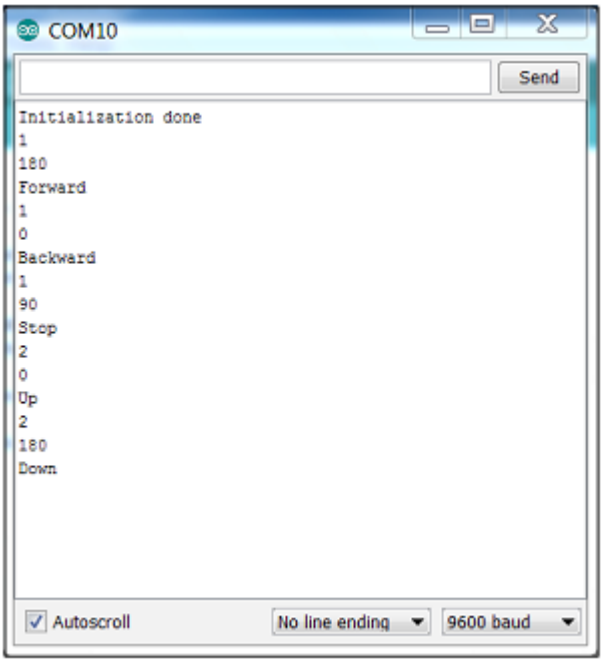

OpenROV | Arduino 1.0.5-r2
File Edit Sketch Tools Help
OpenROV
#include <SPI.h>
#include <Ethernet.h>
byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED };
byte ip[] = { 169,254,1,1 };
const int MAX_PAGENAME_LEN = 8;
char buffer[MAX_PAGENAME_LEN+1];
EthernetServer server(80);
#include <Servo.h>
Servo myservo1;
int servo1 = 9;
Servo myservo2;
int servo2 = 10;
Servo myservo3;
int servo3 = 11;
Servo myservo4;
int servo4 = 12;
void setup()
{
Serial.begin(9600);
myservo1.attach(servo1);
myservo2.attach(servo2);
myservo3.attach(servo3);
myservo4.attach(servo4);
Ethernet.begin(mac, ip);
server.begin();
Serial.println("Initialization done");
delay(2000);
}


OpenROV_ino | Arduino 1.0.5-r2
File Edit Sketch Tools Help
OpenROV_ino §
void loop()
{
EthernetClient client = server.available();
if (client) {
int type = 0;
while (client.connected()) {
if (client.available()) {
memset(buffer,0, sizeof(buffer));
if(client.readBytesUntil('/', buffer,sizeof(buffer))){
if(strcmp(buffer,"POST ") == 0){
client.find("\n\r");
while(client.findUntil("select", "\n\r")){
int dir = client.parseInt();
int val = client.parseInt();
Serial.println(dir);
Serial.println(val);
if(dir == 1){
if (val == 180)
forward();
if (val == 0)
backward();
if (val == 90)
stopMotor();
}
if(dir == 2){
if (val == 180)
down();
if (val == 0)
up();
if (val == 90)
stopMotor();
}
}


OpenROV_ino | Arduino 1.0.5-r2
File Edit Sketch Tools Help
OpenROV_ino §
)
sendHeader(client,"ROV Example");
client.println("<h2><font color=#f6a343>ROV - Motor Control</h2>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select1'");
client.println(" value='180'><input type='submit' value='Forward'/></form>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select1'");
client.print(" value='0'><input type='submit' value='Back'/></form>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select1'");
client.print(" value='90'><input type='submit' value='Stop'/></form>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select2'");
client.println(" value='0'><input type='submit' value='Up'/></form>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select2'");
client.print(" value='180'><input type='submit' value='Down'/></form>");
client.print(
"<form action='/' method='POST'><p><input type='hidden' name='select2'");
client.print(" value='90'><input type='submit' value='Stop'/></form>");
client.println("</body></html>");
client.stop();
delay(1000);
client.stop();

