EXPORTING TO ARDUINO

BY EXPORTING A SEQUENCE TO ARDUINO MODE, YOU CAN SEE THE SAME PROGRAM EXPRESSED AS ARDUINO CODE, AND YOU CAN RUN THE PROGRAM ON YOUR HUMMINGBIRD DUO WITH IT UNPLUGGED FROM THE COMPUTER.

```
        Servo10();
        delay(1000);
        LED1and20();
        delay(1000);
}

}
void Servo10(){
        hummingbird.setServo(1,0);
}
void LED1and20(){
        hummingbird.setLED(2,0);
        hummingbird.setLED(1,0);
}
```

HERE'S HOW!

IN CREATE LAB VISUAL PROGRAMMER, GO TO THE SEQUENCE BUILDER TAB. ON THE RIGHT, SELECT THE SEQUENCE THAT YOU WOULD LIKE TO EXPORT.

Sequences

Counter 3

📂 Open Sequence
❌ Delete Sequence
Export Sequence

CLICK "EXPORT SEQUENCE"

📂 Open Sequence
❌ Delete Sequence
Export Sequence

WINDOWS EXPLORER OR MAC FINDER SHOULD POP UP TO DISPLAY THE NEW ARDUINO PROGRAM.
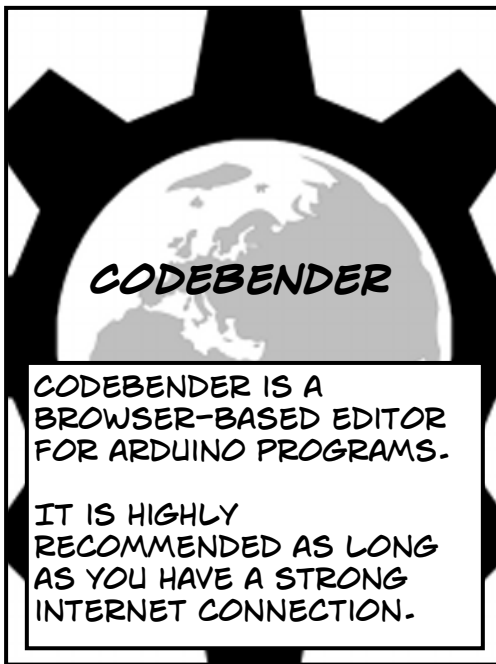
ONCE THE SEQUENCE IS EXPORTED, THERE ARE TWO SEPARATE WAYS TO PUT IT ONTO THE DUO.

USING AN EDITOR CALLED: CODEBENDER..

OR USING THE ARDUINO ENVIRONMENT

CODEBENDER

CODEBENDER IS A BROWSER-BASED EDITOR FOR ARDUINO PROGRAMS.

IT IS HIGHLY RECOMMENDED AS LONG AS YOU HAVE A STRONG INTERNET CONNECTION.

TO USE CODEBENDER, GO TO WWW.CODEBENDER.CC AND CREATE AN ACCOUNT (FREE).

Register

Username

Email

Type a password

Repeat password

Register

OR

Sign up with Google

Sign up with Github

By signing up, you agree to the codebender
Terms and Conditions.

AFTER YOU CREATE AN ACCOUNT, CODEBENDER WILL GIVE YOU FIVE "GETTING STARTED" STEPS. START GOING THROUGH THE STEPS.

Ready. Set. Go!

This guide will follow all the necessary steps to program your Arduino from

- **Step 1: You Are Here**
- **Step 2:** Install our Browser Plugin
- **Step 3:** Install the Arduino Drivers
- **Step 4:** Try codebender with your Arduino
- **Step 5:** Profit!

What are you waiting

Let's Go!

THE FIRST STEPS ARE SIMPLE CLICKABLE DOWNLOADS, BUT THE FOURTH STEP IS A LITTLE TRICKIER. FIRST, SELECT *HUMMINGBIRD DUO* FROM THE LIST OF DEVICES.

