

Lab 0: Download Processing and Draw a Box

In this lab, you will be using Processing to draw a rectangle. Although the assignment is relatively simple, there are a few steps that you need to go through, as well as a few concepts to learn. In particular, you will be learning the basics of Processing, handling mouse events, basic intersection detection, and keeping track of the state of the visualization.

Basic Requirements for This Lab:

1. Download and install Processing from <https://processing.org/download/?processing>.
2. In Processing, do the following:
 - a. Setup your visualization (the canvas) to be of size 400x300 (screenWidth x screenHeight).
 - b. Draw a rectangle. The rectangle needs to be:
 - i. Of size $\frac{1}{2}$ screenWidth x $\frac{1}{2}$ screenHeight,
 - ii. Centered around the center of the canvas,
 - iii. Colored (filled) with a color of your choosing (call this color C1).
 - iv. In addition, draw a text label in the center of the box. The text can say anything of your choosing (call this text label T1)
 - c. Track the user's mouse click, such that when the user clicks on the rectangle with the mouse, the rectangle's properties need to change to:
 - i. Size $\frac{1}{3}$ screenWidth x $\frac{1}{3}$ screenHeight
 - ii. (still Centered around the center of the canvas)
 - iii. Colored (filled) with a different color than C1 (called this new color C2).
 - iv. The text label (T2) needs to be changed to something other than T1.
 - d. Should the user click on the (smaller) rectangle, the rectangle needs to revert to the properties described in 2.b.

Optional Features:

Assuming that you complete the above requirements before the end of the class, or if you'd like to play with this lab further on your own, here are some things to try out:

1. Instead of cycling through 2.b and 2.c, add another rectangle into the cycle. For example, for the third rectangle, make it:
 - a. $\frac{1}{4}$ screenWidth x $\frac{1}{4}$ screenHeight
 - b. Different color (C3), and different text (T3)
2. Add animated transitioning between the three states
3. Try using shapes other than the rectangle. What about circles, crosses, stars?
4. Post this online using Processing.js