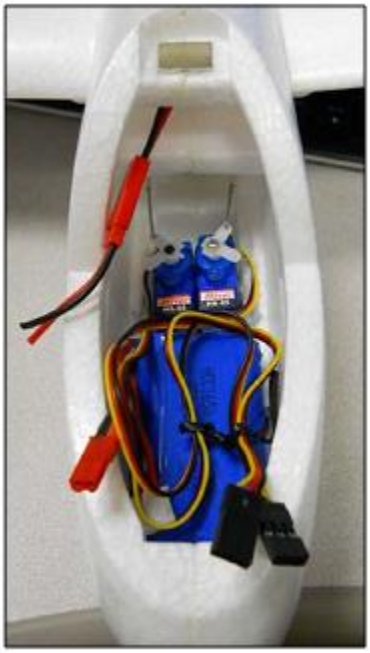

OpenROV_ino | Arduino 1.0.5-r2
File Edit Sketch Tools Help
OpenROV_ino §
void sendHeader(EthernetClient client, char *title)
{
client.println("HTTP/1.1 200 OK");
client.println("Content-Type: text/html");
client.println();
client.print("<html><head><title>");
client.print(title);
client.println("</title><body>");
}
void forward()
{
Serial.println("Forward");
myservo1.write(180);
myservo2.write(180);
}
void backward()
{
Serial.println("Backward");
myservo1.write(0);
myservo2.write(0);
}
void stopMotor()
{
Serial.println("Stop");
myservo1.write(90);
myservo2.write(90);
myservo3.write(90);
myservo4.write(90);
}
void up()
{
Serial.println("Up");
myservo3.write(180);
myservo4.write(180);
}
void down()
{
Done Saving.
The sketch name had to be modified. Sketch names can only consist
of ASCII characters and numbers (but cannot start with a number).
They should also be less less than 64 characters long.
30
Arduino Uno on COM4


ROV Example
169.254.1.1
Google
ROV - Motor Control
Forward
Back
Stop
Up
Down
Stop


COM10
Send
Initialization done
1
180
Forward
1
0
Backward
1
90
Stop
2
0
Up
2
180
Down
Autoscroll
No line ending
9600 baud

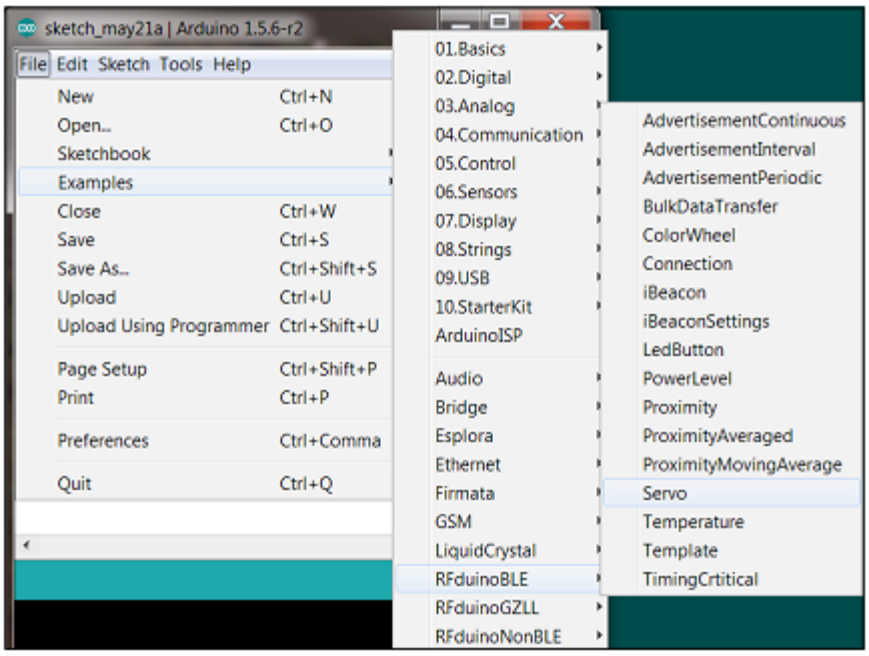

EasyN
Resolution: 640*480
Mode: 50 HZ
Brightness: 6
Contrast: 4
Max FPS: full speed
Preset Call Set

Chapter 13: Robots Than Can Fly




RFD22301
+3V
RESET
FACTORY
GPIO 0 / AREF
GPIO 1
GPIO 6
GPIO 5
GPIO 4
GPIO 3
GPIO 2


RFD22123
RFduino
Servo Shield
Copyright ©
RFduino.com
07.14.2013
R403
Servo Outputs
A
B
C
D


sketch_may21a | Arduino 1.5.6-r2
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
Audio
Bridge
Esplora
Ethernet
Firmata
GSM
LiquidCrystal
RFduinoBLE
RFduinoGZLL
RFduinoNonBLE
AdvertisementContinuous
AdvertisementInterval
AdvertisementPeriodic
BulkDataTransfer
ColorWheel
Connection
iBeacon
iBeaconSettings
LedButton
PowerLevel
Proximity
ProximityAveraged
ProximityMovingAverage
Servo
Temperature
Template
TimingCrtitical

