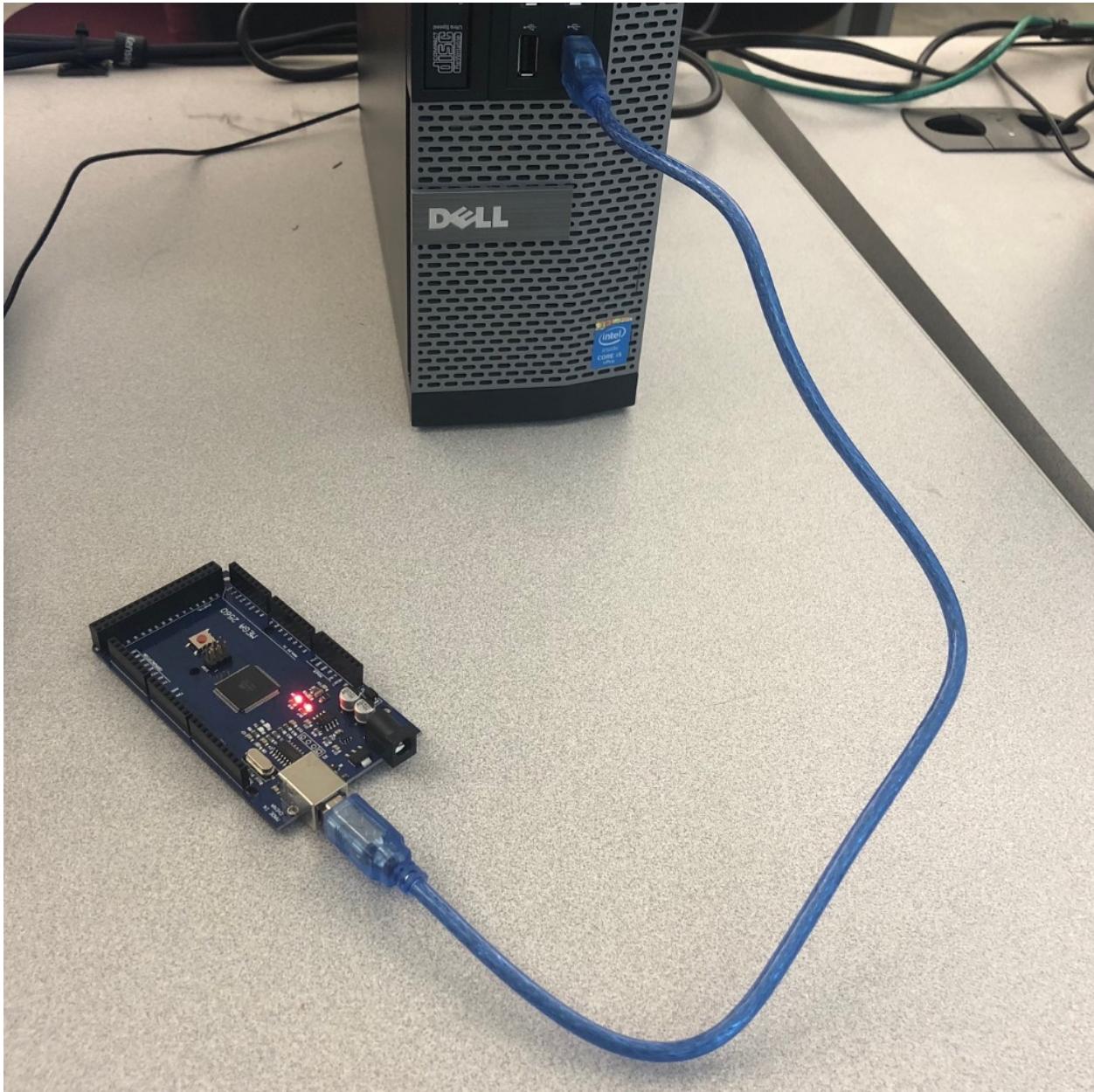


## How to Upload Code to Your Arduino

### Step 1 – Connect Arduino to Computer

You will need your Arduino and the USB cable to connect it to the computer. Once you have both, connect your Arduino to the USB port on your computer, as shown below



When you plug your Arduino in to the computer, a notification should automatically pop up in the bottom right corner indicating that drivers are being installed for the Arduino, as shown below.



Note that you may not have a notification pop up when you plug the Arduino in. This most likely means that the drivers are already installed. While this will save you the time it takes to install, it will not automatically notify you of the COM port it is connected to. Instructions for finding the port manually are found later in the section.

