

**257 / 757**

Programming in the Arts with Processing

**Homework 4****Start: Thur 1.23.14**  
**Due: in class Tue 1.28.14**  
**Goal: Responding to the User**  
**#2****Course Web Site:**<http://www.andrew.cmu.edu/course/60-257/>**Reading:**

Posted on the calendar web page available from the link shown above.

**Assignment:**

Homework #3 responded to the user's mouse in ways of your choosing. For this homework your code will respond to keyboard and mouse input from the user.

**Specifications:**

1. \_\_\_\_ You may use your homework #3 as a starting point or you start with a blank program.
2. \_\_\_\_ Put the following information as comments at the top of your program:
  - homework number
  - a copyright statement
3. \_\_\_\_ Add functions definitions for a `setup()` function and a `draw()` function .
4. \_\_\_\_ Add code needed to the `setup()` and `draw()` functions to draw some “interesting stuff” using mouse input from the user.
5. \_\_\_\_ Add a `mousePressed()` function to alter some aspect of the drawing when the user presses a mouse button.
6. \_\_\_\_ Add a `keyPressed()` function to alter some aspect of the drawing when the user presses any key.
7. \_\_\_\_ Add a `mouseWheel()` function and alter some aspect of the drawing when the user rotates the mouse wheel. – ***This is only if you are using Processing 2.1***
8. \_\_\_\_ Explain how keyboard, mouse-button, and mouse-wheel input alters the output in your post on Processing.org.
9. \_\_\_\_ Explain how keyboard, mouse-button, and mouse-wheel input alters the output in a comment at the top of your code.

**Suggestion:**The `random()` function might be useful for changing “stuff” when the user does something with the mouse button, wheel or a key. A new color can be created with:`fill( random(255) )` for gray`fill( random(255), random(255), random(255) )` for color

or you can create a color variable and use the color function like this:

`color col = color( random(255), random(255), random(255) )`

**Advice:**

This is another experimental assignment. You will use what you learn from this homework in future homeworks. Be sure to read Shiffman and the class notes. Keep working with variables and expressions.

**Handin:**

First -- Submit the ENTIRE FOLDER *without the web and javaScript stuff* to your handin folder following the instructions given today in class and on the web page.

Second -- Post the assignment on Open Processing. Be sure to put instructions in the user to follow in the comment box on Open Processing.

**Working Ahead:**

Chapter 5 (starting on page 59) of Learning Processing introduces a set of programming constructs generically called control. Control was used by Processing to respond to the users mouse movements and key presses. If you look carefully at the API for the key, keyCode, and the button variables, you will see how control can be used to determine more about the user's input. You may want to explore this in coding your responses to user input.

**Sample:**

Here are some other attempts at being "artistic."