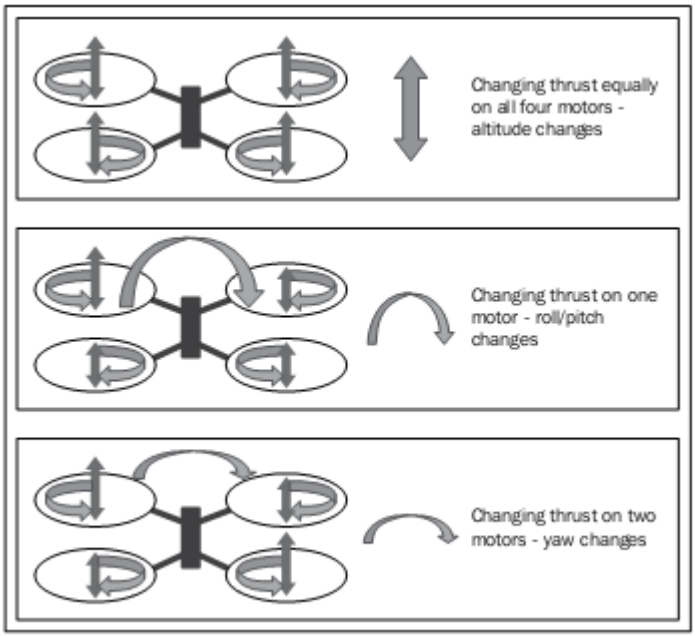
Servo | Arduino 1.5.6-r2

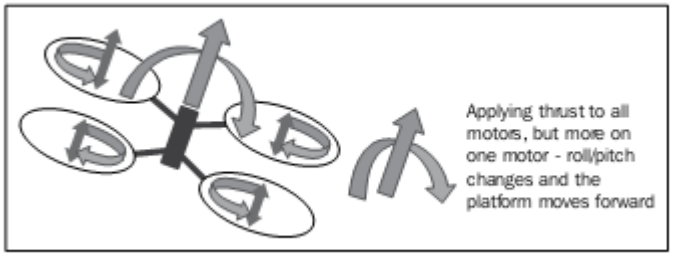
File Edit Sketch Tools Help

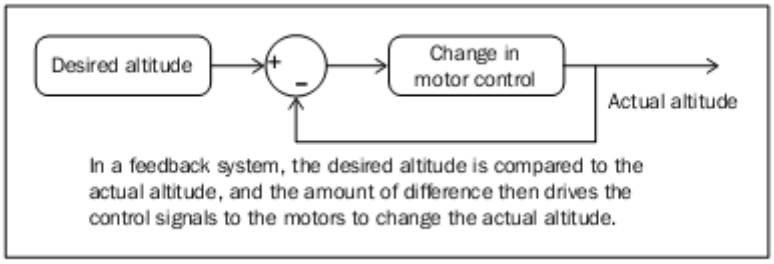
Servo

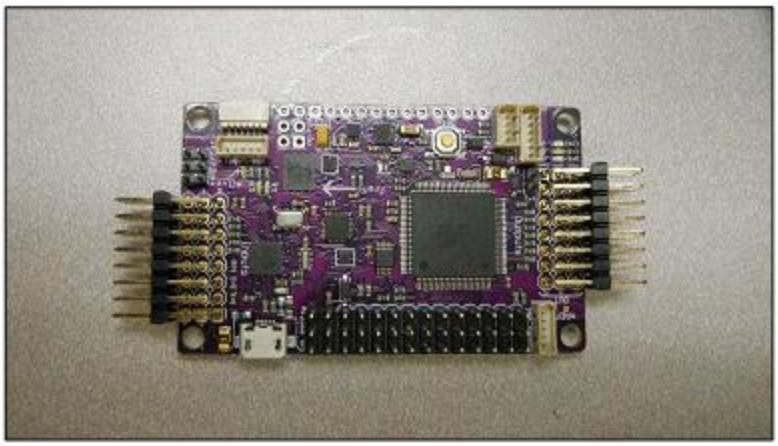
```
#include <Servo.h>
#include <RFduinoBLE.h>

Servo s1;
Servo s2;
Servo s3;
Servo s4;

void setup() {
  s1.attach(2);
  s2.attach(3);
  s3.attach(4);
  s4.attach(5);
  RFduinoBLE.advertisementInterval = 675;
  RFduinoBLE.advertisementData = "-servo";
  RFduinoBLE.begin();
}

void loop() {
  // RFduino_ULPDelay(INFINITE);
}

void RFduinoBLE_onReceive(char *data, int len){
  int servo = data[0];
  int degree = data[1];

  if (bitRead(servo, 1))
    s1.write(degree);
  if (bitRead(servo, 2))
    s2.write(degree);
  if (bitRead(servo, 3))
    s3.write(degree);
  if (bitRead(servo, 4))
    s4.write(degree);
}
```