Almost there! Now we're going to run a basic ske

Connect your device, select port and clic

Hummingbird Duo

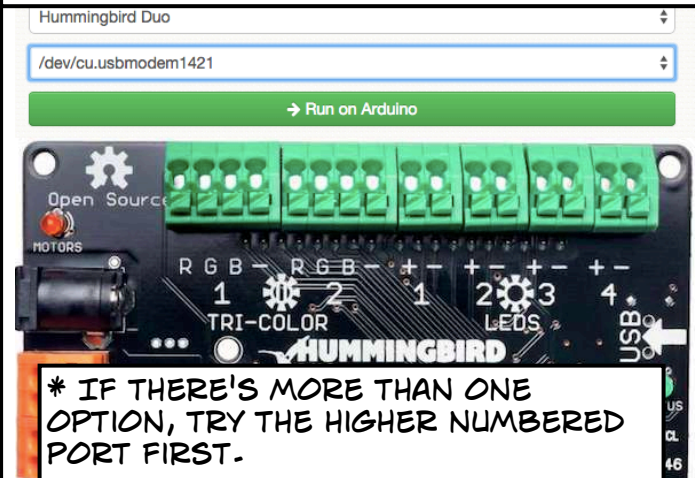/dev/cu.usbmodem1421

→ Run on Arduino

IF YOUR DUO IS IN TETHERED (HUMMINGBIRD) MODE, IGNORE THE SERIAL PORT DROP-DOWN MENU. INSTEAD, YOU'RE GOING TO NEED TO THE PRESS THE **RESET BUTTON** ON THE DEVICE (NEXT TO THE USB PORT).
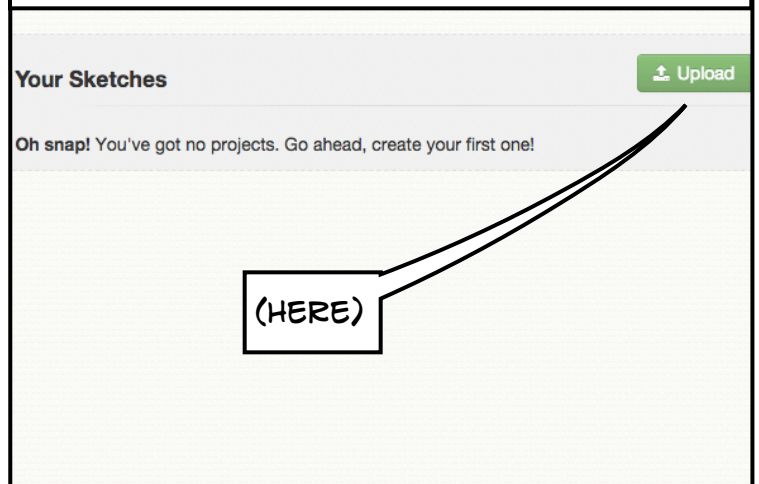

HOLD THE RESET BUTTON AND CLICK THE GREEN "RUN ON ARDUINO" ON THE SITE. LET GO OF THE RESET BUTTON WHEN YOU SEE THIS MESSAGE.

Hummingbird Duo

COM1

Run on Arduino

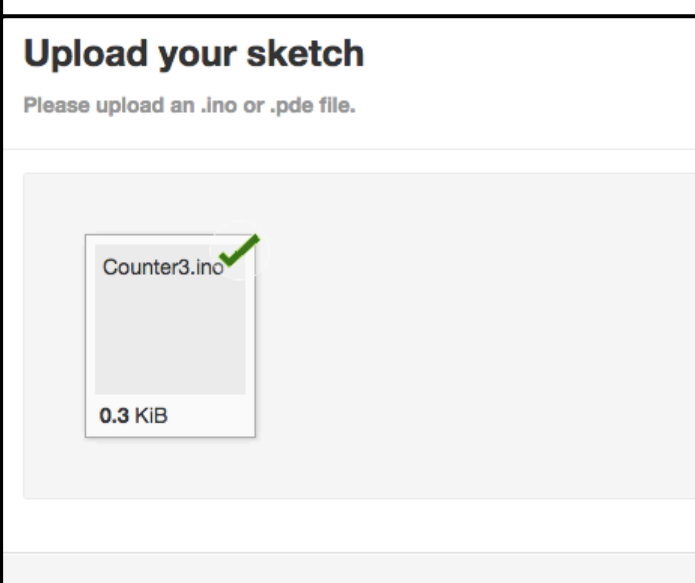Trying to auto-reset your device. If it does not reset automatically, please reset your device manually!

