

15-102 Exploring Programming with Graphics
Homework 5**Start:** Wed 5.25.11
Due: Tue 5.31.11
Goal: Motion Illusion**Course Web Site:**www.andrew.cmu.edu/course/15-100mooseNsquirrel**Reading:**

As posted on the calendar web page available from the link shown above.

Assignment:

You will continue to work with functions in this homework. The new stuff is animation and the use arithmetic to control it. You will need your **drawInitials()** function from homework #4. The program will require **setup()** and **draw()** functions similar to those you wrote in the last homework. The **draw()** function takes on a very important roll in this homework. Processing attempts to call **draw()** 60 times each second. In this homework you will use this repeated call of **draw()** as an “animation engine” to create an illusion of motion as your initials move vertically and horizontally in the graphics window. They will collide and bounce away from each other. This will be a pseudo screensaver.

Prohibitions:

You may not use any control structures such as **if**, **if/else**, **switch**, **for**, **do**, **while** in this homework unless they are already in your **drawInitials()** function. If you do not know what these are – fine – you are set. If you do know what they are, you cannot use them here (expect as stated above). The appearance of any of these control structures outside of your **drawInitials()** function results in a grade of zero.

Preparation:

Copy the **drawInitials()** function you used in homework #4 into HW5.pde file. The .pde file you receive for this homework has a **setup()** and a **draw()** function already started. These **setup()** function and **draw()** functions have some code in place. Feel free to edit these to fit your design.

There is some code that is commented out. You should leave this code and not change it in any way. It will be explained in class. This code must commented out or deleted when you make your applet.

You can add **println()** statements to your code for debugging but you **MUST** comment them out in your final version.

Specifications:

_____ Your code must create the illusion of lateral or translational motion that shows movement of at least two sets or your initials (left/right or up/down/ or diagonally).

_____ Your code must create the illusion rotational motion that shows movement in both clock-wise and anti-clockwise directions of at least two sets of your initials.

_____ The movement must be “interesting” in some manner that appears interactive with each other and not just simple separate movement of four sets of initials.

_____ All control (methods of keeping the initials visible in the window) must use arithmetic methods as discussed in class. The use of any control syntax (see the **Prohibitions** Section above) are illegal for this homework.

The graphics window is set to a square 500x500. Feel free to adjust this to make the illusion better. For your applet window, keep the maximum height to 800 pixels or the execution on some portable computers does not look very good. Jim will not alter the screen size or any variables in grading this homework. However, you may NOT use magic numbers except as explained in class.

Handin:

Follow the directions on the link on the course web page:

[Handing in Your Homeworks](#)

exactly as they are written.

Options:

If you have time or want to play with true and sincere frustration, try this in three-d using your initials (who knows how they will look). If they do not look good, uses some spheres and boxes.