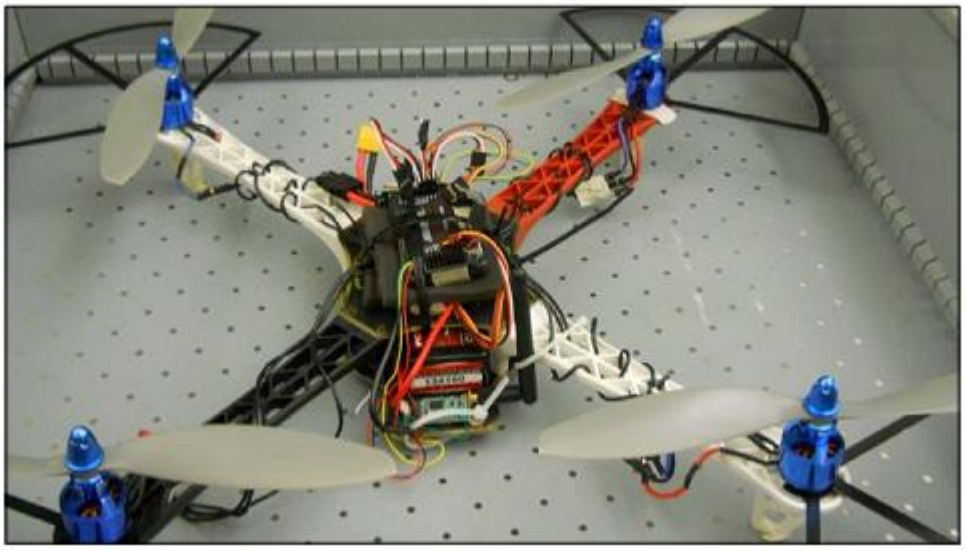
1 RFduino on COM10


Changing thrust equally on all four motors - altitude changes
Changing thrust on one motor - roll/pitch changes
Changing thrust on two motors - yaw changes

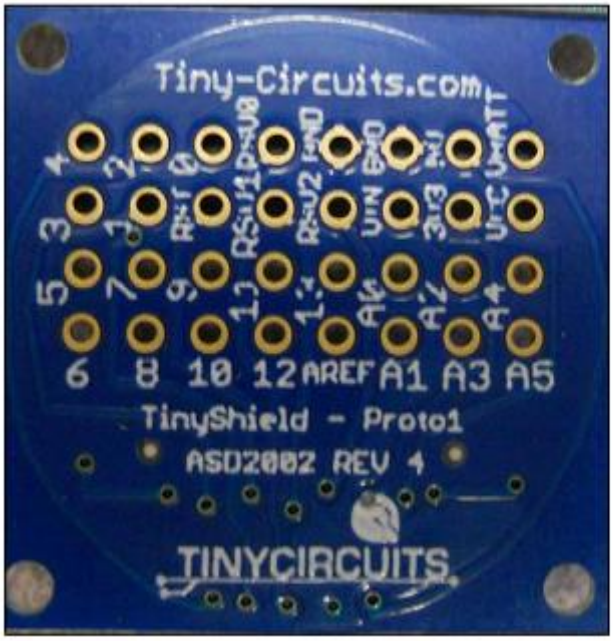

Applying thrust to all motors, but more on one motor - roll/pitch changes and the platform moves forward