IF YOUR DEVICE IS IN ARDUINO MODE, YOU DON'T NEED TO PRESS THE RESET BUTTON. JUST SELECT THE SERIAL PORT* FROM THE DROP-DOWN LIST.
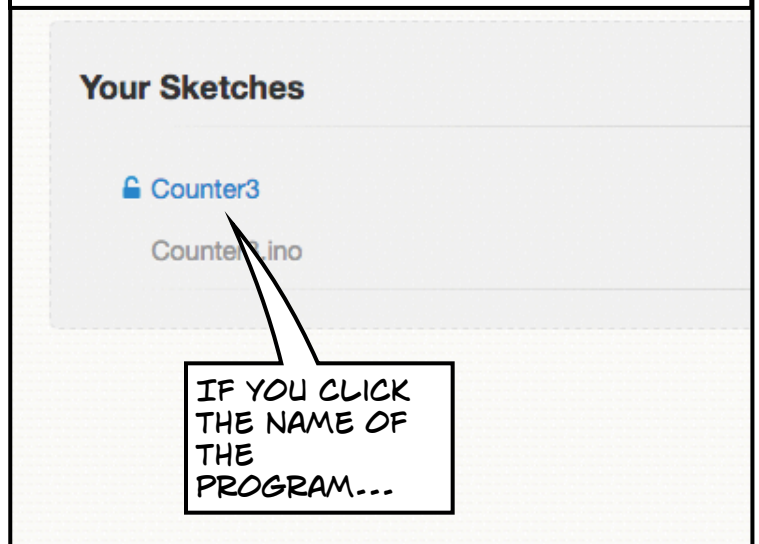
Hummingbird Duo

/dev/cu.usbmodem1421

→ Run on Arduino

* IF THERE'S MORE THAN ONE OPTION, TRY THE HIGHER NUMBERED PORT FIRST.

ONCE YOUR DUO IS CONNECTED, YOU CAN UPLOAD SKETCHES. IF YOU GO TO YOUR HOMEPAGE, YOU SHOULD SEE THE GREEN "UPLOAD" BUTTON.

Your Sketches   ⬆ Upload

Oh snap! You've got no projects. Go ahead, create your first one!

(HERE)

DRAG IN YOUR PROGRAM TO UPLOAD IT!

Upload your sketch

Please upload an .ino or .pde file.

Counter3.ino ✔

0.3 KiB

YOU SHOULD NOW SEE IT APPEAR IN THE LIST OF YOUR SKETCHES.

Your Sketches

🔒 Counter3

Counter1.ino

IF YOU CLICK THE NAME OF THE PROGRAM...

...YOU CAN SEE, EDIT AND RUN THE CODE!

Counter3.ino   +

🗑 | ⬇ | ⧉ Clone | ☰ Set Description | 💾 Save

Hummingbird Duo   ☑ Verify Code

/dev/cu.usbmodem1421   → Run on Arduino

USBtinyISP   ⊕ Flash w/ Programmer

Speed: 9600   ☰ Open Serial Monitor
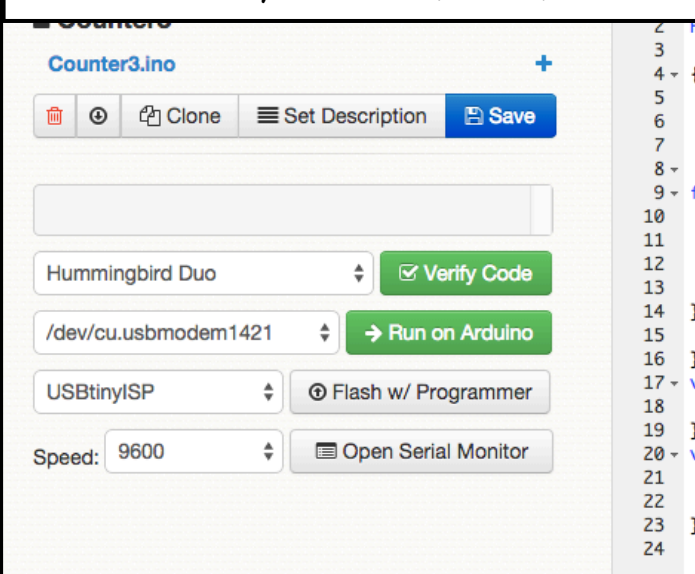
TO SWITCH YOUR DUO BACK TO TETHERED MODE, YOU'LL HAVE TO DOWNLOAD *HUMMINGBIRD FIRMWARE BURNER*, OPEN IT, AND PRESS THE RESET BUTTON ON YOUR DUO.

