257 / 757 Programming in the Arts with Processing **Homework 7** Revised	**Start:** Tue 2.18.14 **Due:** Tue 3.4.14 (Revised) **Goal:** Planning Your Own Game

Course Web Site: http://www.andrew.cmu.edu/course/60-257/

Assignment:

You will take the parts of programming you have worked with during the first five weeks and use them in a game of your own design (sorta…). We ***strongly*** advise you to do this game in 2-d space. There are complexities in 3-d space that you may want to delay dealing with until you have more experience.

Specifications:

1. _____ The game must be both winnable and losable. If Jim cannot win your game (much of the time), you may have to play it to victory to satisfy this specification. Jim has to be able to lose the game when he is trying to win (again, he usually loses). If this specification is not met, the grade is a zero and the rest of the specifications do not help in any way. If the game is both winnable and losable, then:
2. Put the required information in a comment at the top of your program. Since this is an original game, you should include a copyright notice.
3. _____Your game must allow the player to maneuver a figure from a starting place to an ending place dodging one bouncing, one wrapping, and one other figure.
4. _____The elapsed time must be displayed.
5. _____If the player's figure collides with one of the other figures, the player's figure must be returned to the starting place.
6. _____The player gets five tires to get to the ending place.
7. _____The number of tries remaining OR the number of collisions incurred must be displayed.
8. _____Movement control of the player's figure is up to you.
9. _____There must be a start-up screen that explains the game and the control to the player before the game (and the elapsed time) begins.
10. _____A final screen must be displayed reporting the user's results.
11. _____You must evaluate the user's play of your game based on an analysis algorithm of your own design. Just saying that the player took three tries in 20 seconds to reach the goal is not satisfactory. There must be some form of evaluation.
12. _____Find or record sounds for the game for key presses, collisions, end of game that is won, and end of game that is a lost.
13. _____The size of the game screen is up to you but remember that most of us use portables.
14. _____The size of the figures and how fast they move is up to you.
15. _____Everything about the third figure the player must dodge is up to you.
16. _____The control and objectives must be explained in the comment at the top of your program.
17. _____The control and objectives must be explained in the Open Processing post of your program.

18. ____ If your sounds come from commercial sources, be sure to cite them in your program comment.
19. ____ If you use an image from a commercial source, be sure to cite the source in the program comment.

Advice:
Start now!

This is your first program with any detail on your own. The main key is planning. The second most important thing is planning. It is also the third. Break your program down into small discrete steps that accomplish one part of your overall plan. If you keep these steps small, you will have the functions you need and the order in which they need to be called.

Be reasonable in your goals – in terms of coding (not originality) you are probably not ready to challenge EA and the other folks writing this type of code for a living…

Write small test programs to test the parts of your program. When they work, copy and paste, the code into your "master" code and adjust it as needed. This is especially true for the movement and collision coding. It is usually easier for novices to work in a small amount of code than working within a large block of code. It is much easier for us to help you with code in a very small segment that does a specific task rather than code in one huge block that does everything.

Test it thoroughly.

Print the specifications list on paper and check off each item. Do the comments and the control explanations **next to las**t.

Do the sound last. The reason for this is Open Processing. Once your code is working **without sound**, post it on Open Processing. Then add the sound to your code and put that in handin.

Prohibitions:
Your game cannot look anything like Jim's extremely sad demonstration game. You are better than that.

There are three and only three obstacles – we need a better way to store data than discrete variables for each figure. We will begin working with next week.

Handin:
Follow the instructions on the web page. This homework MAY NOT RUN on Open Processing but you need to post it there anyway.

Once you handin, it is final – if Jim grades it and sends back a grade that is less than what you want, you cannot resubmit it for re-grading.