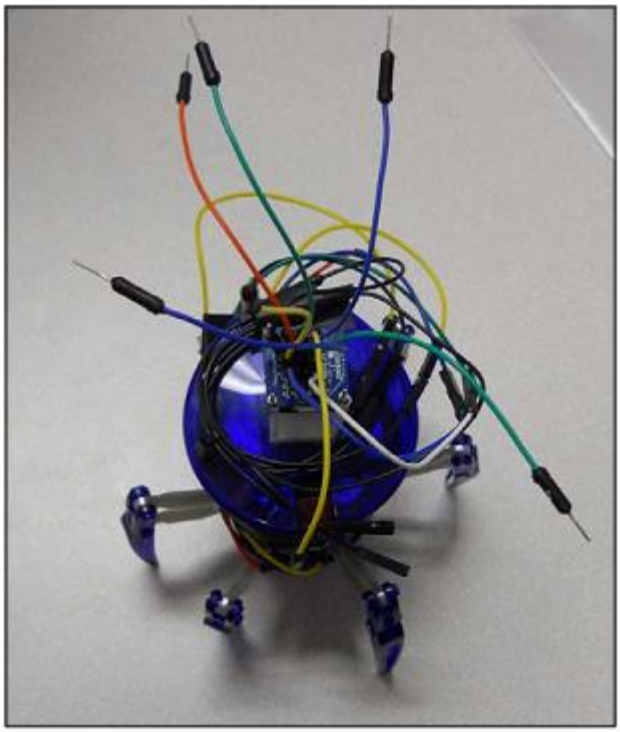

Desired altitude
+
-
Change in motor control
Actual altitude
In a feedback system, the desired altitude is compared to the actual altitude, and the amount of difference then drives the control signals to the motors to change the actual altitude.





Chapter 14: Small Projects with Arduino


Tiny-Circuits.com
6 8 10 12 AREF A1 A3 A5
TinyShield - Proto1
ASD2002 REV 4
TINYCIRCUITS



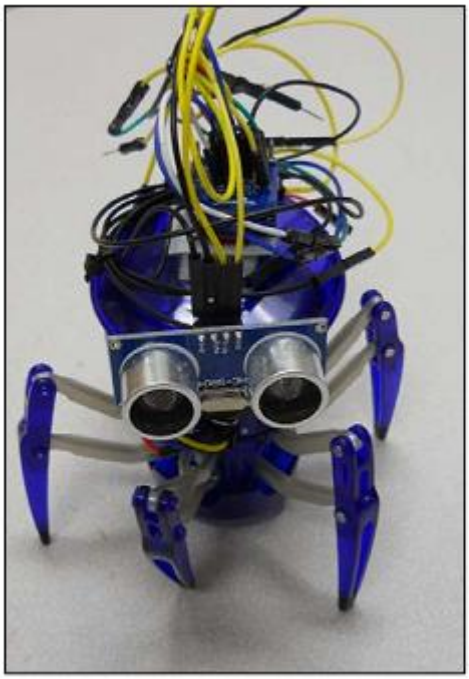
hexspider | Arduino 1.0.5-r2

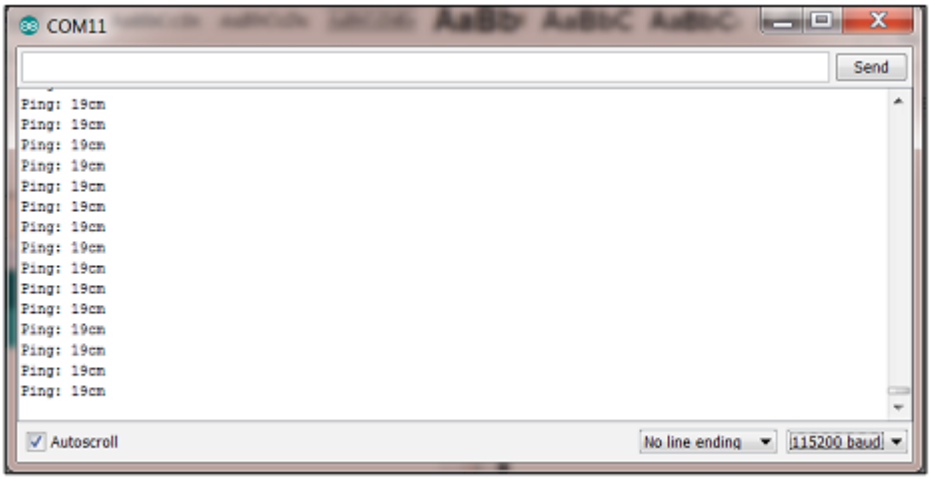
File Edit Sketch Tools Help

hexspider

```
int motor1 = 9;
int motor2 = 10;

void setup() {
  pinMode(motor1, OUTPUT);
  pinMode(motor2, OUTPUT);
}

void loop() {
  digitalWrite(motor1, HIGH);
  delay(500);
  digitalWrite(motor1, LOW);
  delay(1000);
  digitalWrite(motor2, HIGH);
  delay(500);
  digitalWrite(motor2, LOW);
}
```