Hummingbird Firmware Burner

Make sure your Hummingbird Duo is connected to your
Then, select an option and press the Reset button on you
Status: Hummingbird Connected
◉ Revert to Hummingbird Mode (Regular Option)
○ Upload Custom Firmware (Advanced Option)
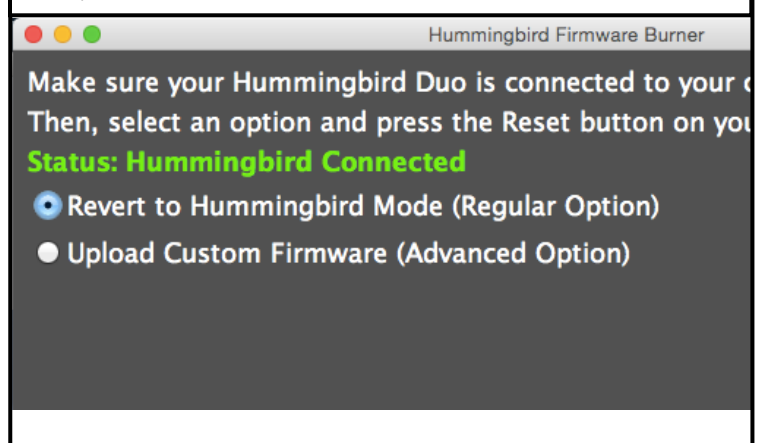
ARDUINO ENVIRONMENT

ANOTHER WAY TO UPLOAD YOUR PROGRAM TO THE DUO IS TO USE THE ARDUINO ENVIRONMENT. HERE'S HOW!

THE FIRST STEP IS DOWNLOADS. YOU'LL HAVE TO DOWNLOAD NOT ONLY THE ARDUINO ENVIRONMENT, BUT THE HUMMINGBIRD LIBRARIES AND ARDUBLOCK AS WELL.

Installation Instructions

1. Install the Arduino IDE.
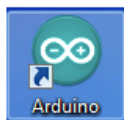
DON'T WORRY, BOTH THE FILES AND THE DIRECTIONS CAN BE FOUND AT HUMMINGBIRDKIT.COM/LEARNING/SETTING-ARDUINO-ENVIRONMENT-HUMMINGBIRD-DUO
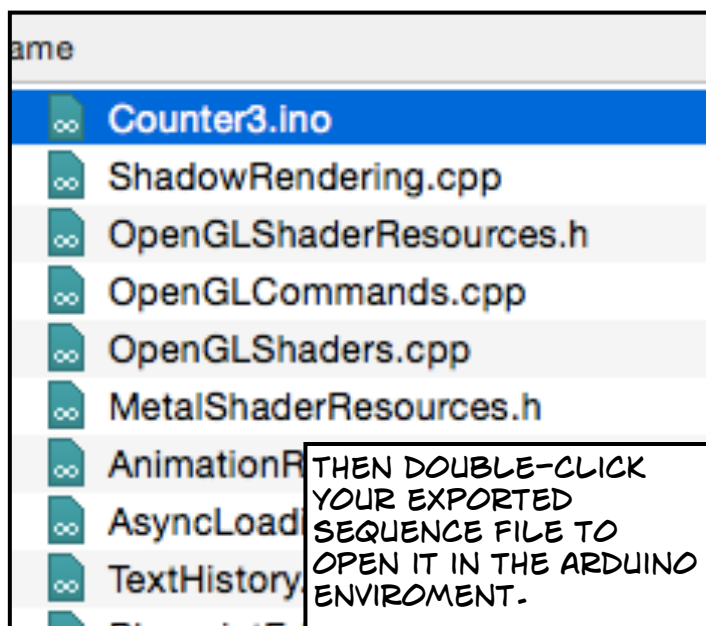
THEN DOUBLE-CLICK YOUR EXPORTED SEQUENCE FILE TO OPEN IT IN THE ARDUINO ENVIROMENT.