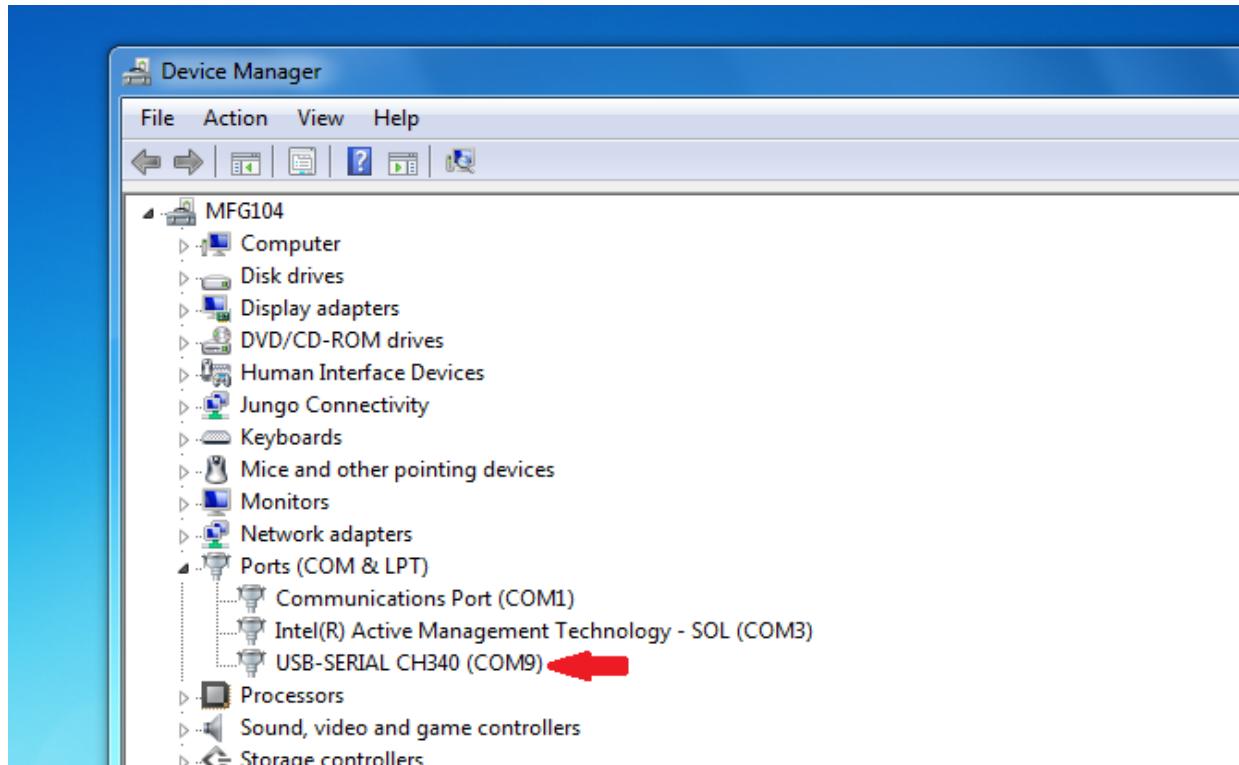
Note that sometimes a notification will pop up saying the installation failed. If this happens, try unplugging the Arduino and plugging it in to a different USB port on the computer.

The drivers are programs that tell the computer how to communicate properly with the Arduino, so it is important that these are installed. Once installation is complete, a message will pop up in the bottom right corner notifying you, as well as giving the COM port it is connected to.



In this case, it is connected to COM9, however do not worry if yours is a different number. You will need to remember which COM port it is connected to, so write this number down or make a mental note of it for later.

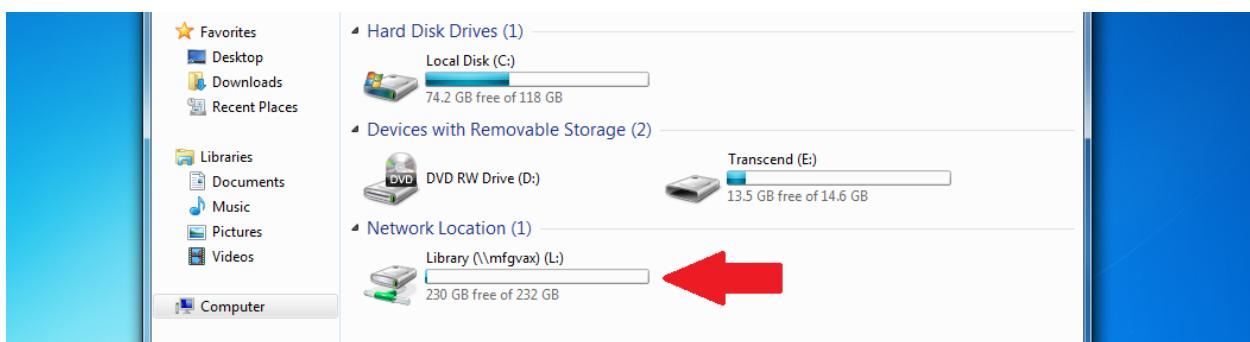
If you did not get a notification, or you forgot the COM port, you need to find it manually. To do so, you can go to Device Manager (search “Device Manager” from the Start Button or navigate to it from Control Panel), expand the menu for Ports, and look for the device labelled as a USB serial device. See below.