1 Arduino Pro or Pro Mini (3.3V, 8 MHz) w/ ATmega328 on COM11




COM11
Send
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Ping: 19cm
Autoscroll
No line ending
115200 baud

hexspider | Arduino 1.0.5-r2

File Edit Sketch Tools Help

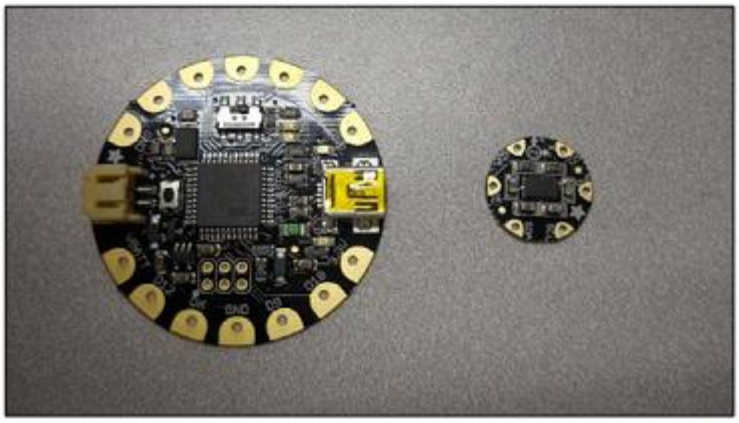
hexspider

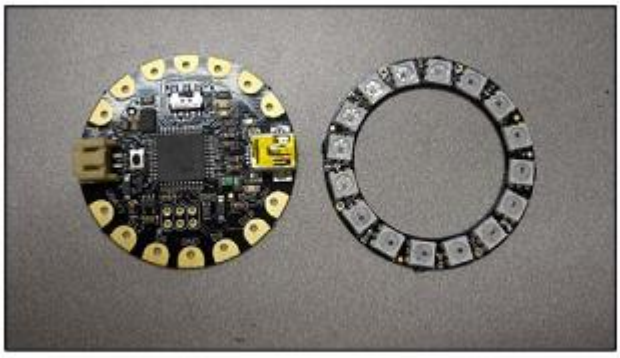
```
#include <NewPing.h>

#define TRIGGER_PIN  12
#define ECHO_PIN     11
#define MAX_DISTANCE 200
int motor1 = 9;
int motor2 = 10;

NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE);

void setup() {
  pinMode(motor1, OUTPUT);
  pinMode(motor2, OUTPUT);
  digitalWrite(motor1, HIGH);
  digitalWrite(motor2, LOW);
}

void loop() {
  int distance;
  delay(50);
  unsigned int uS = sonar.ping();
  distance = uS/ US_ROUNDTRIP_CM;
  if (distance > 0 && distance < 5)
    {
      digitalWrite(motor1, LOW);
      digitalWrite(motor2, HIGH);
      delay(1000);
      digitalWrite(motor2, LOW);
      digitalWrite(motor1, HIGH);
    }
  delay(1000);
}
```

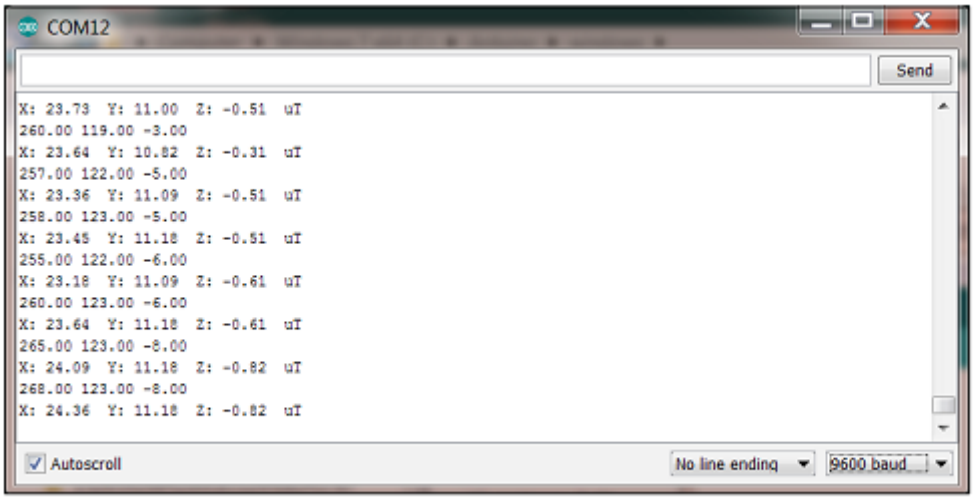
Done Saving.

```
Binary sketch size: 1,948 bytes (of a 30,720 byte maximum)
```

