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//*****
//*           LED Brighness control via serial           *
//*****
// =====
//           SERIAL COMMUNICATION SETUP:
// =====

// CHANGE THE FOLLOWING VARIABLE to match the port
// to which your Arduino is connected.

// SEE THE LIST of available ports in the black debugging
// section at the bottom of the Processing window. (It will
// appear after the first time you run the sketch.

// THE LIST LOOKS LIKE THIS on Windows:
// [0] "COM1"
// [1] "COM3"
// [2] etc...
// or like this on a Mac:
// [0] "/dev/tty.usbserial-somenumbers"
// [1] "/dev/tty.usbserial-othernumbers"
// [3] etc...

// TYPE THE NUMBER (inside the brackets) of the desired
// port after the equals sign.
//
// DEPENDENCIES
// ControlP5 Library
// Processing.serial Library
//
// Created: Nov. 2012
// Author: Ulrich Krauss
// Adapted from: Brian D. Wendt / Serial Slider
//

import controlP5.*;
import processing.serial.*;

ControlP5 cp5;
Serial serial;
Textfield myTextfield;
Textarea myTextarea;

// Define and Draw Control Console
int col = color(255);
int textValue = 0;
boolean toggleValue = false;

void setup() {
  size(300,200);
  smooth();
  PFont font = createFont("arial",20);

// initialize cp5 library object
cp5 = new ControlP5(this);
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// define textarea
myTextarea = cp5.addTextarea("txt")
    .setPosition(20,20)
    .setSize (300,20)
    .setFont(createFont("arial",12))
    .setLineHeight(14)
    .setColor(color(128))
    .setColorBackground(color(255,100))
    .setColorForeground(color(255,100));
;

myTextarea.setText("aBlinky iControl");

// initialize and create textfield
myTextfield = cp5.addTextfield("LED intensity (0-100)")
    .setPosition(20,50).setSize(300,50)
    .setSize(200,40)
    .setFocus(true).setFont(font)
    .setInputFilter(ControlP5.INTEGER);

// create a toggle and change the default look to a (on/off) switch look
cp5.addToggle("toggle")
    .setPosition(20,120)
    .setSize(50,20)
    .setValue(true)
    .setMode(ControlP5.SWITCH)
;

// initialize serial port connection on 0 = COM3 (change accordingly)
int serialPortNumber = 0;

println(Serial.list());
String port = Serial.list()[serialPortNumber];
serial = new Serial(this, port, 9600);

}

// define Textfield
void draw() {
    println("aBlinky iControl");
    background(0);
    pushMatrix();
    translate(200,100);
    translate(0,30);
    fill(col);
    ellipse(0,0,40,40);
    popMatrix();
}

//retrieve Info from textfield
void controlEvent(ControlEvent theEvent) {
    if(theEvent.isAssignableFrom(Textfield.class)) {

        println("controlEvent: accessing a string from controller ' "
            +theEvent.getName()+"': "
            +theEvent.getStringValue()
            );
    }
}

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}  
  
//check for toggle pressed and send textfield value as int to serial  
void toggle(boolean theFlag) {  
  
  if(theFlag==true) {  
    col = color(100);  
    int LEDbrightness = 0;  
    serial.write(LEDbrightness);  
    String myText = myTextfield.getText();  
  } else {  
    col = color(255);  
    String myText = myTextfield.getText();  
    int myInt = Integer.parseInt(myText);  
    serial.write(myInt);  
  
  }  
}
```