# Lab 10: A Scribbler Control Panel

Due November 10, 2016

This lab asks you to create a Scribbler control panel – a live graphical visualization of your robot. Your program should continually convey the status of your robot using the graphics objects recently introduced in class. You should also allow the user to control the motion of your robot using the mouse, gamepad, or keyboard. Your program should loop until the user presses 'Escape' on the keyboard. At a minimum, you should involved the following aspects of your robot:

    ◦ Name   ◦ Battery level   ◦ Light sensors   ◦ Infrared Obstacle Sensors   ◦ Motors

Be creative about how the robot's status is visualized, consider using various shapes, sizes, colors, or text to convey the information[1]. Below is an example that uses color to indicate the level of the light sensors (varying levels of blue), red and green to convey the value of the infrared obstacle detectors and text to indicate the robot's name. A picture from the robot's camera is shown in the middle. The keyboard is used to control the motion of the robot (using the up, down, left, and right keys).
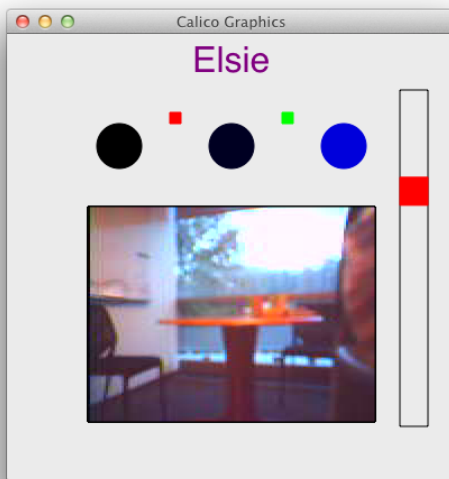
Useful Myro/Graphics Functions

```
w = Window("Title", 500, 500)

# Mouse
w.getMouseNow()    # mouse location (x, y)
w.getMouse()       # after press, mouse location (x, y)
w.getMouseState() # 'up' or 'down'

# Keyboard
w.getKeyPressed()      # Is any key pressed? True or False
w.getKeyPressed(key)   # Is key pressed? True or False
w.getLastKey()         # the last key pressed

# Gamepad
getGamepadNow()   # dictionary of gamepad information
getGamepad()      # after button press, gamepad dictionary
```

Learning Objectives

  ◦ Use Graphics Objects   ◦ Create a User-Interface

Deliverable

Submit an electronic copy of your lab using moodle and bring a hardcopy of your program to class. Your program should have your name, email, assignment description, the date, and collaboration statement at the top of the file as a comment. Your submission should be a zip file that expands to a folder with one file:

```
cmsc143-lab10-LASTNAME-FIRSTNAME
      lab10.py
```

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[1]The Calico Graphics reference guide on the wiki will be useful: http://wiki.roboteducation.org/Calico_Graphics

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