This assignment was locked Feb 7 at 11:59pm.

Modify the existing program from class into a bouncing ball that bounces off all four walls.  Instead of int as we did in class, use float so that coordinates can be modified slightly.  For example, with int we can only set the velocity of the ball to (+1, +1) or (+1, +2) whereas if you support float you can set:

float x = 0, y = 0;

float dx = 1, dy = .3;

This will give much finer control over the velocity.

In addition for this optional assignment, you must create a second ball, and detect when they collide, implementing the collision physics. For the equations, see: [https://en.wikipedia.org/wiki/Elastic\_collision (Links to an external site.)](https://en.wikipedia.org/wiki/Elastic_collision)

Note that it's very hard to get the numerics right and the balls will probably gain energy a small percentage of the time, eventually breaking the simulation. That's ok, you don't need to solve that problem to get the points.