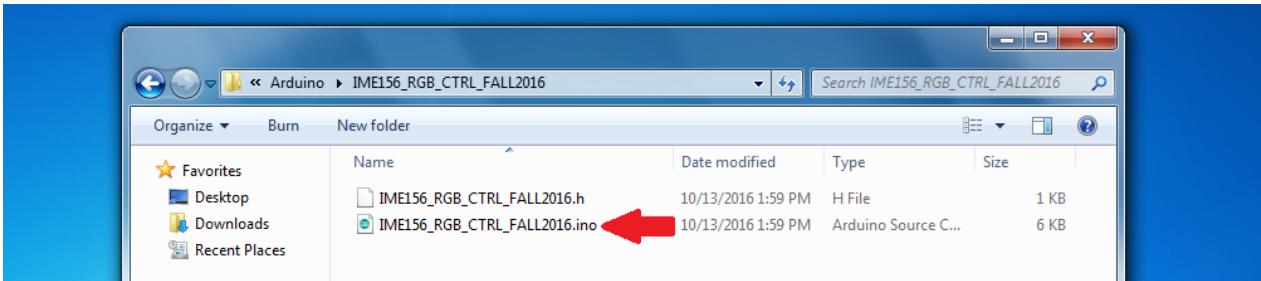
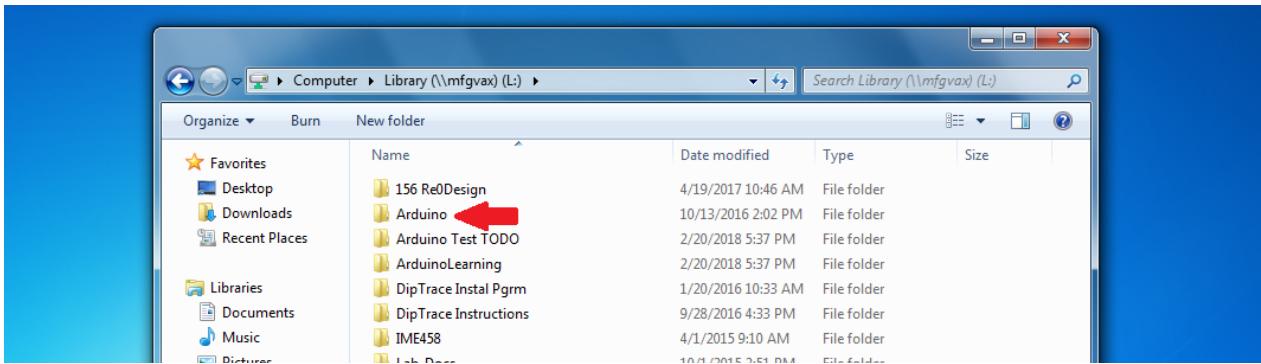


Note that when you open Device Manager, you will likely be prompted to re-enter your password (156student).