LIKE WHEN YOU'RE USING CODEBENDER, YOU'LL NEED TO SET THE DUO TO ARDUINO MODE.
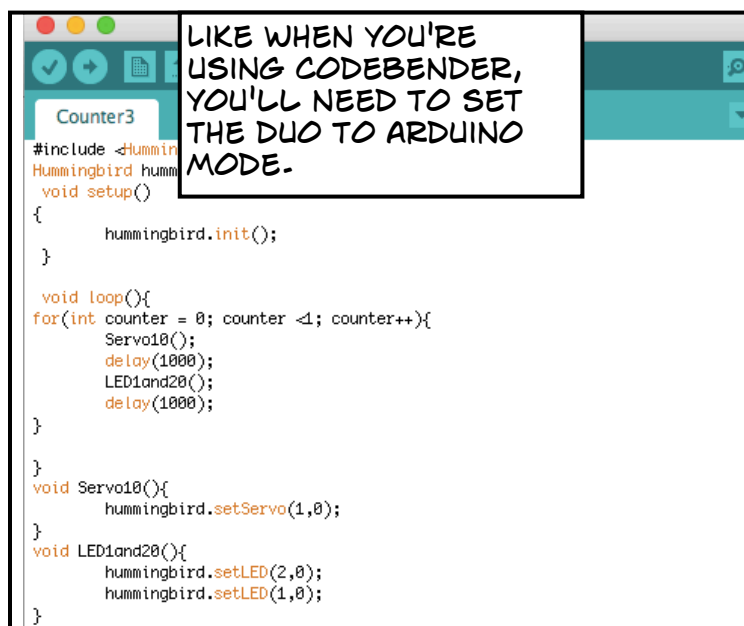
FIRST, UNDER THE TOOLS MENU, GO TO **BOARD** AND SET IT TO HUMMINGBIRD DUO.

THEN YOU'LL CLICK THE RIGHT ARROW TO UPLOAD YOUR PROGRAM. BUT HAVE YOUR FINGER BY THE DUO'S RESET BUTTON!

```
Hummingbird hummingbird;

/*
Initialize Hummingbird ports
*/
void setup()
{
```

Compiling sketch...

Build options changed, rebuilding all

Hummingbird Duo on /dev/cu.usbmodem1421

WHILE YOU GET THE MESSAGE "COMPILING SKETCH," HOLD DOWN THE DUO'S RESET BUTTON...

```
{
   // Turns on LED on port 1 and status LED to full brightness
   tweety.setLED(1,255);
   tweety.setStatusLED(255);
   delay(500); // wait 500 milliseconds
   // Turns them off
   tweety.setLED(1,0);
   tweety.setStatusLED(0);
   delay(500); // wait 500 milliseconds
```

Uploading...

Sketch uses 6,182 bytes (21%) of program storage space. Maximum is 28,672 bytes.
Global variables use 176 bytes (6%) of dynamic memory, leaving 2,384 bytes for local variables.
Maximum is 2,560 bytes.

Hummingbird Duo on COM1

AND THEN RELEASE IT WHEN THE MESSAGE CHANGES TO "UPLOADING"!

ONCE THAT'S DONE, ALL YOU NEED TO DO IS SET THE PORT. IN THE TOOLS MENU, GO TO "PORT." THE LAST OPTION (OR THE ONLY OPTION) SHOULD BE THE ONE YOU PICK.

Board ▶
Port ▶
Programmer ▶
Burn Bootloader

Serial ports
/dev/cu.Bluetooth-Incoming
/dev/cu.Bluetooth-Modem
✓ /dev/cu.usbmodem1421 (

```
#include <Hummingbird.h>

// Makes a Hummingbird object, tweety
Hummingbird tweety;

void setup()
{
   // If you want to use Hummingbird API functions like s
   // you must initialize the Hummingbird
   tweety.init();
```

Upload Using Progra

BlinkLED

```
/*
BlinkLED
Simply bli
Author: To                            rdkit.com
*/

// Include
#include <Hummingbird.h>

// Makes a Hummingbird object, tweety
Hummingbird tweety;
```

NOW YOU'RE SET! WHEN YOU UPLOAD PROGRAMS, YOU DON'T NEED TO HOLD THE RESET BUTTON ANY MORE. JUST CLICK UPLOAD AND YOU'LL BE GOOD TO GO!