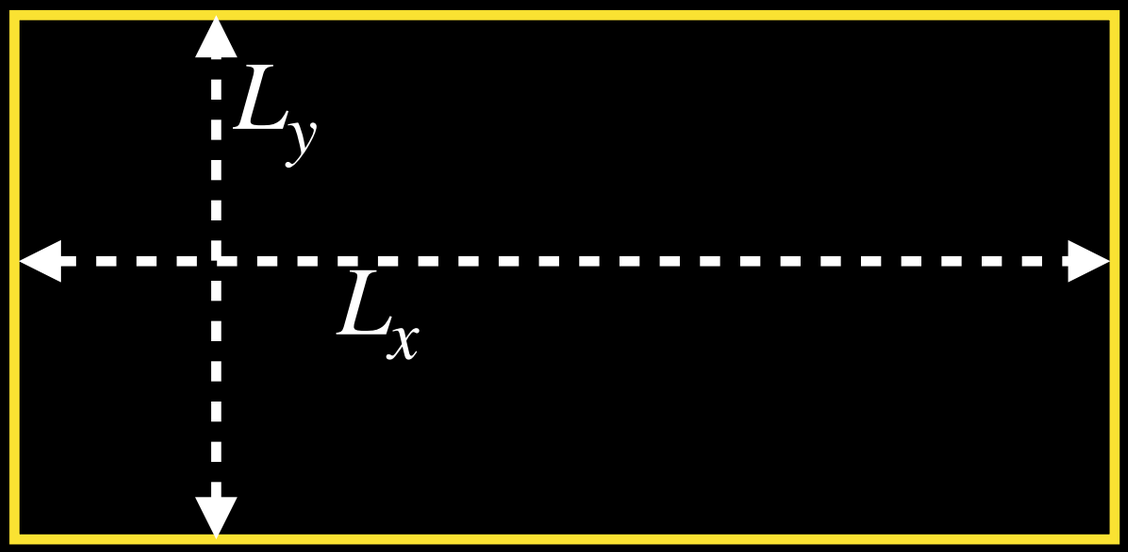
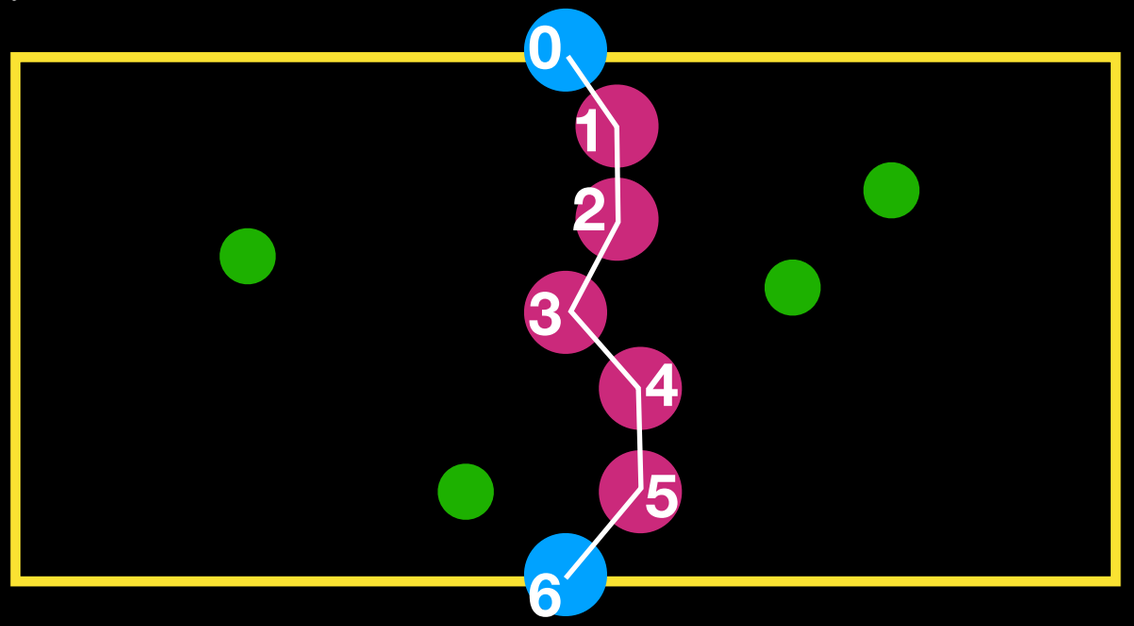
Project 7) Instability of a chain

Choose an elongated box as shown in the picture below.





Create a chain of particles. The ends of the chain consist of two infinity heavy particles with $v_x = v_y = 0$. The two end particles are in contact with the wall, see blue particles 0 and 6. Overlaps with the wall are also allowed for this two blue particles.

Particles in the chain interact via elastic collisions. In addition, nearest neighbors in this chain can not be further appart than some maximum distance Ω. This distance should be small enough, such that green particles cannot cross the chain.

Question: How does the shape of the chain changes with the number of particles in the chain (more particles mean a longer chain)? You should see an instability of the shape of the chain.

How does the shape change if you choose different densities on both sides of the chain?

The number of particles on both sides of the chain should be sufficiently large.

Note: It is not necessary, that one and the same code does everything. You can write severa codes, which do one specific measurement.