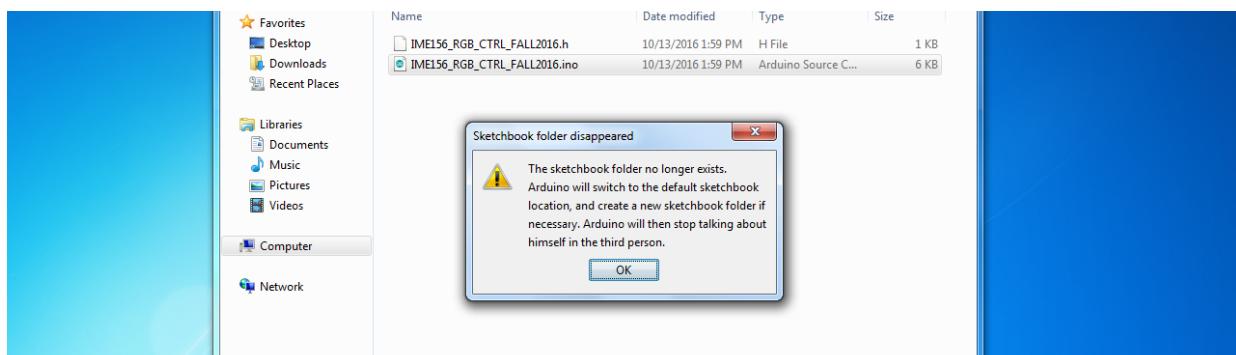
## Step 2 – Navigate to Arduino Code

Now that the Arduino is successfully connected, you will need to open the Arduino Code. To navigate to it, click on My Computer in the top left corner of the screen. Click on the Network Drive, then the Arduino folder, then navigate through to the Arduino Code. Steps are illustrated below.

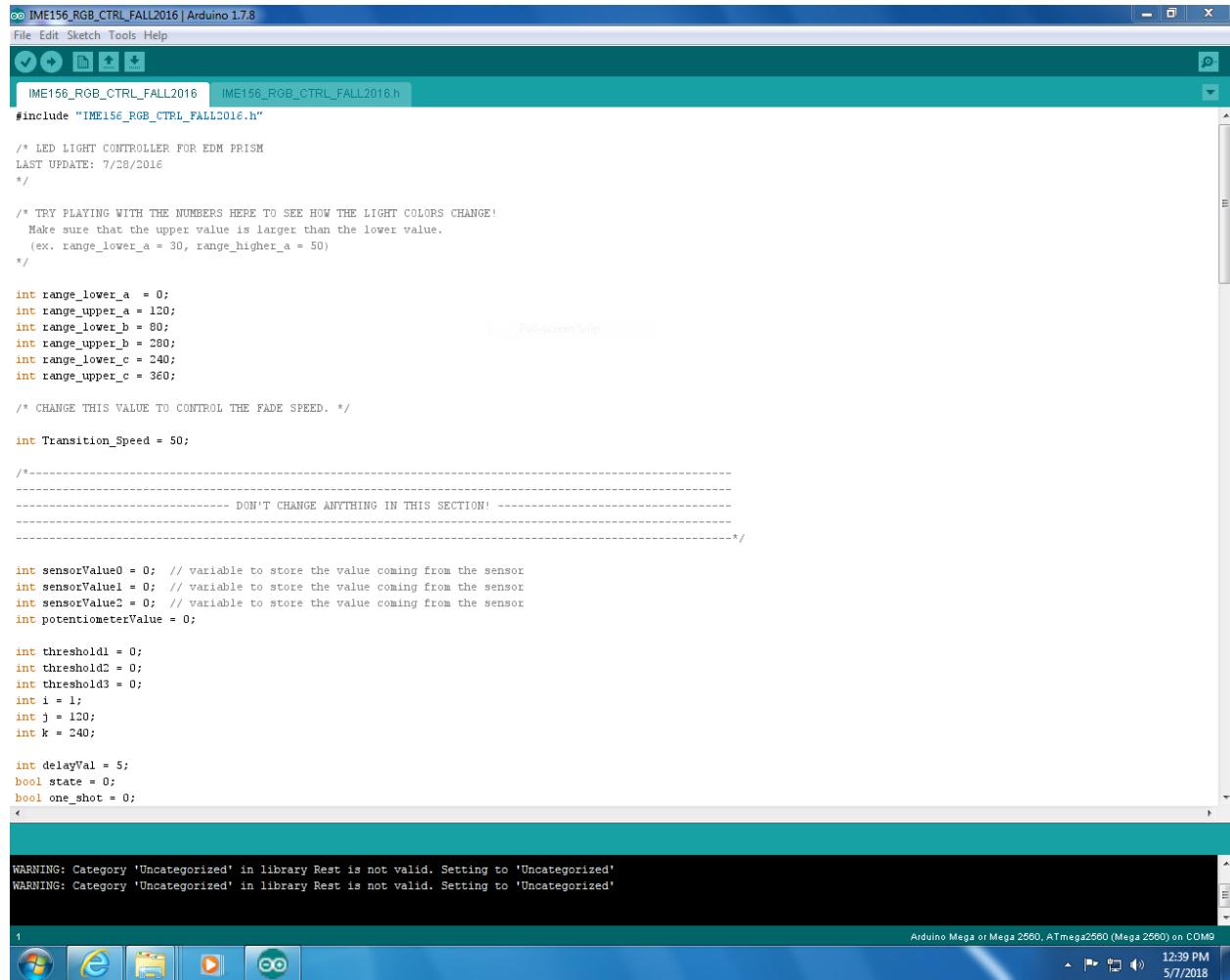




The Arduino code is the file with the .ino extension. Double click on it to open the file. You will likely get a warning when you try to open it (see below); simply click "OK" and it will then open the code in the Arduino Editor.



