

COS126 Methods and StdDraw Activity

- Write a program DiamondTile.java that takes a command-line argument N and creates an N-by-N tile of diamonds. Include static methods diamond() and filledDiamond().

```
1 /*****
2  * Compilation: javac DiamondTile.java
3  * Execution:   java DiamondTile N
4  * Dependencies: StdDraw.java
5  *
6  * Create an N-by-N diamond tile.                (Web Ex. 2.1.1)
7  *****/
8
9 public class DiamondTile {
11 // draw a diamond outline, center at (x, y), diagonals = 2*size
12 public void diamond(double x, double y, double size) {
13     double[] px = { x + size, x,          x - size, x };
14     double[] py = {          y,          y + size, y          , y - size };
15     StdDraw.polygon( px, py );
16 }
17 // draw a filled diamond, center at (x, y), diagonals = 2*size
18 public static void filledDiamond(double x, double y, double size) {
19     double[] px = { x + size, x,          x - size, x };
20     double[] py = { y,          y + size, y          , y - size };
21     StdDraw.filledPolygon( px, py );
22 }
23
24
25 public static void main(String[] args) {
26     int N = Integer.parseInt(args[0]);
27
28     // for easy computation, set scale to match pattern
29     StdDraw.setXscale(0, N);
30     StdDraw.setYscale(0, N);
31
32     for (int i = 0; i < N; i++) {
33         for (int j = 0; j < N; j++) {
34
35             // black diamond
36             StdDraw.setPenRadius();
37             StdDraw.setPenColor(StdDraw.BLACK);
38             filledDiamond(i+.5, j+.5, .5);
39
40             // red outline
41             StdDraw.setPenRadius(.005);
42             diamond(i+.5, j+.5, .5);
43         }
44     }
45 }
46 }
47 }
```