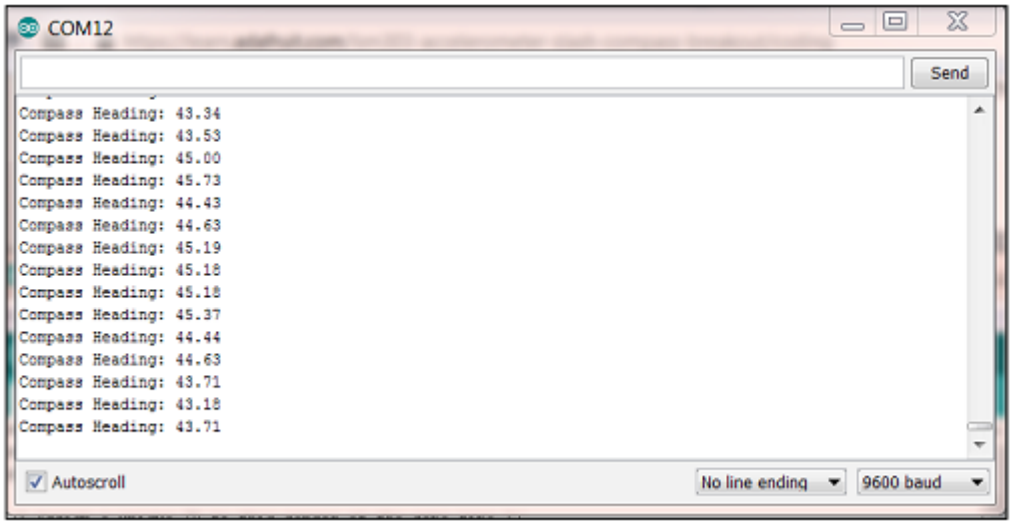
26 Arduino Pro or Pro Mini (3.3V, 8 MHz) w/ ATmega328 on COM11