The opened code should look something like the screenshot below:



```

  IME156_RGB_CTRL_FALL2016 | Arduino 1.7.8
File Edit Sketch Tools Help
IME156_RGB_CTRL_FALL2016.h
#include "IME156_RGB_CTRL_FALL2016.h"

/* LED LIGHT CONTROLLER FOR EDM PRISM
LAST UPDATE: 7/28/2016
*/

/* TRY PLAYING WITH THE NUMBERS HERE TO SEE HOW THE LIGHT COLORS CHANGE!
Make sure that the upper value is larger than the lower value.
(ex. range_lower_a = 30, range_higher_a = 50)
*/

int range_lower_a = 0;
int range_upper_a = 120;
int range_lower_b = 80;
int range_upper_b = 280;
int range_lower_c = 240;
int range_upper_c = 360;

/* CHANGE THIS VALUE TO CONTROL THE FADE SPEED. */

int Transition_Speed = 50;

/*
----- DON'T CHANGE ANYTHING IN THIS SECTION!
----- */

int sensorValue0 = 0; // variable to store the value coming from the sensor
int sensorValue1 = 0; // variable to store the value coming from the sensor
int sensorValue2 = 0; // variable to store the value coming from the sensor
int potentiometerValue = 0;

int threshold1 = 0;
int threshold2 = 0;
int threshold3 = 0;
int i = 1;
int j = 120;
int k = 240;

int delayVal = 5;
bool state = 0;
bool one_shot = 0;
<

WARNING: Category 'Uncategorized' in library Rest is not valid. Setting to 'Uncategorized'
WARNING: Category 'Uncategorized' in library Rest is not valid. Setting to 'Uncategorized'

1
Arduino Mega or Mega 2560, ATmega2560 (Mega 2560) on COM9
12:39 PM
5/7/2018

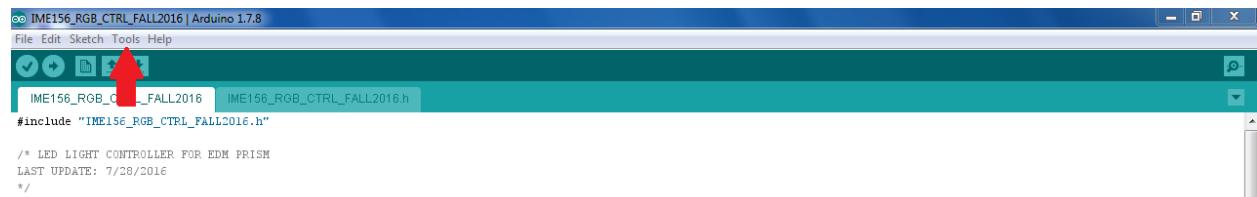
```

### Step 3 – Configure Arduino Editor to Upload Code to Arduino

Now that the code is opened, we need to tell the Arduino Editor how to upload the code. We must tell the Editor what kind of device we have, and what port the Arduino is connected to.

First, navigate Tools -> Board -> and click “Arduino Mega or Mega 2560”

Next, navigate Tools -> Port -> and click on the port which you found earlier in the instructions (see section 1 if you have forgotten it)

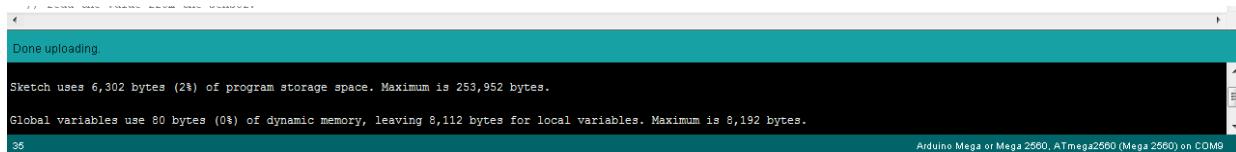


### Step 4 – Upload Code to Arduino

Now that the Editor settings are configured, we can now upload the code to the Arduino. Click on the upload button in the top left corner; indicated below.



Your code should compile and upload. When it is done, a message will show in the bottom of the editor saying that the upload was successful.



Congratulations! You have successfully uploaded your Code to your Arduino!

Note once you have configured all the settings in Steps 1-3, as long as your computer is on and the Arduino editor is open you will not need to repeat the steps and can simply follow Step 4. However, if you log off or turn off your computer for any reason, you will likely need to follow all of Steps 1-4 again.