A Chessboard of squares

Topic Course: CS473 Computer Graphics in Java

Due: February 6 **10 points**

Name_____

The parametric equations of a line between two points (x_0, y_0) (x_1, y_1) was discussed in the class. The attached Triangles.java program shows how the parametric equation of a line is used to draw triangles inside each other. Following the idea in the Triangles.java program, write a program to draw squares inside each other.

Replace the triangles of program *Triangles.java* with squares and draw a great many of them, arranged in a chessboard, as shown in Figure 1.11.

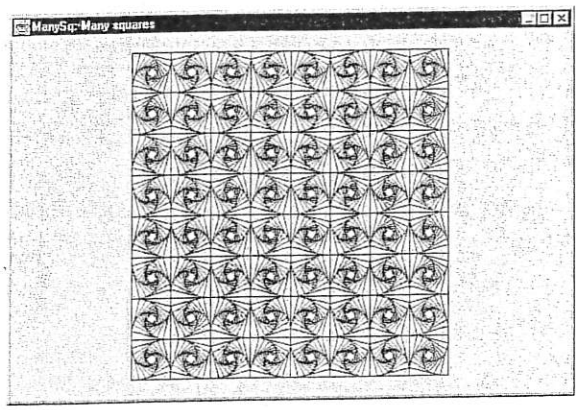

Figure 1.11 A chessboard of squares

As usual, this chessboard consists of $n \times n$ normal squares (with horizontal and vertical edges), where $n = 8$. Each of these actually consists of k squares of different sizes, with $k = 10$. Finally, the value $q = 0.2$ (and $p = 1 - q = 0.8$) was used to divide each edge into two parts with ratio $p : q$ (see also program *Triangles.java* of Section 1.2), but the interesting pattern of Figure 1.11 was obtained by reversing the roles of p and q in half of the $n \times n$ 'normal' squares, which is similar to the black and whites squares of a normal chessboard. Your program should accept the values n, k and q as program arguments.