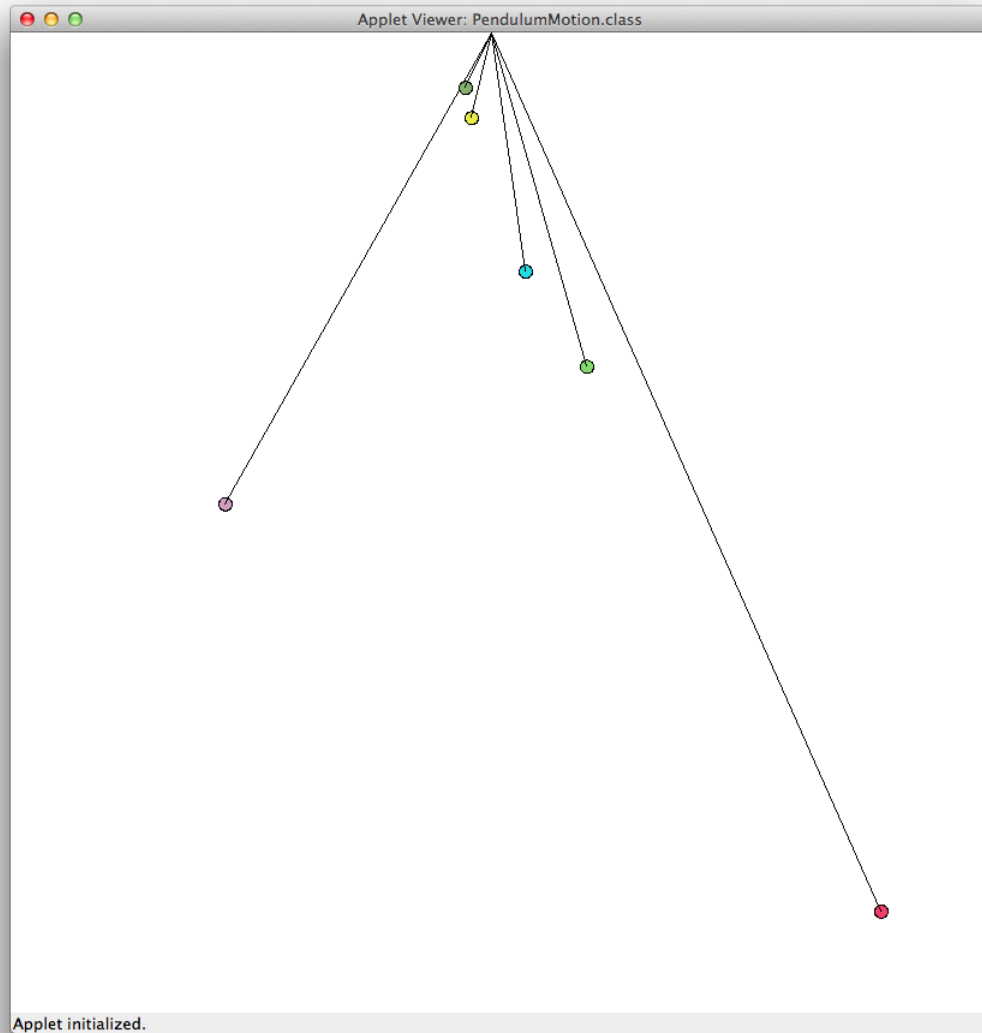


Pendulum Motion

In this problem we will simulate the pendulum motion. You will implement the Pendulum class. Pendulum class extends to GCompound and has 2 fields called theta and length. Recall that you can find the angle of the pendulum at any time from its initial angle and length of the rope (equation for the unfamiliar at end). Pendulum constructor takes two variables theta and len which are initial angle and length of the rope. You should also create and add the ball and rope (line) that you will animate. Step function takes an argument t which is the time. Step function should set the location of the ball and rope according to given time. Initial position of the ball and rope can be determined from givens.

$$\theta = \theta_0 \cos\left(\sqrt{\frac{g}{length}}t\right) \quad (1)$$



Pendulums are moving according to equation.