CET 350 Technical Computing Using Java
Program 6 Cannon Application

Using an IDE, write a java application that will draw a screen box for a bouncing ball to move within.
On the right bottom corner use a polygon and circle to draw a cannon.
Use a scrollbar to adjust the cannon angle.
Use a scrollbar to adjust the initial velocity of the projectile of the cannon.
The cannon barrel angle will move from 0 degrees, horizontal, to 90 degrees, vertical.
Accurately draw the cannon barrel regardless of it's angle, a properly oriented rectangle.
The initial muzzle velocity should be between 100 and 1200 ft/sec.
Use a menu with control, size, and environment.
Use an item under control to run.
Use a shortcut key for the run of the menu, Ctrl-R.
Use an item under control to pause.
Use a shortcut key for the pause of the menu, Ctrl-P.
Use an item under control to restart.
Use an item under control to quit.
Use check boxes in a submenu under size to control the size of the target in five different sizes.
Use check boxes in a submenu under size to control the speed of the target in five different speeds.
Use check boxes in environment to select the gravity of the planet, use the gravity of the nine planets and earth's moon in our solar system, yes include Pluto as a planet.
A single left mouse click, on th cannon, will fire the cannon.
Include appropriate labels to name and display values.
Include labels to keep score accordingly, ball and you, along with the time.
The target will be a moving ball.
The target will bounce around the screen until it is destroyed or it destroys the cannon.
The cannon ball must follow the laws of Physics for projectile motion.
If the projectile leaves the screen, it may return within the screen.
Indicate if the projectile will not be coming back.
Use an appropriate time period for the graphics update.
You are able to drag and draw rectangles on the screen.
The rectangles can not be drawn outside of the screen nor can they be drawn on the ball or the cannon.
A covered new rectangle will not be drawn.
Rectangles covered by a new rectangle will be removed.
The ball will not only bounce off of the screen perimeter but also the rectangles, and the cannon after it destroyed the cannon.
The cannon projectile can destroy the rectangles as well as the bouncing ball.
A double left mouse click will remove all rectangles that the click intersects.
Name your program CannonVSBall.java
Properly comment the program.