Class 3: Using Processing to Control Arduino

What is a library?

How to install a library? (installing a library is same in Processing and Arduino)

Dowload ControlP5 library for Processing from
http://code.google.com/p/controlp5/downloads/detail?name=controlP5-1.5.2.zip&can=2&q=

Extract the contents and put the extracted folder inside the Processing libraries folder. In Windows: Documents\Processing\libraries

The reference for ControlP5 can be found at:
http://www.sojamo.de/libraries/controlP5/reference/index.html

Remember: The reference pages are very important, they tell us what the library can do.

Remember: After installing a library, restart Processing/Arduino to see it work.

How to use ControlP5?

Arduino -> Load StandardFirmata (File -> Examples ->Firmata -> StandardFirmata)

Processing -> Whatever you want to do.

Example Code: Turning on LED at Pin13 from Processing

```
import processing.serial.*; //processing will talk to arduino through serial
port
import cc.arduino.*; //this imports arduino as a class in processing
Arduino arduino;  //let's have an object name Arduino from the class, arduino

color off = color(255,0,0);
color on = color(0,255,0);

int Pin13value = Arduino.LOW; //Create a variable named Pin13value and make it
Arduino.LOW, which is digital 0/low

void setup()
{
  size(400, 400);    //size of the Processing patch
  println(Arduino.list());   //list the Arduinos connected to the computer
  arduino = new Arduino(this, Arduino.list()[0], 57600); //choose the first
Arduino
  arduino.pinMode(13, Arduino.OUTPUT);    //set Arduino pin 13 as ouput
}

void draw()
{
  stroke(on);        //borders on drawings
  if(Pin13value == Arduino.HIGH)
  {
    fill(on);
  }
  else
  {
```

```
    fill(off);
  }
  rect(0, 00, 400, 400);
}

void mousePressed()
{
  if (Pin13value == Arduino.LOW) //if it is low

  {
    arduino.digitalWrite(13, Arduino.HIGH); //send digital high to Arduino Pin
13
    Pin13value = Arduino.HIGH;      //Update the local variable
  }
  else
  {
    arduino.digitalWrite(13, Arduino.LOW);
    Pin13value = Arduino.LOW;
  }
}
```

Let’s write a code that reads analog data from Arduino by using a potentiometer