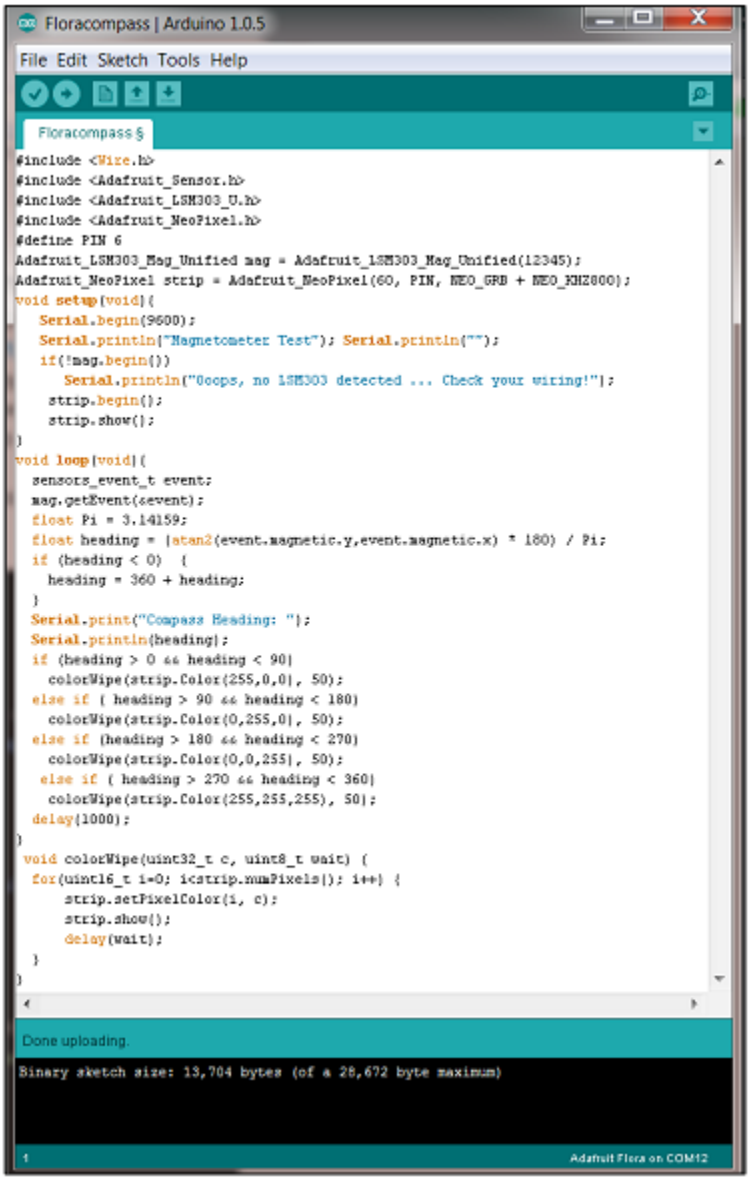





COM12
Send
X: 23.73 Y: 11.00 Z: -0.51 uT
260.00 119.00 -3.00
X: 23.64 Y: 10.82 Z: -0.31 uT
257.00 122.00 -5.00
X: 23.36 Y: 11.09 Z: -0.51 uT
258.00 123.00 -5.00
X: 23.45 Y: 11.18 Z: -0.51 uT
255.00 122.00 -6.00
X: 23.18 Y: 11.09 Z: -0.61 uT
260.00 123.00 -6.00
X: 23.64 Y: 11.18 Z: -0.61 uT
265.00 123.00 -8.00
X: 24.09 Y: 11.18 Z: -0.82 uT
268.00 123.00 -8.00
X: 24.36 Y: 11.18 Z: -0.82 uT
Autoscroll
No line ending
9600 baud


sketch_may29c | Arduino 1.0.5
File Edit Sketch Tools Help
sketch_may29c §
#include <Wire.h>
#include <Adafruit_Sensor.h>
#include <Adafruit_LSM303_U.h>
/* Assign a unique ID to this sensor at the same time */
Adafruit_LSM303_Mag_Unified mag = Adafruit_LSM303_Mag_Unified(12345);
void setup(void)
{
Serial.begin(9600);
Serial.println("Magnetometer Test"); Serial.println("");
/* Initialise the sensor */
if(!mag.begin())
{
/* There was a problem detecting the LSM303 ... check your connections */
Serial.println("Ooops, no LSM303 detected ... Check your wiring!");
while(1);
}
}
void loop(void)
{
/* Get a new sensor event */
sensors_event_t event;
mag.getEvent(&event);
float Pi = 3.14159;
// Calculate the angle of the vector y,x
float heading = (atan2(event.magnetic.y,event.magnetic.x) * 180) / Pi;
// Normalize to 0-360
if (heading < 0)
{
heading = 360 + heading;
}
Serial.print("Compass Heading: ");
Serial.println(heading);
delay(500);
}
Done uploading.
Binary sketch size: 11,378 bytes (of a 28,672 byte maximum)
3
Adafruit Flora on COM12


COM12
Send
Compass Heading: 43.34
Compass Heading: 43.53
Compass Heading: 45.00
Compass Heading: 45.73
Compass Heading: 44.43
Compass Heading: 44.63
Compass Heading: 45.19
Compass Heading: 45.18
Compass Heading: 45.18
Compass Heading: 45.37
Compass Heading: 44.44
Compass Heading: 44.63
Compass Heading: 43.71
Compass Heading: 43.18
Compass Heading: 43.71
Autoscroll
No line ending
9600 baud


Floracompass | Arduino 1.0.5
File Edit Sketch Tools Help
Floracompass §
#include <Wire.h>
#include <Adafruit_Sensor.h>
#include <Adafruit_LSM303_U.h>
#include <Adafruit_NeoPixel.h>
#define PIN 6
Adafruit_LSM303_Mag_Unified mag = Adafruit_LSM303_Mag_Unified(12345);
Adafruit_NeoPixel strip = Adafruit_NeoPixel(60, PIN, NEO_GRB + NEO_KHZ800);
void setup(void){
Serial.begin(9600);
Serial.println("Magnetometer Test"); Serial.println("");
if(!mag.begin())
Serial.println("Oops, no LSM303 detected ... Check your wiring!");
strip.begin();
strip.show();
}
void loop(void){
sensors_event_t event;
mag.getEvent(&event);
float Pi = 3.14159;
float heading = (atan2(event.magnetic.y,event.magnetic.x) * 180) / Pi;
if (heading < 0) {
heading = 360 + heading;
}
Serial.print("Compass Heading: ");
Serial.println(heading);
if (heading > 0 && heading < 90)
colorWipe(strip.Color(255,0,0), 50);
else if (heading > 90 && heading < 180)
colorWipe(strip.Color(0,255,0), 50);
else if (heading > 180 && heading < 270)
colorWipe(strip.Color(0,0,255), 50);
else if (heading > 270 && heading < 360)
colorWipe(strip.Color(255,255,255), 50);
delay(1000);
}
void colorWipe(uint32_t c, uint8_t wait) {
for(uint16_t i=0; i<strip.numPixels(); i++) {
strip.setPixelColor(i, c);
strip.show();
delay(wait);
}
}
Done uploading.
Binary sketch size: 13,704 bytes (of a 28,672 byte maximum)
1
Adafruit Flora on COM12