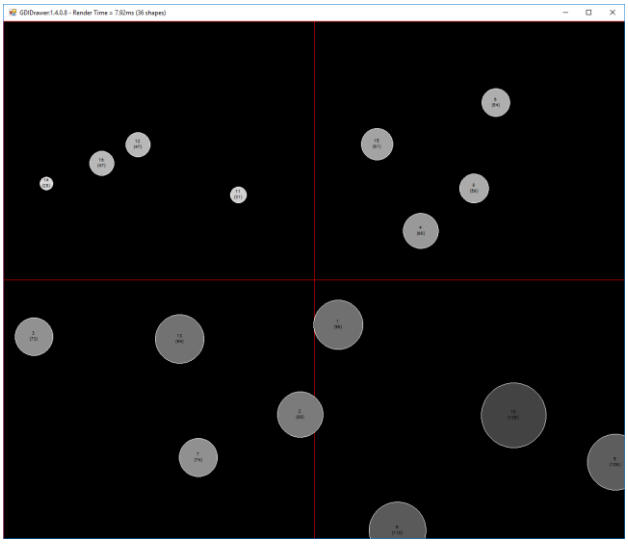
CMPE2300 – CompQuads

You will create a standard Windows Forms application with GDIDrawer support, and *surprise* bouncing balls!



This time you will be adding balls to one of four quadrants in the drawer window. Each quadrant will have its own list of Ball, and these four lists will be stored in a list of list of ball. You will use the left mouse click even from the drawer window to add balls to the appropriate list.

A timer will drive movement and rendering. Balls will move and bounce within the quadrant they have been assigned to (determined by the list they are in).

If the user right-clicks in the drawer window, the balls will be sorted by size, and then redistributed to each quadrant list as evenly as practicable. Balls may not be lost, nor may any quadrant contain more than ±2 balls compared to any other quadrant.

Ball Class

The ball class will contain fields for position, direction (speed), size, and id.

Add a Move method that will move the ball as we have before, except, pass a Rectangle that will be observed as the bounds for the ball movement.

Add a Render method. Render as shown, showing the ball ID and size. The ball color will be greyscale with the RGB values defined as 255 – ball size * 1.5.

Add IComparable support to the ball class, providing ascending ordering on ball size.

Main Form

New balls will have random speed (-2.5 to +2.5, X and Y), and a random size (25 – 255/2). New balls need to be placed in the correct list.

Add a timer at 50ms that will move and render the balls. Use a locking semaphore for this activity.